“*You’re someone different*”:

USING SOCIAL IDENTITY APPROACH TO HEALTH, AND APPRAISAL THEORIES TO UNDERSTAND IMPACT AND RESPONSE TO TRAUMATIC INJURY

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A thesis submitted in partial fulfilment of the requirements of Nottingham Trent University for the degree of Doctor of Philosophy.

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I hope I have done justice to the trauma stories entrusted to me by the forty injury survivors I interviewed: they all passionately desired better for the survivors who will follow them, as did the service providers who shared their knowledge.

Finally, this is dedicated to my mother Dod who left school at fifteen despite a voracious mind. My mother has always encouraged my learning and championed the value of education. Higher education was a choice I could make, but far beyond the reach of my parents and their ancestors for reasons of class and/or gender. I’m grateful to have had the opportunity to update that aspect of my family’s story.

Extracts to introduce the research

“The reviewed literature reinforces that traumatic physical injury is abrupt and unexpected, painful, debilitating, costly and subsequently life-altering”

Wiseman, Foster and Curtis (2013, p1389)

“an accidental injury completely overturns fundamental assumptions we have about ourselves; it won’t happen to me, I’m in control. […] And most people will recover from that quite easily, but we’ve got to make sure that we help them do that. It’s a shock and it changes who you are temporarily or permanently. And your relationship to the world […] ***You’re someone different****, you may have a disability.”*
Clinical Researcher (Service Provider-30, Study 3)

“People that emotionally are still in this: ‘it was a split second and ***this happened to me and my whole life has changed****’ but nobody can see it. Can feel it, but nobody can see it. And because its quite difficult for these people to articulate what they’re feeling, why they’re feeling like that, there’s not really the language to do that. It makes it difficult for them to then go and seek help.”*
Occupational Therapist (Service Provider-01, Study 3)

“I want to go back to work because I want again to mix up with the people I left, you know, so I want to join that crew again you know. […] because a workplace like I told you, it’s like my family, so that’s why everybody wants to go back.”

Taxi Driver (45, pelvic injury), Study 1

“I felt devalued, a lesser member of society, if you like. I had no identity […] I didn't want to look back because it was quite upsetting to lose my career, which was my whole identity. And to lose that was very very... It was devastating for me.”

Trainee Psychologist, (46, TBI), Study 2

Thesis Abstract

Injuries are a worldwide health problem, representing 9% of global mortality. Survivors of traumatic injury may experience loss of function/disability, reduced quality of life, problems returning to work and psychological issues. Despite this impact, evidence on psychological mechanisms that impact recovery and return is fragmented and mostly atheoretical. This thesis applies a multiple-theoretical framework to qualitatively explore the psychological impact and responses to traumatic injury, especially in relation to return to work.

Methodology

Three data sets were analysed using theoretically informed reflexive thematic analysis informed by appraisal theories and the social identity approach to health. Analysis aimed to explore whether social identity context contributed to stress appraisal and coping processes, accounting for some of the social-psychological contributions to injury perception identified in current literature.

Studies 1 and 3 used data generated (mostly by the thesis author) for a larger programme of research to develop and trial a clinical intervention to support trauma survivors' return to work (www.rowtate.org.uk). Study 2 data was collected independently by the author with a specific focus on psycho-social mechanisms experienced by trauma survivors.

Key Findings

Survivors and service providers appraised *work identity threat* from impairments that disrupted work participation. The associated disruption of work identity resources (purpose; connection) negatively impacted wellbeing. Survivors perceived new disability as incompatible with valued work identity. Survivors appraised the availability of workplace social support in relation to continuity of work identity. A key theoretical contribution of this thesis is that combining appraisal theories and social identity approach to health allows identifying key mechanisms for recovery and return to work among traumatic injured individuals.

Findings have important practice implications that can be used to a) develop interventions to support recovery (including RTW), b) address gap in understanding between professionals and patients, and c) integrate psycho-social understanding in future research on traumatic injuries.

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CHAPTER 1: Introduction

1.1 OVERVIEW

This chapter will highlight the impact of traumatic injuries on individuals, their families and society. Next, it will introduce the rehabilitation context in the UK for injured patients and existing evidence on predictors of psychological distress. Then it will highlight the importance of psychological and contextual factors for recovery. Understanding the predictors of psychological distress after injury and predictors of recovery, is important for targeting support and treatment to the most vulnerable in order to promote effective recovery. This chapter will argue that despite the value of biopsychosocial approaches to rehabilitation, there is little and mostly a-theoretical evidence on the role of psychological and social/contextual factors on recovery in general and Return to Work more specifically. Evidence will also be presented on the value of exploratory qualitative research to capture the complexity of predictors and contributors to recovery. The chapter concludes with a summary of the structure of this thesis. The definitions for the terminology used in this chapter and the rest of this thesis are presented in table 1.1.

1.1.1 Definitions

Throughout the thesis, the terminology will be used based on the following definitions.

Table 1.1

Terminology used throughout the thesis

Term	Description
Injury	Refers to *traumatic physical injury* and is inclusive of major trauma. (To avoid confusion with psychological trauma (referenced as a possible psychological outcome of injury), major trauma is referred to as 'injury' unless the context is explicitly clinical.)
Major trauma	In the UK, *major trauma* refers to serious and/or multiple injuries which have a strong probability of resulting in death or disability (National Audit Office, 2010). The threshold for inclusion in major trauma statistics (collected by the Trauma Audit and Research Network (TARN, 2012) is moderate to severe injury plus hospital admission for: ≥3 nights; or to critical or specialist care. Severity of injury is assessed using the Injury Severity Score (ISS: Baker, et al., 1974). Major trauma or moderate/severe injury (ISS of > 8) was the focus of the ROWTATE intervention.
Psychological trauma	Psychological trauma is defined as loss of wellbeing or psychological balance following a traumatic event (Perrotta, 2019) or repeated events. Use of the term does not assume a diagnosis of Post Traumatic Stress Disorder (PTSD). The DSM-V guidelines for diagnosis of PTSD include a definition of traumatic exposure (Criterion A) which incorporates actual experience or threat of death/serious injury (APA, 2013).
Trauma survivor	Or just 'survivors' refers to participants in the present research with lived experience of *traumatic physical injury. It* does not assume the presence of psychological trauma, diagnosable or otherwise.
Psychological distress	While clinical research tends to refer to *mental health issues* and *psychopathology* or *psychological morbidity* to describe issues meeting diagnostic thresholds e.g. PTSD, depression and anxiety, the author more usually refers to ***psychological distress*** for two reasons. Firstly to

	acknowledge that distress that is sub-threshold for diagnosis may also be experienced by survivors. Secondly to acknowledge that in the social identity approach, defining distress only biomedically or diagnostically risks reifying it as a categorical state of disease (Haslam et al., 2018) in individuals, thus overlooking social contributors.

1.2 BACKGROUND

1.2.1 Context of major trauma/traumatic physical injury

Injury is a problem worldwide, with significant associated costs in terms of mortality, treatment and economic output. Injury accounted for an estimated 56 million hospital admissions internationally in 2013 (Haagsma et al., 2016). For EU member states over the period 2010-2012 injury was the fourth most common cause of death and accounted for 8% of all hospital care (European Commission, 2014). The cost of injury across European states was estimated as 78 billion euros annually in the 2014 report. The risk of death following injury varies between countries, with injuries accounting for 6% of deaths in high income countries compared to 11% in low income countries in Southeast Asia (Norton & Kobusingye, 2013).

Injuries are also a significant concern in the UK. Injuries represent 25% of emergency department workload in England, (Royal Society for the Prevention of Accidents, 2021 and over 700,000 hospital admissions in 2015-16 for working aged people aged 16 to 69 (Office for National Statistics, 2017). The annual lost economic output from injury in the UK has been estimated (at 2007 costs) as being between £3.3 billion and £3.7 billion (National Audit Office, 2010). Mortality statistics for England and Wales (Office for National Statistics, 2017) noted 21,226 deaths from external causes in 2017, 26.5% of which were from falls, 15.08% from transport accidents, 15.4% from accidental poisoning, and 18.51% from intentional self-harm. The risk of death from injury was higher for males in almost all age groups in Europe (European Commission, 2014b). However, the incidence of major trauma by age demographic in the UK has changed in recent years (Kehoe et al., 2015; Dixon et al., 2020). Kehoe (2015) noted that while major trauma has traditionally been considered to be associated with young men, in ageing populations trauma incidence is increasingly a problem for the elderly. This is relevant to the present data focusing on injury survivors of working age due to the ROWTATE return to work (RTW) support aims.

The treatment of major trauma patients in the UK was reorganised in 2012, following concerns regarding survival rates after injury (National Audit Office, 2010; National Enquiry into Perioperative Deaths, 2007). This resulted in the creation of 26 regional major trauma centres (MTCs) set up in a hub and spoke model (McCullough et al., 2014) providing care for patients with moderate to severe injuries (Injury Severity Score (ISS) ≥ 9 (Moran et al., 2018). Major Trauma Centres (the 'hubs') are equipped with facilities required for resuscitation, emergency surgery, diagnostic imaging and intensive care (McCullough et al., 2014). The hub and spoke system facilitates triage of some injury patients direct to specialist centres such as burns units (McCullough et al., 2014) with the majority receiving care from major trauma centres (MTCs), satellite trauma units (the 'spokes') and local emergency hospitals (LEHs) (Dixon et al., 2020) depending on injury severity and transfer time. The economic cost of injury includes medical treatment costs as well as loss of earnings and productivity from trauma survivors unable to work. In the UK, the cost of treating non-fatal major trauma is estimated at £50,000 per patient (Dixon et al., 2020). However, a further 28,000 injury patients may be treated each year who do not meet the precise definition of major trauma (Moran et al., 2018). In the UK the implementation of major trauma networks has resulted in a 19% increase in survival (Moran et al., 2018).

1.2.2 Consequences for injury survivors

For injury patients who survive, there may be subsequent material and psychological costs. There may be a high probability of acquired disability following injury (McCullough et al., 2014). Each year an estimated one million Europeans are left permanently disabled following injury (European Commission, 2014). Annually, 760,000 *disability adjusted life years*[1] (DALYs) are lost in the UK as a result of injury (Lyons et al., 2011). Return to work is delayed for a significant proportion of injury survivors, with a third not having returned to work at 12 months post injury (all trauma types: Kendrick et al., 2017a; orthopaedic only: O'Hara et al., 2020). The associated financial cost of not working for individuals and families is likely to impact wellbeing and quality of life. For many trauma survivors there is also a psychological cost of injury with between 30% and 40% of those experiencing major trauma reporting serious psychological disorders within a year of injury (Jones, 2021). The impact of psychological issues is increasingly recognised in relation to reduced quality of life and impaired recovery (Bryant et al., 2010; Këllezi et al., 2017; Zatzick et al., 2008), including delaying RTW (Sareen et al., 2013). An international review of mental health following traumatic injury found a strong association between traumatic physical injury and depression, PTSD, anxiety (Generalised Anxiety Disorder or GAD) and travel anxiety (Wiseman, Foster & Curtis, 2013). Furthermore, psychological morbidity (including PTSD, depression, and anxiety) affects between 2 and 42% of injured patients; affecting recovery, quality of life and return to work (Kendrick et al., 2018).

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[1] The DALY is a statistical calculation estimating the loss (in years) of healthy life due to disability. See Murray (1994)

However, evidence linking injury severity and psychological outcomes is inconsistent (Kendrick et al., 2018; Wiseman et al., 2013) and risk factors for psychological morbidity are heterogeneous (Kendrick et al., 2018). The psychological consequences of injury are explored in more detail below, after first considering the context of rehabilitation, with specific reference to the ROWTATE trial.

1.2.3 The rehabilitation context

The ROWTATE intervention with which this thesis is associated aims to provide *vocational rehabilitation* or return to work (RTW) support following moderate to severe physical injury (Kendrick et al., 2021). Rehabilitation has been described by the World Health Organisation (WHO, 2011) as measures which maximise the functioning of individuals experiencing impairments to their functioning. Models of rehabilitation favour holistic, biopsychosocial[2] approaches (Schultz et al., 2007; Wade, 2015) which consider the full range of contextual factors contributing to disability. The UK National Audit Office report on trauma care (NAO, 2010, p 26) defined rehabilitation as the "*restoration of physical, psychological and social functions*" and reduction of secondary complications (referencing the Trauma Care Manual, 2009), again indicating the range of impacts. Vocational rehabilitation is specifically concerned with (re-)engaging individuals with work and facilitating their fullest, most sustainable participation in working life (Escorpizo et al., 2011). Vocational rehabilitation is particularly responsive to holistic contributions to RTW. It uses the International Classification of Functioning, Disability and health (ICF: Escorpizo et al., 2011) framework to classify components of functioning and disability, taking into account not just physical but also mental and social impacts of impairment[3].

In the practical context of recovery from injury in the UK, rehabilitation prescriptions are recommended by NHS NICE guidelines (National Institute for Health and Care Excellence, 2022) to support patients following hospital discharge. However, concerns have been raised about their implementation (National Health Service, 2015). Furthermore, while RTW is considered to be a recovery outcome (Kendrick et al., 2021), vocational rehabilitation in the UK is not widely available (Kettlewell et al., 2021). The veteran rehabilitation charity Black Stork has noted that in the UK NHS context there is a lack of attention paid to both community rehabilitation support and psychological support for injury survivors (Jones, 2021). The

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[2] The biopsychosocial 'model' is widely applied in healthcare and psychology to highlight the contribution of social and psychological factors to health alongside biological. For a review see Lugg, 2022.

[3] Within the ICF framework, disability is understood as the opposite of functioning (Escorpizo et al., 2011). Impairments to functioning do not necessarily equate to disability however. If impairments are viewed through a social rather than a medical model of disability (Shakespeare & Watson, 2002) then disability is socially constructed rather than individual deficit.

ROWTATE trial is the first to study the effectiveness of vocational rehabilitation for improving the physical, psychological and economic wellbeing of patients with a diverse range of major trauma injuries, rather than single conditions such as brain or back injury (Kendrick et al., 2021). The intervention provides case management through an occupational therapist co-ordinating multi-disciplinary team inputs to survivor recovery. This multi-disciplinary approach was informed by systematic reviews indicating that prior vocational rehabilitation success was associated with inputs from across health and employment sectors (Kendrick et al., 2021). For the first time, this (ROWTATE) vocational rehabilitation approach includes the addition of psychological support where required, acknowledging the frequency of mental health problems following injury. In conclusion, within the biopsychosocial framework of vocational rehabilitation, paying attention to the psychological impact of injury is an essential component of a multi-disciplinary approach to care.

1.3 OUTCOMES OF INJURY

1.3.1 Predicting Return to Work (RTW)

Research indicates that successful RTW following injury is predicted by a range of biopsychosocial factors. Systematic reviews of RTW interventions following injury or chronic conditions include predictors such as pain (Clay, et al., 2010), activity limitation (Cancelliere et al., 2016) and functional status (Saltychev, et al., 2013) may be understood as biological or physical factors. Psychological predictors have included self-efficacy (Clay et al., 2010), recovery expectations, and behaviours related to avoidance of pain (Illes, et al., 2008). Social predictors include demographic factors such as age, gender and level of education (Cancelliere et al., 2016; Clay et al., 2010; Saltychev et al., 2013) but also occupational factors including job role, demands and decision-making latitude (Cassidy et al., 2014; Clay et al., 2010). Cassidy et al.’s (2014) systematic review of RTW predictors in mild traumatic brain injury (TBI) patients summarised five classes of variables relevant to RTW with mild TBI: preinjury personal factors; injury related personal factors; postinjury personal factors; occupational factors; and environmental factors. This review concluded psycho-social factors to be more important predictors of recovery than biomedical factors. These reviews affirm the importance of a biopsychosocial approach to rehabilitation, but do not by themselves help focus in on the key barriers and facilitators to RTW after injury.

A systematic review of social factors affecting RTW in people injured at work (White et al., 2019) concluded that social facilitators and barriers have been neglected in RTW research and are affected by inconsistency of measurement and conceptualisation. Focusing in on psychological predictors of RTW for injury patients, Kendrick et al. (2017a) found the odds of

RTW to be negatively associated with increased depression scores at one month post injury, amongst other factors. Recovery in general was less likely with higher measures of depression, anxiety, PTSD, and poorer social functioning (Këllezi et al., 2017). These findings highlight the impact of psychological problems on rehabilitation following injury, and the need to take a psychologically informed approach to rehabilitation has been suggested by the Black Stork charity (Jones, 2021). However, while it is clear that a wide range of biopsychosocial factors affect RTW, a lack of empirical focus on psycho-social predictors in particular has been noted (White et al., 2019). Existing research also tends to focus on specific types of injury. There is a need for empirical studies in populations recovering from all types of injury. Additional understanding of what predicts psychological outcomes following injury is also important and explored next.

1.3.2 Psychological outcomes

1.3.2.1 Incidence of psychological distress following injury

There is strong empirical evidence of a link between injury and subsequent experience of psychological distress. As referenced above, a systematic review of psychological distress following hospital admission for injury (Wiseman et al., 2013) reported that 30-93% of injury patients met diagnostic thresholds for PTSD compared to 8% of US general population and 23-45% met thresholds for acute stress disorder (ASD). ASD was noted to be predictive of PTSD.[4] Only 10 of the 41 studies included had investigated anxiety (inclusive of travel phobia) with a 16-40% incidence (noted only as ‘common’ in the general population). Depression (negative mood disorder) was not investigated as frequently as other conditions in the reviewed studies but affected 28-42% of trauma survivors compared to 25% of the general population. The review noted that PTSD was the most frequently investigated condition, but that PTSD has been found to typically occur comorbidly with depression or anxiety in trauma survivors (Bryant et al., 2010).

A more recent investigation of psychological morbidity in UK major trauma survivors corroborated the prevalence of diagnosable but also sub-threshold distress. Kendrick et al. (2017a) found threshold-meeting psychological problems at one month post injury at the rate of: 15% depression (plus 19% borderline or sub-threshold); 16% anxiety (plus 15% borderline). Depression and anxiety but also higher scores on impact of trauma exposure all contributed to reduced quality of life scores at later time points (2 and 12 months post injury)

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[4] Acute stress disorder (ASD) is diagnosable at three days following a traumatic exposure, earlier than PTSD (30 days) but shares the same symptom clusters in the DSM-V diagnostic manual (APA, 2013). Diagnosis depends on (1) exposure to death, threat of death, or actual or threatened serious injury, (2) intrusion symptoms such as flashbacks or nightmares, (3) symptoms of avoidance of trauma related stimuli (4) negative changes to cognitions and moods, (5) symptoms of increased arousal/reactivity such as irritability or hypervigilance.

in the same study. A further analysis of the data indicated that diagnosable psychological problems remained high 12 months after injury, reporting: 7% depression, 11% anxiety and 17% PTSD (Kendrick et al., 2018). Reported prevalence of depression, anxiety and PTSD varies across the injury literature and this range has been attributed to differences in measures used, effectiveness of screening tools and timing of data collection (Kendrick et al., 2018; Wiseman et al., 2013), and whether measures were self-report or clinician administered interview (O'Donnell, et al., 2008). Wiseman et al.'s (2013) review noted that mental health was poorly screened for in clinical settings and advocated for a more consistent approach. Nevertheless, it is clear that psychological distress is common following injury. The consequences and predictors of this distress will be considered in turn.

1.3.2.2 Psychological distress impacts recovery

Experiencing psychological distress has been shown to negatively impact recovery, including capacity to RTW. Wiseman et al.'s review (2013) notes that experiencing mental health problems is associated with trauma survivors' decreased quality of life, poorer coping mechanisms and protracted recovery period. PTSD diagnosis was particularly associated with secondary risks of not returning to work, reduced quality of life and decreased participation in living activities. Depression was associated with survivors' poorer coping mechanisms and substance use. Experiencing anxiety was found to contribute negatively to the experience of pain, fatigue, physical functioning and quality of life (QoL). One of the reviewed studies reported that poor mental health measured in hospital predicted physical function a year post injury (Edwards et al., 2007). Experiencing early mental health problems may also affect trauma survivors' capacity to gain needed social support (Agtarap et al., 2017), indicating a vicious cycle. Broadly, experiencing psychological distress is likely to negatively influence coping and recovery. RTW is part of recovery, but research suggests it is not merely an outcome variable. Recent research in a sample of seriously injured black men suggests that not being able to RTW negatively impacts mental health. Men who had not been able to RTW had higher odds of experiencing poor mental health outcomes compared to those who were back at work (Palumbo et al., 2021). The reasons for this negative impact on wellbeing are explored next.

A negative psychological impact from not working may be related to being unable to access the positive benefits of working. For example, there is empirical support that a strong commitment to work and connection with other employees contributes to better psychological wellbeing (Haslam, et al., 2005) and reduced mental health issues (Sani, Scrignaro & McCollum, 2010). A positive impact on health and wellbeing following RTW after sick leave has been attributed to improved finances, increasing self-esteem, connection with others and quality of life (Waddell & Burton, 2006) and positive identity and status (Dyck, 1995). On the other hand, stigmatised perceptions of unemployment may also have a negative impact, such as in (Krug, et al., 2019) cross-sectional research which corroborated an association between higher consciousness of unemployment stigma and a negative impact on wellbeing and health. It is therefore not assumed that the relationship between psychological distress and return to work is unidirectional, but that more complex psycho-social mechanisms are involved in RTW and other aspects of recovery.

1.3.2.3 Predictors of psychological distress following injury

Understanding the predictors of psychological distress after injury is important for targeting support and treatment to the most vulnerable in order to promote effective recovery. Empirically, risk factors for psychological distress are remarkably heterogeneous. Evidence linking psychological outcomes to injury severity is inconsistent across the full range of major trauma and mental health issues (Sareen et al., 2013), which might be expected. However, the same issue remains when research focuses in on specifics, e.g. similar injury mechanism such as RTC (road traffic collision) and PTSD (Heron-Delaney et al., 2013) and PTSD with a specific injury (burns: Hobbs, 2015;). There are many empirical examples associating psychological distress with different risk factors. For example, by injury type, such as higher PTSD with mild TBI (Bryant et al., 2010) or persistent depression, anxiety and stress linked to admission to intensive care (Wiseman et al., 2015), while not being predicted by injury severity or polytrauma. A review by Sareen et al., (2013) discussed the breadth of predictors of psychological distress following injury and the inconsistency of the evidence to support each of them. Table 1.2 (replicated from Sareen et al. 2013) breaks these predictors into biopsychosocial and pre, peri, and post trauma factors. There is subsequent empirical support for many of these predictors: **pre-existing mental health issues** (de Munter et al., 2020; Hung et al., 2020; Halvachizadeh et al., 2020; Kendrick et al., 2018; Wiseman et al., 2015), **ITU admission** (Ahl, et al., 2017; Wiseman et al., 2015), **socio-economic factors** (de Munter et al., 2020; Hung et al., 2020; Kendrick et al., 2018; Visser et al., 2017) and **injury mechanism** (penetrating trauma: Ahl et al., 2017; injuries other than sporting de Munter et al., 2020). **Being female** has also been consistently noted as a predictor of post injury psychological morbidity (Ahl et al., 2017; de Munter et al., 2020; Kendrick et al., 2018; Visser et al., 2017) however, O'Donnell et al., (2008) argue that sampling issues may be relevant: women tend have a higher than average response and return rate in research, but also tend to seek psychological support more than men. Despite the broad consensus, several of these studies have focused only on one type of mental health problem (frequently PTSD or ASD) or one type of injury mechanism or injury type (e.g. road traffic collision or assault), limiting the generalisability to a general trauma population.

Table 1.2

Summary of risk factors for mental health issues post-injury

(Reproduced from Sareen et al., 2013 p 322):

Timing	Biological	Psychological	Social
Pre-injury	Female sex Genetics	Previous mental illness Personality factors	Previous sexual trauma Low income
Injury (Peri)	Type of injury Mid TBI Inflammatory response	Perceived fear of death Peritraumatic dissociation	Death or injury of someone else
Post-injury	High heart rate at initial presentation Pain Intensive care admission	Acute stress syndrome Post traumatic adjustment	Litigation issues Financial problems Low social support

A recent longitudinal study of predictors of psychological problems tested a broader than average range of risk factors, injury types and mechanisms which included sociodemographic characteristics such as sex, age, marital status, ethnicity and socio-economic status by domicile alongside social functioning, injury characteristics and pre-injury health and wellbeing (Kendrick et al., 2018). Surveys measured incidence of clinical threshold meeting depression, anxiety and PTSD in 668 survivors of unintentional injury, then used multivariable linear regression to test the predictors. The most significant risk factors for psychological morbidity were reported as being: **female gender, previous psychiatric illness, and living in more socioeconomically disadvantaged areas.**[5] While incidence of all three psychological outcomes was lower than the ranges noted by the Wiseman et al. (2013) review they were consistent with earlier reviews with wider prevalence ranges than Wiseman (2-42% PTSD, 6-42% depression, 4-24% anxiety: Haagsma et al., 2011; O'Donnell et al., 2003). Kendrick et al., (2018) observed that retrospective pre-injury measures of anxiety and depression were lower in their sample than UK general population rates which may be relevant for the lower incidence of psychological morbidity in their study.

Furthermore, Kendrick et al., (2018) found that there was some variation in predictors by mental health issue probably indicating different psychological mechanisms or pathways by psychopathology. For example, being female was only a risk factor for developing PTSD, while

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[5] Measured by Indices of Multiple Deprivation (IMD: Department for Communities and Local Government, 2010)

living in an area of higher deprivation and higher retrospective (pre-injury) depression and anxiety scores predicted all three mental health conditions. Only incidence of depression was linked to greater injury severity in the study. Kendrick et al.'s (2018) study affirmed some previously reported predictors (as above: previous psychiatric illness; being female) and added a new contextual predictor of psychological vulnerability: living in a socioeconomically disadvantaged postcode. Subsequent empirical support exists for experiencing economic precarity as a new predictor (De Munter et al., 2020; Hung et al., 2020; Giummarra et al, 2020).

A wide range of pre, peri and post injury biopsychosocial predictors have been identified by research but empirical inconsistency remains a problem. This inconsistency may be derived from methodological approaches which make a limited assessment of the complexity of possible predictors. Equally, the heterogeneity of major trauma contributes to the variation in empirical results. Many studies focus on single injury types or mechanisms making it challenging to identify reliable trends in the experience of psychological distress following injury. Much of the research reported above was quantitative and may miss the potential contribution of survivor perceptions or appraisals to the development of psychological distress.

A scoping review of recovery outcomes after orthopaedic injury (Butler et al., 2022) advocated the need for research which examines the relationships between perception of injury and recovery outcomes. While injury severity has not been consistently found to predict distress (noted above), *perception* of injury severity has been found to predict PTSD and depression while statistically excluding ITU admission, injury mechanism and socio-economic factors (IMD) as risk factors (Johnson, et al., 2019). Perception of life threat was the strongest predictor of PTSD in burns survivors (Giannoni-Pastor et al., 2016) and higher rates of depression have been reported in injury survivors who acquired a disability (Jacob et al., 2019). These findings suggest appraisal of the impact of injury contributed to subsequent psychological distress which is remarkably little explored in the wealth of clinical injury research reported above. However, coping strategies have been considered in injury literature, considered next, briefly.

1.3.2.4 Coping strategies

Coping strategies have regularly been included as a variable in studies of psychological outcomes in injured people (reviews include Bhattarai et al., 2020, Bonanno et al., 2012, Klinge et al., 2009 and van der Horn et al., 2020). Coping in the context of injury research is primarily treated as a behaviour variable between beneficial and non-beneficial coping strategies, often categorised as adaptive or maladaptive. Consistent empirical evidence has shown that specific coping strategies have been positively associated with psychological outcomes in injury populations. One third of the variance in depression scores in a review of longitudinal spinal cord patient studies was accounted for by type of coping strategy employed at week 12 post-injury (Pollard & Kennedy, 2007). Adaptive coping strategies (amongst other psycho-social variables) were associated with greater resilience following spinal cord injury by Bhattarai et al. (2020). Passive coping strategies put survivors of orthopaedic trauma at risk of poor biopsychosocial outcomes in Quested et al.'s review (2017). In addition, in patients with chronic pain (highly relevant to TPI survivors) functional outcomes were correlated with coping strategy (adaptive or maladaptive) but also by gender in a systematic review (El-Shormilisy et al., 2015). This finding in particular is interesting when considered in conjunction with the risk factor of being female noted earlier. The evidence for an association between coping strategies and psychological outcomes extends beyond injury studies to trauma exposure more broadly. For example, a meta-analysis differentiating adaptive and maladaptive coping strategies following traumatic events (interpersonal violence and severe injury) found a consistent association between avoidance coping and distress, overall r = .37 (Littleton et al., 2007). Unfortunately, using coping strategies as standalone predictors without any theoretical underpinning limits the contribution they can make to understanding the psychological mechanisms underpinning behaviour.

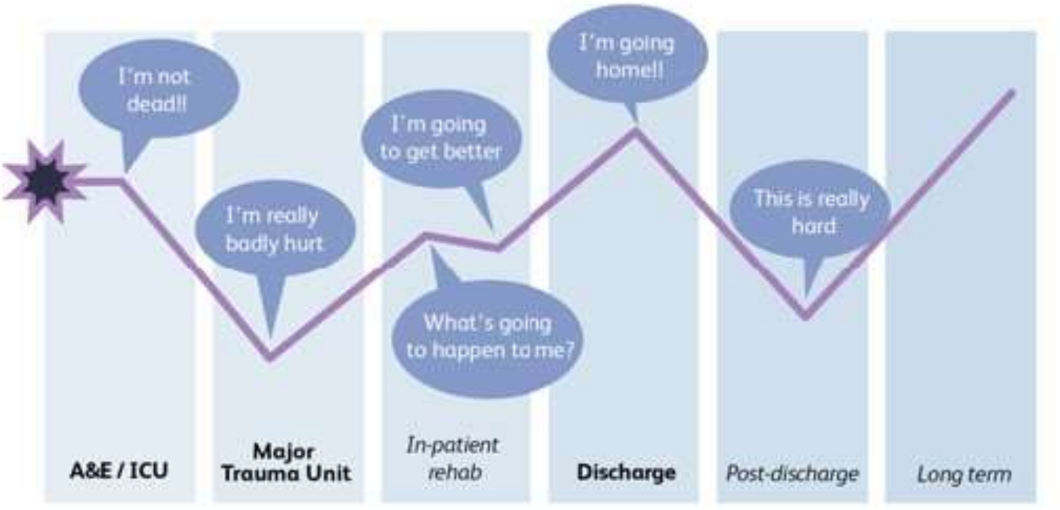
1.3.2.5 The timing of psychological distress after injury

A further contribution to the complexity of psychological response following injury concerns is the timing of psychological distress. Much of the clinical literature focuses on predicting post-injury mental health, usually at time points within 12 months post-injury (e.g. Kendrick 2017b; 2018). Longitudinal injury literature has indicated that high scores during hospitalisation screening predict distress at later time points (Kendrick 2017b; 2018). While this finding may be helpful in predicting recovery such as readiness to RTW, empirical findings indicate that the timing of psychological distress may be more variable. For example, a 24-month longitudinal study noted that most diagnosable psychological problems had resolved within 3 months following injury (Kruithof et al., 2020). However, another study (Richmond et al., 2006) found that injured patients experienced an increase in psychological distress at 3 months post hospital discharge. There are indications that psychological response to injury is not uniform, with trauma survivors experiencing peaks and troughs, as reflected in Figure 1.1 replicated from a recent report from The Black Stork charity on psychological aspects of rehabilitation following major trauma (Jones, 2021). Given the heterogeneity of major trauma, the timing of hospital discharge, and the post-discharge psychological distress trough in Figure 1.1 may occur at very different times post-injury. It has been noted that the timing of empirical measurement of mental health may also contribute to variations in psychological response and recovery patterns (Kruithof et al., 2020). As an example, two studies of distress at the 12-month point returned very different outcomes, probably related to differing levels of physical recovery. For Wihlke et al. (2021) psychological problems decreased over 12 months, but a high rate of functional recovery (68%) was recorded for the sample compared to McMinn et al (2020). This pelvic injury study recorded little reduction in PTSD and depression over 12 months, but due to the extended physical recovery period, participants' physical health scores had declined over the time period. There is also evidence of later onset of distress, for example Bryant et al., (2010) noted that at 12 months post injury, 23% of survivors presented with a new psychiatric disorder that had not been diagnosed earlier on. Returning to the Jones report, this may be explained by the development of earlier distress that did not meet diagnostic thresholds. They reported anecdotal evidence of survivors' experiencing distress, low mood, lack of confidence and other negative feelings after injury, following consultation with patient organisations (Jones, 2021). Such undiagnosed and thus potentially untreated distress may continue for a long time, as evidenced by a study which revisited survivors of polytrauma twenty years post injury. Halvachizadeh et al. (2020) found that over 50% still experienced symptoms of depression and anxiety. Given Wiseman et al.'s review (2013) noted the inconsistency of early psychological screening of traumatic injury patients, the impact of distress that develops over time may be a significant problem for injury survivors.

Figure 1.1

The major trauma recovery journey

(Reproduced from Jones, 2021 with permission from Dan Jones and The Black Stork charity)



1.3.2.6. Qualitative research with injury survivors

The breadth of predictors already discussed indicates the complexity of the experience of injury. Factors such as timing, coping strategies and appraisal indicate why there is only limited corroboration of predictors of distress following injury. This complexity may require qualitative approaches to understand potential interactions better. However, a lack of qualitative research into the lived experiences of trauma survivors has been noted in reviews (Sareen et al., 2013; Wiseman et al., 2013). Existing qualitative research with survivors has highlighted potential contributions to psychological wellbeing from: patient and family perceptions regarding severity of injury (Ogilvie et al., 2015), intentionality in relation to injury mechanism (Jiang et al., 2018), barriers to patients seeking emotional support (including gender differences) (Wiseman et al., 2016), lack of co-ordination of post discharge care (Gabbe et al., 2013; Ringdal et al., 2008), the importance of support networks to recovery (Doohan & Saveman, 2013), and the close connection of emotional and physical aspects of health (Wiseman et al., 2016). While interesting, the range of potential contributions to psychological wellbeing or distress does not allow conclusions to be drawn regarding specific mechanisms of distress. A scoping review on injury perceptions also suggested the need for research that uses theory to explain wider contributions from social and contextual factors (Butler et al.,2022).

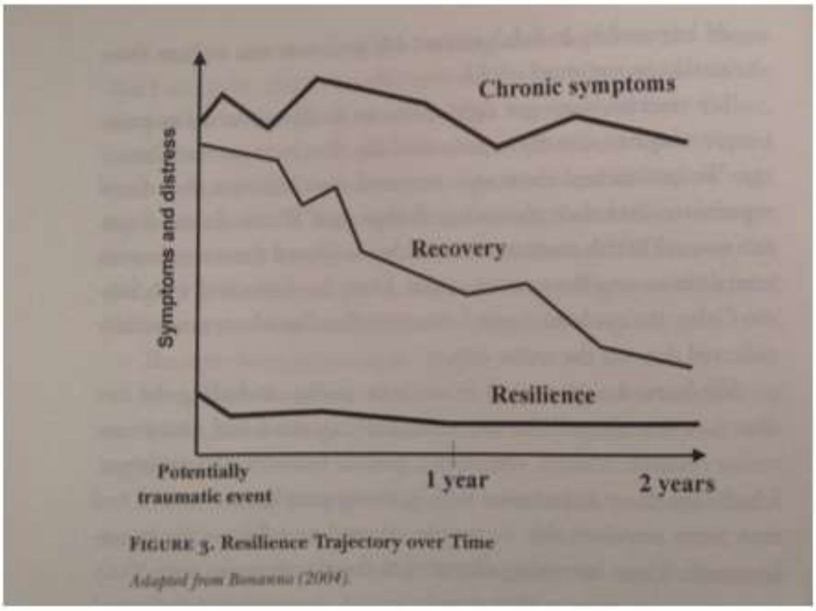
1.3.2.7 The wider context of psychological trauma

Traumatic physical injury falls within the definition of trauma exposure: the first criteria for PTSD diagnosis. This is exposure to death, threat of death, or actual or threatened serious injury (APA, 2013). However, in the broader field of psychological trauma research, it is acknowledged that PTSD is not the inevitable single outcome of being exposed to a traumatic event (Bisson et al., 2015). A world mental health survey indicated that only 5.6% of trauma exposed people went on to develop PTSD (Koenen, 2017). In fact, resilience is more commonly reported in the aftermath of trauma (Hirsch-Hoefler, 2019). There is also a wide literature investigating Post Traumatic Growth (PTG: Joseph & Linley, 2005; Tedeschi & Calhoun, 2004) as a construct which proposes positive responses to trauma exposure including psychological growth that surpasses simple resilience. PTG has been studied in injury populations: occupational (Garcia et al, 2023), brain injury (Griffin et al., 2022) and burns populations (Royse & Badger, 2017).

As with RTW outcomes and injury, trauma research has not been able to consistently explain what predicts the variation in individual outcomes between post traumatic stress, PTSD or resilience and PTG. A wide range of pre/peri/post trauma factors have been investigated in the literature including individual differences of trait, coping style, cognitive approach, but also trauma event differences. A meta-analysis of PTG and PTSD symptoms (Shakespeare-Finch & Lurie-Beck, 2013) concluded that type of trauma and age of survivor is most predictive of psychological outcomes. However post trauma variation in psychological resilience or vulnerability may also be predicted by perceived or actual access to social support (Shakespeare-Finch et al., 2015), and type of trauma (Santiago et al., 2013). In the latter study, PTSD prevalence differed by trauma type, between 52% for rape and 5% for natural disaster. Both of these predictors have also been noted in injury research, e.g. Kendrick et al. (2018) reported a positive contribution of available social support to quality of life outcomes, and Agarwal (2020) concluded that mechanism of injury is a risk factor for psychological trauma. As noted above regarding injury, trajectories of psychological response to trauma are not necessarily flat. Figure 1.2 below illustrates three main trajectories described by Bonnanno and Mancini (2012) in response to trauma exposure. Theoretical approaches to trauma response may well be helpful for understanding injury responses.

Figure 1.2 ***Resilience trajectory over time***

(Reproduced From *The End of Trauma* by George A Bonanno, copyright © 2021. Reprinted by permission of Basic Books, an imprint of Hachette Book Group, Inc.)



1.4 THE PRESENT RESEARCH

As the overview above demonstrates, traumatic physical injury is a significant health problem with outcomes which seriously affect the physical, economic and psychological wellbeing of survivors. A recent summary by a charity has noted high rates of psychological distress following injury (Jones, 2021) and systematic reviews have advocated the need for further empirical research into the lived experience of survivors (Butler et al., 2022; Sareen et al., 2013; Wiseman et al., 2013). Despite there being a wealth of empirical findings regarding the predictors of psychological distress, the majority of empirical literature is quantitative (Sareen et al., 2013), allowing only limited understanding of survivors' lived experiences (Wiseman et al., 2013). In addition, much of the existing research considering psychological outcomes in traumatic injury populations is relatively atheoretical, investigating statistical relationships between psychological morbidity and a range of prospective predictors. Clinical analysis of predictors tends to focus on individual and demographic contributors to variation. Overall little attention has been paid to the psychological mechanisms through which psychological outcomes may be mediated. Existing qualitative research tends to be limited by injury type and rarely examines mechanisms within a theoretical framework. Sareen et al. (2013) argued that a biopsychosocial approach should be taken to the pre, peri and post injury risk predictors of mental health problems, suggesting the need for theoretically guided analysis that would take account of social and contextual factors. A later study identified living in a socio-economically deprived postcode as a novel predictor of psychological distress following injury, alongside more established predictors of previous psychiatric illness and female gender (Kendrick et al., 2018). Butler et al.'s (2022) more recent scoping review of injury perceptions reaffirmed a continuing lack of theoretically informed qualitative research into lived experiences of injury. Furthermore, the specific mechanisms of psychological or mental health barriers to RTW in survivors of traumatic physical injury are also under-explored, despite mental health outcomes being routinely measured as a potential predictor of RTW.

1.4.1 Thesis aims

The present research aims to address the lack of qualitative exploration of the experience of traumatic physical injury survivors. Given the lack of theoretically driven empirical research into subjective experiences of major trauma, **the present research aims to explore psycho-social mechanisms of psychological response to injury within a theoretical framework**. Practically, the findings will be used to better understand survivors' psychological distress and its impact on recovery, including return to work. Theoretically, they will provide evidence towards a framework for future research and analysis.

1.4.2 Thesis Structure

The thesis is structured as follows.

Chapter 2 reviews theoretical literature for prospective candidate theories which may assist understanding of survivors' psychological mechanisms. Three main theories (Stress

Appraisal and Coping; the Common-Sense Model of stress regulation; and the Social Identity Approach to Health) are explored in detail.

Chapter 3 provides an overview of the methodological approach: a qualitative approach using mixed data collection methods and theoretically informed reflexive thematic analysis. The choice of analysis method allows a simultaneous deductive and inductive approach, focusing in on the explanatory power of theoretical mechanisms while still prioritising the lived experiences of the participants. Empirical studies 1 (Chapter 4; trauma survivors) and 3 (Chapter 7; service providers) analyse data generated with a focus on RTW and vocational rehabilitation, but with sufficient psychological focus to provide broader insights into survivor experiences.

Chapter 4 presents **empirical study 1** (trauma survivors) which explored psycho-social mechanisms in lived experiences of injury response, recovery and RTW.

Chapter 5 presents empirical study 2 (trauma survivors), analysing data generated independently of the ROWTATE trial and testing social identity contributions to appraisal and coping processes. This independent study used a theoretical framework to direct data collection, but also to enquiry survivors about their experiences in general beyond the work focus of chapter 1..

Chapter 6 discusses the combined findings of the two lived experience studies in relation to theory and practice.

Chapter 7 explores the perspectives of service providers, contributing their understanding of survivor experiences in the context of a broad range of recovery contexts from acute hospital care to return to work support.

Chapter 8 draws conclusions regarding key findings, implications and recommendations for future research.

CHAPTER 2: Critical Theoretical Review

What do psychological theories contribute to understanding of psycho-social mechanisms of psychological impact and responses to traumatic physical injury?

2.1 OVERVIEW OF CHAPTER

Chapter 1 argued for the importance of a theoretically driven approach and in-depth qualitative exploration to understand the psychological impact and responses to traumatic physical injury. It highlighted the wide range of biopsychosocial factors predicting distress in the empirical injury literature (Sareen et al., 2013). A similar breadth of empirical predictors exists for successful RTW following injury (Cassidy et al., 2014), which is relevant to the focus of the present research. However, little attention has been paid empirically to the contribution of psycho-social factors to RTW (White et al, 2019). Furthermore, psychological responses to trauma generally are not uniform, as illustrated in Figure 1.2 in Chapter 1 reproduced from Bonanno and Mancini (2012). Clearer identification of the contributors to psychological distress and their complex relationship will help to guide interventions to support the recovery of injury survivors, including their successful return to work (RTW). Reviews have suggested the need for theoretically guided analyses to better understand the psychological mechanisms contributing to the development of distress (Butler et al, 2022; Sareen et al., 2013).

The present chapter critically evaluates three areas of psychological theory for their potential to explain psychological processes following injury. These are (A) appraisal and coping, (B) social identity approach to health and (C) trauma response and recovery theories. In RTW studies, while psychological conditions such as PTSD, depression and anxiety may be routinely measured, the application of psychological constructs to understand injury recovery have tended to focus on individual variation for example in self-efficacy, coping styles or resilience. A systematic review (Cassidy et al., 2014) of RTW predictors in mild TBI (traumatic brain injury) concluded that psycho-social factors are more important predictors of recovery than biomedical factors. **Part A of this chapter** introduces two theories of cognitive appraisal and coping and reviews the associated empirical findings with a focus on health threats including injury. In psychological trauma response empirical evidence indicates that social context contributes to individual psychological responses, including appraisals (Këllezi & Reicher, 2012). **Part B** introduces and reviews the Social Identity Approach to Health (SIAH), including psycho-social mechanisms most pertinent to appraisal. **Part C** outlines how appraisal has been understood in theoretical and empirical approaches to psychological trauma responses. The chapter concludes with a summary of the research questions guiding this thesis. **The over-arching research question** resulting from this critical theoretical review concerns **the exploration of social identity contributions to cognitive appraisal and coping processes following injury.**

2.1.2 Overview of the candidate theories

This chapter explores four psychological theories for their potential contribution to the understanding of psychological processes affecting injury survivors. Two established stress theories have been extensively applied to explaining the impact of cognitive appraisals of stressors/threats and perceived capacity to cope with them. Lazarus and Folkman's (1984) transactional model of stress appraisal (**SAC: Stress Appraisal and Coping**) has been widely applied in health research (Biggs et al, 2017). A five-component transactional model theorises a dynamic interaction between the individual and their environment (the 'transactional' aspect) in cognitively appraising and coping with potential stressors. The key psychological processes are stress appraisal, appraisal of capacity to cope, and reappraisal. The **Common-Sense Model (CSM) of Stress Regulation**; Leventhal et al., 1998; Meyer et al., 1985) deals specifically with peoples' self-management when faced with health threats. Both theories describe a dynamic cognitive process of appraisal and coping contributing to wellbeing outcomes, but each approach conceptualises the relationship with coping differently. The granularity of the CSM model has facilitated the generation of extensive empirical evidence on the relationships between health threat appraisal or *representation*, coping strategy adopted and health and wellbeing outcomes. However, the results of a recent meta-analytic review of this evidence indicated that in addition to direct effects, there are indirect contextual effects on appraisal which are not fully accounted for by the most recent CSM model (Hagger, 2017).

The **Social Identity Approach to Health (SIAH)** theory (Haslam et al., 2018; Jetten et al., 2012) is added to the present framework as a possible explanation of some of these additional contextual effects. SIAH theory concerns the psychological impact of group membership on individual perceptions, amplified by level of identification. For example, social identification with valued groups contributes to the perceived availability of social identity resources (Haslam et al., 2012) which buffer stressors and contribute to coping strategies. The SIAH has been specifically applied to understanding variation in psychological response to traumatic experiences, with Muldoon et al., (2019) arguing that variations are not fully explained by demographic social factors or individual psychological differences. Prior to Muldoon et al,'s and other SIAH research, psychological theories of trauma have also contributed to understanding appraisal and reappraisal. Relevant trauma theories are included such as the

Shattered Assumptions theory of trauma and recovery (Janoff-Bulman, 1992) and Herman's trauma and recovery (2015). Altogether these theories provide a framework with which to explore cognitive appraisal processes in qualitative data. This understanding will help create a better framework for understanding impact and responses to injuries and allow healthcare services to prioritise rehabilitation efforts for those who aim to return to work. Next, each theoretical model is described and its empirical support reviewed.

PART A: TWO THEORIES OF COGNITIVE APPRASIAL AND COPING

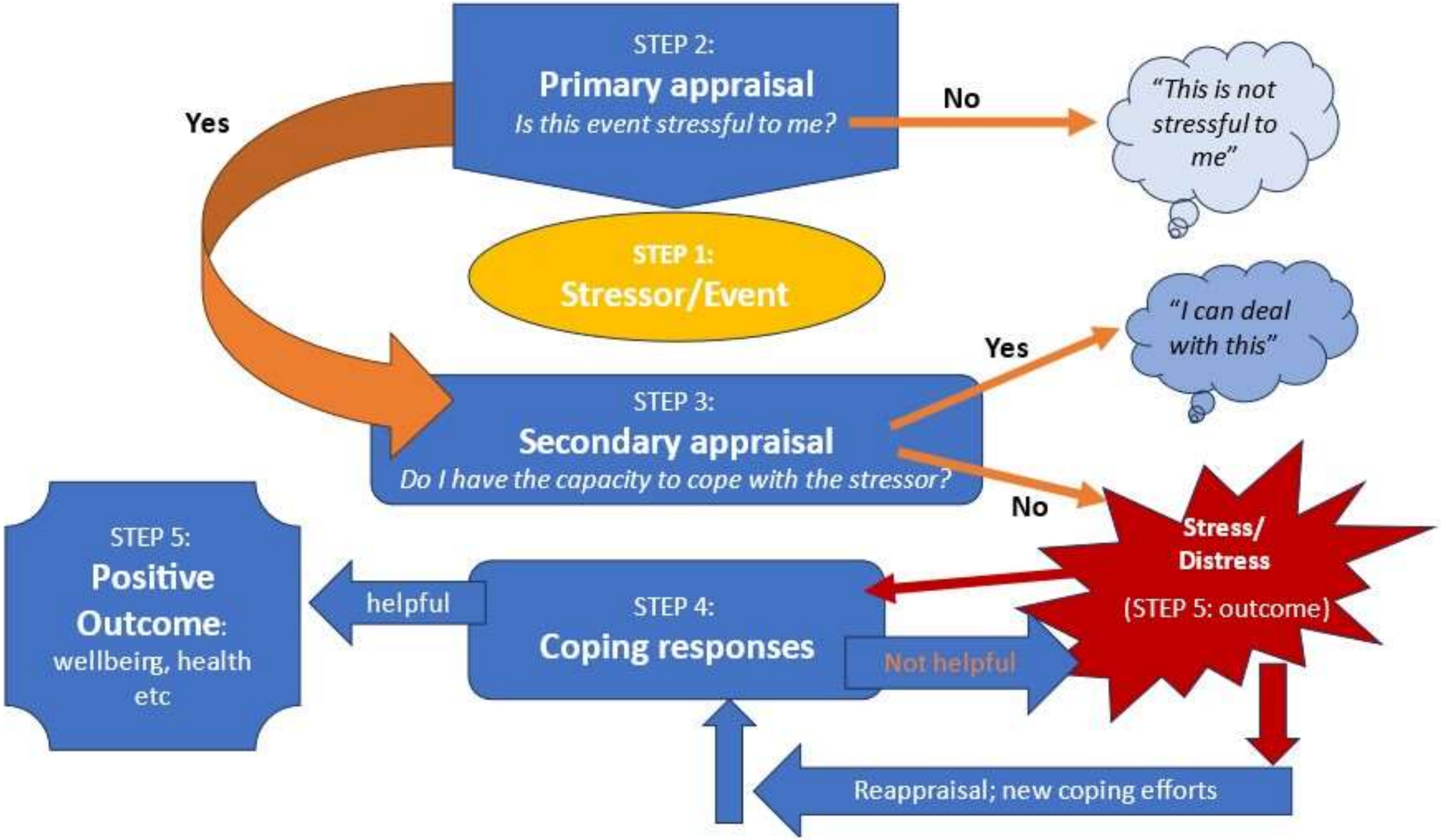
2.2. FIRST APPRAISAL MODEL: The Transactional Model of Stress, Appraisal and Coping (SAC)

2.2.1 Overview of the SAC model

Lazarus and Folkman's transactional model of stress appraisal (1984) sought to account for individual variations in the experience of stress and wellbeing outcomes, through stressor evaluation and coping (Lazarus, 2000). Early experiments on stress perception compared the biological stress response of participants watching traumatic film material in two conditions (Lazarus, 1966). One group received no explanation and a second group were told the same film material was acted out rather than real life. The resulting difference in stress response (in the 'acted' condition participants exhibited fewer physiological stress markers) was explained as having been influenced by a cognitive contribution to their appraisal. Throughout the extensive literature applying the SAC model, the processes most commonly focused on are: primary and secondary appraisals and resulting coping strategies. However, Lazarus and Folkman's model includes five steps which are understood to be dynamic or interacting not consecutive. As Diagram 2.1 illustrates, each step contributes to the way a potential stressor is perceived and responded to. **Step 1** is **the stressor or event.** Whether or not this is interpreted as stressful is filtered through appraisal **Steps 2 and 3** which are influenced by *personal and environmental factors.* Personal variables include personality traits such as optimism (Carver & Scheier 2014). Environmental variables include situational demands, constraints and opportunities (Lazarus, 2000), perhaps factors contributing to exposure to stressors. The transactional element of the model refers to the interaction between these personal and environmental factors (Folkman et al., 1986). **Step 2 primary appraisal** concerns an individual's cognitive evaluation of whether an encounter with their environment impacts their wellbeing: do they have anything at stake? (Folkman et al., 1986). It is appraised to be stressful if it threatens wellbeing in terms of already occurred harm or loss, or future threat or challenge although Lazarus notes that there are components of threat integrated in harm and loss (Lazarus, 2000). **Step 3, secondary appraisal** concerns individuals' cognitive efforts made to evaluate their capacity to meet the demands of the stressor, calling on available coping resources (internal or external) (Lazarus, 2000). Perceived availability of resources reduce the threat. **Step 4**: **coping responses** to manage the stressor closely follow secondary appraisal. In the model, coping responses are grouped as problem-focused (aiming to deal with the stressor causing the distress) or emotion-focused (regulating the emotional response) (Folkman et al., 1986). There is no inherent value-judgement made between the two strategies. Rather, the selection of the most relevant coping strategy is responsive to the interaction of model components 1-3, such that situation, type of person, type of threat (Lazarus, 2000) and perceived coping resources all inform coping responses. This explains why the same person may use different coping strategies for different threats or at different stages of recovery. The **fifth step** is the physiological and psychological **outcomes** resulting from the appraisal and coping strategies taken (Lazarus & Folkman, 1984; Lazarus, 2000). Lazarus makes the point that appraisals are situational, variable and unstable (Folkman et al., 1986). Later iterations of the SAC model proposed that coping which was deemed unsuccessful (due to resultant distress) may promote **reappraisal** and further (revised) coping attempts (Biggs et al., 2017). This could include *meaning-focused coping* (Folkman, 2008) which draws on underlying beliefs, values and goals. Although primary and secondary appraisals are interdependent in the model), they are considered separately next to allow detailed exploration in relevant populations.

Diagram 2.1

Illustrating the Stress Appraisal and Coping steps



2.2.2 Application of SAC to injury

2.2.2.1 Cognitive process 1: Primary appraisal of threat

Applying Lazarus and Folkman's (1984) theory of primary stressor appraisal to injury survivors provides a theoretical lens to understand one prospective source of variation in psychological response to injury. Lazarus and Folkman's primary appraisal concerns the cognitive evaluation of an encounter. The potential for stress in any encounter is theorised to be determined in relation to its impact on personal wellbeing. The first level of appraisal is either: *Irrelevant* (no implication for wellbeing; no investment in possible outcomes); *Benign-Positive* (evaluated as preserving or enhancing wellbeing outcomes); or *Stressful*. An encounter is stressful if it incurs: *Harm/Loss* (damage to self, other, or social esteem); *Threat* (anticipated harm or loss); or *Challenge* which focuses on the gain or growth to be taken from the encounter. Lazarus and Folkman (1984) note that threat and challenge may overlap, and harm and loss is integrated within threat, with the latter being future-focused. Each of these appraisals of stress demands a coping response and there is empirical support indicating that for the type of primary stress appraisal can predict coping strategy in illness and injury samples. A meta-analysis of appraisals and coping with cancer (Franks & Roesch, 2006) found appraisals of (cancer as a) *threat* were more likely to be followed by problem-focused coping. Similarly, *harm/loss* appraisals prompted avoidant coping; *challenge* appraisals: approach coping. In a cross-sectional study of new spinal injury patients (Kennedy et al., 2009) multiple regression analyses indicated that a combination of hope with primary appraisals of threat correlated significantly with a coping strategy of fighting spirit. The authors advocated for a greater emphasis to be put on appraisal in future coping research and a subsequent study of spinal cord injury reported a relationship between cognitive appraisal of injury as *threat* with lower quality of life scores (Kennedy et al., 2011). Perhaps more promising for a trauma population is research which positively connected the *challenge* type of primary appraisal with the development of post traumatic growth (PTG: Tedeschi & Calhoun, 2004). This has been repeated in the contexts of traumatic events (Kyutoku et al, 2011; Yeung et al, 2016) cancer (Cao et al., 2018; Wilson et al., 2014) and injury patients (Byra, 2021; Goldberg et al., 2019). While the definition of coping strategies and psychological outcomes varied widely across these studies, this indicates the utility of applying primary appraisal to injury and trauma populations. However, an exploratory study with brain injury survivors applied stress appraisal as a mediator of psychosocial outcomes, in interaction with personality (trait) and environmental variables (Rutterford & Wood, 2006). Statistical analyses did not find psychosocial variables (including trait-based personality, community integration, life satisfaction) to be mediated through appraisal and coping. However, various combinations of factors including personality traits, self-efficacy, and appraisal (attribution or coping style) and demographics such as gender did account for a large percentage of variance in: community integration (45.2%), satisfaction with life (46.8%) and depression (47.3%). While this study does not support the direct influence of appraisal and coping on psychological outcomes, it does illustrate a more complex interaction exists between appraisal, coping and wider psychosocial factors in injury survivors.

2.2.2.2 Cognitive process 2: Secondary appraisal of available resources and capacity to cope

Turning next to secondary appraisal, this is defined in the SAC model as the cognitive evaluation of what can be done to cope with the situation or stressor (Lazarus & Folkman, 1984). This includes evaluation of available resources as well as coping options (Lazarus & Launier, 1978). Lazarus and Folkman view coping not as a response informed by personality traits or styles, but as a process approach. Coping styles in the SAC model are neither an antecedent, nor an outcome, but are responsive to the (primary) appraisal of the extent of the threat constituted by an encounter or circumstance, and the availability of internal and external coping resources (Lazarus & Folkman, 1984). Cognitive evaluation of what can be done to reduce the impact of a stressor draws on both internal resources (such as optimism or self-efficacy) and external resources (resources in the environment). For example a study of psychological adjustment to spinal cord injury found a significant relationship between participants' sense of coherence[6], primary appraisals and coping strategies in relation to psychological outcome measures (Kennedy et al., 2011). Those with a strong sense of coherence who also appraised their injury as being unthreatening were able to accept the injury and manage its consequences, with resulting higher quality of life scores and reduced depression and anxiety. Interestingly, the individual differences contributing to this process potentially overlap with the personal factors previously noted to affect RTW following injury (Cassidy et al., 2014). External resources are those which come from the environment. This example indicates that, following the SAC model, variations in trauma survivor internal coping resources could contribute to variation in psychological outcomes, mediated by coping style.

Much of the research applying SAC has focused on the external coping resource of social support (Cohen & Wills, 1985), but is inconclusive. To explain: social support has been operationalised in a range of ways such as: instrumental, emotional, companionship and informational social support (Sherbourne & Stewart, 1991). A study of people with spinal cord injuries (Elliott et al. 1992) found positive associations between *reassurance of worth* (as a specific aspect of social support) and lower self-reported physical and psychological

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[6] A construct which might be understood in similar terms to self-efficacy (Bandura, 1977)

impairment. However, when related to trauma specifically, a meta-analysis (Littleton et al., 2007) found relationships between coping strategies (for both traumatic events and illness) and psychological distress to be inconsistent. The range in operationalisation may have contributed to consistency of effect sizes. Littleton et al. (2007) suggested that moderators such as age may explain inconsistent results. However, empirical support for the direct impact of social support on health outcomes has been lacking in general, beyond injury and trauma studies. A meta-analysis of 88 studies (Schwarzer & Leppin, 1991) found that social support accounted for no more than 1% of variance of morbidity and mortality and in a fifth of the studies social support had a negative impact on health outcomes. Subsequent research has identified *perceived* availability of social support to be more consistently linked to health outcomes (Haber et al., 2007) than received support. Both actual social context and perception of social context may therefore contribute to appraisal of coping capacity. Not only: does the injury patient have access to the coping resources to deal with the stressor, but also: do they perceive that they do (appraisal). These findings further affirm the complexity of coping and appraisal processes, suggesting the presence of moderator variables and more complex relationships in place.

2.2.3 Empirical support for the SAC model applied to injury

Lazarus and Folkman's model of transactional stress, appraisal and coping (1984) has been widely applied in health psychology, including to injury (e.g. Kennedy et al., 2011; Rutterford & Wood, 2006). It should be noted that later theoretical iterations have responded to empirical data (for a summary see Biggs et al., 2017), particularly regarding cognitive reappraisal and coping. Given the dynamic nature of the SAC model, it is often applied with close emphasis on specific components, making empirical comparison across all aspects quite challenging. For example, a review relating to the SAC model as a possible underpinning for emotional adjustment to spinal cord injury (SCI) focused particularly on *coping strategies* as a predictor of emotional adjustment (Galvin & Godfrey, 2001). However, that review concluded that while coping strategies did explain at least half of the variance in emotional adjustment, the rest of the moderating or mediating variables were not accounted for by extant research. Later SCI research responded to the criticism, e.g. considering the impact of cognitive appraisals in more depth; one study finding that SCI patients who appraised their injury as a threat (*primary appraisal* through a life events scale) scored lower for quality of life (Kennedy et al., 2011). The same study operationalised *secondary appraisal* through 'Sense of Coherence' (Antonovsky, 1993), finding that higher ratings of the world as meaningful, manageable and comprehensible were also associated with lower depression and anxiety scores. These findings indicate the relevance of separate components of the SAC model for predicting psychological wellbeing following injury, but also how difficult it is to operationalise the full cognitive complexity of the dynamic interaction between SAC stages through purely quantitative research. Empirical data indicates the complex interaction between variables. For example, when the SAC model was examined in brain injured patients (Rutterford & Wood, 2006) as an explanation of individual variation in psychosocial adjustment, neither appraisal nor coping variables alone mediated relationships between psychosocial variables and outcome variables. Yet a combination of appraisal, coping and psychosocial variables predicted all outcomes except employment status. Furthermore, the measures used to operationalise each SAC component have been criticised for their excessive generality and failure to capture differences in coping styles (Coyne & Racioppo, 2000). Despite the SAC model accounting for the contribution of individual and environmental factors as a model component, empirically the contribution of these factors to appraisal have not been robustly captured by quantitative approaches. This may be because the SAC model is not specific about the mechanisms through which variations in cognitive appraisal develop. The next appraisal model addresses this lack of specificity.

2.3 SECOND APPRAISAL MODEL: The Common-Sense Model of Representation (CSM)

2.3.1 Overview of the CSM model

Leventhal's Common-Sense Model (CSM) of Self-Regulation (Leventhal et al., 1980; Leventhal et al, 2008) has been widely applied to health-related threats, though only more recently to injury (Chaboyer et al., 2010; Shiloh et al. (2016). The CSM model is again a dynamic model of parallel appraisal and coping processes. However its emphasis is different to the SAC. The CSM focuses in on two aspects: (1) threat appraisal, called ***representation*** and (2) types of ***coping response***, describing both in more granular detail than the SAC does. The focus of the CSM is understanding the cognitive processes that drive patients' self-management (through coping strategies) in response to perceptions of illness as threat (Hagger et al, 2017; Leventhal et al., 2003; Leventhal et al, 2016;). The CSM assumes that people are active 'common sense' problem solvers, purposeful in dealing with illness (Leventhal et al, 2003) who seek to self-manage (Leventhal et al., 2008). Like the SAC model (Lazarus & Folkman, 1984), health threat representations are understood to be responsive to personal and environmental factors, the latter including contextual factors such as health care worker input, patient culture and gender (Hagger & Orbell, 2003). The CSM explicitly connects illness outcomes (physical and psychological) to the type of coping strategy adopted to self-manage the threat or danger constituted by illness (Leventhal et al., 2003). The model characterises self-regulation as inherently social or socially constructed. The CSM has progressed through several iterations (Leventhal, Phillips & Burns, 2016). A later iteration (the Process Model; Hagger & Orbell, 2003) aimed to theorise the processes through which coping strategies mediate the effect of illness representations. This process model notes that cognitive processes are influenced by two contexts: the environmental context (social and cultural) and the individual context or 'self-system' (Leventhal et al, 1992), which includes experience of symptoms and psychological/personality traits. While the CSM has been applied predominantly to illness health threats (including mental illness: McAndrew et al., 2018), some studies have sought to test its relevance to injury patients (Chaboyer et al, 2010; Hagger et al., 2005; Heruti et al., 2020 Medley, 2010; Shiloh et al., 2016) and to PTSD (Wong et al., 2011). Next, the key cognitive processes are described and explored in relation to injury before the broader empirical status of the CSM is evaluated.

2.3.2 Empirical support for the CSM model applied to injury

2.3.2.1 Cognitive process: Representation

The CSM model breaks down appraisal of health threat/illness into units of representation: one *concrete* (the symptoms experienced) and five *abstract* or cognitive dimensions of cognitive schema or '**representations**': ***Identity, Consequences, Cause, Control and Timeline***. As with the SAC model, CSM representations are not considered to be static, but responsive to contextual factors, personal and environmental, e.g. medical information, social support and cultural norms (McAndrew et al., 2017). Five cognitive representations are illustrated here with reference to a qualitative study comparing perceptions of injury (in a population of heterogeneous injury types) with illness (Shiloh et al., 2016). ***Identity*** accounts for how the health threat is labelled and understood, often as a diagnostic label such as fracture or psychological trauma. Shiloh et al. (2016) noted a novel perception by injury patients that related to the *social identity associated with the context of their injury*, e.g. sporting or military. ***Consequences*** describes the perceived seriousness of the health threat, including its impact physically, psychologically and socially. This representation is particularly wide-ranging, and for injury survivors included the visibility of their injury (Shiloh et al., 2016) and might extend to any associated stigmatisation (Vogel et al., 2007). ***Cause*** representations concern beliefs about the cause of the health threat, i.e. health risks, with injury survivors tending to focus on external causes. ***Control*** relates to the perception of whether there are effective measures/treatments available to deal with or cure the health threat. Finally, ***Timeline*** accounts for the perceived duration of the health threat and whether onset or duration is acute, chronic or episodic. Shiloh et al. (2016) noted a particular concern with whether the injury was temporary or caused permanent disability. In response to further research, two more representations have been added to the model (see Hagger & Orbell,

2003) but only ***Emotional representation*** was included by Shiloh et al. (2016), noting negative responses such as pity, helplessness and disgust. ***Illness coherence*** concerns the patient's comprehension of the health threat.

The representation of illness has not been extensively tested in injury but Shiloh et al.'s (2016) comparative study (with illness) highlighted some novel **injury specific representations**. These were *coping, blame/responsibility, event/drama* and the *self-injury relationship*. *Coping* concerned how far injury survivors identified themselves as being good 'copers' and was such a strong theme that the authors proposed it to be a part of injury representation rather than a coping strategy. *Blame* including personal accountability was found to be at the heart of injury representation, which could be thought of as an extension to the concept of *cause* in illness representation. *Event/drama* concerned the injury survivors' response to the injury event and the way in which the injury was constructed within the social context. Finally, the *self-injury relationship* included observations about the ways illness and injury representations differ, namely that injury was perceived to be external to the self and intrusively imposed upon otherwise 'healthy' bodies. This appeared to lead injury survivors to re-assess their sense of self, and to struggle to do so. A later study Shiloh et al, (2018) found that injury survivors who internalised their injury as part of their self-concept had more negative physical, emotional and social functioning outcomes than those who externalised it.

The CSM framework of representations provides a way of operationalising cognitive appraisals of health threat through validated survey measures (Moss-Morriss, 2002; IPQ; Weinman et al, 1996). These have allowed quantitative analysis of relationships between representations, coping strategies and health outcome variables to understand the impact of patient cognitions on their health behaviours. Empirical support for the CSM model is extensive (for a summary see: Hagger & Orbell, 2003, Hagger, et al., 2017) and widely validated for illness (Hagger & Orbell, 2003). However, while the model has been applied to injury patients only quite recently, it has been operationalised in a range of ways, showing its potential flexibility for use in injury research. Illness representations have been applied longitudinally to a Taiwanese traumatic injury population (Chaboyer, et al., 2010) to predict quality of life outcomes. Through multiple regression, Identity, Emotional Representation and Timeline accounted for 72.4% of the variance in mental quality of life. Medley et al. (2010) employed cluster analysis in brain injured patients grouping different subjective perceptions of injury, based on measures of coping, self-awareness and distress. They concluded that the CSM model could be effectively used to understand injury perceptions. Hagger et al., (2005) applied the complete CSM model to a sporting injury population, finding emotional representation to be an important predictor of emotional outcomes. Applied through qualitative research, it has been used to understand PTSD perceptions (Wong et al., 2011) in people with a diagnosis. Each of these examples shows a useful application of the CSM model to understanding injury appraisal. Given that the model was conceived for illness rather than injury, comparison studies offer a useful perspective. For example, Heruti et al. (2020) compared ill patients with injury patients and found that while they didn’t differ on measured outcomes, injury elicited stronger emotional representations than illness and injury was perceived as being more chronic. However the injury types included were limited to specific injuries (ankle, knee or neck) rather than wider injury population.

2.3.2.2 Cognitive process: Coping

The CSM model argues that health threat representation acts as a filter for illness information, which guides the selection of coping strategy (Hagger et al., 2003). Coping in turn influences illness outcomes, including psychological wellbeing and social functioning. Thus coping strategies are presumed to mediate the effect of representations on outcomes. Furthermore, patients self-monitor their efforts at self-management in response to their health outcomes (Leventhal et al., 2003). This is similar to the reappraisal stage in the SAC model. To date the full CSM model has been little tested in injury populations. Small studies have indicated the model’s usefulness, e.g. Hagger et al., (2005) applied the complete CSM model to a sporting injury population with a focus on coping and found that problem-focused coping did not mediate the relationship between cognitive representations on sports functioning. Instead, problem-focused coping contributed to rehabilitation centre attendance which would contribute to rehabilitation. With the emergent state of CSM injury research, the wider evaluation of the usefulness of the CSM model is better made on the basis of illness research.

The different mechanisms represented by the CSM model have been empirically tested meta-analytically (Hagger & Orbell, 2003; Hagger et al., 2017). For the CSM Process Model, Hagger and Orbell (2003) reviewed coping strategies and selected five for inclusion in the meta-analysis: avoidance/denial, cognitive reappraisal, emotion venting, problem-focused coping and seeking social support. They then tested CSM interactions (between representations/coping strategies/illness outcomes) in chronic illness studies. Hagger and Orbell (2003) proposed that representations affect illness outcomes through coping strategy i.e. coping mediates the effect of appraisal. Their meta-analysis of 45 studies provided evidence of some trends in associations between representations and coping strategies, and representations and outcomes. For example, perceived controllability of illness (i.e. curability) was positively associated with problem-focused coping and cognitive reappraisal, but also with outcomes of psychological wellbeing, social functioning and vitality. Representations relating to illness consequences, timeline (chronic) and identity representation were negatively associated with avoidance/denial and expressing emotions. These outcomes were confirmatory for the CSM model hypotheses. However, the lack of longitudinal analysis was also noted as a significant limitation. Hagger and Orbell (2003) observed that when longitudinal testing of the CSM was employed, there was a stronger relationship between representations and illness outcomes and little evidence that coping mediated the relationship. Given how much attention coping styles receive in injury research (summarised in Chapter 1, See Quested et al., 2017 review) in relation to outcomes and interventions, this is an important finding which suggests more complex cognitive process than simple mediation by coping style.

2.3.3 Evaluating the CSM model overall

While the meta-analytic findings of Hagger and Orbell (2003) have been corroborated in further meta-analyses (Brandes & Mullan, 2014; Broadbent et al., 2015; Dempster et al., 2015; French et al., 2006; Hudson et al., 2014) a more recent meta-analytic review noted that prior research had been selective in measuring only a few of the range of CSM representations and coping strategies which can be operationalised. Hagger et al. (2017) argued that only by including the full range of variables (representations, coping dimensions and outcomes) could a full account of the complexity of interacting variables be obtained. A comprehensive approach to the CSM model is likely to provide insight into the impact of contextual factors and so is important to the present argument, developing the point made by the SAC model (Lazarus & Folkman, 1984) that survivor selection of coping strategies is variable, responsive to context. To this end, Hagger et al. (2017) chose studies which had taken a multivariate approach for their subsequent meta-analysis. They used two different multivariate pathways: one where coping mediated the effect of representations on illness outcomes and a second where indirect effects of all pathways between representation, coping and outcomes were accounted for. They included emotional representation and illness coherence which had been added to later measures of CSM representations (IPQ-R; Moss-Morriss, 2002).

The full complexity of the outcomes is not discussed here (see Hagger et al., 2017 which includes the first full intercorrelation matrix for all representation, coping and outcome variables in the CSM model), but there were several interesting findings. The most consistent positive predictors of poor outcomes (including distress and poorer wellbeing) were *Consequences* (impact on functioning) and *Identity* (which was framed as the treatability of illness). *Emotional representations* of illness were strongly correlated with distress. Those who were able to regulate their emotional response had better psychological wellbeing outcomes. Of most interest to the present argument is the second statistical analysis which sought to account for direct and indirect effects in all CSM pathways. (These findings are summarised in *Appendix Table V.a*.) What they found was that each representation exerted statistically significant effects both positively and negatively, directly and indirectly on both coping strategy choice and outcomes. For example, the representation of *Control* was directly and positively associated with coping strategies of avoidance, cognitive reappraisal and social support; indirectly positively associated with problem-solving coping and indirectly negatively associated with problem-focused coping and cognitive reappraisal. The importance of this is that different types of coping response may occur together and cancel each other out and this suggests interaction with other mediators and moderators, presumably contextual factors. The same was true for relationships between representations and outcomes. Some consistent indirect effects were noted such as *Timeline* representation on outcomes through problem focused coping; or a negative indirect effect of *emotional representation* on psychological wellbeing through the coping strategy of avoidance and a positive indirect effect of *emotional representation* on distress through emotion venting coping. In summary, **Hagger et al.'s (2017) multivariate testing of the CSM indicated that the mechanisms of health threat cognitive appraisal, coping and outcome are more complex than the straightforward mediation by coping style proposed by the early CSM model. Bidirectionality may exist between model elements, or a constant process of reappraisal.** This mechanism complexity, likely contributed by contextual factors has been under-researched to date (McAndrew et al., 2018). This potentially affirms empirical conclusions regarding the SAC model that other moderator variables contribute to outcomes, possibly derived from context.

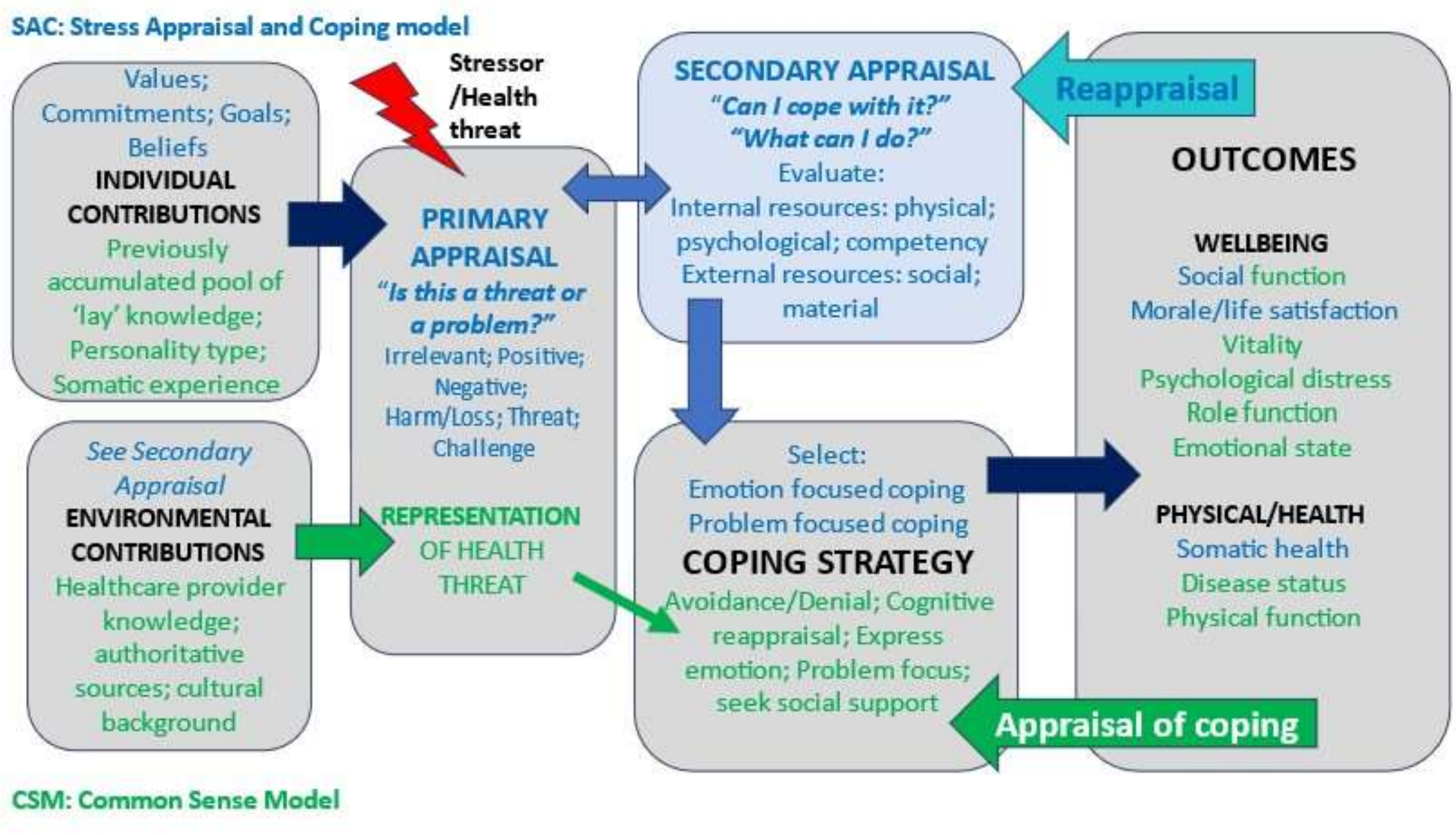
2.4 COMMONALITIES AND DIFFERENCES in the two cognitive appraisal models

Drawing conclusions from the two model reviews above, both models share an understanding of coping with a health threat as a dynamic process of interacting cognitive processes. Diagram 2.2 below amalgamates both models in simplified versions. This makes it clear that both models are concerned with the relationships between: **primary appraisal** or *representation* of threat, **coping strategies** and physical and psychological **outcomes**. Both models recognise that individual and environmental or contextual factors contribute to how the health threat is appraised. Threat appraisal is understood to drive the selection of coping strategy, and both models link the psychological and physical outcomes to the selection of coping strategy. Both models also recognise that negative outcomes such as psychological distress may prompt **reappraisal** which in turn may prompt a change in coping strategy. The CSM framework provides a more granular breakdown and operationalisation of both the appraisal of threat in injury (not included in the diagram below for reasons of space) and the range of coping strategies available. The SAC model includes an additional component of secondary appraisal of capacity to cope with the threat which is not present in the CSM model. This cognitive process is perhaps assumed in the CSM as part of the contribution to primary appraisal/representation. Despite the differing strengths provided by each model, quantitative empirical findings for both (as reviewed above) indicate there are still gaps in understanding. Neither model has empirically accounted for all of the additional contextual contributions to mechanisms of coping with stress or health threat.

Diagram 2.2:

Comparison of the Model of Stress and Coping with the Common-Sense Model of Representation

(adapted from Lazarus & Folkman, 1984; Hagger & Orbell, 2003).



Dynamic models like the CSM and SAC are well suited to the biopsychosocial context (Benyamini & Karademas, 2019) of psychological distress and RTW following injury. Both models recognise the importance of contextual factors on the selection of coping styles, through either primary appraisal or secondary appraisal, plus the likelihood that negative outcomes will prompt further cognitive reappraisals. The high level of complexity in empirical findings, such as indirect and contradictory mediations should not perhaps be surprising, given both models acknowledge the contribution of environmental, social or cultural contextual factors to appraisal. However, neither model provides a consistent theoretical link between the personal cognitive response to injury threat and the context or social environment. The third theory under consideration helps to bridge these empirical gaps. The Social Identity Approach to Health provides a link between individual cognitive appraisal and social context, through the psychological effects of social identification and group membership. SIAH theory acknowledges that individuals appraise stress in the context of their social groups, not just by themselves.

PART B: THE SOCIAL IDENTITY APPROACH TO HEALTH (SIAH)

2.5 PROSPECTIVE CONTRIBUTION OF SIAH to injury appraisal

2.5.1 Overview

It will be argued here that the Social Identity Approach to Health is a useful theory to better understand psychological appraisal and coping with injury. Extensively empirically tested, the SIAH provides a rationale for the contribution of social context factors to individual cognitive appraisal processes. While social identity is not assumed to be the only mechanism for contextual factors in appraisal it does provide a well-supported approach (Haslam, et al., 2018; Jetten et al., 2012) with hypotheses, theories and mechanisms which have relevance for injury appraisal and coping responses. In this section (B) the origins and central concepts of social identity will first be outlined, followed by the key hypotheses of Social Identity as applied to Health (SIAH, otherwise known as social cure; Jetten et al., 2017) and some relevant applications such as: its application to social support as a stress buffer; stigma management; and wellbeing outcomes in injury relevant populations.

Social identity theory has been applied to the appraisal of stress (Haslam et al., 2005) and experimentally to illness and injury (Levine, 1999; Levine & Reicher, 1996). It has also been used to understand variations in appraisal and psychological outcomes in trauma populations (Këllezi & Reicher, 2014; Muldoon et al., 2019). The Social Identity Model of Identity Change (SIMIC) model will be explored (Jetten et al., 2009) will be explored since this has been used to understand social identity contributions to psychological vulnerability during a life transition (which includes injury). SIMIC has recently been applied to theorise mechanisms contributing to variations in psychological outcomes in trauma populations (Muldoon et al., 2019). This review of social identity theory will identify prospective social identity contributions to injury survivor appraisals of threat and coping and through this to variations in survivors' psychological outcomes.

2.5.2 Origins of the social identity approach

The social identity approach to health builds upon earlier social psychology theories: The **Social Identity Theory** (SIT; Tajfel & Turner, 1979) and The **Self-Categorization Theory** (SCT; Turner, Hogg, Oakes, Reicher & Wetherell, 1987). The field has grown since its origins in the 1970's to be a highly influential meta-theory (Hornsey et al., 2008). SIT initially sought to explain intergroup behaviours by understanding the psychological motivation for identification with social groups (Tajfel & Turner (1979). Early experimental work theorised the minimal conditions (Tajfel, 1981) under which individuals would exhibit behaviours favouring their own group (or *ingroup*) over another (*outgroup*). Tajfel (1981) noted that multiple identities exist, ranging from the personal/individual to the group/social category and theorised the conditions under which a social identity would become *salient* (more relevant than other levels of identity). While social categorisations provide group members with a means of recognising their place in a social world, *social identity* described the way individuals derive a portion of their self-image from their group membership (Tajfel and Turner, 1979). **SIT theory argues that individuals strive for a positive sense of self and that the evaluation of social categories to which they belong, contributes positively or negatively to that self-concept.** SIT asserted that this evaluation of ingroup is necessarily performed by comparison to a relevant outgroup to achieve *positive differentiation* contributing to positive self-concept. Groups are aware of the relative status of their ingroup within a social context. Tajfel and Turner (1979) considered the *mobility strategies* available to individuals belonging to groups of low status which made an unsatisfactory contribution to self-concept. It is sufficient for the present argument to summarise that SIT recognised that in "stratified societies" (Tajfel & Turner, 1979, p36) unequal division of resources/esteem created groups of higher and lower social status and the recognition of this inequality could contribute to the salience of a social identity. Over the decades since it was first proposed, SIT has stimulated a huge breadth of social psychological research (Moghaddam & Taylor, 1994) and evolved both theoretically and through application to new fields (Hogg et al., 2017), which includes health psychology.

While Social Identity Theory focused on the psychological processes that generate intergroup behaviours, Turner's **Self Categorisation Theory** (SCT: 1985) sought a clearer understanding of the **cognitive psychological processes underlying identification with a group**. SCT considered ingroup identification less as a driver of dysfunctional intergroup behaviours but as an adaptive social cognitive process whereby individuals could become part of a greater whole capable of prosocial behaviours (Turner, 1985). Turner recognised multiple levels of self-categorisation: personal/individual, social, and human and paid attention to the factors influencing which category became salient for the individual. In Turner's SCT (1985) **the salience of self-categorisation is not static but shifts in response to context** and through individual perceptions of sameness and difference (the *metacontrast ratio*) between self and group, or between ingroup and outgroup. For individuals to self-categorise with a particular social group or category, the category must first be situationally *salient* for them. SCT explained the variation of salience between categories as being an outcome of the interaction between *accessibility* and *fit* (Turner & Onorato, 1999). The accessibility of a category is related to "*perceiver readiness*" (Turner & Onorato, 1999, p22) to self-define in that category, based on the individual's past experience, current motives, goals, needs etc. Hogg and Reid (2006) argued that *group norms* are "shared cognitive representations" (p10) or normative attributes (*prototypes*) through which ingroup members may both define themselves and also prescribe ingroup behaviour.

The above explanation of SIT and SCT constitutes only a sketch of the wealth of empirically supported theoretical elements covered by the social identity approach. However, it is the more recent iteration of the *social identity approach to health* (SIAH) (also known as The Social Cure) which is of interest to injury, recovery and return to work.

2.5.3 The "Social Cure"

The central principle of social identity research is that the social groups that people belong to contribute to individual sense of self, but also the way the members feel, think, behave and interact. Research has found identification with group membership to enrich wellbeing by providing members with self-esteem (as per the initial SIT theory, Tajfel & Turner, 1979) but also with a sense of belonging, purpose, meaning, control and efficacy (Cruwys et al., 2014; Greenaway et al., 2016; Jetten et al., 2014). Research into the positive impact of social identity has gone on to address both physical and psychological health in what has become known as Social Cure Research or the Social Identity Approach to Health (Haslam et al., 2018; Haslam et al, 2009; Jetten et al, 2012). An extensive meta-analytic review of factors affecting mortality using random effects modelling (Holt-Lunstad et al., 2010) found that people with stronger social relationships had 50% better rate of survival. There is extensive meta-analytic support for a positive impact of social identity on physical health and wellbeing outcomes in a range of settings (Cruwys et al, 2014; Steffens et al, 2016). There is evidence of positive associations between social identification and physical health (Haslam et al., 2018; Jetten et al., 2012), mental wellbeing (Cruwys et al. 2014; Sani et al. 2012), adjustment to health conditions (Haslam et al. 2018; Grace et al., 2015) and outcomes following trauma exposure (Muldoon et al., 2019). Haslam et al. (2009) have argued that group identity and social context are internalised in individual identity, affecting personal psychology and contributing to health and wellbeing outcomes (Haslam et al, 2009). The social identity approach explains these positive outcomes as being a product of the internalisation of group membership (Steffens et al., 2019) and the benefits this brings in terms of perceived access to *social identity resources* (Muldoon et al., 2019) such as reciprocal social support (Haslam et al., 2005; Walsh et al., 2015) and a sense of belonging and social connectedness (Greenaway et al., 2016). Furthermore, the application of social identity building health interventions have been shown to have a moderate to strong impact on health outcomes (for a meta-analysis, see Steffens et al., 2019). SIAH research has also delineated a suite of empirically supported hypotheses which highlight prospective mechanisms of social cure.

2.5.3.1 Key Theoretical Concepts in the Social Identity Approach to Health

SIAH research is extensive and this chapter seeks to highlight only the most relevant aspects, starting with an overview of key hypotheses from a review of the SIAH research agenda (Jetten et al., 2017). The key hypotheses (collated in Table 2.1) indicate some possible mechanisms which may influence injury appraisal. As above, the central hypothesis of the application of SIA to health and wellbeing is that **(Hypothesis A) if social identification is the basis of meaningful group life, then social identity contributes to health outcomes** good and bad. Regarding mental health, a major review of the relationship between depression and social identity argued that depression is a social disorder for which the major risk factor is lack of social connectedness, with social loss being a trigger for the onset of depression (Cruwys et al., 2014). The extent of **the impact of group membership is conditional (Hypothesis B) on the strength of the individual's identification with that group**. For example, a link between access to group based psychological benefits and stronger identification has been consistently replicated (Greenaway, et al., 2015; Greenaway et al., 2016) in social cure research. This highlights how interlinked the hypotheses are, **since (Hypothesis C)** concerns the **mediation of social cure through psychological resources associated with valued groups, or social identity resources**. Social cure research has expanded the conception of 'coping resources' beyond social support (or perceived social support) which has been central to secondary appraisal (Folkman & Lazarus, 1984) research. Jetten et al. (2017) refer to four categories of social identity resource: shared connection;

common direction, meaning and purpose; social support; and a sense of collective efficacy, agency and power. Furthermore, **(Hypotheses D) a shared social identity may induce group members to conform to normative behaviours for the group** with which they identify, which has been found to be important for health behaviours. For example, a study of attitudes to depression medication and counselling concluded that acceptability varied with cultural or racial context (Cooper et al., 2003). The previous hypotheses dealt largely with the positive or curative impacts of social identity, but social cure literature also recognises the other side of the coin: the potential for a detrimental effect of social identity on health and wellbeing or "social curse" (Këllezi & Reicher, 2012). **(Hypothesis F): Low status or burdensome/stigmatised social identities have been associated with health and wellbeing deficits: social curse.** Due to the negative wellbeing impact of some social identities, **(Hypothesis G)** notes that **people are motivated to restore positive identity,** and the **mobility strategies they pursue depend on their perception of the permeability of the boundaries of the burdensome identity.** There is a broad literature relating to stigma coping strategies and social identity threat. This may be relevant to injury appraisal, given the disability related injury representations reported by CSM literature (Shiloh et al., 2016).

Table 2.1

Key SIAH hypotheses and their prospective relevance to injury appraisal

SIAH Hypotheses from Jetten et al., 2017 **[original hypothesis numbering in brackets]**	**Prospective relevance to traumatic injury appraisal**
A/Social identity is the basis of meaningful group life, therefore social identity contributes to health. **Where this is positive, these group based health benefits are referred to as the "social cure".** **"*The social identity hypothesis*. Because it is the basis for meaningful group life, social identity is central to both good and ill health." [H1 replicated from Jetten et al., 2017]**	-Pre-injury social identities or lack (social isolation) may contribute to pre-existing mental health resilience or vulnerability. This may impact appraisal of injury and coping capacity.
B/The extent of the impact of social identity on health is conditional on the strength of individual identification **"*The identification hypothesis*. A person will experience the health-related benefits or costs of a given group membership only to the extent that they identify with that group." [H2]**	-Extent of identification with valued groups pre or post injury may contribute to perception of available support from those groups, and coping appraisal. -How strongly the injured person identifies with the work identity may

	influence their appraisal of/motivation to return to work.
C/The social cure is conferred through social identity resources, which facilitate coping/appraisal of capacity to cope. **“*The multiple identities hypothesis.* Providing they are compatible with each other, important to them, and positive, the more social identities a person has access to, the more psychological resources they can draw upon and the more beneficial this will be for their health.” [H11]** **Specific social identity resources mentioned in subsequent hypotheses as: shared connection (H12); sense of purpose and meaning (H13); social support (H14); collective agency (H15).** **“*The social support hypothesis*: When, and to the extent that, people define themselves in terms of shared social identity, they will (a) expect to give each other support, (b) actually give each other support and (c) construe the support they receive more positively.” [H14]**	-Availability of social identity resources may contribute to the **secondary appraisal** of capacity to cope. - This **appraisal** of available social identity resources may vary by identification *Number and compatibility of group memberships are discussed with the SIMIC theory Jetten et al, 2009* -Pre-injury number of group memberships is another variable in access to social identity resources -Injury as a ‘life change’, has the potential to reduce access to social identity resources, affecting mental health.
D/ Normative values and behaviours within social groups mean people with shared identities may be better able to influence each other’s behaviour. **“*The norm enactment hypothesis*. When, and to the extent that, a person defines themselves in terms of a given social identity they will enact—or at least strive to enact —the norms and values associated with that identity.” [H8]** **“*The influence hypothesis*. When, and to the extent that, people define themselves in terms of shared identity, they will be more likely to influence each other.” [H9]**	- Pre-injury social identities may contribute to **appraisal** of injury through shared norms as contextual contributions to injury appraisal/representation as noted in the CSM model. This may extend to trust in healthcare advice and subsequent adherence to treatments. -Shared norms may also contribute to injury risk behaviours a social curse effect.
E/ Low status or burdensome/stigmatised social identities are associated with health and wellbeing deficits: the “social curse”	-Pre-existing low status or stigmatised social identity may negatively contribute to injury survivors’ mental health or

“*The group circumstance hypothesis*: When, and to the extent that, a person defines themselves in terms of a given social identity, their well-being will be affected by the state and circumstances of the groups with which that identity is associated.” [H3] **“When the group that defines a person’s social identity is enhanced in some way (e.g., by success, high status, or advancement), social identity becomes a beneficial psychological resource and tends to have positive consequences for their health and well-being.” [H3a]** **“When the group that defines a person’s social identity is compromised in some way (e.g., by stigma, low status, or failure), the capacity for social identity to function as a beneficial psychological resource is reduced and this will tend to have negative consequences for their health and well-being.” [H3b]**	psychological resilience to cope with the stress of an injury. -Being unable to work/becoming unemployed because of injury may be **appraised** as being stigmatised. -Acquisition of a disability may be **appraised** as a stigmatised social identity, with social ‘curse’ impacts on wellbeing. SIMTIC -injury may be appraised in relation to vulnerability to it by social group
F/People are motivated to restore positive identity when it is undermined. They may do this by leaving a burdensome group or adopting creative strategies to enhance the value of the compromised group. **“*The identity restoration hypothesis*. People are motivated to restore positive identity when this is compromised by events that threaten or undermine their social identities (e.g., group failure, stigma, low status, or loss of valued group membership)”. [H4]** **“*The social mobility hypothesis*. When circumstances threaten, undermine, or preclude positive social identity, if people perceive group boundaries to be permeable they are likely to respond to the threat to positive identity through strategies of personal mobility.” [H5]** **“*The social creativity hypothesis*. When circumstances threaten, undermine, or preclude positive social identity, if people perceive group boundaries to be impermeable but group relations to be secure, they are likely to respond to the**	-Injury survivors with a new stigmatised identity may appraise this as a threat. -Coping strategies may be related to the need to restore positive identity. -TPI coping strategies may be determined by the extent to which individuals identify with a stigmatised identity gained though their injury. -If they identify their injury as an ‘individual’ rather than ‘collective’ problem, there will be no shared social identity resources to draw on in response to perceived discrimination. -If TPI identify with a new stigmatised identity with a group, then they may gain access to social support through it

threat to positive identity through strategies of social creativity." [H6]	

Hypotheses are adapted from Jetten et al., 2017

2.5.4 Prospective SIAH Contributions to Injury Appraisal

The present research is concerned with understanding psychological responses following injury, by exploring prospective social identity mechanisms that may impact cognitive appraisal and coping processes. The following paragraphs discuss existing research supporting the social identity hypotheses above, highlighting prospective mechanisms which may be relevant to appraisal of injury (also summarised in column 2 of Table 2.1.). Just as SAC and CSM processes are dynamic, as already discussed, so too there is interaction between the SIA mechanisms described by the hypotheses above.

2.5.4.1 Social Identification contributes to health

Social cure research makes a strong link between social connectedness and mental health, suggesting social identity contributions to both the development and treatment of depression. In a review of 16 depression studies across diverse populations, Cruwys et al. (2014) reported a negative correlation between high social identification and depression symptoms, i.e. that social identification was protective for mental health. While the evidence reviewed by Cruwys et al., (2014) did not include clinical depression studies, a clear link between social identity and mental health/wellbeing was identified. From the extrapolated data, they argued that depression is a social disorder for which the major risk factor is lack of social connectedness, with social loss being a trigger for the onset of depression. The review also noted that for people joining therapy group interventions, the beneficial impact (reduced depression) was more pronounced in those who identified strongly with the groups (Cruwys et al., 2014). This highlights the role of group identification and social connection in depression. In separate research (Sani et al., 2012), subjective identification with a social group (family or army unit) was a stronger predictor of mental health (depression, stress) than was degree of interaction. I.e. members of the army unit who felt a stronger sense of 'we-ness' scored more positively in measures of depression, life satisfaction and job satisfaction. For injury survivors, **pre-injury social connection and group identification may contribute to variations in pre-existing mental health which may impact both capacity to cope with injury, but also its appraisal**. This could partially explain why pre-existing psychiatric history is so widely identified as a predictor of post-injury psychological distress (De Munter et al., 2020; Kendrick et al 2018). **Hypothesis A** relates to pre-existing variations in resilience which could contribute to threat and coping appraisals of injury.

2.5.4.2 Salient social identities influence norms

The contribution of shared group norms to health behaviours **(Hypothesis D)** is a central area of SIAH research (see review by Smith & Louis, 2009). Testing the influence of shared norms through social identification on health issues, positive associations have been empirically evidenced on: eating behaviours (Cruwys et al., 2015) disordered eating (Liu et al., 2019); online gambling (Savolainen et al., 2021); covid threat perception (Crimston & Silvanathan, 2020; Gollwitzer et al., 2020; Pew Research Center, 2020) and related public health behaviour (Maher et al., 2020). Group norms have also been shown to contribute to the appraisal of treatment. For example Adams et al., (1997) found that use of asthma inhalers differed greatly depending on whether patients did or did not identify as asthmas suffers. Whether or not social identification is shared with healthcare staff may also be relevant to therapeutic alliance (Haslam et al, 2018). These factors map well onto the personal and environmental contributions to representation in the CSM model.

Experimental studies which manipulated the salience of social identities (Levine, 1999; Levine & Reicher, 1996) concluded that health threat appraisal varied when different social identities were salient. Female participants were manipulated to self-categorise as women or secretaries (their real work identity) before evaluating hypothetical injury scenarios. There was a significant difference between the two groups when evaluating injuries affecting attractiveness, with the woman-salient group appraising this as more threatening than the secretary-salient group. This was understood as indicating a contribution of social norms (of attractiveness) to injury appraisal. This research is particularly interesting to the present review since it drew on the CSM model to predict fluctuating appraisal of health threat through fluctuating social identity and associated norms. However, the authors noted that within the context of experimental manipulation, they were not able to check participants' salient identity nor their understanding of identity norms, which was a limitation. Beyond appraisal, group norms are understood to contribute to health risk behaviours, such as binge-drinking (Livingstone et al., 2011), which may be relevant given the demographically skewed incidence of major trauma. As noted in the Introduction, injury in the UK until recently predominantly happened to younger males, often through the mechanism of road traffic collision (Kehoe et al., 2015). More recently, a retrospective analysis of major trauma data from a UK major trauma centre linked higher injury burden in lower socioeconomic groups to more high risk behaviours such as not using helmets and seatbelts, risk-taking attitudes and alcohol consumption (Snell et al., 2023). For injury survivors, **shared norms from social identities may be relevant to the incidence of injury, the appraisal of injury threat and the acceptance of treatment**.

2.5.4.3 The social cure is mediated through social identity resources

The availability of psychological resources through valued social identities (**Hypothesis C**) is particularly relevant to injury appraisal and subsequent wellbeing. The SAC model (Lazarus & Folkman, 1984) identified both internal and external coping resources as buffers for stress, and much SIAH research has focused on social support in this capacity. For example, Haslam et al., (2005) found correlational evidence that work role identification (in two groups: bomb disposal officers and bar staff) was a protective factor for work related stress, significantly mediated by social support. SIAH research understands the relationship between social support and mental health to be more complex than a direct correlation. Social support has been shown to be more likely to come from ingroup members (Levine et al. 2005) and more effective at buffering stress when it comes from ingroup members (Jetten et al., 2009).

For example, Haslam and Reicher's (2006) analysis of the BBC prison experiment theorised that it was group identification levels (**Hypothesis B**) which mediated access to social support, contributing different mental health outcomes in prisoners and prison guards. Despite being in the apparently more powerful group of prison guard, their mental health outcomes were poorer than the prisoner group. The authors explained that prison guards experienced declining shared identity and had less access to stress buffering group support. The prisoner group, despite having lower status, developed a stronger sense of shared identity and provided each other with greater social support to buffer the stressors they were experiencing as the lower status group. SIAH research understands that the coping resources conferred by social identity are more complex than social support alone. It has been argued that social support does not have impact in isolation, but in conjunction with more global psychological or *social identity resources* including social connection and sense of purpose (Greenaway et al., 2016). Cruwys et al.'s review (2014) of depression and social identity for instance, concluded that social support constitutes a secondary benefit of social identification, rather than being the primary predictor for positive health benefits, and that loss of access to social identity resources during life changes is correlated with depression (this will be explored further in relation to the SIMIC model, below). The availability or perceived availability of psychological resources associated with valued social identities can clearly be understood as a contributor to secondary appraisal of coping. For injury survivors, any **variation in pre and post injury social identity and identification may affect the availability of social identity resources contributing to coping appraisals**.

2.5.4.4 Social curse and injury appraisal

Alongside and often interacting with social cure is social curse (Këllezi and Reicher, 2012), or the potential for social groups to have a negative impact on health and wellbeing. Problematic shared group norms noted above (**Hypothesis D**) is one mechanism of social curse. Këllezi and Reicher's (2012) earliest analysis of social curse concerned blocked access to social support following trauma that was heavily stigmatised (e.g. wartime rape) and contradicted cultural/gender norms. This example makes clear how several social identity concepts may interact in appraisal responses to trauma. High levels of pre-existing identification (**Hypothesis B**) with a normative identity (femininity as purity) contributed to the concealment of rape stigma. By remaining silent, social support could not be sought to enable coping, was not expected or was not available due to stigma. This blocked access to social support (**Hypothesis C**) has been replicated in other populations with stigmatised or burdensome social identities e.g. immigrants in a detention centre (Këllezi et al. 2019). The effects of stigma on health and wellbeing are much researched in SIAH (see meta-analyses: Paradies et al., 2015; Pascoe et al., 2009; Schmitt et al, 2014). The SIAH predicts negative consequences for health and wellbeing (beyond structurally unequal access to resources) where individuals' sense of self is in part derived from identification with a lower status group (Jetten et al., 2017). Disability associated stigmatised identity gain may be relevant for injury survivors, given Shiloh et al.'s (2016) application of CSM representation to injury indicated that some survivors appraised their acquired disability as stigmatising. For injury survivors, **a pre-injury low status or stigmatised social identity may contribute to increased psychological vulnerability**, as noted above regarding pre-existing mental health problems. If the impact of the injury leads to the acquisition of **a new identity that they perceive to be stigmatised** (e.g. a disability or becoming unemployed) this **may be appraised as a loss of positive identity**, negatively affecting wellbeing (**Hypothesis E**).

2.5.4.5 Social identity strategies for coping with stigmatised identity

SIAH theory provides a wealth of empirically supported mechanisms for coping with a stigmatised or burdensome social identity (**Hypothesis F**). Early social identity theory explicitly sought to explain the impact of relative group status on wellbeing within unequal social contexts (Tajfel & Turner, 1979). Strategies for coping with burdensome social identities are driven by the central concept that people seek to restore positive identity (Haslam et al., 2018; Jetten et al., 2017). SIT strategies fall into two main categories[7] (Tajfel & Turner, 1979) firstly: leave or dissociate from the unsatisfactory ingroup for a better one (*individual mobility*).

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[7] The full range of stigma management strategies is not explored here. See Dirth and Branscombe (2018) for a full description related to the topic of disability.

This may include choosing to *conceal* a stigmatised identity. This first approach assumes that social group boundaries are perceived to be *permeable* (membership to a category can be changed). Unfortunately, leaving a devalued group may cut off a source of social support, as evidenced by Postmes and Branscombe (2002) who found that black Americans who moved out of majority black communities had lower levels of psychological wellbeing than those who did not move. If leaving a group is not possible either objectively or psychologically (group boundaries are impermeable; (Tajfel, 1981), the second set of strategies available are group level *social creativity* or *competition* strategies to revalue a group by comparison to another group. A review of SIAH applied to disability (Dirth & Branscombe, 2018) notes that people who acquire impairments are less likely to self-categorise as a disabled person than those born with impairment. They attribute this to previously able-bodied people perhaps not having the *perceiver readiness* (a key SCT process summarised above) to self-categorise as disabled. If this self-categorisation leads to individual strategies of concealment of stigmatised identities, SIAH research indicates that this can come at a cost for subsequent mental health. Concealing a history of mental illness has been associated with reductions in self-rated authenticity and decreased confidence (Newheiser & Barreto, 2014). Patients who concealed their brain injury (Hagger & Riley, 2019) experienced greater social anxiety, social avoidance, loneliness and lower self-esteem although not reduced social support. As Dirth and Branscombe (2018) point out, collective strategies such as activism for equal treatment of people with disabilities can contribute to increased availability of psychological resources. For injury survivors, **negotiating a stigmatised identity may contribute to threat appraisal through perceived devaluation of pre-injury social identity and through the impact that stigma coping strategies may have on the availability of social identity resources**. Both issues are captured in the next SIAH theory under consideration.

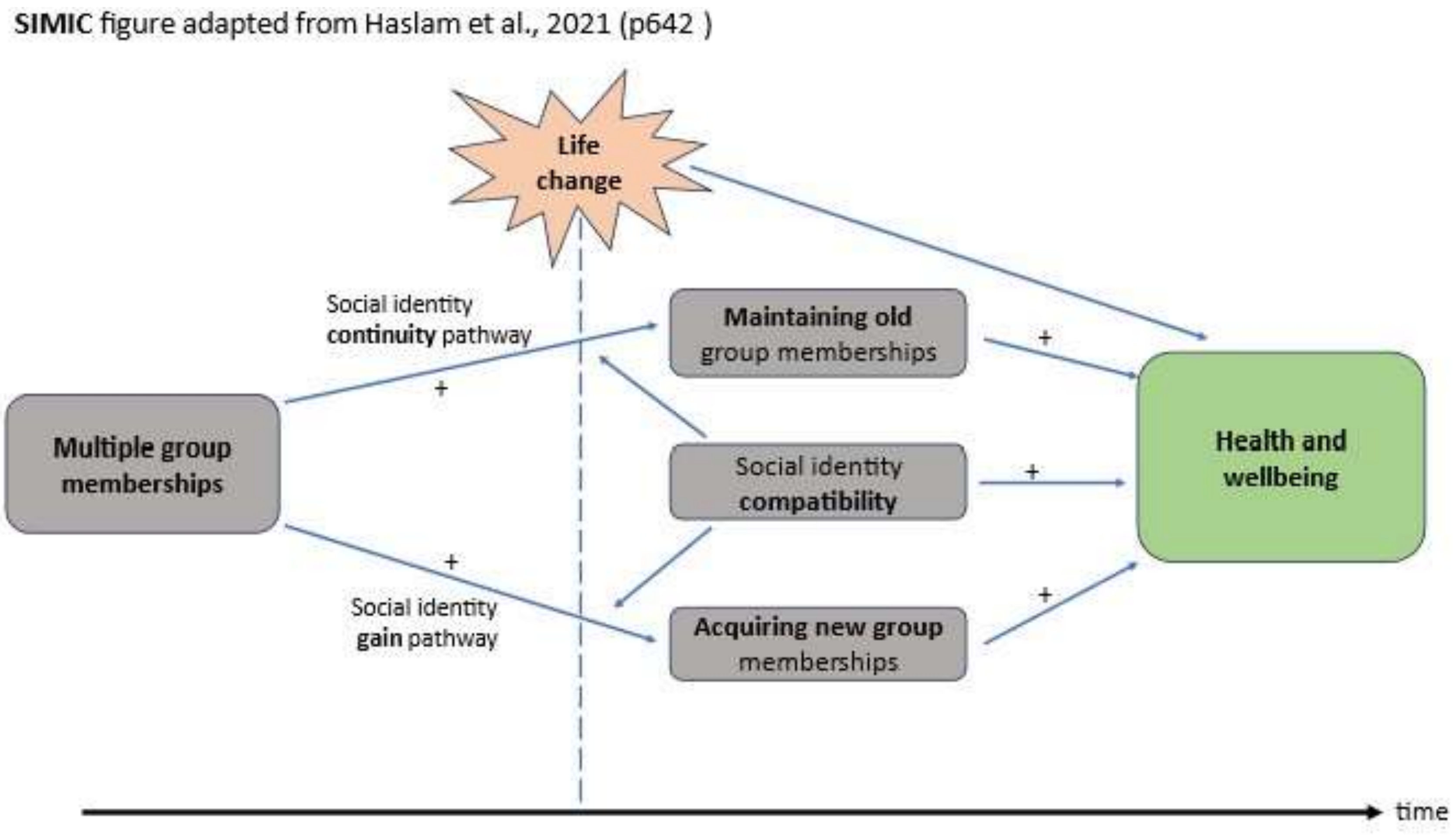
2.5.5 SIMIC: The Social Identity Model of Identity Change

Within SIAH research, the SIMIC model has been widely used to predict wellbeing following a life transition. Researchers recognise that depression often follows key life events such as bereavement, divorce or retirement (Kendler et al., 2003; Paykel, 1994; Tennant, 2002). The SIMIC model Jetten et al. (2009) (building on the Integrated Social Identity Model of Stress, ISIS: Haslam & Reicher, 2006) argues that life transitions (positive and negative) constitute a threat/stressor because they are times of social identity change which threaten to disrupt access (or perceived access) to social identity resources. A wider literature outside the SIA has associated identity disruption with negative psychological outcomes (Boyle, 2017; McCormack & Ell, 2017) including more severe PTSD symptoms Mitchell et al., 2020). The sociological theory of biographic disruption (Bury, 1982) in chronic illness when applied to injury has indicated a common theme of identity change (Bourke et al., 2015; Dickson et al, 2008; Soklaridis et al., 2011; Sveen et al., 2016). In contrast to these approaches which have tended to focus on individual responses, SIMIC argues that stress coping strategies have a social or group component.

Diagram 2.3 (adapted from a later version of the model: Haslam et al 2021) indicates the pathways and factors which contribute group-based variations in health and wellbeing outcomes following life transitions. The model predicts that the capacity to deal with life changing events will be enhanced by *multiple, maintained, new* and *compatible group memberships*. The model highlights two pathways likely to enable wellbeing: *identity continuity* or maintenance of group membership and *identity gain* of new group memberships. They argued that **in the context of identity change through life transition, multiple group memberships provide greater access to social identity resources** in general. The *number of valued group memberships* prior to the life transition would predict wellbeing, as would the *compatibility* of old and new social identities. Studies of adjustment to retirement have supported the predictive value of a higher number of pre-retirement group memberships and old/new group compatibility (Iyer et al., 2009). Another study proposed that compatibility of groups enabled *scaffolding* of new groups by old groups in retirement (Haslam et al., 2019). A longitudinal matched control group study found that the maintenance of pre-retirement social group memberships was associated with better quality of life, and the risk of premature death was predicted by loss of group memberships (Steffens et al., 2016). A study comparing the effectiveness of social support as a stress buffer with social identity change (measured through changes to multiple group memberships) in populations undergoing stressful life transitions (including patients receiving a serious health diagnosis) reported interesting results. Praharso et al.'s (2017) findings indicated only limited support for stress buffering through social support; instead group maintenance or gain was more protective against wellbeing decline or increased depression. If injury constitutes a life transition, then SIMIC predictors of wellbeing (e.g., **pre-injury number of group memberships) may contribute to variations** in appraisal. Specific applications of SIMIC to acquired brain injury will be considered next.

Diagram 2.3

The Social Identity Model of Change *(adapted from Haslam et al., 2021; p642 while permission pending from Annual Reviews)*



2.5.5.1 Application of SIMIC to injury

The closest application of the SIMIC model to injury populations has been made to acquired brain injury (ABI) patients. ABI can occur from both physical injury and health conditions such as stroke. A longitudinal study using SIMIC to compare post-traumatic stress (PTS) symptoms between ABI and orthopaedic injury (Jones et al., 2012) found that while (fewer) group memberships at time one predicted PTS for ABI patients, for orthopaedic patients, PTS was predicted instead by health symptoms. The authors proposed that this indicated ABI was being appraised as more life-changing than orthopaedic injury due to the social impact. ABI patients experienced identity loss (work and social), gain (support groups) and continuity (family) in a qualitative exploration of identity change (Muldoon et al., 2019b). This included interactions of cure and curse effects between different social groups, e.g. incompatibility between work, the stigma of ABI and disability, and scaffolding of identity gain through family support. Another study linked positive mental health outcomes with access to social identity resources. Lower rates of depression were predicted by increased group memberships in a cross-sectional mediation analysis (Kinsella et al., 2020) and this was mediated through enhanced self-regulation from social support. Most recently, SIMIC has been applied to ABI for the prediction of psychological outcomes which include PTG (post traumatic growth). Griffin et al., (2022) found that positive psychological outcomes were more strongly associated with identity gain than maintenance. PTG was mediated by the extent of connectedness that ABI survivors felt with (gained) support groups. Together these findings indicate the relevance of SIMIC social identity predictors (such as social connectedness through number of groups; availability of social support) for psychological outcomes in ABI. The importance of appraisal processes is indicated by the PTS and PTG study outcomes (Griffin et al., 2022; Jones et al., 2012). Griffin's study tested a new elaboration of SIMIC applied to trauma (SIMTIC: Muldoon et al., 2019) which is outlined in Section C alongside other theoretical approaches to trauma appraisal.

SECTION C: APPRAISALS OF TRAUMA

2.6 SIAH CONTRIBUTIONS TO TRAUMA APPRAISAL

The application of SIAH theory to extreme events further supports the potential relevance of social identity to appraisal of injury. Social identity contributions to trauma appraisal have been linked with mechanisms already detailed above: norms, stigma acquisition, identification extent, and social support. As explained in the social curse section, Këllezi and Reicher (2014) have highlighted the contribution of social norms to different psychological responses to war events in Kosovo. They found that group norms can impact appraisals of wartime experiences. When war events were appraised to affirm group norms (believing that sacrifice was contributing to the wider good) this reduced the perceived threat of the events (Këllezi, Cassidy & Reicher, 2009). On the other hand, traumatic war events perceived to violate group norms were experienced as **more psychologically threatening**. These wartime examples illustrate two further social identity contributions to appraisal: unequal incidence of trauma by social groups, the imposition of stigmatising identities, and impact on support and coping strategies. Këllezi and Reicher (2014) noted that men and women had different experiences during war (fighting versus sexual assault/care for vulnerable) so they were appraising different types of extreme events, dictated by gendered social roles and positions in society. In Northern Ireland, Muldoon et al. (2003) found that Catholic children appraised political violence as being more stressful than did Protestant children and this was linked to the increased likelihood of Catholic children's' exposure.

Regarding **stigma**, wartime rape **blocked access to social support** (Këllezi & Reicher, 2014) because the stigma of rape made it 'unspeakable' impacting appraisal, support and coping strategies. The perceived availability of psychological resources from social identity was mentioned above in terms of work identities and work stress appraisal in bomb disposal officers (Haslam et al, 2005). Trauma research repeatedly identifies social support as a predictor of resilient outcomes such as post traumatic growth (Zhou et al., 2017; Hasson-Ohayon et al, 2016). Returning to Hypothesis B, higher identification with a group is likely to increase the extent to which social identity processes mentioned above (norms, stigma, perceived access to support). There is evidence of this in research in trauma populations. For example, in the context of a population experiencing earthquake in Nepal, Muldoon et al. (2017) found that variation in **community identification levels predicted PTS and PTG** outcomes. Crowd behaviour research indicates that identification may influence threat appraisal. In a survey of people who attended a potentially disastrous beach concert (Drury et al., 2009), attendees who expressed a higher degree of identification with the crowd were less likely to report experiencing panic than were lower identifiers. This example neatly indicates the interacting nature of primary and secondary appraisals. The outcome suggests that **higher identifiers assumed greater collective capacity to cope** with a threat. This can be understood in terms of the social identity resource of collective efficacy (Hypothesis C).

These applications of SIAH to extreme events indicate that primary appraisal of threat may be impacted by social identity mechanisms such as norms, stigma, and perceived availability of psychological resources (contributing to secondary appraisals of coping). All of which may be moderated by the extent of identification with a social identity. For injury survivors, even the same major trauma may be appraised as an extreme event or it may not. It is argued here that social identity contributes to those appraisals, including of coping capacity. A more complete review of trauma research in the context of social identity has been made by Muldoon et al. (2019). It is their SIMTIC elaboration of the SIMIC model for trauma and its relevance to psychological outcomes following injury that is outlined next.

2.6.1 SIMTIC: The SIMIC model elaborated to explain trauma response

Muldoon et al.'s (2019) SIMTIC model argues that variations in psychological responses to extreme events are not fully accounted for by variations in individual difference (such as personality traits) and social demographics. Reviewing previous research, the model builds a prospective case for social identity contributions to individual responses to trauma. They then propose an elaborated SIMIC model (Jetten et al., 2009) which includes the **pathways of social identity continuity and gain** to pinpoint psychological processes relevant to the aftermath of trauma. They add **a novel pathway (*revitalisation*) to explain positive psychological outcomes of trauma** such as PTG. While the SIMTIC model is not explicitly focused on appraisal and coping processes, the prospective social identity contributions they describe are applied to appraisal below.

2.6.1.1 SIMTIC contributions to appraisal

Muldoon et al. (2019) proposed that trauma response could be understood as responsive to social identity change, following SIMIC (Jetten et al., 2009). They argue for three broad processes contributing to variations in PTS and PTSD: social identity continuity (vs. loss), social identity gain (vs. loss) and social identity revitalisation contributing to psychological growth. The following points describe the contributions these may make to appraisal (1) **social identity contributes to the perception of traumatic events**, e.g. awareness of belonging to a more vulnerable group in society in terms of power distribution may amplify negative threat appraisals. For example, Catholic children appraised political violence as being more stressful than did Protestant children (Muldoon et al., 2003). This suggests that **trauma increases the salience of the identity through awareness of vulnerability, contributing to threat appraisal**. (2) Regarding identity loss, the SIMTIC authors argue that trauma may contribute to the **weakening or loss of positive identity** (as evidenced in ABI research above). Undermined social identity has been linked with greater PTS and PTSD (Muldoon & Downes, 2007; Quota, Punamaki & El Sarraj, 2007) if not explicitly linked to appraisal. Being identified with norm-violating trauma can itself be stigmatising, as noted above (Këllezi & Reicher, 2014). If focused on antecedents rather than outcomes, devalued social identity may contribute to primary threat appraisal. (3) In SIMIC identity gain terms, new social identities fostered through **shared experience of trauma may be a mechanism for resilience**. For example, people affected by a terrorist attack in London experienced an emergent sense of shared fate which was associated with psychological resilience (Williams & Drury, 2009). The authors explained this in terms of access to social identity resources. Another study indicates how access to group resources could contribute to psychological growth. In civilian Iraqi war survivors PTG incidence was associated with collectively experienced trauma, explained as being related to increased opportunities for self-disclosure (Kilic et al., 2016). This indicates social identity based opportunities for shared appraisals. This feeds into (4) the revitalisation pathway which argues that **new social identities focused on collective trauma provide the circumstances for individual re-evaluation, meaning-making and psychological growth**. Muldoon et al. (2019) argue that social identity processes such as identification and collective efficacy could mediate the development of PTG following trauma exposure. This is coherent with PTG theory which emphasises social support and disclosure in schema re-evaluation following trauma (Tedeschi & Calhoun, 2004). Subsequent testing of SIMTIC has focused on PTG incidence, supporting a link particularly with social identity gain (Craig et al., 2022; Griffin et al., 2022), affirming the revitalisation pathway argument. As discussed above in relation to the SIMIC theory (Jetten et al., 2009), changes to social identities crucially affect access to psychological or social identity resources. Throughout, Muldoon et al. (2019) are explicit about (5) **the changing availability of social identity resources following trauma and its importance to coping.** For example, trauma that is stigmatised has been linked to reduced support-seeking, e.g. young witnesses of domestic violence (Naughton et al., 2019) and people with HIV diagnoses (Adewuya, 2009). Social identity loss or devaluation would reduce the pool of available psychological resources, as per SIMIC.

2.6.1.2 Empirical evidence for SIMTIC

The evidence used to develop the SIMTIC model related predominantly to collectively experienced extreme events, particularly political violence (e.g. Northern Ireland). Its prospective relevance to individually experienced traumatic injury remains theoretical. However Muldoon et al.'s review (2019) is helpful in highlighting additional social identity mechanisms to threat appraisal and coping. Furthermore, Muldoon et al. (2019) note that a social identity component to psychological growth has implications for the way interventions are approached. To promote positive outcomes, pre-existing social identities should be used to scaffold access to new groups and the destructive potential of stigma should be recognised.

2.7 BROADER PSYCHOLOGICAL TRAUMA THEORIES

Finally, it is noted that outside SIAH research, other psychological theories of trauma corroborate the importance of psycho-social contributions to cognitive appraisal and coping. The founder of logotherapy (a major school of psychotherapy) focused on meaning-making as a therapeutic approach. Frankl (1985) drew on his own observations as a prisoner in Nazi concentration camps arguing that to survive psychologically, prisoners needed to focus on meaning beyond their current suffering. The source of this meaning was frequently attached to aspects of pre-detainment life: relationships, family, identification with art or religion. The links to social identity are clear here: retaining a sense of self through social connections or other sources of meaning (a social identity psychological resource mentioned above). Some of the most prominent researchers in psychological trauma refer to trauma recovery with explicit reference to the centrality of relationships and community to recovery. Bessel van der Kolk (2014) is known for research into somatic treatments to down-regulate nervous system trauma responses. He acknowledges the importance of community and support networks (including peer support and therapeutic relationships) for recovery and is critical of the DSM-V (APA, 2013) diagnostic manual for omitting the social impact of trauma, pushing research agendas towards the bio/neurological. Herman's theory of trauma and recovery (1992 and 2015) following sexual violence notes that the experience of trauma severs the survivor from their community. Therefore, the final stage of recovery from trauma for Herman (after re-establishing safety and integrating trauma memories), is reconnection with 'normal life', including relationships and meaning. Herman also argues that the study of trauma is inherently political as it draws attention to the oppressed (2015, p237) affirming Muldoon et al.'s (2019) argument about the structural inequalities underlying trauma incidence. Most relevant to the present focus is a theory of cognitive appraisal of trauma which is a foundational component of subsequent PTG theory.

2.7.1 Shattered Assumptions

Janoff-Bulman's (1992) concept of *shattered assumptions* theorises a cognitive shattering of pre-trauma schemas (or mental maps of reality). Both Tedeschi & Calhoun's (2004) transformational model and Joseph & Linley's (2005) organismic valuing theory of PTG expand from cognitive response to this shattering. Janoff-Bulman (1992) argues that early attachment experiences (if they are sufficiently positive) result in an *assumptive world* that is optimistic about: the benevolence of the world, life being meaningful, and self-worth. Traumatic experiences cause rapid change to schemas: shattering them. (Herman's recovery model also refers to shattering, but of the connection with others, 2015, p55.) Following shattering, the cognitive recovery task of the trauma survivor, according to Janoff-Bulman's theory, is to accommodate or integrate the new information about the possibility of traumatic events into their assumptive world. It is this need for cognitive reappraisal, it is argued, which creates the conditions for the psychological growth described by post traumatic growth theories. For injury survivors, this cognitive shattering represents an existential threat to the worldview held prior to the injury. This seems congruent with the centrality of an ‘event/drama’ health threat representation in Shiloh et al.’s (2016) application of the CSM model to injury. In addition, a qualitative study of injured marines (Haynie & Shepherd, 2011) referred to shattered assumptions specifically regarding loss of self-worth following lost occupational identity. Shattered assumptions as an approach has some similarities to *biographical disruption.* This is a sociological theory widely used to understand the impact of injury and illness as a disruptor of physical, biological identity (Bury, 1982). It has been recently applied to mild traumatic brain injury (Sveen et al., 2016) and breast cancer (Trusson, 2020) to understand identity threat.

In relation to social identity contributions, Janoff-Bulman refers to the influence of pre-existing psycho-social factors as a source of variance for the appraisal of shattered assumptions. Brief mention is made of the potential influence of negative early life experiences (e.g. childhood victimisation) on the extent of schema shattering. Following the logic of the theory, if a person holds negatively biased assumptions about the world then trauma could confirm rather than disconfirm worldviews, or pre-injury schema. This accords with the vulnerability of some social identities to trauma incidence, noted by Muldoon et al. (2019). Greater age and thus potential to have experienced prior stressors over the life course are also described as *inoculating* against shattering of assumptions by Janoff-Bulman. In the context of Muldoon et al.’s (2019) argument for the contribution of social identity to the variation of psychological response, the extent to which a traumatic event is experienced (appraised) as being ‘shattering’ to pre-injury schemas may be responsive to previous life experience which includes social identity.

Janoff-Bulman also delineates cognitive strategies for coping and schema integration used by trauma survivors. While these three aspects of cognitive reappraisal are under-explored in the original description of shattered assumptions (1992, p118), they fit well with the other candidate theories under consideration here. (1) Real or hypothetical social comparisons through which the survivor counts themself ‘lucky’, resemble creative social identity re-evaluation or mobility strategies taken to re-value a low status social identity, in earlier SIT theory (Tajfel and Turner, 1979). (2) Self-blame or denying the external threat by assuming personal responsibility for events. It should be noted that blame/responsibility was an injury specific representation identified by Shiloh et al.’s (2016) application of the CSM. Finally, (3) a focus on meaning-making by inferring benefit or purpose from the traumatic experience is particularly relevant to the revitalisation/post traumatic growth mechanism. Furthermore, Janoff-Bulman asserts that these processes of cognitive strategies require the support of close, caring others (1992, p173), straightforwardly relating to the availability of social identity resources in trauma appraisal.

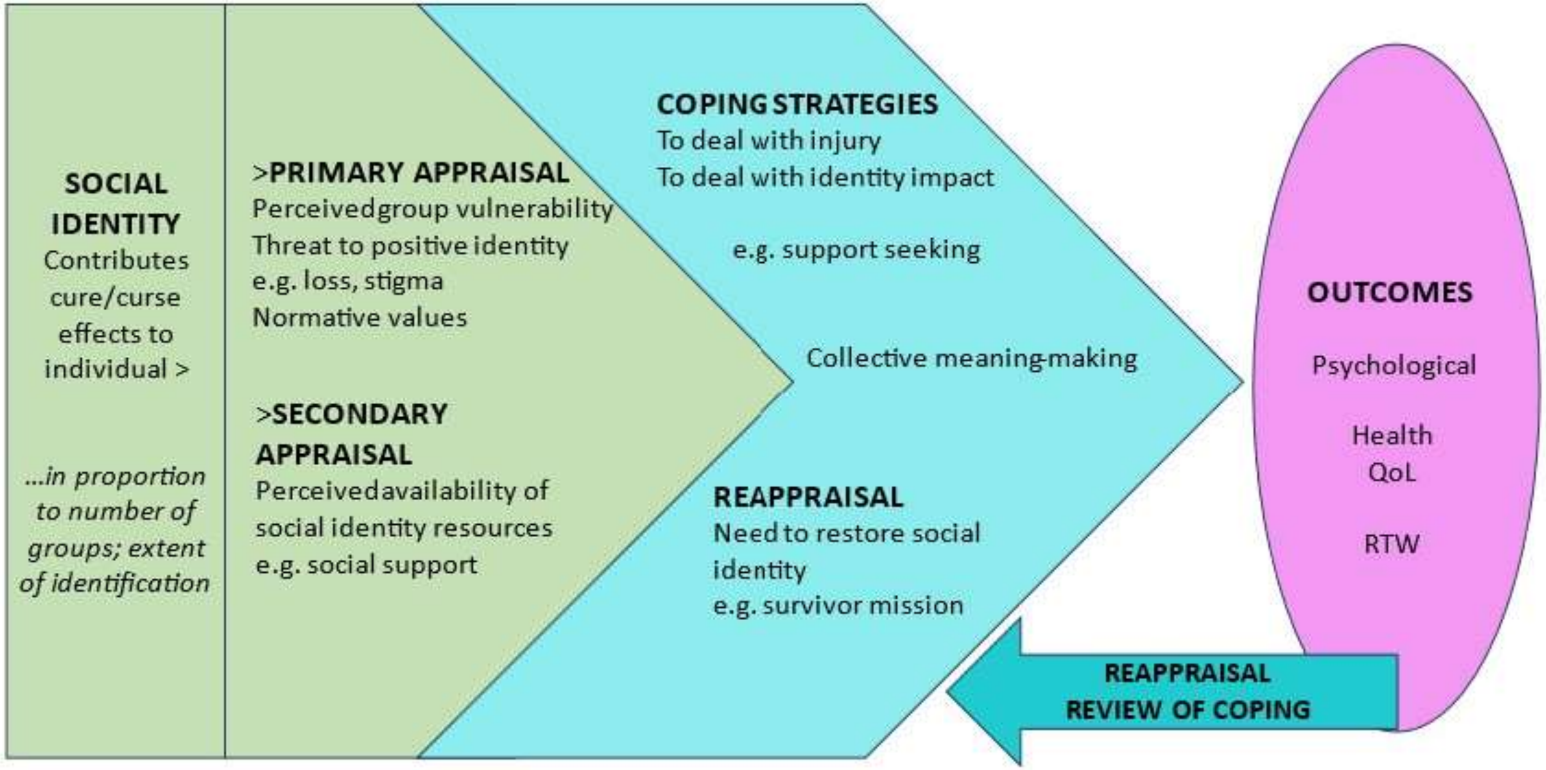
2.8 SUMMARY

This chapter set out to explore theories which may help better understand psychological impact and responses following injury. It first reviewed two theories of stress appraisal and coping for their relevance to understanding psychological responses to injury. It then explored the empirical support for several social identity mechanisms which may contribute to variations within the three cognitive processes of stress appraisal and coping for traumatic injury survivors. Together this has provided a detailed prospective model of social identity contributions to injury appraisal and coping. It is not intended to suggest that social identity mechanisms are the only factors contributing to appraisal and coping following injury. Rather SIAH offers a bridging theory and a rich source of empirically supported mechanisms to explore.

To summarise, the theoretical review identified empirically supported social identity mechanisms which have the potential to interact with the steps or processes of the stress appraisal and coping model (Lazarus & Folkman, 1984; Leventhal et al., 1998) and contribute to survivors' psychological response to injury. Diagram 2.2 combined the processes of the two appraisal and coping models. Between them, the SAC and CSM provide an overview of the processes of primary appraisal of threat (representation), secondary appraisal of coping capacity and the contributions both make to coping strategies and thence to survivor outcomes. The Common-Sense Model adds needed granularity through *representations* which have been tested and expanded in injury populations. The empirical evidence for the two models indicates that these processes do not fully account for all the factors predicting psychological outcomes. Meta-analyses suggest that there may be some mediation from social context. The prospective model in Diagram 2.4 maps empirically supported social identity mechanisms onto appraisal and coping steps. The potential applications of example social identity mechanisms to injury survivors are further explored in the right hand column of Table 2.1. They include: group identification; motivation to maintain positive social identity; stigma; availability of social identity resources. These social identity mechanisms are examples of psycho-social mechanisms which theoretically have the capacity to bridge individual and environmental contributions to appraisal which central to the two appraisal models reviewed here, yet remain somewhat separated in those models. Furthermore, it has been demonstrated that social identity explanations of variations in psychological response to trauma is congruent with existing trauma theory. The application of the SIA to trauma is particularly helpful in understanding the way that social identities can contribute to meaning-making as a coping response, and the conditions (pre, peri and post injury predictors) which may affect this.

Diagram 2.4

Prospective model of social identity contribution to injury appraisal



2.8.1 Research aims overall

The **overarching research question** resulting from this critical theoretical review concerns **the exploration of social identity contributions to cognitive appraisals and coping processes following injury.**

The three empirical studies reported in the following chapters (4, 5, 7 with Discussion chapters 6 and 8) tested the explanatory power of a combination of appraisal and social identity approach theories could explain survivors' experience and response to injury. Traumatic injury data has not previously been analysed using this combination of stress appraisal and coping theory with the social identity approach to health. The analyses were guided by the following questions. **Does social identity context or social identity mechanisms contribute to injury survivors':**

- **Primary appraisal of threats/stressors experienced following traumatic physical injury?**
- **Secondary appraisal of coping capacity and related coping strategies and wellbeing outcomes?**

CHAPTER 3: Methodology

3.1 OVERVIEW

This chapter discusses the epistemological and theoretical principles which guided the methodological approach to the three studies in the thesis. Details discussed here include: choice of data collection and analysis methods, sampling strategy, detailed description of the analysis process, ethical procedures, researcher characteristics and reflexivity. This chapter also introduces the ROWTATE trial within which the author worked as a Research Assistant while generating the data later analysed for chapters 4 and 7. Further methodological details for each study are provided in each empirical chapter (4, 5 and 7). Where appropriate, the reporting of methodology throughout the thesis was guided by the COREQ quality assurance checklist for qualitative research (Tong, Sainsbury & Craig, 2007).

3.1.1 Thesis aims and chosen methodology

The first two chapters indicated the need for qualitative research informed by a theoretical framework to better understand psycho-social mechanisms contributing to injury survivor psychological responses (Butler et al., 2022). Methodologically rigorous qualitative research exploring lived experiences of injury would contribute to the understanding of complex mechanisms behind very diverse responses to injury and build support for survivors' physical and psychological recovery. The potential valuable contribution of theoretical frameworks to understanding psychological response to injury was considered by Chapter 2. The present empirical studies aimed to explore social identity contributions to survivors' cognitive appraisal and coping processes following injury.

Chapter 1 noted the range of common injury types and severity, (Trauma Audit and Research Unit, 2012), so a certain amount of heterogeneity in psychological response might be expected. Furthermore, injury responses may go through different stages (Jones, 2021). Therefore, each individual survivors' reflections on their psychological response may be subject to a great deal of variation in response to pre and peri trauma factors and over the course of their recovery. It was important to capture the diversity of experiences and responses in sampling. While lived experience data were prioritised, the perspectives of a further stakeholder group were also explored to provide insights regarding the context of treatment and recovery (Sigodo, Davis & Morgan, 2020).

3.2 STUDY DESIGN

3.2.1 Overview of the methodology

This thesis consists of three cross-sectional qualitative studies, all analysed using reflective thematic analysis (Clarke & Braun, 2021). The studies are summarised in Table 3.1 below. Data generation for two of the studies (1 and 3) was carried out by the author as part of a research team for a larger clinical study (ROWTATE), explained further below. The first exploratory trauma survivor study (Study 1) was designed to address the larger study aims (the ROWTATE study) to develop and test a vocational rehabilitation intervention. The ROWTATE study was not designed with reference to the present theoretical framework. Therefore, a second trauma survivor (Study 2) was designed to directly test the theoretical framework in a new sample.

Table 3.1:

Summary of empirical studies in the thesis

	Chapter 4: Trauma Survivor Study 1	**Chapter 5: Trauma Survivor Study 2**	**Chapter 7: Service Provider (Study 3)**
Number of participants **(total = 75)**	**n= 17** 3 focus groups = 6 Semi-structured interviews =11	**n=23** semi-structured interviews	**n= 35** 1 focus group = 8 Semi-structured interviews = 27
Total length of audio recording	13 hours 13 minutes	43 hours 15 minutes	23 hours 25 minutes
Mean length of interview	51 minutes mean	112.56 minutes mean	59.70 minutes mean
Research Aim	Explore psycho-social responses to injury, including threat appraisal and coping appraisal	Further test specific social identity contributions to threat and coping appraisals	Explore provider understanding of the contribution of social identity context to survivor appraisals of threat and coping
Data generation:	Main interviewer as part of ROWTATE research team, Feb 2019 to Feb 2020	Sole interviewer, independently Feb to May 2021 Conducted remotely.	Main interviewer as part of ROWTATE research team, Feb 2019 to Feb 2020

Sampling aims	Representative diversity primarily of injury type and employment type. Diversity of age, gender and ethnicity	Represent a diverse range of injury, extending the injury types beyond those sampled in study 1. Also represent diversity of age, gender, educational level and employment role classification, and ethnic diversity.	Representative of: acute/hospital care, rehabilitation care, psychological care, RTW/vocational rehabilitation support. Caseload including diverse types of injury.
Inclusion criteria	Aged 18+ Living in the UK. Experienced an injury requiring hospital treatment/time recuperating. Able to speak and understand English sufficiently to take part in an interview.	Aged 18+ Living in the UK. Experienced an injury requiring hospital treatment/time recuperating. Able to speak and understand English sufficiently to take part in an interview.	UK caseload or research expertise in injury survivor care and recovery

3.2.2 The ROWTATE context: vocational rehabilitation intervention

The thesis author was a Research Assistant in the ROWTATE research team from its beginning in November 2018 to August 2022. ROWTATE (Return To Work After Trauma; (www.ROWTATE.org.uk) is a programme of research aiming to develop, trial and implement a vocational rehabilitation intervention for survivors of moderate to severe traumatic injury (major trauma). ROWTATE is funded by NIHR programme grant (NIHR, Ref: RP-PG-0617-20001) and led by primary care and occupational therapy in the University of Nottingham's medical school. The ROWTATE study extends over multiple sites with a large network of principal investigators. The early stage of the ROWTATE intervention trial developed an existing vocational rehabilitation intervention, including adding optional access to clinical psychology (Kendrick et al., 2021). As such, the qualitative data generated to develop an intervention for major trauma patients included a focus on psychological response to injury, recovery and return to work (RTW).

The first stage of the study involved extensive data collection with trauma survivors to understand the impact of injury and recovery process, and extensive interviews with service providers to understand the context of care provision. (Kendrick et al., 2021).[8] Participant recruitment and data collected for the first stage of the ROWTATE study composes studies 1 and 3 respectively of this thesis. The author of this thesis was involved in all 4 focus groups and all except 2 of the interviews. The author brought a psychological perspective to the ROWTATE work having recently graduated from a MSc conversion to psychology, with specialism (modules and independent research) in the psychology of trauma. This knowledge complemented the expertise of the colleague sharing the work (JK) whose expertise was clinical implementation and brain injury. Finally, the author was a key contributor to the analysis of the data for ROWTATE purposes.[9]

Continued participation (until August 2022) in the ROWTATE research programme was beneficial in a number of ways. Leading some of the key analysis and contributing to other ROWTATE data analysis ensured the author was immersed in the data and had a good understanding of the overall context of injury survivor treatment before commencing doctoral studies. Additional steps to support validity and reliability of the data analyses for the thesis were possible through a) participant checking with the ROWTATE Public and Patient Involvement (PPI) group comprised of 15 trauma survivors and b) discussions with practitioners such as occupational therapists and case managers.

3.2.3 Justification of qualitative methodology

The research aims explicitly required qualitative methods to explore lived experiences through rich data. The ROWTATE study design combined focus groups with interviews for data generation with both trauma survivors and service providers. Since survivors were being asked to talk about potentially distressing traumatic experiences, providing a choice of approaches allowed them to select the format which best suited their circumstances and preference. This mixed methods approach also acknowledged that both data generation methods have different strengths and weaknesses. Interviews may allow more in-depth sharing than is possible in a focus group format (McArdle et al., 2012; Smithson, 2000). This is important when exploring sensitive topics (Gill et a.l, 2008).

A semi-structured approach was adopted to allow scope for divergence from the core questions enabling elaboration on topics important to participants (Gill et al., 2008). Semi-

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[8] The primary analysis of the data has been reported by Kettlewell et al., 2021.

[9] Analyses contributed to the tailoring of the intervention, development of therapist training and to a publication concerning patient priorities for intervention outcomes Bridger et al., 2021

structured interviews provide participants with the opportunity to share information about their lived experiences in their own words. On the other hand, focus groups are considered more ecologically valid than interviews, because they allow individuals to influence and learn from each other, re-evaluating their individual understanding (Kitzinger, 1995; Litosseleti, 2003). In focus groups, discussion is promoted through social interaction which may enhance insight and exploration of a topic (Braun & Clarke, 2013; Morgan, 1997). For example, if discussion and debate is encouraged then participant points of agreement and disagreement will help the researcher to gauge the importance of issues to participants (Braun & Clarke, 2006). Given the range of factors understood to contribute to appraisal of trauma (discussed in Chapter 1), this debate may be particularly valid for injury survivors.

3.2.4 Topic guides

In all three studies, topic guides were designed to progress from the general to the specific in line with Stewart and Shamdasani's (1990) recommendations. In survivor topic guides, questioning proceeded from open questions about general injury and recovery, to more specific questions. The author actively probed to uncover latent or unspoken meanings relating to psychological responses. Service Provider topic guides were more focused on barriers and facilitators to survivor RTW, but the focus on developing a clinical psychology input justified the interviewer asking probe questions to understand providers' observations about survivor psychological response. While interviewing for Study 1 and 3 was shared between 2 researchers, the thesis author was present for all except 2 provider interviews, and able to interject psychologically relevant probe questions. For Study 2 (designed and carried out solely for this thesis), survivors were encouraged to tell their injury and recovery 'story' and the order of questioning was responsive to their focus. This was a deliberate strategy to ensure that Study 2 avoided driving the questioning towards work as the central social identity. This aimed to prevent a bias towards work impact since it was an explicit focus of the ROWTATE topic guides. Full topic guides for each study are included in the *Appendices: sections I to III*.

3.2.5 Recruitment procedures

Recruitment procedures for Studies 1 and 3 had been specified by ROWTATE protocol, but was managed by the author and one other colleague (JK). Data generation with trauma survivors and service providers happened concurrently. The service provider data generation began with a focus group to gain a sense of key issues across different recovery contexts. It then proceeded to interviews to better recruit around the busy schedules of healthcare providers. Survivors' late cancellations affected size of focus groups. This was due to their ongoing treatments, or injuries reducing mobility and capacity to travel. A similar point was noted by Elliott et al. (2016) regarding recruitment of chronically unwell patients who might be excluded from research participation because of difficulties travelling.

Given these challenges, the second trauma survivor study was therefore conducted only through interviewing to allow more scheduling flexibility. Study 2 coincided with varying levels of public health covid precautionary policies and was conducted remotely. This may have been beneficial for including survivors with more severe or lasting injury impacts.

For both survivor studies (Study 1 and 2) recruitment was pursued through charitable intermediaries: two charities with experience of supporting trauma survivors (After Trauma, London; Day One, Leeds). This strategy aimed to follow Krueger and Casey's (2015) recommendation to invite neutral parties to nominate focus group participants but the concerns are similar for interview participants. Recruitment through charitable intermediaries also enabled the identification of participants who had progressed through their recovery sufficiently far to be able to reflect on their experiences. Finally, this method enabled avoiding recruiting through NHS which especially during COVID, would have been too burdensome to healthcare staff.

3.2.6 Sampling sufficiency

Sampling was purposive in order to gain breadth of perspectives to address research aims (Patton, 2015). The sampling approach for Studies 1 and 3 was driven by the aim of the ROWTATE study to inform the development of an intervention and associated training needs. Sampling was focused on gaining stakeholder perspectives that were representative of survivor heterogeneity (e.g. injury, employment role, age, gender, ethnicity) and the range of recovery care settings (service providers). Sampling aims are summarised in Table 3.1 above. Sampling sufficiency is often understood in terms of data saturation or information redundancy (Lincoln & Guba, 1985), or the point at which no new information recurs in new data. However, the relevance of saturation to the methodological assumptions of reflexive thematic analysis has been questioned by Braun and Clarke (2021), arguing that meaning is interpretive and not finite or quantifiable in a reflexive process, so potentially never ending. The ROWTATE approach to sampling sufficiency estimated how many participants would be required to meet sufficient 'information power'[10] to fulfil the research aims. If rich data has appropriate variation to enable exploration of established theory and identify selected patterns (Malterud, et al.,

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[10] Malterud, Siersma & Guassora (2016) propose the concept of saturation as a marker of quality in qualitative research be replaced with 'information power' which is appropriate to exploratory topics. Information power does not claim comprehensiveness in relation to the topic, only new insights.

2016), then it has information power regardless of the number of data cases. While the decision to terminate recruitment in Studies 1 and 3 was not under the control of the author, no new patterns in the content were occurring in interviews by the time recruitment was stopped. Sampling for Study 2 aimed to recruit a minimum of 20 UK based survivors of traumatic injury to take part in in-depth semi-structured interviews of approximately 90 minutes in duration. Interviewing continued past 20 due to availability of additional participants, but the content was sufficiently rich and no new psychological processes were identified when interview notes were reviewed. When Study 2 stopped recruiting it contained more diversity of injury type and severity than Study 1, as well as a greater number of participants who had lost their pre-injury job, which was relevant to the topic.

3.3 DATA ANALYSIS

3.3.1 Choice of analysis method

All three data sets were analysed using reflexive thematic analysis to allow analysis to combine inductive and deductive approaches: exploring the relevance of specific theoretical frameworks without overlooking other patterns in the data. Reflexive thematic analysis (Clarke & Braun, 2021) was selected as the most suitable analytical approach for a range of reasons. The focus of the research was gaining understanding of psychological processes contributing to lived experience of injury and recovery. While Interpretive Phenomenological Analysis (IPA: Smith et al., 2009) is popular for exploring lived experience of health and clinical topics (e.g. Swift et al., 2001), it focuses on depth of analysis within small data sets. The focus of the present question on the broad range of major trauma injuries required a reasonably large sample in order to be representative. Grounded theory (GT: Charmaz, 2006) was also considered but rejected as an inappropriate analysis method given the author’s pre-existing relationship with the data. GT explores social processes inductively, with the researcher interpreting the patterns to develop new theory, testing it against the data as more is generated. While GT offers a rigorous process, it assumes discovery through naïve exploration of data, whilst still generating data (Howitt & Cramer, 2010). Data generation for Studies 1 and 3 was already completed. Furthermore, while reviewing the field notes from the data generation stage for Studies 1 and 3, the author recognised that some theoretical assumptions were already present. Reflexive thematic analysis (Clarke & Braun, 2021) was most relevant because it allowed for a combined inductive and deductive approach by accommodating a mixture of epistemological positions. This is discussed in more detail next.

Reflective Thematic Analysis (RTA) is a refinement of the thematic analysis (TA) method, considered appropriate for both interview and focus group generated data (Braun et al., Clarke

& Weate 2016). TA is widely used and understood in clinical research (Braun, 2022) and so is helpful in making the findings of the present research accessible to clinical researchers. However, the primary reason for selecting RTA for the present research was its flexibility to approach data both inductively and deductively. This was necessary given the epistemological positioning of the research was to explore the relevance of a theoretical framework without de-prioritising what was important to the participants themselves. This acknowledges individual meaning-making (an essentialist approach) alongside the contextual contribution to meaning through individuals interacting with the social, cultural or environmental (social constructionist). Social constructionism allows for multiple versions of reality rather than one single truth (Gergen, 2015). Braun and Clarke (2013, 2021) have noted that RTA enables a *contextualist* approach where it is not possible to separate individual meaning-making from the contexts individuals live in Pepper (1942); Tebes (2005). It should be apparent that such an approach is highly relevant to applying the social identity approach to health, concerned as SIAH is with the impact of valued social groups on individual cognitions and behaviours. Furthermore, the models of appraisal reviewed in Chapter 2 (SAC and CSM) make clear the influence of both personal and environmental factors on threat appraisal. A contextualist approach has previously been used in SIAH qualitative research with vulnerable populations such as immigration detainees (Këllezi et al., 2019) and survivors of communist dictatorship (Këllezi et al., 2021). Both papers refer to 'theory-driven thematic analysis' as they pre-date Clarke and Braun's (2021) refinement of TA as reflexive. RTA is therefore, an ideal analysis method to facilitate understanding of patterns of individual meaning within a theoretical framework while staying open to 'unanticipated insights' because the analysis procedure keeps returning to the data (Braun & Clarke 2006, p96). It should be noted that this dual inductive/deductive approach was applied to the order of questioning for data generation during Study 2. Participants were encouraged to tell their story first, without too much prompting, allowing inductive data generation. Subsequent probe questions and further topic guide questions were constructed around theory, for deductive data generation.

3.3.2 Reliability and validity

One further key point is that RTA regards the subjectivity of the researcher as an asset rather than a prospective source of bias (Clarke & Braun, 2021). **Analysis is an active process which produces knowledge** through conscious choices which are necessarily informed by the researcher's position regarding the data and theoretical influences. (Braun, Clarke & Weate, 2016). Since this is counter to positivist approaches which seek to contain the researcher's positioning and experience as 'bias', evaluating reliability and validity of qualitative findings must be addressed. To do this, the analytical procedure is described in detail below and a reflexivity section notes key aspects of the author's positioning and experience, acknowledging that these contributed to the construction of meaning from the data. In addition, further checks of the confirmability of interpretation of the data were made in two ways. By sharing a proportion of the data with other members of the ROWTATE (RL) and supervisory teams (BK) and by presenting preliminary findings to the ROWTATE PPI (Public and Patient Involvement) team and to practitioner groups (case managers and occupational therapists) for discussion and feedback. This second step was particularly relevant to understanding the practical contexts to which the research findings might be applied.

3.3.3 Data analysis method

RTA follows a clearly defined six stage procedure that was first proposed by Braun and Clarke and recently refined further by them (2006, 2021). The process identifies and iteratively tests patterns of meaning by returning to the data again and again. RTA is a reflexive, iterative process, with movement back and forth between stages (Braun et al., 2016). Steps 1 and 2 overlap with each other, as do steps 3-6. Theme development is not rushed, but built upon systematic and rigorous coding Braun et al., (2016) then revisiting data pertaining to proposed themes. The purpose of each of the stages is described below, drawing particularly on Braun et al. (2016) and Clarke & Braun (2021), then describing the author's operationalisation of the process within the present research. The three studies were approached discretely, with no overlap between any of the analyses.

3.3.3.1 Stage 1: Familiarisation with the dataset

Clarke and Braun describe familiarisation as “immersion” in the data (2021, p35). This stage allowed the researcher to understand the content of the data and make initial analytic observations about how participants made sense of their experiences.

All interviews and focus groups were audio recorded and the recordings transcribed verbatim. The author made handwritten field notes during data generation which were reviewed as part of familiarisation. Familiarisation was composed of listening to audio while reading transcripts; listening while actively transcribing (Study 2) or checking automated transcripts; listening to audio while reading notes made during data generation. During familiarisation, prospective codes were noted, with the research aims in mind. These prospective codes responded to the data inductively, but also with reference to theoretically relevant aspects of the data.

3.3.3.2 Stage 2: Coding

Coding involved systematic and rigorous labelling of anything in the data which was of interest to the research aims. Coding was at the *semantic* or explicit level of meaning and the *latent* level where meaning was implicit or conceptual. When coding was complete, the relevant extracts were collated together to aid the next stages.

Given the dual inductive and deductive approach to the data, codes were not specified in advance. Instead, an initial set of codes was prepared from the familiarisation stage and adapted in response to the first few transcripts that were coded, in each case. Coding was carried out in Nvivo software, version 10 while listening to the relevant audio recordings. Coding was semantic and latent, concerned with meanings constructed by the participants but also related to the theoretical frameworks highlighted in Chapter 2. After a small number of cases (participant transcripts) had been coded, the codes were reviewed for overlapping concepts and the first few transcripts revisited to check consistency of coding. After the full data corpus (in each study) had been coded once, the data within each code was reviewed in Nvivo. Key aspects were collated in a separate table (not in Nvivo) and a preliminary description was written to capture the essence of each code.

3.3.3.3 Stage 3: Generating initial themes

Prospective or candidate themes were identified by clustering codes together which shared some meaning or had the potential to provide an answer to the research questions. Once codes had been collated their associated data extracts were collated into a new grouping.

Related codes were clustered together in a table in Word, looking for shared patterns of meaning while considering the research aims. Extracts with overlapping codes in particular were carefully checked. Codes with most relevance to the research aims were noted. Patterns which extended across the majority of the data were paid the most attention. This was assessed by reviewing the frequency of codes and number of cases they were coded to in Nvivo. Prospective relationships between codes were mind-mapped freehand.

3.3.3.4 Stage 4: Developing and reviewing themes

In this stage the data associated with each candidate theme was reviewed. The researcher checked for the coherence of the different extracts such that everything collated could be understood to have a central organising concept. Revision of the candidate themes often occurred at this point. Relationships between themes were also considered, and care was taken to interrogate the boundaries between themes to ensure that each theme was distinct from other themes. Themes began to be organised into overarching themes with subthemes which illustrated facets of the central organising concept.

New nodes were created in Nvivo per candidate theme and relevant extracts from the clustered codes were recoded to them to collate relevant data by candidate theme. By reading through all the extracts associated with a candidate theme, the central organising concept was pinpointed. Where there was overlap between themes, some revision was made. A narrative was described to explain the relationship between the themes. At this stage, the analysis so far was shared with the supervisory team for discussion. This was illustrated with selected illustrative extracts. This discussion sought to bring together the inductively derived material with underpinning theoretical framework.

3.3.3.5 Stage 5: Refining, defining and naming themes

In this stage, the story told by the data was considered. Writing theme synopses helped with this. The naming of themes aimed to capture the essence of the theme, clearly communicating the demarcation between themes.

After discussion with the supervisory team, drafting of the report began around the themes and subthemes which had been agreed as most relevant to the research aims. Several codes were left out in order to distil the most relevant response to the research aims. Attention was also paid to extracts which were contradictory to the candidate themes. Final decisions about the most relevant extracts to illustrate each theme were made during this stage.

3.3.3.6 Stage 6: Writing up

Writing the story of the data in report form was iterative, beginning in Stage 3. Final choices about which quotes best illustrated the report were made. Extracts were used to illustrate analytic claims and the analysis was contextualised in relation to existing literature.

The most relevant analyses for each extract were described and this was immediately related to the literature. Data extracts were edited for brevity where necessary, and excerpts indicated with ellipses […]. Each extract was identified by a pseudonym with key demographic characteristics (which varied by stakeholder type). Any extracts that were omitted were collated separately as additional supporting data which could be used if required, e.g. as supplementary data for publication. The material was presented to audiences outside the research and supervisory team before each study report was finalised. This provided valuable participant and stakeholder checking and aided narrative development.

In each empirical chapter, the results are presented in combination with the discussion in order to more clearly link each point of discussion with relevant theoretical and empirical points. This strategy has been used by other theoretically guided RTA research (e.g. Këllezi et al., 2019) to more explicitly link the interpretation of extracts with the guiding theoretical and empirical framework.

3.3.4 Research team and reflexivity

Central to RTA is the understanding that data is co-created through the meeting of the interviewer and interviewee's life experience and positioning relative to the topic (Braun & Clarke, 2019). This co-construction means the researcher must be continually reflexive to recognise the lenses they and their participants interpret through. The author's experience and positioning is described below for clarity on this issue. In addition, further to COREQ guidelines (Tong et al., 2007) an overview of researcher characteristics in the wider ROWTATE and supervisory teams is also provided.

3.3.4.1 KB was the primary researcher

I had no experience of injury research prior to working as a Research Assistant on the ROWTATE study. At the time of joining the study in 2018 I had recently graduated from an MSc Psychology conversion where I had specialised in trauma psychology topics at every opportunity. This was preceded by 12 years' experience of working with vulnerable groups including children and young people in public care. I brought a focus on social justice from that previous work to my psychological retraining, so I was alert to the contribution of social context to psychological responses to extreme events. Through the Psychology of Trauma module at Nottingham Trent University during my MSc, I learnt about the social identity approach to health (SIAH) and on reflection, this background knowledge contributed to the early questions I was asking myself about the ROWTATE data as I generated this alongside JK. As a white British, able-bodied female in my forties during data generation, I recognised I had more common ground with some injury survivors than others and no personal experience of the level of impairments some participants were still experiencing. Therefore, I was careful to check meaning with probe questions during interviewing. At the beginning of data generation I considered myself to have no experience of injury, having never been hospitalised for it (an inclusion criteria for survivor sampling), but I later recalled two road traffic collisions and the impact these had on me emotionally. Throughout doctoral studies I moved towards a point of view that the clinical diagnosis and medicalisation of psychological responses to extreme events was missing critical social context in the construction of survivor responses. To balance this perspective, I have been careful to present my findings to audiences outside those which potentially share my perspective (e.g. psychology and SIAH) to check their relevance, e.g. with lived experience, clinical and compensation networks.

3.3.4.2 Colleagues during data generation (Studies 1 and 3)

Within the ROWTATE study, the other focus group facilitator/interviewer (JK) was also white, British and able-bodied. JK was a research fellow (PhD) with expertise in neuroscience, brain injury and clinical implementation. Interviews were carried out by KB and JK

During data generation KB and JK were under the supervision of DK and KR, the Chief Investigators on the ROWTATE study. Both held professorial roles in the Medical School at University of Nottingham, DK in primary care with experience as a General Practitioner, KR in rehabilitation with experience as an Occupational Therapist. DK and KR provided some supervisory feedback on planning, preliminary findings and thesis chapters.

RL joined the ROWTATE team after the generation of data for Studies 1 and 3 had concluded. A psychology (BSc) and rehabilitation psychology (MSc) graduate and a white, able-bodied woman, she brought lived experience of caring for her parents with disability as both had spinal cord injuries and had been wheelchair users since before her birth. RL provided an informed opinion of injury and recovery through her work on the study but had no experience of social identity theory.

3.3.4.3 Supervision team at Nottingham Trent University

BK was Director of Studies throughout. MR was second supervisor for years 1 to 3. Danai Serfioti replaced MR for year 4.

BK, a white, female, able-bodied Research Psychologist worked as a Programme Manager on the ROWTATE study while also conducting trauma psychology research at NTU. Significantly, BK’s research uses the SIAH. BK had extensive experience of interviewing research participants with experience of traumatic or extreme events and was available for debriefing if concerns were raised about researcher or participant wellbeing.

MR, a white, male, able-bodied Research Psychologist worked part time in the NHS as a Clinical Psychologist supporting cancer patients. His research did not draw on the SIAH.

DS, a white, female, able-bodied Research Psychologist is qualified in Occupational Psychology and has researched in trauma affected populations including military veterans.

3.4 ETHICAL CONCERNS AND PROCEDURES

Data generation for Studies 1 and 3 was conducted following ethical approval from University of Nottingham Faculty of Medicine and Health Sciences Research Ethics Committee (Ref: FMHS 150-1811) and NHS Research Ethics Committee approval was gained later from Leicester South REC (Ref 19/EM/0114). These ethics applications were subject to stringent Good Clinical Practice (GCP) guidelines for which the author completed a full day in person training course and subsequent online refresher (see certificates in Appendix section IV). Training included guidance on the process of gaining informed consent to participate in research. ROWTATE procedures which were ethically approved included sampling through existing contacts using an invitation flyer, a Participant Information Sheet and pre-participation completion of a Consent Form (see copies in *Appendices I to III*). Pre consent information for trauma survivors mentioned a £20 participation voucher and travel reimbursements where appropriate. The ROWTATE study did not provide a Debrief sheet but highlighted appropriate support resources by email when sharing the participant copy of the Consent Form after participation. Subsequent approval to analyse the data again for the present research at Nottingham Trent University was not required.

Ethical approval to carry out Study 2 was granted In December 2020 by Nottingham Trent University's Business, Law and Social Science Research Ethics Committee (BLSS REC). Relevant documents are available in the *Appendix Section IV*. Psychological research in the UK follows ethical standards published by the British Psychological Society guidelines (Oates et al., 2021). Analysis of Study 1 and 3 data and Study 2 data generation and analysis were informed by the BPS research ethics standards regarding: *respect, competence, responsibility* and *integrity*.

The primary ethical concern for the research pertained to data generation, recognising the potential for emotional distress to participants in reflecting on their traumatic injury. Strategies for the management of this touched on all four aspects of the BPS standards. Respect for participants included their right to be treated with compassion and empathy, by a *competent* researcher. The information sheet highlighted the possibility of questions triggering participant distress. The author had experience of interviewing injury survivors from the ROWTATE study and continued to seek out and attend NTU and UoN workshops on dealing with distressed participants. This included a session with a Clinical Psychologist experienced in supporting a Major Trauma ward. During each Study 2 interview preamble, the researcher noted and normalised the possibility of the participant feeling distress, noting that the participant could suspend or discontinue by their own preference. Since interviewing was remote, the researcher also checked whether the participant had a trusted person with whom they could talk about any distress afterwards. Throughout, participants were monitored for distress, offering a break if desired. A number of participants did become upset while being interviewed, but all opted to continue. In fact, several participants noted the wellbeing benefits of talking about their recovery journey during the interviews. The researcher also clearly communicated that they had no training in counselling when responding to any participant distress (professional boundaries are part of the BPS standards of integrity). Within 24 hours of each Study 2 interview, each participant was emailed a Debrief sheet (*Appendix II.g.*) including links to possible sources of support. Regarding the right to confidentiality, the terms of extract anonymisation and data storage were clearly stated and agreed through the informed consent process (*Appendix II.d.*). The researcher recognised that her position as a university based researcher accorded her power and influence which might have affected her participants. Participants were assured of the importance of their lived experience contribution to the interviewer's research while being realistic about the length of time it could take for research findings to influence practice. A few Study 2 participants attempted to refuse the £20 voucher (noting their satisfaction at being able to help others as sufficient reward) but the researcher persisted, stating the importance of offering symbolic compensation to respect the time commitment involved.

Each of the empirical chapters reporting the 3 studies (Chapters 4, 5 and 7) contain methods sections presenting more detailed information on recruitment strategies, participant characteristics, study and materials design and analytic procedure. The relevant recruitment documents are saved in the *Appendices I to III*, collated by study.

CHAPTER 4: Empirical Study 1: Trauma Survivor study 1

This first empirical study was a reflexive thematic analysis of qualitative data from interviews and focus groups with traumatic injury survivors. The overall purpose of the study was exploratory. Inductively, it aimed to explore psychological response to injury. Deductively it explored if any of the psycho-social mechanisms at work could be understood in terms of the theoretical framework detailed in Chapter 2, i.e. social identity contributions to appraisals.

4.1 STUDY RATIONALE

Despite there being an empirical link between the experience of traumatic injury and subsequent psychological distress (Kendrick et al., 2018; Wiseman et al., 2013) there is still a lack of understanding about what contributes to this distress. The link between injury severity and psychological outcomes is inconsistent (Heron-Delaney et al., 2013; Hobbs, 2015; Sareen et al., 2013). Predictors in previous research have been notably heterogeneous, both regarding the incidence of psychological distress and RTW outcomes following injury, as noted in Chapter 1. Given that the majority of traumatic injury research is quantitative and little of it aims to explain psychological outcomes in relation to theory (Wiseman et al., 2013), there is a gap in understanding the reasons why psychological distress arises. It is important to better understand factors contributing to psychological distress not only to improve quality of life for trauma survivors but also because the experience of mental health problems may contribute to delayed return to work (RTW) (Sareen et al., 2013). Sareen et al., (2013) also argued that pre, peri and post injury risk factors for mental health issues should be considered, to take a multi-factor, biopsychosocial approach to psychological outcomes. Such a biopsychosocial approach is also consistent with empirical understanding of variation in psychological responses to traumatic experiences more generally (Muldoon et al., 2019). A subsequent review noted the continued lack of research focused on the lived experience of survivors (White et al, 2019). Qualitative methods informed by a theoretical framework would aid understanding of what predicts distress following injury.

4.1.1 Aims of the study

The aim of the present study was to explore psycho-social mechanisms contributing to psychological response to injury, recovery and readiness to RTW. This was approached through a secondary analysis of lived experience data (data generated by the author without extensive reference to psychological theory). Following a review of prospective theories in Chapter 2, the analytic approach centred on cognitive appraisal processes described by the transactional model of stress appraisal (SAC: Lazarus & Folkman, 1984): primary stressor appraisal, secondary appraisal of coping resources and reappraisals. This was explored inductively (prioritising the lived experience of participants) and deductively, applying existing theoretical and empirical approaches. Theoretical approaches are summarised in the analytical procedure section, below. The analysis sought to address the following aims:

1. Explore trauma survivors' psychological responses to injury and the impact of this on return to work.
2. Explore appraisals of primary threats/stressors, informed by existing schema or representations described by the Common-Sense Model of Representation (CSM).
3. Prospectively explore the relevance of social identity context to cognitive appraisals of stress and coping.

4.2 METHODS

4.2.1 Study Design

Study 1 was a qualitative analysis of data generated using mixed methods: 11 semi-structured interviews and 3 focus groups. Chapter 3 provided an overview of study design for all three studies including the sampling approach and a step-by-step description of the process of reflexive thematic analysis of the data. Details of the ethical procedures and epistemological principles guiding the study are outlined in Chapter 3 in accordance with the COREQ quality assurance checklist (Tong et al., 2007).

4.2.2 Recruitment and Procedure

The sampling strategy was purposive, aiming to gain participants with representative diversity primarily of injury type and employment type, but also age, gender and ethnicity. Trauma survivors were included if they had been working or studying at the point of injury, were aged 18+ and had been admitted to hospital for ≥3 days after an injury. Experience of psychological distress following injury was not an inclusion criteria, but recruitment was not concluded until some survivors affected by psychological distress had been interviewed. The majority of participants (*n*=12) were recruited through two intermediaries each working in one of two charitable organisations supporting survivors of major trauma (Day One and After Trauma). The rest were either PPI (Public and Patient Involvement group) or individuals approached by email through research team contacts. Of those who initially expressed interest, 12 trauma survivors did not participate in the study. Their reasons for declining were not captured. The number of trauma survivors approached by intermediaries who did not respond was not captured.

4.2.3 Participants

17 participants with lived experience of traumatic injury were interviewed (*n*=11) or took part in one of 3 focus groups. Focus groups took place in person in Leeds (2 on different dates) and London (1). All focus groups were small in size (2-3) due to participant cancellations. Focus groups of the preferred size (7-8 participants) were problematic to schedule, since several trauma survivor participants cancelled with less than 48 hours' notice in all three focus groups. This may have been due to the use of a third party for recruitment (perhaps affecting commitment), or because trauma survivors' circumstances (mobility, ongoing treatments etc) reduced their flexibility. Two additional participants joined the first Leeds focus group remotely (by telephone) but this was not a successful approach, due to technical or audibility problems. One of these participants was interviewed (remotely) at a later date. Since focus groups were difficult to schedule, interested participants were offered interviews instead. Two interviews were conducted in person and 9 over the telephone. Interviewing and focus group facilitation was carried out by the author and two others, as detailed in Chapter 3. Baseline data was gathered per participant, including age, injury details including mechanism, employment status at injury.

Sampling aims were met for diversity of injury and employment (see Table 1 where pre-injury job roles have been grouped by International Labour Organisation classifications (ISCO-08: International Labour Organisation, 2012) as an indication of socioeconomic diversity. There was a good range of age and gender representation. Gaining black and Asian minority ethnicity (BAME) participation was more challenging; recruitment was extended to recruit two non-white participants. The length of time since injury varied between 6 months and 14 years, with a mean of 4.87 years. The majority of participants (82%) had returned to work or study following their injury.

Table 4.1

Summary of trauma survivor participant characteristics

Participant characteristic (*n*=17)	overview	Number/Range
Age		27-68 (mean 44)
Gender		Female (*n*=10); Male (*n*=7)
Injury Type	Orthopaedic only = 9 (52.94 %)	Amputation *n*=1 Lower limb injury *n*=5 Pelvic injury *n*=2

		Upper limb injury n=1
	Polytrauma and/or spinal or brain injury = 8 (47.05%) (total affected by brain injury = 5 29.41%)	Polytrauma n=1 Polytrauma incl. TBI n=3 Spinal cord injury n=2 Traumatic Brain Injury (TBI) n=2
Time since injury		6 months to 14 years (mean 4.87 years)
Ethnicity		White British (n=15); Asian (n=1); Black British (n=1)
Employment status at time of injury		Employed (n=11); Self-employed (n=4); Student (n=2)
Pre-injury employment occupation classification (ISCO-08: International Labour Organisation, 2012) and role	ISCO-2: Professionals n=4 (23.52%)	IT Consultant n=1 Finance Consultant n=1 Journalist n=1 Lecturer n=1
	ISCO-3: Technicians and Associate Professionals n=8 (41.17%)	Council Planning Officer n =1 Housing Officer n =1 IT n =1 Nurse n =1 Photographer n =1 Probation Officer n =1 Surveyors n =2
	ISCO-4: Clerical Support Workers n=1 (5.88%)	Secretary n =1
	ISCO-05: Service and Sales Workers n=1 (5.88%)	Animal Care n =1
	ISCO-8: Plant and Machine Operators/Assemblers n=1 (5.88%)	Taxi Driver n =1
		Students n =2
Employment status following injury		Returned to work (n=12) Returned to education (n=2) Not returned to work (n=3)
Vocational rehabilitation		Received VR (n=3); Did not receive VR (n=14)
Recruitment pathway		Recruited through support charity (n=12) PPI member (n=3)

	Other research team contacts (n=2)

4.2.4 Design/Materials

The topic guide was developed by the ROWTATE research team and piloted with a small group of PPI advisors prior to deployment. The questions asked aimed to understand lived experience of injury and the RTW journey, see Table 4.2 for example questions. Probe questions were asked when participants mentioned psychological, emotional or mental health impacts or unmet needs, allowing scope for feeling as well as thinking responses, per Krueger & Casey (2015). Probe questions aimed to better understand the need for additional psychological support, which was relevant to the inclusion of a clinical psychology input in the intervention under development.

Table 4.2

Example interview questions to trauma survivors

Topic area	Example questions
Traumatic physical injury experience and return to work (RTW) journey	• What kind of injury did you have? • How important was getting back to work for you? • At what stage did you realise you were going to have problems getting back to work? • Can you tell me about your journey back to work?
Services available to traumatic injury survivors	• What are the main services you used during your RTW? • Probed: emotional, physical, psychological, vocational, financial needs
Barriers and facilitators to RTW	• What do you think are the barriers to RTW? • Is there any kind of support or help that you didn't get but might have wanted? • Did you get any help from relatives or friends?
Outcomes	• What was important to you long term? • What goals should the RTW intervention hope to achieve?

The full interview schedule is included in *Appendix I.f.*

4.2.5 Analytic Procedure

Audio recordings totalling 834 minutes (mean duration of 51 minutes) were made with participants' consent. Recordings were transcribed verbatim by a professional transcription service and subsequently anonymised to safeguard participants' confidentiality. Transcription accuracy was checked, but transcripts were not returned to participants for correction. Extracts from the data are presented in the analysis using pseudonyms plus age, pre-injury job role and injury. Omitted lines in the extracts are represented with ellipsis […].

Reflexive Thematic Analysis (Clarke & Braun, 2021), was chosen because it can be flexibly applied to incorporate both inductive and deductive approaches. This allowed analysis to be theory driven but also responsive to lived experience themes arising outside the theoretical lens. The deductive approach was informed by theoretical approaches reviewed in Chapter 2. The SAC stress appraisal and coping model (Lazarus & Folkman, 1984) describes cognitive responses to stressors. The focus here was on primary appraisal of the existence of a threat and secondary appraisal of capacity to cope with that threat. The Common-Sense Model (CSM; Leventhal et al.,1998; Meyer et al.,1985) has been used to understand the primary appraisal or 'representation' of health threats, including injuries. Empirical evidence supporting the Common-Sense Model of Representation (Hagger et al., 2017) has indicated that unexplained variations in relationships between appraisal, coping responses and wellbeing outcomes may derive from social context. Social Identity Approach to health theory (SIAH) provides prospective mechanisms for the impact of social context, as described in Chapter 2. For example, the Social Identity Model of Identity Change (SIMIC: Jetten et al., 2009) theorises a threat to social identities during a life transition and this threat is associated with changed access to psychological resources associated with the social identities. This is congruent with the recent application of social identity theory to trauma populations (Muldoon et al., 2019; Griffin et al., 2021).

The analytic method used for the secondary analysis of the data was reflexive thematic analysis (Clarke & Braun, 2021) the six stages of which are described in greater detail in the Methods chapter (3). The stages were: (1) Familiarisation; (2) Coding; (3) Generating initial themes; (4) Reviewing themes; (5) Defining and naming themes; (6) Writing up. Familiarisation with the data was extensive, including a review of field notes made during data generation, listening to audio recordings and reading transcripts while considering the research aims of **exploring psycho-social mechanisms including social identity contributions to primary and secondary appraisal**. Initial codes for the data were developed in response to notes made during familiarisation then discussion with the supervisory team. Codes were applied to the whole dataset using Nvivo software. Inductive coding paid attention to the content of the data regarding psycho-social mechanisms such as triggers for psychological distress or coping strategies. Deductive coding noted topics congruent with previous theory, including the application of health threat representations from the CSM (Leventhal et al., 1998; Meyer et al.,1985), primary and secondary appraisals of threat and coping (Lazarus & Folkman, 1984) and perceived availability of social identity resources such as social support (Haslam et al., 2018). The full coding framework is summarised in *Appendix Table I.g.*

After coding, the content of each code was described and interpreted then discussed with the supervisory team (BK, MR) to agree aspects of the data with the most relevance to the research question (e.g. work group related appraisals of the impact of injury or availability of support). Relationships between codes were explored by the author and codes were grouped into prospective themes. Extracts (from clustered codes) relevant to prospective themes were collated to new Nvivo nodes, then examined to assess the level of fit. This resulted in some shifting of themes and subthemes. Identified themes were written up and their independence, coherence and accuracy in representing the data was discussed with the supervisory team. Preliminary findings were also presented and discussed with the ROWTATE research team, PPI consulting group and practitioners of occupational therapy and case management, testing the relevance of findings. Further refinement of theme names was made at the final write up stage.

4.3 ANALYSIS AND DISCUSSION

Two overarching themes were identified (See Table 4.3) related to the research question which sought to understand psychological responses to injury and the impact of these on RTW. Theme 1 concerned survivors' primary appraisal of stressors or threats associated with the disruption of work through their impairments. Theme 2 addressed trauma survivor secondary appraisals of coping capacity in relation to the perceived availability of social support from their workplace.[11] Results are explored and discussed below with a more complete discussion of the findings of both lived experience studies in Chapter 6.

Table 4.3

Table of themes reported in study 1

Themes	**Subthemes**	
4A	4A.1	Functional impairment threatened work participation

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[11] The richness of the data corpus meant that only analyses specifically relevant to the research question are reported here. Several interacting threats were appraised by participants, a brief description of which is included in Chapter 6. The primary threat spoken about by all trauma survivors concerned the impact of their changed functional capacities on their ability to participate in pre-injury activities. Affected activities included three valued aspects of pre-injury life: work, social connection and close relationships. The latter aspect is not considered in depth here, and social connection is only considered in relation to the work identity.

	Functional impairment appraised through impact on valued work identity	4A.2	Perceived exclusion from work through anticipated stigma
		4A.3	Disrupted sense of purpose
		4A.4	Disrupted or continuity of social connection
4B	**Coping appraisals linked to perceptions of available workplace social support**	4B.1	Availability of instrumental workplace support
		4B.2	Availability of emotional support from the workplace

THEME 4A: Functional impairment appraised through impact on valued work identity

Theme 4A focused on the threat of functional impairment appraised by trauma survivors and its impact on their valued work identity. Impairment to functioning is a quality of life indicator following illness or injury, comprehensively described and defined by the ICF or International Classification of Functioning, Disability and Health (World Health Organisation, 2001). Functional impairment is used here to describe any limitation to body or cognitive function which restricted activity or participation in daily activities, including work[12]. Subtheme 4A.1 (*functional impairment threatened work participation*) concerned the barrier that functional impairments (tangible or invisible) presented to participation in work. Subtheme 4A.2 (*perceived exclusion from work identity*) indicated that the threat of disruption to the work identity was appraised as being potentially stigmatising. The last two subthemes specifically addressed two social identity resources which were disrupted while unable to work: subtheme 4A.3 *Disrupted sense of purpose* and subtheme 4A.4 *Disrupted social connection*. This illustrated that the value of work was understood in social identity resource terms. Together these subthemes highlighted sources of stress that trauma survivors appraised and were coping with while negotiating their RTW.

Subtheme 4A.1: Functional impairment threatened work participation

All participants evaluated the threat of their functional impairments following injury in relation to the impact they had on participation in work. Most participants were speaking retrospectively about their experience of attempting to return to pre-injury work following their injury, with a small number having lost that work and sought an alternative. Many spoke about tangible physical limitations which limited their capacity to carry out specific work tasks, for example:

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[12] The second edition of the ICF was revised to more explicitly differentiate functional impairment from disability (Üstün etl al., 2003). This revision acknowledged the difference between a medical model of disability which seeks to correct impairments as attributes of individuals and the social model of disability which recognises social or environmentally created barriers to participation.

> *"It's office and construction site based. I was still in a leg brace when I went back the first time. They wouldn't let me go out on construction sites, said it might be a health and safety risk"* **John, Surveyor, 31, lower limb injury**

John's physical impairment (using crutches) whilst still healing was an example of a tangible impairment. It was judged by his employer to limit his capacity to safely move around in his usual work environment. This was a barrier to John's participation in work that he had no control over: "*they won't let me*". Functional impairments were not limited to physical capacities to carry out specific work tasks. Survivors were also impacted by less visible limitations e.g.

> *"so a lot of pain and then drugs to manage that pain which have knock-on effects on concentration and stuff. General fatigue"* **Kate, Lecturer, 35, lower limb injury**

Here invisible impairment to concentration through pain and analgesics had implications for Kate's work performance. Other participants spoke also about fatigue and lack of sleep. Both tangible and visible impairments accord with biological or physical factors widely reported as barriers to RTW, summarised in Chapter 1. Some participants experienced these functional impairments only during the convalescent period, for others the impact continued long term, especially for those who had experienced brain or spinal cord injury like Jean.

> *Getting ready for work in the morning took so much — It doesn't take as long now, but yeah, takes so much time. I arrive at work – like I arrived here today – and people don't see what goes on in the lead up to that. So, personal care, the way I manage my bowel and bladder. It takes me longer to get dressed, getting in and out of the car takes longer, finding the right parking. It's pretty much everything.* **Jean, Trainee surveyor, 46, spinal cord injury**

Jean's account highlighted the additional energy expended on personal grooming or getting to work while dealing with her spinal cord injury. This had taken longer earlier on but following her adjustment "*doesn't take as long now*". This additional demand, it was implied, impacted her capacity to do her job. Jean was aware that this was invisible to her colleagues who "*don't see what goes on*" before arrival at work, suggesting a lack of sympathy from colleagues. However Jean did not appear to be telling colleagues about these impacts of impairment. Her reticence may have suggested appraisal of stigma which led her to conceal her less visible struggles, despite her impairment being obvious through wheelchair use. This is interesting because it indicated overlap between physical and social barriers to RTW (reported in reviews discussed in Chapter 1).

Traumatic brain injury survivors in the sample all spoke about invisible functional impairments affecting their work.

> *"Short-term memory, fatigue, making sure I didn't kind of wear myself out because going back from doing kind of nothing and then going back to trying to do the kind of job I have*

> *with all the computers and coding and stuff like that and it was just like – they were just like, "You're brain's going to get overloaded," and I was like, "Yeah, but I want to do it. I'm sat at home."* ***Joe, IT worker, 37, TBI***

Joe (like Jean, above) noted the impact of impairments on overall capacity to participate in his pre-injury work, here: becoming "*overloaded*". He (and his rehabilitation support: "*they*") perceived that his cognitive impairments had diminished his capacity to participate fully in work. Cognitive impairments that interfere with RTW are common following brain injury (Benedictus et al., 2010). The impact of invisible impairments such as pain and fatigue have also been noted to present a 'predominant' barrier to RTW in general injury survivors Gavin et al (2022).

Survivors' motivation to RTW underpinned their evaluation of impairments. Whether functional impairments were short term or enduring, tangible or invisible, survivors all appraised them in relation to their capacity to take part in their pre-injury work role. Returning to work was understood as a desired part of a return to 'normal' functioning following injury. This has been observed in recent sociological injury research in Norway (Andreasssen and Solvang, 2020) where a qualitative approach noted the importance of a return to a "wageworker identity" (p583) as they termed it. This research was not informed by the social identity approach to health, but their findings being framed around 'social identities' is congruent with it. In the present theme, functional impairments appeared to be appraised as a threat to participation in the pre-injury work identity. An application of the Common-Sense Model (CSM) to injury by Shiloh et al., (2018) previously found that the mental health impact of injury was moderated by how much that injury defined identity. Survivors' desire to maintain their work participation suggested motivation to maintain an important or central aspect of their identity (Haslam, 2012). SIMIC informed research has evidenced that loss of a valued identity following a life transition can negatively impact wellbeing (SIMIC: Jetten et al., 2009), e.g. following: retirement from an athletic identity (Haslam, Lam, et al., 2021), or after acquired brain injury (ABI: Muldoon et al., 2019b). The loss of a valued work identity has also been associated with a loss of self-worth or personal meaning in a sample of retiring police officers (Bullock et al., 2020). For injury survivors in the sample, their functional impairments were appraised as a threat to work participation and thus a valued work identity following injury. The wellbeing consequences of which are considered by subsequent subthemes.

One final point which indicated the centrality of the threat posed by functional impairment was a commonly shared coping strategy in the sample. All participants spoke about their focus on physical rehabilitation or regaining functions, for example:

> *"they told me that if you put 100 per cent, you can walk. So I put 110 per cent (laughs)"* **Bisa, Housing Officer, 39, lower limb injury**

> *"frankly, threw a lot of money at going to see a physiotherapist three times a week"* **Julian, Finance Consultant, 65, spinal cord injury**

The CSM model (Leventhal et al., 1998) makes it explicit that coping strategies are responsive to the health threats appraised. The two examples represented the effort that survivors dedicated to regaining their functioning. While some talked in terms of effort, Julian spoke of making a significant financial commitment to physiotherapy. Given both the SAC (Lazarus & Folkman, 1984) and CSM models of stress appraisal recognise the importance of contextual factors in the selection of coping styles, the possible interdependence of functional recovery and participation in the work identity may be related. Within the social identity approach to health, the drive to restore positive identity is considered to be a central motivator (*Identity restoration hypothesis*, Jetten et al, 2017). Here, survivors focused much of their coping response on regaining functioning, perhaps indicating its centrality for regaining participation in the valued work identity.

In summary, subtheme 4A.1 noted that a key threat of functional impairments, appraised by all participants was spoken about in relation to its impact on participation in their valued work identity. While survivors did speak about the impact of their impairments on other social identities, the work identity is particularly pertinent to the present research question. The next subtheme illustrates a separate form of threat to the valued work identity.

Subtheme 4A.2: Perceived exclusion from work through anticipated stigma

The second subtheme focused on trauma survivors' perceptions that their functional impairments might lead to another type of threat: being actively excluded from work. There was awareness of potential stigma associated with impairments. In most cases survivors anticipated exclusion or stigmatising responses, but there were some other actual experiences reported too.

Across the sample, more than half the participants spoke about their injury either in generally stigmatising terms or (more frequently) with the implication that others could view them as stigmatised because of their impairments. What was most consistently spoken about was the perception of having impairments viewed negatively by the workplace:

> *"and the people I work with; it's one of the things, when the people around you know what's happened to you, it makes you nervous to go elsewhere, because you just think, I don't want to go somewhere else and have to explain why I am the way I am. It's the one thing I don't want to do, because people say, you've been there for so long, and I'm like, I can't bear the thought"* **Penny, Secretary, 48, polytrauma TBI**

Penny, whose enduring impairments were largely cognitive, recognised that she had avoided changing employer for a long time, because she didn't want to have to explain "*why I am the way I am*" to new colleagues. Penny anticipated a stigmatised response from new contacts, and this distressed her too much to risk moving job: "*I can't bear the thought*". While she did not speak about being actively excluded from work, she feared a stigmatising response enough to avoid seeking alternative employment. The social identity approach has investigated in depth the psychological impact of being a member of a lower status group, or of having a compromised or burdensome identity (Jetten et al., 2017). Dirth and Branscombe (2018) applied the SIAH to the experience of disability, including acquired disability. They noted that being disabled is widely appraised as a low status identity with negative dominant cultural stereotypes contributing to individuals' experience of stigma. Just as positive social identity is associated with positive health and wellbeing (social cure), a stigmatised social identity may be associated with negative wellbeing impacts or social curse (Këllezi & Reicher, 2012; Wakefield et al., 2019). Penny's reluctance to engage with new colleagues indicated she wanted to minimise such social curse effects.

A small number of survivors reported actual experiences of stigmatising responses to their impairments from their workplace. These were usually subtle, with one notable exception reported by Miriam (Nurse, 57, pelvic injury): "*your team leader calls you a cripple*". Other examples were more nuanced, e.g. for this participant returning to her pre-injury role as a wheelchair user:

> *"it was really, really difficult just sort of facing… not facing but seeing people that I'd known before. They weren't sure what to say. They were sort of tripping over themselves, saying things that were pretty much embarrassing, like, "Watch my toes. Don't run over me," and stuff like that. […] So, I was supported and I was backed up, but it was still really difficult. I had some really odd comments off some of my colleagues as well that I just thought 'I can't believe someone's just said that'. So yeah, it was difficult."*
> ***Jean, Trainee Surveyor, 46, spinal cord injury***

Jean's experience highlighted the awkwardness she perceived in her colleagues' response to her new impairments. She had to "*face*" or deal with her colleagues' "*odd comments"* which made her aware that colleagues now viewed her differently. While this may not have constituted overt ableism, like Miriam's experience, it was still "*difficult… embarrassing*" even acknowledging the presence of colleague support. The experience of potentially stigmatising responses in the present study is corroborated by a systematic review of social factors impacting RTW following injury (White et al., 2019). They noted the experience of hostile or exclusionary reactions from co-workers was a common barrier to RTW. In social identity terms, it has been argued that trauma experience causes positive identities to be weakened (Muldoon, et al., 2019). The present findings are similar to research with acquired brain injury

(ABI) survivors who perceived themselves to be “othered by injury” and to lose valued social identity such as work identity (Muldoon et al., 2019b p1280). In the previous extracts, there is a focus on loss of positive identity through becoming identified with a stigmatised identity through impairment. For Jean, this might even have resulted in exclusion from her previous sense of belonging with colleagues. The following extracts show how survivors perceived this social curse effect might exclude them from working altogether.

Joanne, a student when injured, had spent her whole working life with brain injury related impairments, and was aware that she chose to conceal them only in a work context.

> *“again I don’t know if I did tell them about my accident because I didn’t want to be judged on that […] all the jobs or work I’ve done since I don’t normally talk about it. I just kind of obviously – again, not thinking – because I’m not ashamed about it or anything, I’ll clearly quite happily chat about it. I think because I assume people don’t know anything about it so they don’t know how to react to it.”* ***Joanne, Student, 29, polytrauma and TBI***

Joanne was aware of the way new colleagues might view her impairments and had withheld this information at “*all the jobs*” she had done because she expected a stigmatising response. Joanne’s reasoning for concealment was that people who “*don’t know anything about*” brain injury would ‘judge’ her. She made it clear that she chose to conceal her impairments specifically from the workplace, not in other contexts where she was “*not ashamed*” and would talk about it. This suggested that Joanne appraised stigma responses primarily as a threat to her work identity. She anticipated discrimination, perhaps because of a perception of the pervasiveness or ‘legitimacy’ of exclusionary treatment (Jetten et al., 2013) for people with disabilities, evidenced in social identity literature. Her concealment strategy was a typical individual level strategy described by the social identity approach (Jetten et al., 2017) aiming to safeguard positive social identity threatened by stigma or low status. Concealment of a stigmatised identity (discussed in detail in Chapter 2) is undertaken when the boundaries between ingroup and outgroup are considered to be permeable enough to shift to a higher status group, in this case an able-bodied group.

Where the preceding extracts indicate exclusionary or stigmatising behaviours from colleagues, another participant who chose to conceal his impairments noted an expectation of exclusion from prospective employers.

> *“my typical work profile, I’ll get engaged by fifty days, do some stuff for them, and I don’t, I can’t tell them about the injury until after I’ve delivered something. […] I don’t need to tell them, but I generally have done, but I wouldn’t, I would never volunteer it until I’ve done something. If I’ve delivered something, and I know that they’ve got no reason to worry, but I consider their judgement, I might imagine they might judge me. […] if you’ve got three CVs, they all tick the box as far as the skills, one of them has had an injury that may impact on their work pattern, because your injury, you might have a posttraumatic*

> *stress, and someone who isn't vulnerable to posttraumatic stress you're going to pick* the one who hasn't, isn't vulnerable." **James, IT Consultant, 49, polytrauma plus TBI**

This IT consultant who could not return to his pre-injury role believed that prospective employers and colleagues would view him as being less able to work if they knew about his brain injury: "*they might judge me*". He too chose a concealment strategy until he had proven his capacity to 'deliver'. This account highlights his clear appraisal of threat to his valued work identity. His appraisal of exclusionary responses was relatively pragmatic; he recognised the potential impact of disclosing impairment on his employability and selection processes: "*you're going to pick the one who isn't vulnerable*". His acceptance of this decision making as normative perhaps indicated his own internalisation of ableism in the workplace. Indeed, there is empirical evidence of job offer retraction following disability disclosure, with 17% of people with disabilities sharing this experience in a survey reported by the charity Leonard Cheshire (2019). Dirth and Branscombe have commented on the positioning of people with acquired disabilities as perceiving themselves to have a "*first responsibility*" to "*attempt to be as* ***abled*** *as possible*" as part of individual stigma management strategies (2018, p1307). The ability to conceal relies on perceptions of permeability of ingroup boundaries i.e. that trauma survivors with impairments are able to present themselves as not disabled.

In conclusion, trauma survivors perceived the potential to be excluded from their work identity because of the likelihood of other people's stigmatisation of their functional impairments. The majority anticipated rather than experienced this exclusion, but the appraisal of potential exclusion was sufficient to cause some individuals to conceal their impairments from the workplace. The next two subthemes illustrate some of the psychological cost of exclusion from the work identity.

Subtheme 4A.3: Disrupted Sense of Purpose

Subtheme 4A.3 concerned the apparent disruption of sense of meaning or purpose while unable to work, post injury. The social identity approach to health speaks generically of a 'sense of purpose and meaning' as part of the psychological resources associated with a valued social identity or meaningful group life (Haslam et al., 2018). While the two resources of connection and purpose are considered separately here, it is understood that they impact wellbeing altogether (Greenaway et al., 2016) and that all the individual resources may be mediated through social connection (Haslam et al., 2021).

Returning to work was a clear motivation for all who were interviewed, for example:

> *when I said right, I'm ready to do four days a week now I remember them being like, are you sure that's a good idea? Take some more time if you need it and I was like, no thanks. Seriously, I'll go crazy, I need to up my days now. […] I think I'm very driven by my work, so for me it was about finding normality again and establishing. I've heard a lot about the importance of routine and when you're back into your normal routine, how that can kind of benefit you psychologically. Getting back into that routine, I think would be – I would always advise, unless you've got a job that you've absolutely physically can't do again, I would always advise being able to form some sort of routine when it comes to work. Obviously, career is such a huge part of most people's lives that it kind of gives you a purpose.* ***Helene, Journalist, 28, amputation***

Helene's account highlighted different aspects of meaning and purpose that she derived from work. It was clear that she 'needed' to increase her work hours (following a phased return), for her wellbeing: "*I'll go crazy*". For Helene who noted she was "*driven by my work*", working was equated with "*normality*" and the psychological benefits of "*routine*". The disruption of this while convalescing appeared difficult for her. Perhaps because Helene gained a personal sense of purpose from her career, she projected this on to "*most people's lives*", indicating her understanding of a collectively held belief or societal norm that career gives people "*a purpose*". This perception may have been related to her own experience described as "*career*" rather than a job, implying a long-term focus on building a professional role. Helene had been able to return to her pre-injury job within a year. Another participant had not returned to work and also spoke about work, purpose and wider societal norms:

> *I think it's important to try to get back to work if you can, because it gives you a sense of purpose in your life, which you may feel yourself to be useless and I think it is important to feel you have some use, not just to yourself but to those in society.* **Julian, Finance Consultant, 65, spinal cord injury**

Julian had experienced extensive and enduring injuries which had prevented him from returning to work and he was concerned with his personal value, of having "*some use*" at a societal level. Like Helene, his pre-injury work had been a professional career. The loss of his work identity had disrupted his sense of purpose and this had a negative impact on his own sense of self-worth. The implication was that he appraised that he might be judged by "*society*" against the societal norm of working he perceived. His personal sense of purpose had been lost with his pre-injury role, and this negatively affected his wellbeing.

There are well established links made between employment and wellbeing and also the negative impact of unemployment on wellbeing (Black, 2008; Waddell & Burton, 2006). Furthermore a review of the contribution of work to meaning in life notes that meaning in life is "widely recognised as a cornerstone of wellbeing" (Ward & King, 2017, p 77). However, they also note that meaningfulness in relation to work has not been extensively studied and that the definition of meaning or purpose has varied in research both generically and in relation to work. For example, meaning in work has been viewed in three ways: calling, career or job

(Wrzesniewski et al., 1997). Such variability in defining purpose was evident in the different ways that survivors spoke about their sense of purpose, e.g. as the routine of normal life; as a sense of personal worth; or as societal expectations about work as a meaningful contribution.

For a few participants who could not return to their pre-injury role, there was evidence that they were motivated by a need to restore sense of purpose:

> *I started off my endeavour back to work, it wasn't a planned thing, but I wanted to give myself something to do, it was, a purpose in life as people say, and it started off for me for volunteers, it's a website I want to refer to, there's a place called do-it.org which is like a volunteers website […] I was doing it, not for any end goal […] But still there's some steps towards getting a worthwhile, feeling satisfied with yourself and that you're fulfilled, […] I never imagined I would go back to work, and suddenly it just all happened.*
> ***James, IT Consultant, 49, Polytrauma with TBI***

James had thought he would never work again and wanted to regain his sense of purpose through volunteering. This made him feel "*worthwhile*", "*fulfilled*", "*satisfied with yourself*". He associated having purpose with self-worth. Purpose had been lost with his job, but he found he could restore this through voluntary work. The motivation to restore a positive identity is a central social identity hypothesis, albeit mostly studied in an intergroup context (identity restoration hypothesis: Jetten et al., 2017). Here it was clear that purpose was part of the psychological resources survivors gained through working. In the wider injury literature there are empirical indications of the importance of work for purpose and identity, e.g. marines with disrupted careers viewing progress towards a new career as conferring "meaning and purpose through work" (Haynie & Shepherd, 2011, p510) or in the prioritisation of "regaining purpose and identity through work" (Gavin et al., 2022, p3) as a rehabilitation goal.

One final extract further indicated the negative psychological impact of loss of purpose while unable to work following injury:

> *Part of the reason I got so down was like it's that sense of worth, you know, sense of achievement. Because I worked in a job that I love and I'm passionate about it and I really enjoy it. And when you've not got that I just felt like I didn't really have a purpose. […] Well you've got physical restrictions haven't you? For me, that feeling of self-worth. I always think, and I always think I've got mates that are tradesman and stuff. And I always think if they had this accident and they had to change their trade, or it affected their income because they don't get sick pay or stuff like that, mentally like well effectively socially, you can't afford to do anything. It affects you mentally because you lose that sense of self-worth, you can't support your family and that affects your relationships. It literally affects everything. So I think if an injury were that bad to change your trade or what you do for a living, I think that would massively affect everything about your life.* ***Sam, 32, Council Planning Officer, lower limb injury***

Sam noted that not being able to work, even in the short term impacted his mood "*I got so down*" through his "*sense of worth*". For him, self-worth was directly related to his "*achievement*" through a "*job that I love*", and he made a straightforward link between his wellbeing and this loss while he was unable to work. The same connection between the erosion of self-worth and the loss of work-associated "goals and values" has been observed in retiring police officers, some of whom had been forced to retire due to injury (Bullock et al., 2020, p1128). Sam also considered how self-worth could be negatively affected through the impact of loss of earnings on family relationships, hypothesising about friends with physical jobs "*tradesmen*" who were self-employed and didn't have access to sick pay. He noted that this "*affects everything*" including being unable to contribute financially to family and relationships. His observation implied another work-related sense of purpose (financial contribution to family) that could be disrupted. Other participants recognised this associated threat to family roles too and there is some precedent in the social identity literature applied to brain injury. An interaction between work and family identities has previously been noted following brain injury, although this focused on social support (Walsh et al., 2015; Walsh et al., 2017). They explained that the availability of support through family identity *scaffolded* brain injury survivors' ability to participate in other social identities. In the present sample, threat to the work identity was understood as negatively impacting survivors' self-worth when no longer able to financially support close relationships.

In conclusion, survivors associated their work with a sense of meaning or purpose, and when this was disrupted while unable to work (short or long term) this had a negative impact on wellbeing. Survivor understandings of work-related sense of purpose did not map precisely onto the generic social identity definition of shared meaning and purpose as a psychological resource. Rather they indicated that purpose through participation in the work identity was a source of individual self-worth, as per the social cure approach (Haslam et al., 2018). Next, another disrupted social identity resource will be considered: social connection.

Subtheme 4A.4: Disruption or continuity of social connection

A second psychological resource that was consistently noted as being disrupted while unable to work following injury was social connection. Social connection is another psychological resource conferred by valued social identities (Jetten et al., 2017) within the SIAH. Many participants commented on a loss of social connection during the convalescent period associated with lack of mobility following hospital discharge e.g.:

> *You're sort of a prisoner in the house. I remember those, especially when family went on holiday, I was just sat there. They'd all got holidays booked at the same time, my husband was working, and from first thing in the morning until he came home at night, I was on my own for a spell, and those two weeks were just dreadful. The psychological bit, I felt it more that first - them two weeks. I'll never forget them two weeks. They were dreadful to me.* **Molly, Animal care, 64, lower limb injury**

For Molly, the negative psychological impact of being socially isolated was clear: "*just dreadful. The psychological bit*". This lack of social connection affected all aspects of her life. There was a loss of control implied, being "*a prisoner*" through lost mobility, and separated from social contexts outside the home. When this coincided with family absence, the impact was "*dreadful*". There is a strong empirical link between depression and social isolation (Cruwys et al., 2014), discussed in Chapter 2. While Molly was not specific about her state of mind, her strong words implied the negative impact being alone had on her. Furthermore, since social connection is argued to be the mediating factor for other social identity resources (Haslam et al., 2021), a lack of social connection seems likely to prevent access to needed coping resources including social support.

With this general experience of social isolation while convalescing, it was unsurprising that regaining social connection was a motivator for survivors' RTW:

> *So, anxiety played a massive part in going back to work, massive. Every day I'd turn up feeling anxious, just self-conscious, anxious, unwell, but wanting to do it. I didn't want to be in the house on my own. I lived with my parents and they were out at work, so I didn't want to be in the house on my own. But then I got to work, and I didn't want to be at work either (laughs). So it was sort of like the lesser of two evils, in a way. […] also to then find something to keep yourself occupied because, for me, isolation was the killer. […] So, isolation is a definite thing and, whatever your disability is, or condition, however you want to phrase it – this is just my belief – as human beings, we are not designed for solitary confinement. Yeah, it's great if we can enjoy our own company, but we've all got a limit. And especially when you combine that with grieving the old me.* ***Jean, Trainee surveyor, 46, spinal cord injury***

Jean's choice of words expressed similar sources of distress to Molly. There was the stress of isolation: "*isolation was the killer*", and the prison/punishment connotation: "*solitary confinement*". However, Jean explicitly focused on returning to work as a solution to her social isolation. Even though going to work was also psychologically challenging: "*self-conscious, anxious*", it was "*the lesser of two evils*". She needed social contact, generalising this as a human need for social connection. The importance of social connection for mental health was noted above. It has been linked to physical health as well with a major meta-analytic review identifying social connectedness as the largest contributor to reducing mortality risk (Holt-Lunstad et al., 2010). There was also a hint that Jean sought social connection to support her wellbeing while "*grieving the old me*", this is in tune with Haslam et al.'s (2021) argument that social support is mediated through social connection.

There was more to survivors' RTW motivation than a desire to simply negate social isolation. A high value was placed on continuity of social connection with the work identity and all the benefits that come with it.

> *I want to go back to work because I want again to mix up with the people I left, you know, so I want to join that crew again you know. So hopefully and cross fingers a family, you know. […] I think it's because a workplace like I told you, it's like my family, so that's why everybody wants to go back with your family, you know.* ***Ismail, Taxi Driver, 45, pelvic injury***

Ismail's words indicated that work was a valued social identity "*I want to join that crew again*" with whom he identified strongly: "*it's like my family*". His vivid description of wanting to "*mix up with the people I left*" indicated he appraised intrinsic value in being with his colleagues again. His RTW motivation was not simply to distract himself from the stress of isolation. Social interaction as a motivator for returning to work has been noted in injury rehabilitation literature (Gavin et al., 2022; White et al., 2019) and social connectedness was identified as rehabilitation priority for people with severe ABI (Martin, Levack & Sinnott, 2015). This desire for continuity of the workplace identity through maintained connection is in tune with the SIMIC theory (Jetten et al., 2009) which argues that maintained group membership is protective of psychological wellbeing during a life transition. The protective nature of maintaining group memberships has been shown hypothetically through an experimental study (buffering the stress of a health diagnosis: Praharso et al., 2017) and in a sample of retired police officers whose wellbeing suffered when dislocated from their colleagues (Bullock et al., 2020). The present study indicates that injury survivors' were motivated to maintain social connection for the sake of their wellbeing.

Furthermore, continued workplace social connection did help several participants to cope with the stress of their injury. For example, John talked about his work team:

> *"They came and visited me in hospital and I couldn't have been more grateful. […] I think if I didn't have that it would have been a lot harder"* ***John, Surveyor, 31, lower limb injury***

John was not specific about how this connection with work colleagues helped, but his gratitude was clear. Being visited by his colleagues seemed to contribute to his wellbeing, and he appraised that without it his experience would have been "*harder*". This seemed again to suggest that with social connection came social support, but deeper understanding of the mechanism of this for John was not forthcoming. The finding is congruent with a systematic review of social context barriers and facilitators to RTW which noted that good communication with the workplace was a key facilitator (White et al., 2019).

Another survivor's reflection on both the presence and absence of social connection from work provided a little more insight:

> *If I think of people from the top, like after my manager, I didn't get a phone call from them or anything, how are you feeling, nothing. […] we're sorry you had the injury, how are you feeling? You know, it will make you feel better, you feel you're part of them, in a way*

> *you're sort of a family, but then I didn't get anything of that, but then it was just my line manager who was checking up on me to see if I'm okay, but not anyone from the top above, no one.* ***Bisa, Housing Officer, 39, lower limb injury***

Bisa noted the value of her work identity as "*sort of a family"* and described the effect on her wellbeing of a lack of communication from senior colleagues. For her a 'phone call would have affirmed identity continuity "*you're part of them*" through their expression of care of her. Instead she perceived a lack of care, and by association, this undermined her sense of the continuity of her work identity. This was congruent with the protective nature of maintaining valued social identities described by the SIMIC theory (Jetten et al., 2009). SIMIC model research has focused on wellbeing predictors of the: number and maintenance of groups pre-life transition and compatibility of old and new identities. The present finding suggests that the maintenance of social connection with the work identity may be a specific mechanism supporting wellbeing.

In summary, the disruption of social connection holistically was distressing to trauma survivors and they sought to maintain social connection with their workplace to support wellbeing. While regaining social connection was in part a reaction to the pain of overall social isolation, social connection was also clearly part of the value of the work identity. The specific benefits of maintaining social connection with the workplace were not spoken about uniformly, but given the data was generated without a specific focus on social identity processes, this is understandable but warrants further investigation.

Theme 4A summary

To conclude the first theme's investigation of primary threat appraisal, the threat of functional impairments directly contributed to a work identity threat which negatively affected psychological wellbeing. The threat to work identity came through two routes: first capacity to work and second through the anticipation of exclusion from work through perceived disability stigma. Participants appraised the value of work through two psychological resources which have been linked to social identity: purpose and social connection. Both resources were disrupted while survivors could not work, and motivation to RTW was directly spoken about in relation to maintaining or regaining these two resources. Theme 4.1 indicated that social identity contributed to primary threat appraisal (work identity) and secondary appraisal of available psychological resources (purpose and social connection). The social identity threat described by the SIMIC model (Jetten et al., 2009) has been previously evidenced in brain injury patients (e.g. Muldoon et al., 2019b). The present study indicated this might affect survivors of other types of injury.

THEME 4B Coping appraisals linked to perceptions of available workplace support

Theme two focused on the secondary appraisal of capacity to cope, linked to survivors' perception of coping resources available from the workplace. This theme focused particularly on a third psychological resource understood to be associated with valued social identities: social support.

In the present sample, the majority of participants reported their perception of having been well supported in general. While it is acknowledged that a more holistic context for social support existed in the data[13], the present analysis focused in on social support from the workplace. Participants spoke about the support that had helped them to successfully RTW which was a marker of recovery for all trauma survivors in the sample. A few reflected on a perceived lack of workplace support. Inductive coding identified two separate types of social support in the data: material or *instrumental support* (theme 4B.1) and *emotional support* (4B.2). Within social identity literature, social support has only rarely been differentiated in this way (Drury et al., 2016). A systematic review considering social support and social integration factors implicated in RTW outcomes after a workplace injury proposed five subdivisions of social support (White et al. ref). However theoretical subdivisions between instrumental and emotional are common in social support research (Semmer et al., 2008; Zimet et al., 1988; Frisch, 2014).

Subtheme 4B.1 Availability of Instrumental support from the workplace

Most of the sample spoke positively about receiving instrumental, material or practical support from the workplace. They spoke about this in the context of their desired RTW, which was a key part of how they framed their recovery. Many participants made a clear link between support received and their capacity to RTW:

> *"I've recovered well and gone back into work fast. I've had a load of support."* ***Joe, IT worker, 37 with TBI***

Joe clearly appraised recovery and RTW as being associated and he connected his recovery with having been well supported. The majority of participants made positive appraisals of being supported in their desired RTW and many indicated different types of instrumental support, most of which were mentioned by Sam:

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[13] Social support was spoken of as coming from wider sources than just the work identity: "*I've got a great network of family and friends. My wife was absolutely fantastic, my parents were, my in-laws were, quite a few of my friends were*" (John, Quantity Surveyor, 31, lower limb injury). The availability of support from other sources was noted (as in previous ABI research: Walsh et al., 2015) as contributing to capacity to RTW: "*all that network around me. That helped me get back to work*" (Sam, Planning Officer, 32, lower limb injury)

> *And then work came and saw me, the team – I've got a good team, and basically I said, I want to come back to work but I can't do probably 40% of my job, because that needed me to move around and be mobile and all that sort of stuff. So work made adaptations that meant that I could return to work full-time, I didn't do any phased return or anything… […] I've always been quite a positive person, but I just think it's just been support around me, work being good. And I think probably without knowing the adaptations they made and the way the old team have - without making it sound like I'm a burden, have changed their work to give me more of their desk-based work and they do more my training and exercises and stuff, they made that really easy for me. […] I know that if I asked him for something else like an adaptation, like I don't know, a different chair or a foot rest, I know that he'd do it for me, he'd get me it. […] I have fantastic support […] and the amount of sick pay, flexible working and understanding. You know, my boss gets it.* ***Sam, Council Planning Officer, 32, lower limb injury***

Sam here spoke about different types of instrumental support made available by his workplace. The "*adaptations*" provided allowed Sam to go back to work full time without a phased return stage. There were material supports, task sharing with his colleagues changing "*their work to give me more of the desk-based work*", and "*flexible working*". Sam's gratitude for this instrumental support was evident, and while he attributed some of his coping to being a "*positive person*" he still associated his positive coping capacity with work support: "*it's just been support around me, work being good*". Furthermore, Sam noted that his colleagues took a collective approach to diminishing his barriers to work participation "*we shuffled stuff around in the team*". This demonstrated *collective efficacy*, or working together to deal with challenges, another social identity resource (Haslam et al., 2018). Collective efficacy has previously been associated with workplace social support, e.g. in a study of schoolteachers which noted an association between shared work identity, perceived social support and collective self-efficacy (Avanzi et al., 2015), the finding later affirmed longitudinally (Junker et al., 2018). Sam's positive appraisals of coping appeared to be strongly connected with his perception of available support from his "*good team*" at work. This again, is congruent with wider social identity literature hypotheses about the perceived availability of social support within a *shared* social identity (*Social support hypothesis*: Jetten et al., 2017): part of the social cure. Sam's account also indicated that his positive appraisals of coping were related to colleagues *understanding* his needs: "*the amount of flexible working and understanding. You know, my boss gets it*". This is congruent with a recent addition to the social identity approach: *felt understanding*, another prospective mechanism for the social cure (Livingstone et al., 2020). Outside the social identity approach, Semmer et al. have acknowledged that instrumental support transactions in the workplace may be associated with a symbolic "emotional meaning" such as communicating caring, esteem or understanding (2008, p237) This one trauma survivor account indicated the potential for several social identity resources to interact (as noted by Greenaway et al., 2016) when workplace support was available

Another participant made a clear differentiation between instrumental support and anticipated emotional support:

> *They gave me a parking space outside the office, which, yeah, that was really helpful actually because it meant that I knew that someone wasn't going to park directly next to me and me not be able to get my chair in and out. To start with, I guess if I needed to go home, I could just let someone know and I could just go. I was having a lot of problems with my bladder – I was having accidents and stuff – so there were occasions where I'd just say to someone, "I've got to go home." So there were definitely allowances made for me, but support? I don't think I received much support.* ***Jean, Trainee surveyor, 46, spinal cord injury***

Jean as a new wheelchair user recognised instrumental support as material help and flexibility from her pre-injury workplace, e.g. "*allowances made*", suggesting some grudging flexibility when she wanted a deeper kind of support. She did not seem to appraise emotional support to be available "*I don't think I received much support*", possibly inferring the absence of the *understanding* discussed above. The next extract indicated that some participants attributed the availability of instrumental support to pre-injury workplace history.

> *my workplace was very, very, very supportive. I'd been working there for most of my life really. I've done bits of summer stuff and then slowly I've progressed my career at that place and I've done a lot of overtime and bits, so they were fine. They were absolutely really good with it.* ***Joe, IT Worker, 37, TBI***

Joe's comments implied that he attributed the availability of workplace support to a sense of reciprocity for time served. In exchange for "*most of my life*" working for the company and doing "*a lot of overtime*", he had received "*very, very, very*" good support. This appraisal fitted with a central argument in the social identity approach, namely that the extent to which people identify with a given group influences the positive expectation of receiving support (Social Support hypothesis, Jetten et al., 2017). Survivors' expectations of instrumental support and thus appraisals of capacity to cope may well be responsive to how strongly they identified with their workplace or work identity.

While the majority of the trauma survivors who participated in the sample did perceive themselves to have received workplace support, a few did not. Empirically, the high level of support in this sample may have been unusual. A systematic review of the relationship between social support and worker recovery found lack of ongoing support to be a common barrier to RTW (White et al., 2019) following work related injury.

In summary, the way survivors appraised available workplace instrumental support in subtheme 4.2.1 suggested greater complexity than the present data was able to confirm. Perceived instrumental support from the workplace was associated with positive appraisals of coping, largely in relation to capacity to RTW as part of the recovery. However, the appraisal of both availability and meaning of support seemed to be invested with emotional meanings (Semmer et al. (2008). These emotional meanings could include social identity concepts like ‘felt understanding’ as an indicator of belonging, but also identification or collective efficacy. The next subtheme examines the way emotional support was spoken about by survivors.

Subtheme 4B.2 Availability of emotional support from the workplace

During data analysis, emotional support received from the workplace was (inductively) coded separately to instrumental support, despite there being some crossover. Semmer et al. (2008) note that instrumental and emotional support are likely to be highly correlated. Here, extracts coded as emotional support were understood to relate to “the provision of empathy, esteem or concern” (Frisch, 2014, p154 after Semmer et al., 2008). While most participants spoke about material support, workplace emotional support was mentioned less frequently. When survivors did receive emotional support, it was always appraised with gratitude:

> *so people you know, ringing to my switchboard and asking about me and, you know, a lot of people came in hospital to see me and, you know, gave me flowers and cards and everything. […] A lot of visitors yeah, yeah, my family, friends, my colleagues that work with me.* ***And do you think that has helped you get better?*** *Obviously, because when they come and they talk with me and they encourage, you know. […] I said, you know, when they come to me and they always give me support and they give me encourage, don’t worry we are here and if you need anything, you know, you just give us a call, you know. So people give me really, you know, good love and support and everything. And I have no words how I say to them thank you for this, you know. […] My family and my work colleagues and my switchboard people, you know, that work in the office, make phone call. And everybody, you know my boss and most of them are on my side, everybody really did me a good job you know.* ***Ismail, Taxi Driver, 45, pelvic injury***

While Ismail acknowledged broader support than just work, he appraised the availability of “*encouragement*” and “*good love and support*” as being from the whole of his network, workplace included. Ismail received workplace emotional support through continued social connection “*ringing to my switchboard*”, and hospital visits illustrating that social connection was a vehicle for social support, as argued by Haslam et al. (2021). Through this contact, Ismail appraised the *availability* of support/coping resources should he need anything “*don’t worry we are here if you need anything*”. His positive appraisal of coping also crossed over with collective efficacy “*most of them are on my side”*. He perceived this support to be from both team mates and manager. Through his understanding of his workplace’s intention to support him, Ismail seemed to be assured of the availability of *both* instrumental support and emotional support. This overlap between continuity of social connection and available emotional support was echoed in other survivor accounts, further affirming Haslam et al.’s (2021) assertion that other social identity resources are mediated through connection. This social identity contribution offers a possible mechanism for the importance of continued connection with the workplace, noted by a review of facilitators to RTW following injury (White et al., 2019).

Some survivors reflected with gratitude on the emotional support they received both before and after returning to work. For example, in the following extract, Carla spoke appreciatively of the understanding that she felt motivated emotional and material support from the workplace.

> *when I did raise the 'I had a bit of a wobble or whatever' they were all very, very supportive […] I had a very, very supportive line manager who was actually, she was there right at the point of when I had the accident, and then all the way through after that, come visiting at home quite regularly. When I talked about going back to work she actually put in place a, just a couple of hours psych up, just wander in and say hello to everyone. […] I was really, really, really lucky, and in the environment I worked in I think it could of probably could of been very, very different, if you were in a manufacturing environment, or a different, or a less of experienced management team, most of the managers I was involved with were more mature, so there was a level of understanding that I think you only get with maturity. […] even when I was back to full time work, and she was very amenable to me, she.. would just give her a quick ring and say I am on my way just struggling a bit this morning, her comment would be 'you just do what you got to do, when you got to do it, and if you don't feel up to it just give me another ring'. So, I was really well supported, really well supported* ***Carla, Probation Officer, 68, upper limb injury***

Firstly, Carla clearly felt able to express her need for emotional support "*when I did raise the had a bit of a wobble*" to her line manager, indicating her confidence that emotional support would be forthcoming if she asked for it. Carla appraised the quality of this support with evident gratitude "*I was really, really, really lucky*", and made favourable comparisons to a hypothetical outcome "*if you were in a manufacturing environment*" to highlight her good fortune in her workplace. Both these appraisals, of being lucky and of making favourable comparisons were congruent with the trauma appraisals noted by Janoff-Bulman (1992) in relation to cognitive reappraisal strategies noted in trauma survivors. The availability of emotional support was related to maintained social connection with the workplace while on sick leave "*she was there… visiting at home quite regularly*". Furthermore, her manager seemed to exhibit understanding of Carla's need to renew social connection with colleagues, by arranging the opportunity to "*just wander in and say hello to everyone*". Carla certainly appraised there to be "*a level of understanding*" from her line manager, and this understanding fed into the provision of the instrumental support that she needed such as flexibility after returning to full time hours. All of this led to Carla appraising herself to be "*really well supported*" by her workplace. Again, the overlap between material and emotional support evident in subtheme 4B.1 was repeated here. Her appraisal of how well she had been supported seemed to pivot on her perception of how well her needs had been understood, linking again to 'felt understanding' as a mechanism for social cure (Livingstone et al., 2020) noted in the previous subtheme.

Finally, the issue of workplace understanding was negatively highlighted by another participant, illustrating a lack of emotional support from the workplace. Jean related an interaction with a senior colleague after returning to work as a wheelchair user:

> *The thing is, I arrived at work, sitting in a wheelchair and, quite rightly, no one there knew – bowel and bladder – how I managed those, the fact that I was in pain. I mean, one of the top managers once said, "Gosh, you look knackered," or something, and I said, "Yeah, I am absolutely shattered." He said, "Oh, that'll teach you to burn the candle at both ends partying." Because he knew previously that I'd go out on the socials after work and stuff, he assumed that I'd been out, whereas actually, I'd been awake half the night in pain. But why would he know? I wouldn't have known until I had the spinal injury myself.* ***Jean, Trainee surveyor, 46, spinal cord injury***

While this participant understood that the reaction came from a lack of insight into the impact of spinal cord injury "*why would he know?*" her reaction was still experienced as being particularly unsympathetic, and recounted word for word 23 years later, indicating the emotional impact it had had at the time. Even with a serious impairment made evident by wheelchair use, Jean's experience "*I'd been awake half the night in pain*" was invisible to her colleague. His comment about partying exhibited a lack of understanding, negatively mirroring the link between available emotional support and understanding. The link between invisible impairments and lack of understanding has previously been noted following injury. For example police managers found invisible psychological injuries more difficult to deal with than physical ones (Bullock et al., 2020) and pain and fatigue was noted as a 'predominant' barrier to RTW (Gavin et al., 2022).

To summarise Subtheme 4B.2, survivors who perceived they received emotional support from their workplace appraised it with gratitude since it contributed to their capacity to cope (secondary appraisal). The value of this emotional support appeared to be associated with the perception of understanding from colleagues. Furthermore, the receipt of emotional support from the workplace was closely related to the maintenance of social connection, indicating further interaction between social identity resources.

Theme 4B Summary

The perceived availability of workplace support seemed to be an important contributor to appraisals of capacity to cope with the specific threat identified in Theme 4.1: threat to participation in the valued work identity. Most straightforwardly, instrumental support from the workplace maintained participation with the work identity, reducing the threat perceived to it. This would accord with the SIMIC model where maintenance of a valued identity buffers wellbeing following a life transition (Jetten et al., 2009). Instrumental and emotional workplace support overlapped despite being clearly differentiated at coding stage, however Semmer et al (2008) have noted the two forms are highly correlated in outcomes. Both instrumental and emotional support were associated with the perception of 'understanding' from colleagues or employers, but the meaning they attributed to understanding was not fully clear from the data. Practically, workplace *understanding* appeared to result in the provision of instrumental support which was more effective for survivors'; being in receipt of workplace understanding may also have reduced primary appraisal of threat to the work identity. *Felt understanding* has been proposed as an additional mechanism of the social cure (Livingstone et al., 2020) within the social identity approach to health, but it has received little empirical attention to date.

Appraisals of the availability of either type of workplace social support contributed positively to participants' wellbeing. Finally, continuity of workplace social connection appeared to facilitate access to both instrumental and emotional support (as argued by Haslam et al., 2021) for survivors.

4.4 CONCLUSIONS

This study set out to explore trauma survivors' psychological responses to traumatic physical injury and in doing so to understand how this might contribute to their RTW decision making. Through theoretically informed reflexive thematic analysis, survivors' primary appraisals of threats[14] and secondary appraisals of capacity to cope with those threats were explored. Data generation was undertaken without specific reference to SIAH theory but there was evidence of social identity contributions to survivors' appraisals this in the themes identified.

The main threat appraised by survivors was the impact of functional impairments gained through injury on capacity to participate in the valued work identity. The associated threat of disruption to the work identity was imposed either directly by limiting participation or through perceptions of potential exclusion from employment on the basis of the anticipated stigma of acquired disability. Existence of threat to the work identity when understood through the SIMIC theory suggested that traumatic injury may be understood as a life transition when valued social identities may be appraised as under threat (Jetten et al., 2009). The present study also provides novel empirical support for the SIMTIC elaboration of SIMIC which theorises the importance of social identity to psychological responses to trauma (Muldoon et al., 2019).

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[14] The Common-Sense Model of representation was helpful in structuring coding of threat appraisals leading to a holistic understanding of the various stressors perceived.

Survivor accounts indicated that work identity threat had a negative impact on wellbeing following injury. In addition, the disruption of social identity resources associated with the work identity suggested a social identity mechanism for the negative impact on survivor wellbeing and why survivors would be keen to RTW quickly. The disruption of sense of purpose and social connection indicated the value of the work identity in identifiable social identity resources (Jetten et al., 2017). Another social identity resource that could have been threatened was social support. However, in this sample, workplace social support was mostly spoken about as available and contributing to positive appraisals of coping with the threat to work identity. Workplace provision of support, both instrumental and emotional was an important contributor to psychological response and RTW (including decision making). However, from the present data, it was clear that workplace support was being appraised in more complex ways than simple availability. There appeared to be a more meaning rich social identity context at work within survivor appraisals (e.g. colleague understanding or perceived work identity continuity) which bears further exploration.

These findings indicated the relevance of applying social identity context to injury survivors' cognitive appraisals. Since data generation was undertaken without a theoretical contribution, a more theoretically informed approach would allow detailed exploration of some of the questions raised by the conclusions of this study. For example, what contributed to the appraisal of the threat of disruption to the work identity? Was it linked to the extent of functional impairment alone, or was pre-injury identification with work also relevant? Therefore, a second set of semi-structured interviews with a new sample was generated to further test the impact of social identity context on appraisals, reported in the following Chapter: 5.

4.4.1 Strengths and Limitations

This study was the first to explore the lived experience of injury using a theoretical framework including both appraisal theories and the social identity approach to health. The participant sample was notable for including a broader range of injury types (albeit lacking burns) than the more typical sample limited by injury type or mechanism. Being a qualitative study, the findings are not generalisable to the injury population overall (nor to the general population, having little BAME representation) but they did provide valuable affirmation that a social identity approach to appraisal of injury, recovery and RTW is relevant to understanding the variation of psychological outcomes that follow traumatic physical injury. Participants were self-selecting upon receipt of study information which mentioned RTW; this may have biased the sample towards those who appraised their work identity to be particularly salient. Furthermore, survivors were relaying experiences retrospectively, often a number of years after their injury. This may have affected the accuracy of their recollections but was useful for understanding longer term psychological responses to injury which are often not captured in injury research.

Chapter 6 provides a full discussion of the theoretical and practical significance of the combined lived experience findings from combining the present study and the second lived experience study (Chapter 5).

CHAPTER 5: Empirical Study 2: Trauma Survivor study 2

The second lived experience study was a reflexive thematic analysis of qualitative data generated by interviewing a new group of survivors (*n*=23) of traumatic physical injury. It aimed to develop a richer understanding of the Study 1 findings indicating a social identity contribution to trauma survivors' threat and coping appraisals.

5.1 STUDY RATIONALE

It has been noted (Chapter 1) that empirical predictors of psychological distress following traumatic injury are heterogeneous. Despite recommendations for a biopsychosocial approach to understanding the post injury risk of mental health issues (Sareen et al., 2013) the psycho-social mechanisms remain under-explored (Butler et al., 2022). Study 1 (Chapter 4) analysed lived experience data for psycho-social contributions to post-injury distress and its impact on return to work (RTW) decision making. The resulting themes indicated a contribution made by social identity context to cognitive appraisals of threat (primary appraisal) and coping resources (secondary appraisal) as described by the transactional model of stress appraisal (Lazarus & Folkman, 1984). Social factors (support and integration) have previously been found to be important contributors to return-to-work outcomes following injury (White et al, 2019), suggesting their importance to recovery, both in psychological and functioning terms.

Survivors in Study 1 appraised a threat to their valued work identity from functional impairments following injury, or perceived stigmatisation. This was congruent with the Social Identity Model of Identity Change (SIMIC; Jetten et al., 2009) which argues that any life transition will be associated with threat to social identities and the psychological resources they deliver. Furthermore, the SIMTIC elaboration of SIMIC has proposed that variations in psychological response to trauma may be related to social identity processes, including stigmatisation (SIMTIC; Muldoon et al., 2019). The review in Chapter 2 highlighted social identity mechanisms such as group membership continuity or gain/revitalisation as important to psychological responses following life transitions. Study 1 also indicated that available workplace support was related to positive coping appraisals and that changes to the availability of social identity resources (e.g. social support, purpose, social connection) were relevant to psychological response following injury.

5.1.1 Aims of the study

Given the Study 1 data were generated initially to develop a RTW intervention, this may have biased responses towards work identity. Therefore, it was important to further test appraisals of work identity threat and coping responses with a new sample. Study 1 had found social identity contributions that focused on the appraisal of work identity threat and the disruption of available social identity resources from work. The second survivor sample was first questioned about social identity impacts in general, to robustly test the importance of work identity focus to the new sample before questioning addressed work identity specifically. Generating a new sample also allowed questioning to be designed to focus on theoretical concerns including social identity mechanisms and how these might contribute to trauma survivor appraisals of threat, coping and reappraisal (Lazarus & Folkman, 1984). Semi-structured interviewing was used to explore the following aims to better understand:

a) If survivors appraised that their social identities **changed** following injury and whether this contributed to psychological distress. E.g. threats of identity loss and stigma gain. (Primary appraisals of threat)
b) The psychological resources that survivors associated with their social identities (particularly work) and whether they appraised any changes following injury. (social identity resource changes)
c) The importance of workplace social support to survivors' appraisals of coping. (Secondary appraisals of coping)

5.2 METHODS

5.2.1 Study Design

Study 2 was a qualitative analysis of data generated through 23 semi-structured interviews, conducted remotely. Details of ethical, methodological and researcher characteristics are outlined in Chapter 3 in accordance with the COREQ quality assurance checklist (Tong et al., 2007). Chapter 3 also includes the overview of study design for all three studies including the sampling approach and a step-by-step description of the process of reflexive thematic analysis of the data.

5.2.2 Recruitment and Procedure

Sampling aims were to recruit a minimum of 20 UK based survivors of traumatic injury to take part in in-depth semi-structured interviews of approximately 90 minutes in duration, although all those that expressed interest after advertisement were recruited (*n*=23). The sampling strategy aimed to recruit participants with a diverse range of injury and in particular to extend the injury types beyond those sampled in study 1. Sampling goals also aimed for diversity of age, gender, educational level and employment role classification, and ethnic diversity (the latter not attained). Trauma survivors were included if they were aged 18+, lived in the UK, had experienced an injury requiring hospital treatment/time recuperating, and had anticipated continuing to work or study at the time of injury.

Study 2 is composed of 23 remotely conducted semi-structured interviews with survivors of traumatic physical injury. Semi-structured interviews provided rich, in-depth information sharing by allowing the participant to tell their story in their own way. Remote participation was necessary since the period of data collection (February to May 2021) was subject to varying levels of Covid-19 restrictions. Remote recruitment enabled inclusion of participants with ongoing impairments since restricted mobility had been a barrier to travel in Study 1. The majority of survivors participated from home; some from their workplace. A small number noted the presence of another person in their environment during the interview, but all were content to have them present. Participants controlled the choice of media: either telephone (4) or online video (MS Teams, 19). Technological issues such as fluctuating Wi-Fi meant that several video calls lost their visual component. This required the researcher to adapt her interviewing style, particularly in relation to conveying active listening and to using non-verbal cues to guide probe questions (Opdenakker, 2006). Informed consent included permission to record by either audio or audio/visual depending on the medium chosen by the participant, but participants were informed that only audio components would be analysed.

Four broad recruitment strategies were pursued: a) direct emailed approaches to known contacts (primarily the PPI group supporting ROWTATE research study or trauma survivors who had been contacted but not interviewed for Study 1); b) outreach through third party charitable organisations (email and a recruitment advertisement for social media); and c) social media including the researcher’s Twitter account which was retweeted by existing contacts plus a limited number of charities; d) snowball sampling was encouraged through ROWTATE PPI and recruited participants. Recruitment was most successful through known contacts (PPI and previously contacted trauma survivors), and trauma survivor support organisations with whom there was a pre-existing relationship (After Trauma, Day One). Requests sent to charitable organisations with no previous relationship (Headway; RoadPeace) provided limited response. Direct contact was made with 35 prospective participants but only 23 eventually agreed to take part in the study. Of those who expressed interest but did not proceed to interview, three were ineligible (due to: domicile outside UK; retired at time of injury; still being treated in hospital at time of response). One more postponed several times due to ongoing life stressors and was excluded after three failed contacts which was the ethically approved limit.

5.2.3 Participants

As planned, the injury characteristics of recruited participants were heterogenous (see Table 5.1), including serious and life changing injuries and polytrauma (2 or more significant injuries; Butcher & Balogh, 2014) on brain (10) spine (3), and scarring (5). Study 2 participants had a higher incidence of polytrauma (69%) compared to Study 1, and injuries were also significantly more complex. Nine of the trauma survivors in the present study had polytrauma affecting five or more areas of the body.

Sampling goals were also satisfactorily diverse for age (range = 27-65, m = 46), gender (43.47% female; 56.52% male), educational level and employment role classification. Table 1 includes the employment classification of pre-injury job roles, using International Labour Organisation (ILO: 2012): standard classification which categorises job families on the basis of job tasks and duties. More than half (56%) of participants' employment roles could be classified as professional or associate professional (ISCO-08 ref). However only 2 out of 5 of those in managerial roles (21.7%) were educated at degree level, suggesting a range of professional trajectories. All participants were white, self-identifying as British or Irish. Mean years passed since injury at the point of interview was 8.84, ranging from 4 months to 21 years. While only 3 of the 23 participants had never returned to work following injury, demographic statistics alone did not capture the extent of employment turbulence for the majority of participants. Overall, 15/23 participants spoke about having lost a valued employment role during interviewing with 43.47% (10) forced to find a new role. Further qualitative detail of participant appraisals of the impact of injury on their working life are available in *Appendix Table II.i.*

Table 5.1

Summary of trauma survivor participant characteristics

Participant characteristic (n=23)	Number/Range
Incidence of injury types (high incidence of polytrauma means individuals affected by multiple injury types)	*n*=16 polytrauma affecting >2 body areas (*n*=9 polytrauma affecting 5+ body areas affected) *n*=10 brain injury *n*=5 affected by scarring (1 burns) *n*=3 spinal cord injury *n*=1 upper limb amputation
Highest educational qualification equivalent to	Pre-degree: 6 (26.08%) UG degree/Level 6: 12 (52.17%) PG degree: 5 (21.73%)_

Employment status at time of injury		Employed (*n*=14); Self-employed (SE) (*n*=3); Student *n*=3 FT About to start new job n=1 Mixed: Employed/SE n=1; Employed/student: n=1
Employment status following injury **NB 15 appraised that they had lost a valued work role following injury**		Returned to pre-injury role/study (*n*=9); Returned to same role but PT (*n*=1) (43.47% returned to pre injury role) RTW, but different role (n=10, 43.47%) Not returned to work (*n*=3)
	Pre-injury employment occupation classification (ISCO-08) and role	
	ISCO-1: Managerial *n*=5 (21.7%)	Body Shop Manager Corporate HR Director IT Project Manager n=2 Self-employed business owner
	ISCO-2: Professionals *n*=7 (30.43%)	Coach and Trainer Database Administrator ESOL Teacher Nurse (and PT student) Neuropsychologist, Assistant Physiotherapist Senior Teacher
	ISCO-3: Technicians and Associate Professionals *n*=6 (26.08%)	Estate Agent Financial Product Sales Media Production Racing driver Senior Buyer Web Design Tutor
	ISCO-07: Craft and related trades *n*=1 (4.34%)	Bricklayer (contractor/sole trader)
	ISCO-8: Plant and Machine Operators/Assemblers *n*=1 (4.34%)	Mechanical fitter
	Full Time Student (13.04%)	n=3

See *Appendix table II.i*. for interview extract appraisals of: the life-changing extent of injury; identification with work; the threat experienced to work identity

5.2.4 Design/Materials

The topic guide was theoretically informed with the aim of further testing the impact of social identity context on cognitive appraisals of injury and coping. Interview questions were designed to prompt participants to speak freely about what was important to them regarding their injury, recovery and attempts to return to work. Probe questions focused in on social identity context issues raised by Study 1, including: changes to/disruption of valued social identities; perceptions of exclusion or stigma; the meaning of work; the impact of perceived availability of social identity resources (social connection, social support, sense of purpose). Examples of the questions are included in Table 5.2. Questions on important groups (or social identities) were adapted from a group listing task and EXITS rating scale used by Haslam et al, 2008). Prior to deployment, the topic guide questions were discussed with a PPI group supporting the ROWTATE study to assess their clarity and meaningfulness to trauma survivors.

TABLE 5.2

Example interview questions to trauma survivors (Study 2)

Topic area	Example questions
Broad injury and recovery journey prompts	• Tell me about your injury? • Where are you in your recovery journey?
Appraisal of the impact of injury	• Tell me about your life before the injury and how it has changed since? • How do you feel when you think about your injury? • Where would you fit your injury into the story of your life?
Mapping of important group memberships with pre-and post-injury ratings to assess changes of importance/SIMIC	• What groups did you belong to before your injury? • How important was each group to you on a scale of 1-7 before and after your injury? Rated 1-7 where 1= not important and 7 = very important • Explain what was behind your rating? • How important was each group following your injury? Probe changes in importance.

	- Have you gained any new groups since your injury?
Social identity resources associated with important groups or identities	- How important was work to you before your injury? - Was there anything else about being at work that motivated you to want to return? - What specifically did you get out of participating in that group?
Coping and support	- What support do you feel you had if you needed help? - What helped you to cope (with your feelings)? - Some people have mentioned 'stages' of recovery, does that mean anything to you? Has your injury and recovery journey changed you at all? - What would you say to a newly injured person about how to cope with their recovery journey?
Stigma	- Has your injury resulted in you changing the way you see yourself? - Has your injury changed the way others related to you?

5.2.5 Analytic Procedure

Audio recordings totalling 43.15 hours were made of the interviews, with participants' consent. The mean duration of interview was 112.56 minutes (ranging from 63 to 197 minutes). All interviews were recorded and transcribed verbatim with no attempt to correct grammar or vernacular. All transcripts were anonymised to remove identifying personal details and assure the confidentiality guaranteed when gaining consent. Anonymised transcripts were coded and analysed using theoretically guided thematic analysis (Clarke & Braun, 2021). Using reflexive thematic analysis to analyse the data allowed both deductive (theory driven) and inductive approaches to data analysis. This was important for maintaining the centrality of lived experiences while applying a theoretical framework.

The analytic approach was contextualist, acknowledging the influence of both the meaning-making of individuals (essentialist approach) and the impact of the social, cultural and environmental context (constructionist). This approach assumed that there was no single underlying reality; rather that individuals construct their own reality and meaning in response to their experiences (Braun & Clarke, 2013). The six stages of reflexive thematic analysis were described in Chapter 3. The process included use of a coding framework to inductively and deductively label data quotes. Coding recognised the impact of injury on all social identities, but codes were grouped to create initial themes which prioritised the impact of injury on work identity. These themes were refined after discussion with the supervisory team (BK, MR) who had access to the full dataset. Participant checking was undertaken by presenting and discussing a later iteration of themes with the PPI group advising the ROWTATE study. Anonymised extracts are represented in the results below with a pseudonym, plus age, job role at injury and injury type. An ellipsis […] is used to represent where part of the extract is omitted for reasons of space.

5.3 ANALYSIS AND DISCUSSION

Focusing on data from participants' accounts which dealt with work identity, two overarching themes were identified. These related to cognitive appraisals (Lazarus & Folkman, 1984) and how these appeared to be influenced by the social identity context. The **first theme** (5.1) concerned **primary appraisals of the perceived threat to valued work identity following injury**. The **second theme** (5.2) considered **secondary or coping appraisals and how they related to perceived availability of support from the workplace**. Themes and subthemes are summarised in Table 5.3. While these themes focus solely on work identity, there was evidence in the wider dataset that similar appraisals arose in relation to other valued social identities including family and friendship or interest groups, but this is beyond the scope of the present research question.

Table 5.3

Table of themes reported in Study 2

Theme	Subthemes
5A Appraisal of the work identity threat following injury	5A.1Work identity disruption impacted wellbeing
	5A.2 Motivation to maintain or restore disrupted social identity resources
	5A.3 Disability identity appraised incompatible with work identity
5B Availability of workplace support influenced coping appraisals	5B.1 Available support affirmed work identity continuity
	5B.2 Perceived betrayal of expected reciprocal support

THEME 5A: Appraisal of the work identity threat following injury

Within this second sample of traumatic injury survivors all participants had experienced some short-term disruption of their work participation, for example while convalescing. More than half had also experienced outright loss of their pre-injury work role. Both short term and outright disruption (loss) of the work identity was appraised in terms of: the impact on participants' wellbeing (subtheme 5A.1: *work identity disruption impacted wellbeing*) and disruption of social identity resources, particularly sense of purpose and social connection (subtheme 5A.2: *motivation to maintain or restore disrupted social identity resources*). Subtheme 5A.3 concerned a further threat to work identity perceived from new disability: *incompatibility between a new disability identity and the work identity*.

Subtheme 5A.1 Work identity disruption impacted wellbeing

As in Study 1, participants appraised a threat of disruption to their work identity (whether short or long term) speaking of it in conjunction with a negative impact on their wellbeing. For example, a trainee psychologist lost her trainee role but also all future prospects of ever working in her chosen career following a brain injury:

> *I felt devalued, a lesser member of society. If you like. I had no identity […] I didn't want to look back because it was quite upsetting to lose my career, which was my whole identity. And to lose that was very very... It was devastating for me.* ***Clare, 46, Trainee Psychologist, TBI***

For Clare, the outright loss of her pre-injury role and her "*career*" had a "*devastating*" impact on her wellbeing. She spoke about this loss in conjunction with the loss of her "*whole identity*", associating this with a loss of status: "*devalued, a lesser member of society*". For those whose work identity disruption was experienced as an outright loss of the pre-injury role (more than half the sample), this negative impact on wellbeing was frequently spoken of explicitly in terms of a loss of personal identity. Clare did not want to "*look back*" or talk about her experiences because they were too distressing, indicating how difficult the disruption was to adjust to. Another participant spoke in terms of grief:

> *The more I came to realise that I wasn't going to go back it also devastated me because so much of my identity was intertwined with me being a teacher and what I planned to do, I'd always wanted to be a head teacher. […] I think the grief counselling really made me address what I thought about myself and how I valued myself. And I'd put an incredible amount of value on me being a teacher and an educator and my career.* ***Phoebe, 40, Senior Teacher, TBI with polytrauma***

Phoebe's account highlighted the 'devastating' impact of losing her career with which so much of her "*identity was intertwined*". She needed "*grief counselling*" to come to terms with this identity disruption. The impact of outright work identity disruption for Phoebe and Clare seemed related to the pre-injury centrality of work and career to their personal identity and associated sense of self-worth. Their loss of positive identity was a common appraisal for participants who were unable to return to their pre-injury work role and accords with the core understanding of the social identity approach to health: that social identity is central to health and wellbeing (*Social Identity hypothesis*: Jetten et al, 2017). The *identification hypothesis* (Jetten et al., 2017) was also relevant here, i.e. that the extent of health-related benefits (social cure) and harms (social curse) were dependent on the extent of identification with a given social identity.

The present findings strongly suggested that the impact of work disruption on wellbeing exceeded purely economic concerns. Participants' stress appraisals of work disruption were centred on loss of identity, supporting the argument made by the social identity model of identity change (SIMIC: Jetten et al., 2009). Loss of work identity has previously been associated with significant psychological impact in injured marines where it was reported as disrupting personal meaning and self-worth (Haynie & Shepherd, 2011). The negative impact of work identity loss on wellbeing has also been reported in relation to *involuntary* retirement (Ward & King, 2017, p64) and following brain injury (Libeson et al., 2021). Furthermore, within recent rehabilitation literature, links have been made between existential distress and the need for socially meaningful goals following injury (Dekker et al., 2020; Littooij et al., 2021). While SIAH research has not previously focused on work identity disruption, it is congruent with the SIMIC theory argument that any life transition can result in threat to valued social identities, with negative impacts on wellbeing. In another group transitioning out of work (retirement) SIMIC theory application has indicated the relevance of social identity context to wellbeing. Multiple group memberships and continuity of pre-retirement social identities predicted positive wellbeing in retirees (Haslam et al., 2019), as did gain of new social identity.

Appraisals of a negative impact on wellbeing in conjunction with work identity disruption were not limited to participants who experienced outright loss of their pre-injury work role. Short term disruptions to work identity occurred for the majority of participants, usually while convalescing.

> *I know when I did get back to work, the fact that everything slotted back in, I could remember everything did actually cheer me up. Cause once I found that out, once I did go back to work, I started to have me doubts, thinking what if I can't do it then. What can I do, what would I have to retrain to do, would I have the confidence to do it. That did panic me a bit. When that one were thrown at me. Luckily I've managed to go back and everything that I needed to know it was still lodged upstairs, in me head.* ***Nick, 59, Bricklayer, polytrauma with TBI***

Nick reflected on the improvement in his wellbeing: "*did actually cheer me up*" once his ability to return to work was confirmed. This illustrated the stress he had been under during convalescence, wondering if he would still be able to do his job: "*did panic me*". Nick's worries appeared to be related to the unknown impact his brain injury had had on his untested cognitive capacity to do his job. These concerns were not relieved until he had "*managed to go back*" and found himself still competent: "*everything that I needed to know it was still lodged upstairs*". What had 'panicked' him was the worry about what he would "*have to retrain to do*", and whether he would "*have the confidence to do it*". This period of uncertainty about the continuity of work was a common experience for participants. In the application of the Common-Sense Model (CSM: Leventhal et al., 1998) to injury, patients particularly focused on the timeline representation (appraisal of threat) in terms of how permanent the impact of their impairment would be (Shiloh et al., 2016). In the example above timeline of impairment, work disruption and wellbeing outcomes were clearly linked. While Nick did not speak in terms of his identity directly, he clearly experienced stress related to the continuity of his pre-injury work.

Where survivors like Nick worried about the 'what if' of losing their work (indicating this was a source of anxiety), other participants' unsuccessful return to work further illustrated an impact on survivor self-worth.

> *I couldn't do the physical side of it. Me not being able to do things I saw as a weakness and I felt I was letting myself down by going in there and telling people what to do and pointing the finger. I'd never ever done that. I've been the worker. I've always been the one that gets stuck in and does it. And I tried to do it on a couple of occasions and I hurt myself.* ***Liam, 62, Self-employed, Polytrauma***

Liam's experience of trying to return to his pre-injury role managing his own manufacturing business led to negative appraisals of his value when he struggled with "*the physical side*". During a transitional stage back into work, his self-worth was undermined by not being able to do what he had pre-injury: "*I saw [it] as a weakness…letting myself down*". Being unable to function as "*the worker*" was central to his sense of positive identity. Again, levels of identification seemed relevant as Liam's account indicated strong identification with his pre-injury work role, something which was notable for the majority of the sample (see *Appendix Table II.i.* for participants self-descriptions of the meaning of work to them). The concurrent disruption of work identity and self-worth was attuned with social identity approach evidence that the more identified an individual is with their social identity, the greater the psychological gains they derive from them (the *identification hypothesis:* Jetten et al., 2017). Or inversely with identity disruption, greater psychological losses and negative impact on wellbeing may follow higher identification with the threatened work identity. Qualitative research with retired police officers included reflections that the identity related challenges of transition to retirement varied with how identified they had been with their role (Bullock et al., 2020). Variation in the extent of identification with work may account for variation in psychological impact.

While most participants experienced work identity disruption linked to their new impairment, there were a few cases in the sample where serious impairments had not resulted in the loss of pre-injury work role. Their wellbeing response was an interesting comparator. For example, a participant with an amputated arm who worked in TV Production talked about being able to continue with his role through workplace support:

> *No, I was actually really lucky in that regard. I was able to carry on with the same job and still get paid the same […] So work, I think those that I work closely with, and family that I know are close, they kind of pre-empt when I might need it. So rather than asking for help, they'll offer it. In some ways it makes me feel a bit better because I didn't ask.*
> ***Dean, 36, TV Production, Arm amputation***

Dean appraised himself "*really lucky*" to have been able to retain his pre-injury role, attributing some of this to the help his colleagues provided. His wellbeing seemed protected by not having to *ask* for help "*it makes me feel a bit better*". There is more than one interpretation for why this had a positive impact on Dean's wellbeing. Simply, he was able to continue in his pre-injury job without being forced to highlight his impairment by asking for help. Alternatively his colleagues' willingness to support him affirmed his continued belonging to the work group, which is further explored in Theme 5B. Dean's appraisal of work continuity was not as emotively phrased as were the preceding reflections on work identity disruption, possibly suggesting he had not experienced a great amount of stress. This accords with existing empirical support for the positive impact of identity continuity following a traumatic event. Continued community identity has been associated with experiencing a less severe psychological trauma response following natural disasters (Craig et al., 2022; Muldoon et al., 2017). Links between participants' positive appraisals of coping and the receipt of workplace support are further explored in Theme 5B.

In conclusion, it was common for survivors to appraise a threat to their work identity[15], outright or short-term, and this negatively impacted wellbeing. Work identity disruption was appraised as a threat beyond obvious financial concerns; i.e. disruption was threatening because it directly affected participants' identity and self-worth. It was clear that injury could

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[15] Note: The present analysis focused on work identity disruption. However, within participant accounts disruption of other social identities was also appraised. For example, there was disruption of family identity due to dependence on care or changed capacity to be the 'provider'. Other valued group memberships such as friendship or hobby groups were affected too. Some of this was related to changed functional capacity restricting activities but other mechanisms were intuited by trauma survivors, such as friends not being able to deal with a new disability. The potential for interaction between other social identities and the work identity is noted but was beyond the scope of the present research question.

have work and career-changing effects and even the threat of loss of this central aspect of identity was distressing to trauma survivors, in accordance with the SIMIC theory that life change is inherently identity threatening (Jetten et al., 2009). Subtheme 1.2 illustrates that this disruption to the work identity had a consequence for the availability of social identity resources.

Subtheme 5A.2 Motivation to maintain or restore disrupted social identity resources

Study 1 noted the impact of work disruption on sense of purpose and social connection, in particular. There was further evidence in Study 2 of the importance and disruption of these and other social identity resources to participants. Survivors coped with resource disruption by seeking: social connection with work colleagues; quick return to their pre-injury job; or new social identities which gave them a sense of purpose after losing their pre-injury role.

The majority of participants linked their motivation to return to work with their need to regain both sense of purpose and social connection. Both resources were mentioned by Jason:

> *I was so desperate to get back there. If anything, it probably went up because of the recognition of how important it was. Yeah, it sounds weird to say, but yeah it probably did go up cause I were craving it so badly.*
>
> ***Interviewer: Craving it – quite a strong word, so what was that about?***
>
> *Just having that purpose again. And then when I did finally start getting paid again, when I started working with [Charity 1], it were like Oh! That feels so much better. It just sits much neater in my life that I'm paying taxes, the right thing to do. Not holding out my hand. You know, yeah. A weight off my shoulders […**]** I liked the work. I wasn't a massively sociable person from being young but the social aspect that work brought was important to me. You know being around others on a daily basis, you know in that routine of seeing the same people you know and getting to know them and them getting to know you. Yeah all that side of it was good […]* ***Jason, 42, Mechanical Fitter, SCI***

Jason, in common with most participants, equated the value of work with "*having that purpose*", noting how highly motivated he was to return: "*craving it*". Jason spoke about both his short and long-term coping strategies following a spinal cord injury. Short term, he participated at his pre-injury workplace without pay, motivated by a need for "*the social aspect*" and "*routine*", his wellbeing was improved by the maintenance of social connection and sense of purpose through the routine of work. When the physicality of this work was no longer feasible due to the extent of his injuries (he was now a wheelchair user) he pursued other strategies to regain paid work. When he achieved this, Jason measured the positive impact on his wellbeing in terms of "*paying taxes*" and working rather than claiming benefits. His sense of purpose related to contributing at a social level, or perhaps re-establishing his identity as an employed person, suggesting relief from the stigma of unemployment: "*a weight off my* *shoulders*". Jason's example affirmed the positive wellbeing impact of identity continuity argued by SIMIC (Jetten et al., 2009). It also indicated that continuity of social identity resources such as purpose and social connection motivated a return to work. While purpose and social connection has been found to predict wellbeing and a growth mindset in another qualitative study of traumatic injury survivors (Gavin et al., 2022), these specific resources have not been highlighted in social identity research before. Previous SIAH research with survivors of acquired brain injury (ABI) (Muldoon et al., 2019b) noted better adaptation to the impact of injury with social identity resource gains from new group memberships. These new group memberships were not work groups, however. Continuity of specific social identity resources from work appeared to be pursued by survivors to safeguard their wellbeing. The meaning of social connection and purpose to survivors will be considered further, consecutively.

The wellbeing impact of maintaining work associated social connection was clear in most participants. Jen, who returned to her pre-injury role as soon as she was healed found continued connection supportive while convalescing:

> *then work colleagues, there's a few in my team that I'm close with who would message me when I was in hospital and they sent me some gifts when I came out of hospital. So yeah, they've been there to message whenever you know if I have an appointment they'll message me, how did it go? What's the latest sort of thing? So yeah, it's nice.* ***Jen, 30, Database Administrator, polytrauma***

Jen's positive appraisal of received messages and gifts from her close colleagues indicated a positive wellbeing impact. Jen knew that her work colleagues were still thinking about her while she was off work sick: "*they'll message me, how did it go?".* Her words suggested that this continued connection contributed to a sense of either work identity continuity or support: "*they've been there*". This probably affirmed her strong sense of identification with colleagues which she spoke of elsewhere:

> *I really care about work. So I'll go. I'll go above and beyond like if things are happening out of hours, I'll be there. People need me to be there, even if it's even if I'm not on call. So yeah, it's just yes, a big part of my life.* ***Jen, 30, Database Administrator, polytrauma***

Jen's commitment to the work team and their collective efficacy was clear: "*people need me*". Being highly identified with her work group she was more likely to gain psychological benefits from it according to the social identity theory (identification hypothesis: Jetten et al., 2017). Therefore continuity of social connection was potentially more impactful for Jen's wellbeing because of her high identification with the work identity.

Affirming this, the impact of lost social connection with a valued work identity had a negative effect on wellbeing for other survivors, as noted by Phoebe when reflecting on what she lost along with her teaching career following injury:

> *I felt really, well I do still sometimes feel really out of control of it all and frustrated and I miss, I miss the people I used to work with. […] The people that I worked with at the time, so I suppose I called them my team. They were literally like my second family. And I think that's a lot of that grief does come from the fact that I lost them. […] I think I often felt with them that I was just myself at work. but because my family: none of them had been to university. And weren't academic in that sense, I couldn't talk to them about the same.. I couldn't have a conversation with them about an author or, you know what I mean things like that so. yeah I missed that sort of thing.* ***Phoebe, 40, Senior Teacher, TBI with polytrauma***

The loss of connection with her work colleagues who were "*like a second family*" was experienced as grief by Phoebe. The strength of her loss left her feeling "*really out of control*". Again, the strength of her identification with her work identity seemed to contribute to the impact. Communication with colleagues had been more authentic than with her family: "*I couldn't have a conversation with them about an author*". This suggested that social interactions with her work team were identity affirming through a shared sense of meaning. She found this could not be replaced by her family based social identity.

Jen, Phoebe and other accounts indicated a link between the centrality of the work identity and the importance of continuity or disruption of social connection with that group to wellbeing. Continued social connection may have represented work identity continuity survivors which the SIMIC theory would argue buffers wellbeing during a vulnerable period of life transition (Jetten et al., 2009). Alternatively, social connection may have bridged the availability of other social identity resources (Haslam et al., 2021) such as support which Jen's experience suggested. Alongside this, lack of connection may have exposed participants to social isolation which is correlated with poor mental health (Cruwys et al., 2014). Recent research with brain injury survivors has concluded that the group membership contribution to positive adjustment (to injury) was mediated through connectedness (Griffin et al., 2021), which was related to level of identification. Each but probably all of these wellbeing explanations may account for the motivation of survivors to maintain social connection with their valued work identity.

Survivor motivation to restore sense of purpose or meaning was also clearly linked to wellbeing for most participants, as one account particularly illustrated:

> *Did it affect me, yes, when I left work I was really down. I ended up going to the doctors. They sent me, I ended up at the doctors, they referred me to mental health unit at [Hospital], sat there for forty minutes with a very understanding lady, finished it, she said Well basically you sat in that waiting room outside, didn't you, I said Yes. And there was*

> *a load of men outside wasn't there? I said yeah. They're all exactly the same as you. They've lost their purpose in life. Which when you think about it, is what happened. And it took me 18 months to really settle down to retirement. . Money wise yes, I'm alright, I'm not rich but I'm comfortable, we do what we want or we could. But I still miss the involvement […] Boat club was probably a year, from the actual going from dead stop to feeling happy in my own life, eighteen months. … I love making things. As a group activity, that would probably be a seven. Yeah. High up there. […] Because they're people who make things.* ***Geoff, 65, Body Shop Manager, polytrauma including mild TBI***

Geoff reflected on the loss of "*the involvement*" from his job, which a mental health worker had reflected back to him as being a common issue that she was dealing with in her caseload who had "*lost their purpose in life*". This helped Geoff to pinpoint the cause of his low mood. Geoff had been forced to take retirement following his injury and he reflected that it took him eighteen months "*from dead stop to feeling happy in my life*". What improved his wellbeing was the restoration of purposeful engagement with a new *group*. In his work he had thrived on team-based engineering projects. He understood that it was the sense of shared purpose with "*people who make things*" that he found in "*Boat Club*" which restored his wellbeing. When asked to rate the importance of this group, he gave it 7 out of 7. A drive for restoration of the sense of purpose lost through work identity disruption was common for all the participants who experienced outright loss of their pre-injury work role.

In the present study, sense of purpose as a specific psychological resource available through the work identity added a mechanism to recent arguments about the relevance of social identity context to the appraisal of traumatic events (Muldoon et al., 2019). The SIMTIC theory asserts that trauma can impact social identities, potentially by changing access to associated psychological resources. The loss of work identity has been noted following brain injury (Muldoon et al., 2019b). While this was discussed in association with a loss of status, it was not connected with any specific loss of social identity resource. In the present data coping strategies focused on restoration of purpose took different forms: maintaining the pre-injury work identity where possible (Jason); seeking a new work role (Phoebe) or hobby group (Geoff). Other examples included pursuing purpose through education or survivor support groups (discussed below). It is a central tenet of the social identity approach to health that if the benefits associated with an identity are compromised then individuals will be motivated to restore the benefits associated with positive social identity (identity restoration hypothesis: Jetten et al., 2017). Regaining sense of purpose and life satisfaction was also highly prioritised in relation to return to work by two separate studies with traumatic injury patients (Bridger et al, 2021; Gavin et al., 2022). Restoring sense of purpose undermined through work identity threat appeared to be particularly central to injury recovery.

Several of the participants who lost their pre-injury work role or could not return to work quickly, spoke about helping others as boosting their sense of purpose, and through it their wellbeing. They had engaged in different ways of helping others, usually to benefit other injury survivors. Experiences of helping others was often focused on benefiting other injury survivors, e.g.: organised volunteering to provide survivor peer support; participating in clinical research or as a patient representative; helping others in injury support groups both face to face and online. One trauma survivor who knew she would never work again due to her impairments spoke about helping people to navigate the disabilities support system:

> *I'm grateful that I've learned to help others to see how to fight the system, how I've been able to help a couple of other people get through all the difficulties and that's rewarding cause it's really hard, there's a lot of red tape out there. There's more red tape than anything else and you can't see through it you know so to show something that you know you don't have to accept what they say. This is what you are entitled to and this is how you deal with it. It is rewarding. I am very grateful, my eyes have been opened to all of disability.* ***Carole, 44, Nurse, TBI.***

Carole's helping activities were either online through social media fora or within an injury specific charity which she attended regularly. She found it "*rewarding*" to use her own experiences in this way, to be able to "*help others*" learn through her own experiences, having had her eyes "*opened to all of disability*". Having experienced complete loss of a work identity that she strongly identified with (see *Appendix table II.i.*), Carole had found a way to restore some purpose through helping other injury survivors, something which had been central to her pre-injury work role in nursing and part time studies in psychology. She and other survivors spoke of these experiences as boosting personal wellbeing through a renewed sense of purpose. This was congruent with the social identity restoration hypothesis (Jetten et al., 2017) that people are motivated to restore positive social identity. What the present study findings added to this was an association with the specific social identity resource of sense of purpose.

Furthermore, this focus on benefiting other injury survivors, is reminiscent of two coping strategies described elsewhere. Firstly, advocating for a better experience for others who share a stigmatised or burdensome identity (e.g. disability, Dirth & Branscombe, 2018) reflects a group level strategy of *social competition* within the social identity approach. In the present sample, this may suggest that survivors' appraised themselves to have acquired such a burdensome identity, and taking action to improve the experiences of their group provided a way to cope with this with agency. Secondly, in trauma theory, advocacy for others with a shared survivor identity has been identified as a stage of trauma recovery. Within Herman's (2015, p207) account of trauma recovery, the concept of *survivor mission* describes a coping strategy of working for the support of trauma survivor peers. This group based coping strategy formed part of a reconnection phase in Herman's trauma recovery. Within the present analysis, restoring the availability of sense of purpose is highlighted as a possible driver for group based coping strategies. If this is more widely replicated, it represents empirical confirmation of Muldoon et al.'s (2019) SIMTIC argument that post traumatic changes in the availability of social identity resources impact psychological response to trauma.

Of further relevance to the SIMTIC argument is a final point regarding positive appraisal or reappraisal of traumatic experiences. There was some indication that for a small number of the participants, the sense of purpose they gained through helping others contributed to a *reappraisal* of their experience which they understood as positive psychological growth. For example:

> *I don't wish that I was in a coma or wheelchair. But I feel like it's given my life purpose right? I'm a much better person than I was before my accident. All I was worried about was earning lots of money and running around. Being a Flash Harry sort of thing. Whereas now I've got a real sense of purpose and direction. This accident has given me direction is probably the best thing I can say. […] It's just so wonderful that I can use my experiences to help other people. I've had huge thanks from parents of patients who have personally thanked me for all the work I've done for just giving hope to people* ***Paul, 44, Financial Product Sales, TBI***

Paul's traumatic brain injury resulted in the loss of his paid work but he eventually volunteered in the hospital which had treated him. His appraisal of the value of this activity was focused on the sense of purpose he gained from using his experiences to give others hope: a clear example of Herman's (2015) *survivor mission* described above. Moreover, he noted that this had resulted in personal growth "*I'm a much better person*" which is one criterion of post traumatic growth (Tedeschi & Calhoun, 1996). Previous research suggests this may be a common experience. Survivors of spinal cord injury were noted to experience an overlap between a search for meaning after life-changing injury and psychological growth (Davis & Novoa, 2013). While positive growth following trauma has previously been found to be associated with the identity gain pathway in SIMIC research (e.g. in ABI survivors, Griffin et al., 2022), a connection with sense of purpose has not been noted before. This adds a specific social identity resource mechanism to recent findings linking community or collective responses with positive psychological sequelae of trauma exposure (Cacioppo, Reis & Zautra, 2011; Craig et al., 2022). Purpose is also the most common feature of PTG in Joseph and Linley's (2005) Organismic Valuing Theory of PTG.

In conclusion, the maintenance or restoration of social identity resources (purpose and social connection) benefitted survivors' wellbeing and was an important contributor to survivors' coping strategies. This indicated possible mechanisms through which wellbeing may be mediated in the SIMIC and SIMTIC models. Other strategies to reappraise meaning and purpose co-occurred with this, e.g. many participants also spoke of gaining a renewed sense of meaning from the reprioritisation of their family identity in response to loss of work identity, too. Interaction between social identities is relevant to the next subtheme.

Subtheme 5A.3 Disability identity appraised incompatible with work identity

In Study 1, participants appraised a threat of exclusion from employment associated with their injury acquired impairments, but few of them spoke of themselves as having a disability. In Study 2 participants were asked more directly about changes to important groups and changes in how they were perceived. They reflected on the interaction between a prospective disability identity and the work identity more explicitly, e.g.:

> *they [work] did put a lot of faith in me in that they said I was still viable and I got to do training courses that I'd earmarked to do before my accident, and they still honoured all those and I still had a really good progression since the accident without being kind of cast aside or .. so I have been really lucky in that regard. […] I'd lost my arm above the elbow…everything is quite kind of like problem: solution kind of tasks. But I mean some things have been made easier with prosthetics…. I never like to refer to myself as disabled because I know there's people much worse off than me. […] In my head I don't think of myself as too different. I think* I've *been able to keep my, my sense of humour hasn't changed or like I've been able to make a joke of myself. Most of the time I don't think I've changed too much be that a positive or a negative depending on what the task is I suppose. I don't.. I think half of it is I've not wanted to change myself. I think I've fiercely wanted to keep being the same person like, if that makes sense. I've not wanted to change who I am. Because of my arm. I don't want it to be like all about my arm. I want it to be more about me I suppose.* **Dean, 36, TV Production, arm amputation**

Despite having had his arm amputated, and having a skilled job with manual elements, Dean had experienced no actual threat to his job. He did however reflect on a possible threat to his work identity, saying he had not been "*cast aside*" appraising himself "*lucky*" to have been considered "*still viable*" by his employer. Implicit in his account was the recognition that disability might have threatened his work identity, perhaps through exclusion or stigma. However, Dean did not self-categorise as disabled: "*I never like to refer to myself as disabled because I know there's people much worse off*". Instead, he approached his impairment as a "*problem:solution*" issue where prosthetics reduced the disabling impact on his work functioning. Dean's response reflected an aspect of self-categorisation noted by Dirth and Branscombe (2018) in their theoretical application of social identity theory to disability. They argued that perceptions of permeability (how far belonging to the disability group is 'negotiable') may be higher for injury patients than for those born with a disability. They suggested this may be because injury patients viewed their impairment as temporary, pending effective treatment or rehabilitation. Or because they previously identified as able-bodied and focused on retaining that aspect of their identity. Dirth and Branscombe pointed out that injured combat veterans may prefer to self-identify as 'injured veterans' rather than 'disabled', self-categorising by their valued work identity (2018, p1310). In this way veterans could resist or de-emphasise a potentially stigmatising disability identity in favour of a collective identity still in touch with the valued work identity. In Dean's case, he resisted self-categorising as disabled and appraised himself as not having changed his pre-injury sense of self which he "*fiercely wanted to keep*". Dean, in common with other participants was focused on preserving the continuity of his valued work identity. It was clear that he was negotiating the incompatibility of a disability identity with work in order to do so.

Incompatibility is a factor in the SIMIC theory of identity threat (Jetten et al., 2009) which has been found to contribute to wellbeing outcomes following a life transition. In university students, a lack of compatibility between old and new identities (e.g. home and new student identity, Praharso et al., 2017) contributed to the experience of stress during the transition. In the present study, many trauma survivors reflected on their negotiation of a conflict between the threat of a newly acquired disability identity and their work identity.

> *I think its just the whole perception of you've had this massive accident. massive injuries. You've been off work for a year, and you've clearly got a disability. That must mean that you're.. You know, probably not gonna be the most attractive candidate for my client. […] I did that trawl of the search firms, used my contacts, and had an interesting response. You know, somebody walking with a stick. You know you should have seen, you know it was just a big…The doors were closed really.* **Eve, female, 56, HR Director, polytrauma**

Eve had experienced forced redundancy from her pre-injury role, and directly attributed her lack of success finding new freelance clients to a perception of having been discriminated against for her apparent disability "*someone walking with a stick*". She perceived that prospective clients did not see her as "*the most attractive candidate*" and that "*the doors were closed*" to her. Eve perceived 's disability based discrimination as a direct threat to her work identity. Her experience is empirically supported. A disability charity report (Leonard Cheshire, 2019) noted that only 51.3% of people with a disability are in employment, with 17% of disabled adults having experienced employer withdrawal of a job offer as a result of their disability. Unlike Dean, Eve did self-categorise as having "a disability", perhaps because she had experience of it presenting a barrier to work participation while Dean kept his job.

While willingness to self-categorise as disabled varied between participants, resisting this self-categorisation in itself seemed to be a coping strategy for a few, e.g.:

> *So I know that I'm technically classed as disabled because of the injuries that I have and what I am able to do, but I then don't say, oh Alright, well I'm not searching for like what things I need, what benefits I need and things like that. I'm trying to do everything I possibly can to get better and to. Not obviously back to where I was, but to be as good as I possibly can, and I do find it quite strange that people don't want to do that just cos that is my way of thinking.* **Tina, 31, Physiotherapist, polytrauma**

Tina described herself as "*technically classed as disabled*". She did not accept it as a part of her identity, being more focused on doing "*everything I possibly can to get better*". She considered her impairments to be a work in progress, not yet finalised, pending possible rehabilitation. Tina spoke elsewhere about how motivated she was to return to her pre-injury job (see *Appendix Table II.i.*) and noted that she was not going to accept the need to seek benefits (which would imply an acceptance of disability) until she had tried more things to recover. This was very much in tune with Dirth and Branscombe's (2018) observations about injury survivors exhibiting a lack of *perceiver readiness* to self-categorise as disabled. Instead, they argued survivors would continue to identify with other groups (such as work) where positive identity could be maintained. Tina's lack of perceiver readiness to self-categorise as disabled was clearly motivated by a desire to preserve her work identity. This is understandable given research shows that negative and exclusionary attitudes to disability are pervasive in society (Jetten, Iyer, Branscombe & Zhang, 2013).

Reluctance to self-categorise as disabled is typical of an individual level identity management strategy. Such individual level *stigma management strategies* (summarised in Chapter 2) were most frequent in the sample. Regarding stigmatised identities, the social identity approach argues that when individuals perceive there to be *permeability* in the boundaries of a stigmatised identity (i.e. they can leave it) then individuals will find ways to not self-categorise with the stigmatised identity. These are termed *social mobility* strategies, allowing individuals to find ways to psychologically move out of a burdensome identity. Tina was attempting to postpone self-categorising as disabled, illustrating that survivors negotiated incompatibility between a potentially stigmatising identity and the work identity.

Another type of individual level stigma management strategy was evident for a small number of participants; that of concealment:

> *initially I was nervous to tell them because I thought there would be.. A bias towards not employing me because I was disabled […] I thought they would, they wouldn't employ somebody that had been in a wheelchair, I just thought that they're gonna think, right this guy's going to be on the sick all the time, and I have never had a day off. With this company I'm working with now, the last company I did because I was still having operations every now and then* ***Danny, 57, Motor Racer, polytrauma***

Danny was concerned that knowledge of his prior years of wheelchair use would prejudice prospective employers against hiring him. Despite having recovered enough function to no longer use a wheelchair, Danny chose to conceal his history of impairment because he perceived an exclusionary bias against disability in the work market. A concealment strategy was used mostly by participants with invisible functional changes such as cognitive changes from brain injury. This is likely to be a much wider practice, as evidenced by a small (non peer reviewed) survey of hidden disability in the UK publishing industry which found that the majority of affected workers were concealing their disability (Mitchell, 2021). Such a strategy has been reported in relation to protecting valued social identity before. An SIAH informed review of coping with a diagnosis of multiple sclerosis noted that concealment of symptoms was motivated by preserving family identity (Barker et al., 2014). In the present context, concealment of disability was motivated to maintain a work identity.

Finally a participant who was unable to conceal his impairments, being a permanent wheelchair user, illustrated how minimising self-categorisation as disabled was directly related to the preservation of work identity. Jason reflected on the extent of the impact his spinal cord injury had on his life:

> *Mobility. How I get around. Continence. Other than that I kind of like to think I'm just an average Joe, you know. For me, I am lucky, I am lucky that it's, that those are the main aspects in my life that are affected. You know. […] it's just the sense that like I say it fits into an average lifestyle, an average life of the average person. So it makes me feel average as well. I can drop the kids off at school, say to the other parents Oh I've got to get off to work now. And it just feels right and if I was on benefits and nothing else to do then that wouldn't feel the same, you know. It's an achievement, big achievement.* ***Jason, 42, Mechanical Fitter, SCI***

Jason identified himself as "*just an average Joe*", diminishing the extent to which disability defined his life because he was able to fulfil social roles like most other 'average' people. For example, he was still able to take part in an active parenting role "*drop the kids off at school*". Being able to tell other parents about his active work identity was positive for his wellbeing "*just feels right*". Being able to participate in these valued social identities, particularly work meant that Jason did not feel overly 'disabled'. The negotiation between his disabled identity and his work identity seemed to result in his valued work identity being more salient than his disabled identity. Even so, his account indicated that he was aware of the potential for incompatibility between the two identities.

In conclusion, trauma survivors perceived that becoming disabled could threaten the continuity of their valued work identity. The two social identities were understood to be incompatible. This perception was likely built upon prior experiences of ableist attitudes in society or the workplace. Coping strategies to manage the threat of a disabled identity were individual level strategies rather than group level.[16]

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[16] It is noted however that there was some evidence of group level strategies were employed across the sample, mostly by those who lost their pre-injury role. Accessing injury based peer support helped individuals to overcome the negative impact of disability on their wellbeing. While this point is not central to negotiations of work identity self-categorisation, it does relate to the cost of stigma concealment strategies.

Summary of Theme 5A

This theme further developed Study 1 findings, affirming that a threat to work identity was evident both as a short and long-term stressor and this made a negative contribution to wellbeing. The centrality of the disruption of social identity resources (purpose; social connection) to wellbeing was again apparent. The relevance of this as a prospective mechanism was underlined by survivor coping strategies focused on maintaining and restoring these resources after work identity disruption. The Study 1 perception of exclusion from work through disability was further developed. In Study 2 it was apparent that survivors negotiated perceived incompatibility between a new disability and the valued work identity. Coping strategies varied across participants, but all pursued individual stigma management strategies centred on avoiding self-categorising as 'disabled'.

THEME 5B: Availability of workplace support influenced coping appraisals

Theme two considered trauma survivors' appraisal of the availability of support from their workplace. Study 1's focus on workplace support observed that its positive receipt contributed to trauma survivor wellbeing. Study 2 data indicated a possible link to meaning-making in response to availability of workplace support. Where workplace support was perceived to be forthcoming it was appraised positively, as *affirming the work identity continuity* (5B.1). In contrast, where participants *perceived a betrayal of expected reciprocal support* (5B.2) from the workplace, their appraisals indicated a strongly negative impact on wellbeing.

Subtheme 5B.1 Available support affirmed work identity continuity

Half the participants had been able to retain their pre-injury role, and others were in new roles at the time of the interview. Those who perceived they had received post-injury support from work appraised it with gratitude.

> *I spoke to the guy whose company it is, there's a limit I can do. His reply was, cheered me up no end, he said Look I've got to manage you, this is what he said, I don't want to come over clever, We don't want to lose you Nick, but yeah we know we've got to manage you, meaning me body, so that cheered me up, that gave me a bit of a, well I'm working for a crowd that actually recognise what I've been through and know me limitations, which has helped me a little bit* ***Nick (59, Bricklayer, polytrauma including TBI)***

Nick reflected on how his employer's statement that "*we don't want to lose you*" was directly associated with him feeling "*cheered up*". His receipt of support here was an explicit affirmation of his work continuity. Nick's appraisal also indicated that he felt his workplace understood his needs, indicating 'felt understanding' (Livingstone et al., 2020) affirming Study 1, they "*actually recognise what I've been through*". The importance of supportive communication and the receipt of genuine care and concern from the workplace has been noted as an important facilitator to return to work following injury in a systematic review (White, et al., 2019). In SIAH research following trauma, the receipt of emotional support has been noted as important for conferring solidarity and enhancing collective expectations of coping or efficacy (Drury et al., 2016). This expanded Study 1 findings, indicating that the positive appraisal of available work support could be linked to the affirmation of work identity continuity.

Workplace support was perceived to come from colleagues as well as employers, both linked to positive coping appraisals. One severely impaired participant whose spinal cord injury affected his hands as well as his capacity to walk was routinely assisted by colleagues in his work tasks.

> *I mean my job. There are practical sides to it in terms of having to make decisions about parts. But again, I have a team of quality technicians that would basically be my hands for us. If there was an issue they would pick the stuff up and have a look. If you get down to physically, that's probably stopped us doing quite a lot, but you've got to be creative and find a way around it.* ***Anthony, Student, but Quality Engineer at time of interview, 36, Spinal cord injury***

Anthony spoke about this help from colleagues "*that would basically be my hands for us*", which meant his work role could continue unthreatened, through teamwork. Anthony's positive appraisal of coping creatively included his colleagues' actions, suggesting *collective efficacy* (another social identity resource). He did not differentiate here between his own coping and his colleagues' contribution. The receipt of work-based support has previously been found to be associated with an increased capacity to deal with work-based stressors, such as burnout in chefs (Kang, Twigg and Hertzman, 2010). The social identity approach notes that support is *expected* from social identities with which an individual strongly identifies (*social support hypothesis*, Jetten et al., 2017). For Anthony, the collective and individual response was appraised as so closely associated it was one response. This may have been derived from such a high level of identification with his work group that he perceived colleague problem solving as part of his own coping. Anthony's example illustrates a very close link between the expectation of available workplace support and being strongly identified with the group.

The social identity approach argues that support is perceived to be available from the social identities with which one identifies (*identification hypothesis*, Jetten et al., 2017). This central concept is relevant to understanding the preceding extracts. When group members perceive a given social identity is salient they will be motivated to provide support to other group members in order to benefit the group overall (Haslam, Reicher & Levine, 2012). Experimental evidence has supported this inclination to support ingroup members, where the group was first made salient (Levine et al., 2005; Levine & Thompson, 2004). Furthermore, empirical evidence has predicted the availability of colleague support in bomb disposal officers on the basis of high identification with their work group (Haslam et al, 2005). For the present population, receiving workplace support clearly affirmed the continuity of work identity. What was less clear was whether identification with the pre-injury work group was necessary to expect workplace support to be forthcoming.

A different way that workplace support helped affirm work identity was evident for another participant with significant impairments following his injury. For Ethan, receiving workplace support in the form of understanding of his needs allowed him to feel he was just "*another work colleague*":

> *I suppose with work […] in terms of how they treat me, they are considerate to my needs, yes. Especially when they have a fuller understanding of what my needs are, cause I think that you know it's easy to make an assumption, that I just can't move my legs, but I'm fine to move my hands and arms. […] But in terms of how they treat me, it's just as if I wasn't paralysed. So I don't get any sort of special treatment in that respect, they treat me as another work colleague.* ***But they're not putting obstacles in your way either.*** *No no. But in terms of the standards of my work and so on, they would still expect just as much.* ***Ethan, Medical student, 38, Spinal cord injury***

Ethan noted that his colleagues were "*considerate to my needs*", but "*treat me as another work colleague*". He qualified that this meant colleagues had the same expectations of his "*standards*" of work, implying that they did not expect less of him because of his disability. His appraisal of this was positive "*it's just as if I wasn't paralysed*… [no] *special treatment*". This seemed to be an appraisal of his continued belonging and *prototypicality (being like the others).* Within the social identity approach, prototypicality has more usually been studied in conjunction with group behaviour and social influence through leadership (E.g. Haslam, Reicher & Platow, 2011). In Ethan's example, this appraisal may have contributed to his sense of continued belonging to his work identity while also reducing his perception of work identity threat from disability. Colleague support that treated Ethan as a work colleague in spite of significant impairments helped affirm the continuity of his work identity.

Finally, one participant's novel experience of how her workplace's support exceeded expectations further affirmed a relationship between available workplace support and work group identification:

> *Work colleagues like literally blew us away. So bearing in mind, I'd only been there since September. so there were people that brought us dinners […] like feeling incredibly loved and supported by my work colleagues and and it's not just about meals. There was messages and books and encouragement cards and stuff like that. So that was really nice. […] I definitely valued it, valued it more and was grateful for it. It's probably my, It's my least well paid job and it's my least Yeah, it's probably my least favourite job, so. Yeah so, but it definitely has, you know that stuff. I sat there in the office like recently and thought this is more than just what about, you know, what I give and what I do here, being part of this is is really important to me. […] It changed, changes your relationships,*

> *changes your perspectives.* ***Nessa, female, 40, Coach, Trainer, Foster Carer, polytrauma***

Nessa described a portfolio career and noted that support received from her least favourite role (pre-injury) "*blew us away*". Receiving a level of support that surpassed the pre-injury importance of that role caused Nessa to re-evaluate her identification with that workplace so that it became "*really important*". She attributed this increased identification to support that "*changes your relationships, changes your perspectives".* Given other participants appeared to experience workplace support in the context of a work identity that they had highly identified with pre-injury, Nessa's experience may highlight a bidirectional reciprocity relationship between identification and provision of workplace support. An increase in group identification has previously been reported following receipt of support (Gleibs et al., 2011). This could represent another mechanism through which support affirmed work identity for trauma survivors.

In conclusion, Study 2 added insight to the reasons why perceived availability of workplace support were appraised positively and contributed to wellbeing in Study 1. While receiving workplace support was instrumental in promoting continued work identity participation, the importance of support to work identity continuity may go further. Appraisals of workplace support in the present sample were associated with psychological resources such as work group belonging, understanding of needs, team efficacy, and high identification with the group. All of these psychological resources were intrinsically valuable to survivors' wellbeing, but their presence also affirmed work identity continuity.

Subtheme 5B.2 Perceived betrayal of expected reciprocal support

Trauma survivors who perceived an absence of workplace support appraised this very negatively, viewing it as a betrayal of expected reciprocal support. This was usually associated with work identity loss. More than half the participants had lost their pre-injury work role and a small but significant minority had experienced the termination of their employment against their wishes.

> *I went in to see the CEO and he had a conversation to terminate my employment. And so that adds to the psychological injury. So I was absolutely just knocked sideways. […] I remember having that conversation with him and you know this is really damaging my rehabilitation. But of course he didn't care. It was nothing to do with him and I just couldn't think. I thought. Well, how can you not, you know this is I've been through all this and I've done so much for the organisation. […] It did feel there was a massive betrayal. […] I did feel betrayed because there was a definitely another way to do it. They just handled it the wrong way and actually they could have supported me in my rehabilitation. That's all I was asking for at that point. I needed that. I needed that to get strong and build myself up both psychologically and physically.* **Eve, 56, HR Director, polytrauma**

Eve described the unexpected termination of her contract by her employer as contributing to her "*psychological injury*". She appraised it as "*a massive betrayal*" of the support she had anticipated from her workplace: "*they could have supported me in my rehabilitation*". Eve also noted "*I've done so much for the organisation*", indicating she expected some employer support in reciprocity for her pre-injury contribution and was "*knocked sideways*" when the opposite happened. As noted above, the social identity approach has shown that support is expected to be reciprocally available from social identities with which individuals identify (*identification hypothesis*, Jetten et al., 2017). A negative impact on affect has been found in employees who perceived a lack of reciprocal support at work (Buunk et al., 1993). Identification was again important since Eve had strongly identified with her high status role and career (see *Appendix Table II.i.*). The lack of support she received directly resulted in the loss of her valued work identity. Her psychological distress seemed more devastating because it was caused by a simultaneous loss of two things: expected and much needed support "*I needed that to get strong*" alongside her work identity. Eve's case clearly demonstrates multiple impacts: the traumatic injury itself, then loss of expected support plus social identity disruption. The simultaneous psychological insult of trauma, plus identity change related loss of support has previously been noted (Këllezi & Reicher, 2014). They reported the double insult affecting survivors of wartime rape unable to access support due to stigma. This suggested a pathway to the erosion of positive identity theorised by Muldoon et al., (2019) following traumatic experience.

The loss of work identity also contributed to feelings of eroded self-worth, for example Geoff who was forced to retire following injury, which made him feel disposable:

> *Well you sort of. You're just a single use object. You've done your bit, thankyou, goodbye. […] it was announced that *I* had decided to take early retirement. Cause it had got to look right. So that was on me mind, thinking am I going to.. am I going to go, am I going to find another job, what am I going to do, blah, blah, blah. Can I afford to do it. So there was that.* ***Geoff, 65, Body Shop Manager, polytrauma including mild TBI***

Geoff's company had not offered him any support to return to work after an accident occurred in the workplace. Instead they initiated a retirement which Geoff perceived as coerced. He had no control over the process which his company "*announced*" as his decision "*cause it had to look right*". Geoff's bitterness at being treated so badly, discarded as a "*single use object*" following decades of work for the same company again highlighted a perceived betrayal. This was perhaps a betrayal of his value as a worker or a betrayal of the consideration he felt he deserved in reciprocity for long years of service. The loss of his identity as a worker initiated a period of psychological distress through loss of purpose discussed in subtheme 5A.1 above, echoing the negative impact of involuntary retirement on wellbeing noted by Ward and King (2017) and also in a qualitative study of retired police officers (Bullock et al., 2020). Geoff's experience highlighted how lack of support from the workplace could result in the complete destruction of work identity.

Perceived betrayal of expected support by the workplace was not always a response to termination of employment. Another extract indicated that lack of workplace support directly contributed to Aaron feeling unwilling to return to his pre-injury role:

> *Because I didn't feel that I could go back there. Didn't feel I could trust them. I don't feel that they understood what the real situation was, and therefore I don't think. I didn't get the feeling that they really wanted to help me or were prepared to do what was needed to support me. I didn't feel that that trust was there, which was disappointing, but I've always worked hard I've always given 100% You know, I'd always go out of my way to try and improve things and you know better than it was before type of thing. So yeah, I think I would find it difficult to come back there.* ***Aaron, 56, Senior Buyer, Polytrauma with mild TBI***

For Aaron, the late diagnosis of a mild traumatic brain injury contributed to his changed performance at work and he perceived that his workplace did not want to meet his need for support: "*I didn't get the feeling that they really wanted to help me*". This resulted in his loss of trust in his employer. As with Eve, Aaron had expected some reciprocity of support in return for his previous contribution "*I've always worked hard, I've always given 100%*". When it was not forthcoming, it damaged his trust in the workplace. Aaron's feeling that "*I would find it difficult to come back there*" indicated a severe loss of identification with his pre-injury workplace. As noted in subtheme 5B.1 (Nessa) an unexpected level of support (this time negatively) seemed to directly contribute to alterations in the level of survivor identification with the workplace. This was likely to have varied by the level of pre-injury identification, which was high in the sample (see *Appendix Table II.i.*). Social identity theory makes a connection between high identification with a group and the expectation of available support, as noted above (identification hypothesis: Jetten et al., 2017). A perception of betrayal in response to a lack of expected support from a valued identity was a particularly novel finding. It may indicate a social identity mechanism through which the erosion of positive social identity occurs following trauma, adding to the SIMTIC proposal (Muldoon et al., 2019).

To conclude, trauma survivors in the study predominantly expressed a high level of identification with their work identity (even though this was not measured quantitatively), and they expected reciprocal support from their employer. When this was not forthcoming, participants appraised this as a betrayal that contributed to psychological distress. The extracts in this subtheme suggest that while survivors were usually interacting with their workplace as a member of a shared identity, some employers interacted with the trauma survivor at a transactional, contractual level. This mismatch was appraised as betrayal by the employee.[17]

Summary of Theme 5B

This theme contributed greater clarity to Study 1 findings. Positive appraisals of coping were again evident where workplace support was perceived as available. However, the link between available workplace support and work identity continuity was made clearer both positively (5B.1) and in the absence of expected support (5B.2). Betrayal of expected reciprocal support was a particularly novel finding. Pre-injury identification levels with the workplace seemed likely to contribute to this process.

5.4 CONCLUSIONS

This second lived experience study set out to further investigate the contribution of social identity processes to trauma survivors' cognitive appraisals of injury, recovery and return to work. While the questioning route was careful to ask about possible impacts on all social identities (important groups), participants did appraise specific threats to work identity, which was the focus of this analysis.

Theme 5A.1 provided insight into the social identity processes underpinning primary appraisals of work identity threat. Work identity threat was evident for almost all participants in this second sample (subtheme 5A.1), but not only because a higher proportion of the second trauma survivor sample experienced outright loss of their pre-injury role. Whether outright loss of pre-injury role or short term worries during convalescence, work identity threat negatively impacted survivors' wellbeing. This second study confirmed that work identity threat contributed to psychological distress following injury. Moreover, the impact of work identity disruption was experienced through disruption of social identity resources, particularly sense of purpose and social connection (subtheme 5A.2). Again, this psychological resource disruption contributed negatively to survivors' perceived wellbeing, indicating social identity resource disruption as a possible mechanism for the impact on survivors' distress. Survivor coping strategies that focused on maintaining or restoring the same resources affirmed this. The acquisition of disability was a further threat appraised by survivors' and the threat

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[17] The majority of the appraisals of betrayed reciprocal support related to employers but there were cases where betrayal of expected support was appraised in response to colleagues. The same pattern was illustrated in the wider data in relation to family, friends and other valued groups too, with an impact on subsequent levels of identification, but this is beyond the scope of the research question.

perceived in relation to the valued work identity (subtheme 5A.3). Participants seemed to be negotiating their identification with being disabled in direct relation to the threat to work identity.

Theme 5B contributed new insights to the Study 1 findings regarding positive appraisals of available work support. Both subthemes highlighted that survivors who felt strongly identified with their pre-injury work identity had an expectation that support from the workplace would be available. The provision of support seemed to be perceived as practically supporting continuity of the valued work identity (Subtheme 5B.1). Furthermore, perceived support seemed to be associated with work identity continuity in another way: the availability of psychological resources such as belonging and team efficacy also affirmed continuity. A particularly novel finding was that where the expected workplace support was not forthcoming, survivors appraised a betrayal of reciprocally available resources (subtheme 5B.2) for their salient work identity. This betrayal indicated a painful loss of the valued work identity.

5.4.1 Strengths and Limitations

This study provided particularly rich data through in-depth interviews with survivors of general injury, a high proportion of whom had experienced polytrauma or injuries which resulted in long term or permanent impairments. This was important for understanding psycho-social mechanisms in a broad range of injury types. This second lived experience study corroborated and developed evidence for a social identity contribution to appraisals of general injury. It did so through a questioning route which did not prioritise any single social identity and nevertheless supported the relevance of work identity threat. However, work/study was mentioned as a criterion of participation in recruitment documents, so participant self-selection may have unduly biased sampling of survivors who were highly identified with work.

Survivors were retrospectively recalling their experiences, in some cases years after injury. This was relevant for understanding reappraisal and meaning-making which takes place over longer periods of time, however appraisals may also change over time (Lequerica et al., 2010). Self-selection also meant that survivors who were unwilling to talk about their experience may not have participated which potentially omitted the accounts of those who did not experience any stress or who were still too distressed to speak of their injury. Recruitment for both samples was mediated through peer support communities or PPI who were actively focused on assisting research. This may have resulted in a disproportionate number of participants who used ‘survivor mission’ as a coping strategy. It would be useful to compare these findings with trauma survivors still in an active phase of psychological distress, perhaps through trialling an intervention aimed at social identity generation.

As noted following Study 1, the following chapter (6) discusses the combined lived experience findings of Studies 1 and 2, with reference to implications for theory and practice.

CHAPTER 6: Discussion of combined lived experience studies

6.1 INTRODUCTION

This chapter provides an overview and discussion of the main findings of the two qualitative lived experience studies reported in Chapters 4 and 5. The overall purpose of the research was to explore the contribution of social identity context to cognitive appraisals of threat and coping made by injury survivors as they attempted to return to work. The present chapter discusses the key findings of the two lived experience studies together, summarising the theoretical and practical implications for psychological outcomes and return to work (RTW). As detailed in Chapter 2, two theoretical approaches were brought together to analyse survivor responses. Cognitive appraisal was informed by the transactional model of stress appraisal and coping (Lazarus & Folkman, 1984) and the common-sense model of representation (CSM: Leventhal et al 1998; Meyer et al., 1985). The prospective contribution of social identity to appraisal included SIMIC (Haslam et al., 2021; Jetten et al.2009) and SIMTIC (Muldoon et al., 2019) models. Below, the main findings of each survivor study are summarised and a social cure and curse pathway model proposed before each key finding is reviewed in relation to existing literature.

6.1.1 Main findings of chapters 4 and 5

The key findings of the two studies are briefly summarised as follows. Study 1 (Chapter 4) aimed to explore psychological responses to injury and return to work decision making by analysing qualitative data both inductively and deductively. The findings of Study 1 indicated that social identity context was relevant to survivor appraisals. Survivors appraised *threats to their valued work identity*. These threats came from injury originating impairments in two ways: by limiting capacity to participate in work and through perceived exclusion from work. Survivors also spoke about *disruption to key social identity resources* of sense of purpose and social connection while unable to participate in work. A third social identity resource of *social support from the workplace contributed to positive appraisals* of capacity to cope with the consequences of their traumatic injury. Study 2 (Chapter 5) aimed to further test the contribution of specific social identity processes to cognitive appraisals. The *negative psychological impact of work identity disruption* and even short-term work identity threat was evident. The importance of *sense of purpose and social connection* to wellbeing indicated that these social identity resources were *associated with the work identity*. This was further affirmed by *survivors attempts to restore social identity resources* (particularly sense of purpose) when they had been disrupted. In addition, survivors perceived there to be *incompatibility between a new disabled identity and the valued work identity*, and many negotiated their self-categorisation using recognisable *social identity strategies for stigma* *management*. Finally, appraisals of the availability of workplace social support indicated that survivors had *expectations of reciprocal support* from colleagues. The extent of *the availability of support appeared to contribute to the affirmation or perceived betrayal of work identity continuity*. The majority of this discussion chapter considers the theoretical and practical implications of the combined findings.

6.2 DEVELOPING A PROSPECTIVE MODEL OF IDENTITY THREAT

6.2.1 Summary of social cure and curse pathways

Diagram 6.2 below summarises four pathways through work identity threat that were evident in the lived experiences of injury survivors. Findings which are novel to the present research are in red font. To put these into context with existing theory, Diagram 6.1 is the Social Identity Model of Identity Change previously cited in Chapter 2 (Diagram 2.2). Key to the SIMIC model (Jetten et al., 2009) are social identity continuity and gain pathways and the impact these have on health and wellbeing following a life transition. The number of pre-existing group memberships and the compatibility between old and new social identities are also predictors of psychological outcomes after a life transition. In Diagram 6.2, the prospective model, **Pathway (1)** ***identity continuity or maintenance*** (Haslam et al., 2021) replicates the positive or curative pathway to positive psychological outcomes noted in the SIMIC model (Jetten et al., 2012). A mirror **pathway (2)** of social ***identity disruption or loss*** is also included as a pathway to negative psychological outcomes (or social curse: Këllezi & Reicher, 2012) following injury. The notes within the pathway arrows indicate that the disruption or availability of *social identity resources* such as social support, sense of purpose and social connection was closely associated with the process of social cure or curse. Pathway 3 adapts the SIMIC predictor of social identity compatibility to indicate **(3) the** ***stress of identity incompatibility*** between the work identity and newly acquired disability identity: a social curse process. Finally, **Pathway (4)** ***identity revitalisation*** includes Muldoon et al.'s, (2019) SIMTIC concept of renewed social identity following trauma. This is a curative pathway to positive psychological outcomes, which has been empirically associated with identity gain over maintenance (Craig et al., 2022; Griffin et al., 2021). As in pathways 1 and 2, the present data indicated that access to social identity resources was an underlying mechanism of this pathway. All of this is elaborated below in relation to specific aspects of appraisal and coping, with Table 6.1 providing an overview. The congruence of these social identity processes with psychological trauma theories outlined in chapter 2 (Bonanno, 2021; Herman, 2015; Janoff-Bulman, 1992) is also discussed, adding further support to the relevance of social identity context to appraisal and variations in psychological outcomes in a trauma population.

Diagram 6.1

The Social Identity Model of Change *(adapted from Haslam et al., 2021; p642 while permission pending from Annual Reviews)*

SIMIC figure adapted from Haslam et al., 2021 (p642)

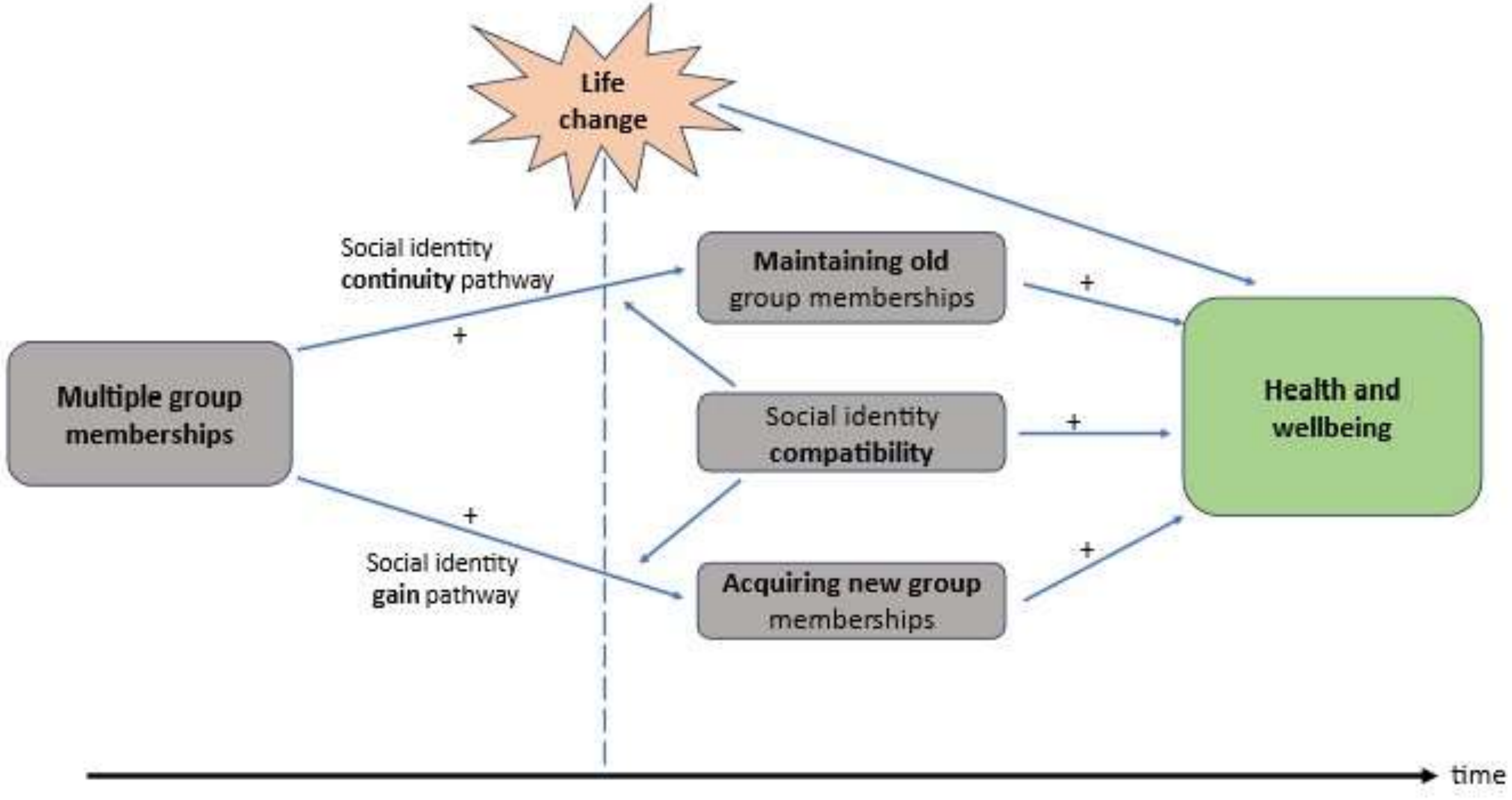
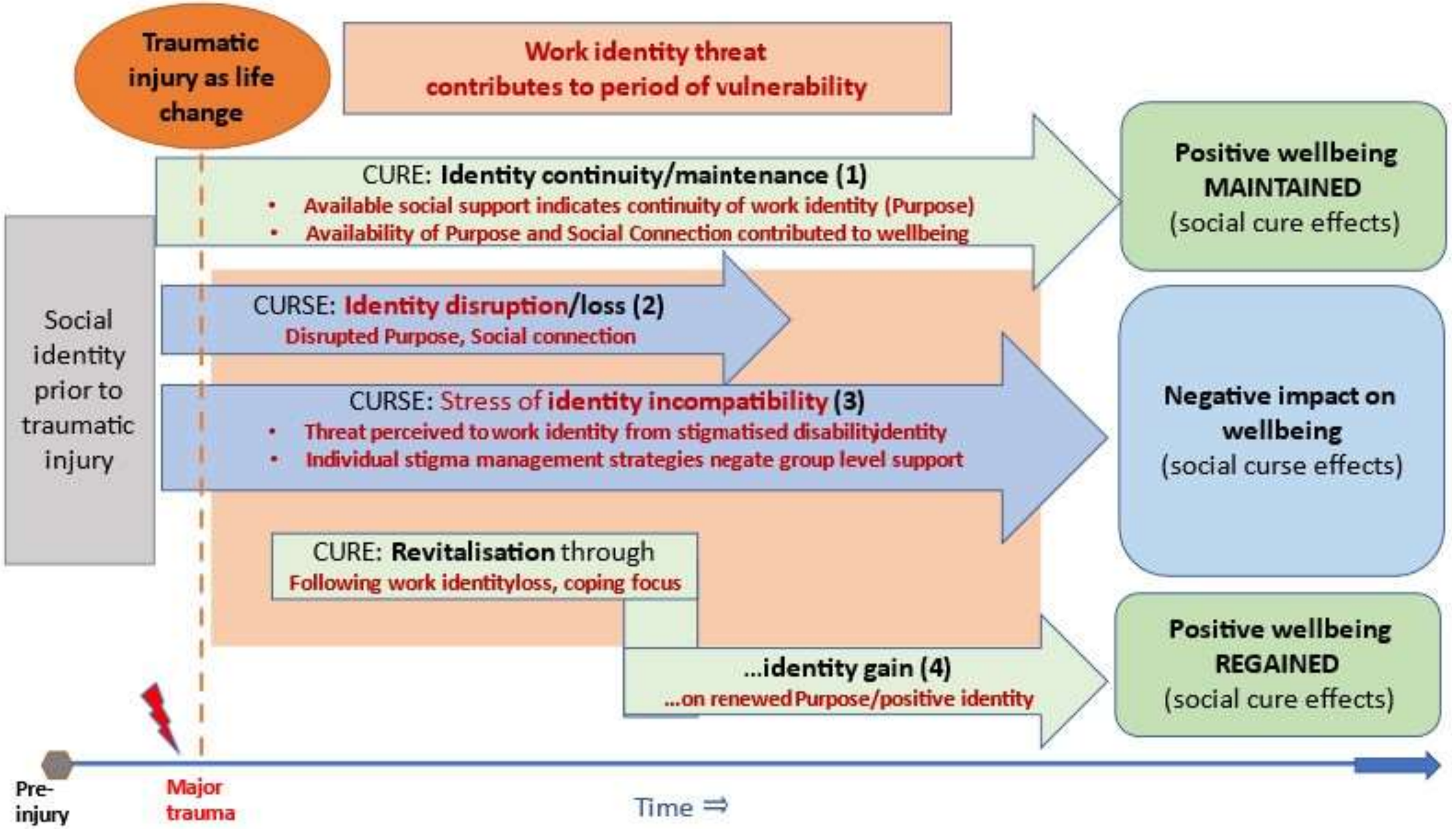


Diagram 6.2:

Prospective model of pathways through work identity threat following injury: an elaboration on SIMIC and SIMTIC models



Findings which are novel to the present research are in red font.

Table 6.1

Summary of social identity processes operating within the Work Identity Threat pathways model

Pathway through Work Identity Threat (with processes)	Social Identity Resources implicated + mechanisms	Survivor Coping Responses
SOCIAL CURSE		
P2/Work Identity Disruption or Loss – mirror of SIMIC **Primary appraisal of work identity threat or shattering = loss of positive identity**	Disrupted sense of purpose Disrupted social connection Betrayal of expected workplace social support reciprocity	Physical recovery efforts Motivation to return to work quickly [Seek support from other social identities e.g. family]
P3/Stress of Identity Incompatibility / Incompatibility through stigma **Externally imposed disability identity associated with stigma = burdensome identity (primary appraisals)** **Disability identity incompatible with work identity: a further primary appraisal of stress**	Incompatibility reduces identification and thus perceived availability of coping resources. *Devalued social identity* *Stigma identity management strategies may be motivated by maintaining positive identity and access to associated social identity resources – not clear from present data*	Physical recovery efforts Identity management strategies at individual not group level: Conceal disability Resist self-categorisation as disabled
SOCIAL CURE		
P1/Work Identity Continuity/Maintenance – affirms SIMIC **Maintenance of positive social identity** **Available workplace social support appraised as affirming work identity continuity (secondary appraisal)** **Social support provides emotional regulation/coping**	Instrumental workplace support signified continuity. Emotional workplace support through social connection Felt understanding	Seek connection with work while convalescing *Direct support seeking from work – not evident in data*

P4/Revitalisation through Identity Gain – affirms SIMTIC	Restoration of sense of purpose	‘Survivor mission’ to improve other injury survivors’ experience
Restore positive identity through new groups following loss of work identity (reappraisal)		[Reappraise value of maintained identities e.g. family]
	[Felt understanding from shared experience]	[Seek support from injury peer groups]

Notes in [square brackets] indicate themes present in the wider data corpus which were omitted to focus on work identity.

6.2.2 Social identity contributions to primary appraisals of threat

A primary appraisal of threat to the valued work identity was central to survivor experiences, and this was linked to the primary health threat of functional impairments from injury. **Work identity threat was a specific and novel form of social identity threat following injury**, fitting in Pathway 2 in the model (Diagram 6.2). Both tangible and invisible impairments (subtheme 4A.1) were appraised in terms of the impact they had on survivors’ ability to participate in valued social identities.[18] This central finding of primary threat of injury to work identity has received limited attention in injury research and social identity research. Haynie and Shepherd (2011) found that injury disrupted veteran marines’ sense of self associated with career identity. Andreassen and Solvang highlighted a conflict between injury patients’ “wageworker” identities (2021, p583) and rehabilitation goals, noting how important return to work was for injury survivors. In social identity literature, the SIMIC model has been applied to life transitions affecting work identity such as retirement and redundancy (from the police: Bullock 2020; from elite sports: Haslam et al., 2021b; and also following acquired brain injury (ABI) (Muldoon et al., 2019b). The centrality of the issues in the present research indicated that a specific **threat to work identity was a marked consequence of experiencing injury**. In SIMIC terms, this indicated that traumatic injury constituted a life transition when social identity may become threatened. The SIMIC model and SIMTIC application to trauma exposure provide social identity processes which help to explain variations is psychological outcomes following injury. The focus of previous literature applying SIMIC has been on pathways of identity gain or maintenance that support psychological

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[18] Work identity threat was the focus of the analysis but other social identities were similarly affected across the data corpus.

resilience (social cure). In the present data, work identity threat constituted a *loss pathway* mirroring the gain or maintenance pathways shown to foster psychological resilience in SIMIC. Work identity threat was a source of social curse (Këllezi & Reicher, 2012) after injury, represented by pathway 2 in the model. Thus, the psychological impact of impairments following injury went beyond suffering such as pain and discomfort, having the potential to threaten loss of positive social identity. For injury survivors, **a primary appraisal of work identity threat was a key aspect of their appraisal of the impact of injury**, and a significant stressor. The impact of work identity threat on survivors' psychological wellbeing is explored next.

Experiencing work identity threat (pathway 2) had a negative impact on psychological wellbeing for survivors. This negative impact on wellbeing occurred whether the threat was short term or long term work disruption or an outright loss of pre-injury job role. The negative impact on wellbeing was evident in two ways, both of which are explained in more detail below. Firstly, **positive social identity was diminished through reduced participation in the work identity** following a life transition. Positive social identity is at the heart of the social cure, (Jetten et al., 2017) and the threat of its loss is the starting point of the SIMIC theory of what supports resilience during a life transition (Jetten et al., 2009). When Praharso et al. (2017) compared the buffering or protective nature of social support with threat of losing social identity (in the hypothetical context of a health diagnosis) they found identity loss was more important to experimental participants' mental health. Secondly, in both studies, **the disruption of social identity resources, specifically sense of purpose and social connection, contributed to reduced wellbeing**. Loss of access to social identity resources is congruent with recent theoretical applications of social identity theory to trauma populations (Haslam et al., 2021; Muldoon et al., 2019). These two impacts of social identity disruption on psychological wellbeing are discussed further in the following two paragraphs.

In both lived experience studies, wellbeing was negatively affected when the work identity was disrupted (social curse pathway 2). Short term distress was often spoken of in terms of anxious rumination about not being able to continue the pre-injury role. Those who lost their job following injury noted a loss of self-worth amongst other impacts. The **impact of a specific work identity threat or outright disruption on injury survivors' psychological wellbeing** was a novel finding. However, the negative psychological impact of loss of work identity has been noted in rehabilitation literature which was not informed by the social identity approach to health. For example, Libeson et al. (2021) reported distress in survivors of traumatic brain injury unable to return to their pre-injury work. Within social identity literature, the stressor of social identity loss has been noted in populations such as people with acquired brain injury

(Muldoon et al., 2019b), police officers retired through injury (Bullock et al., 2020) and retiring elite athletes (Haslam et al., 2021b). In the present traumatic injury survivor context, while financial motivations for return to work were spoken about, **survivors were also motivated by the need to maintain their threatened work identity for wellbeing reasons (pathway 1)**. The maintenance pathway in SIMIC predicts that wellbeing will be preserved by the continuity of a valued social identity (Jetten et al., 2009). While the impact of work identity disruption on wellbeing affirmed the relevance of social identity context to injury appraisal, it was the second issue, psychological resource disruption that indicated a mechanism for the wellbeing impact of work identity loss.

6.2.3 Social identity resources as a mechanism

The present research indicated that **social identity resource disruption** (particularly of sense of purpose which is considered first) **was central to** the pathway 2 **negative impact of work identity threat on wellbeing**. This was a particularly novel finding. In both lived experience studies survivors focused on the disruption of sense of purpose and social connection in relation to their wellbeing. This disruption was evident both during temporary disruption of work participation and where work identity was lost outright. The value of work was expressed in close relation to these two concepts; both of which are understood to be part of the positive psychological resources available through social identity (Haslam et al., 2021). Particularly in relation to work, **disrupted sense of purpose had a direct impact on survivors' individual self-worth or positive identity**. The disruption of sense of purpose or meaning has been previously reported following spinal cord injury (Davis & Novoa, 2013) (with no reference to social identity) and in relation to retirement from the marines (Haynie & Shepherd, 2011) or police (Bullock et al., 2020) through injury. Only the latter study was social identity informed research. The contribution of work to meaning in life has been little researched (Ward & King, 2017), but the importance of sense of purpose as a return to work outcome was recently reported as an important goal of vocational rehabilitation (Bridger et al., 2021; Gavin et al., 2022; Litooij et al., 2021). Sense of purpose was also a focus of survivor coping strategies discussed below in relation to pathway 4: revitalisation.

A second disrupted social identity resource of social connection was also spoken of in relation to survivors' reduced wellbeing. This again had been prioritised for survivor rehabilitation, by Gavin et al.'s (2022) research, noted above. A link between social connection and wellbeing has previously been noted in populations with disrupted work identity, including combat veterans (Waldhauser et al., 2021), and following covid related job loss (Godinić & Obrenovic, 2020). It has been argued that social identity resources become available to group members through social connection (Haslam et al., 2022), so a lack of social connection would cut off access to other group resources. This suggests that social connection functions simply as a bridge to other psychological resources important in coping with stressors. However, social identity research has reported a strong empirical link between loneliness/social isolation and depression (Cruwys et al., 2014) and between social connectedness and health and wellbeing (Holt-Lunstad et al., 2011) discussed in Chapter 2. While social connection may not directly equate to the opposite of social isolation, this more straightforward impact on wellbeing is also likely to be relevant to injury survivors. Returning to social identity resource disruption in general, Muldoon et al., (2019) argue in their application of the SIMIC theory to trauma that a change in access to social identity resources following trauma exposure may contribute to traumatic response. The importance of resource loss following trauma has been noted outside the social identity approach, such as the therapeutic STAIR approach (Ortigo, 2020) and Hobfoll's (1991) conservation of resources theory, which both consider traumatic stress to be related to the experience of resource loss. These two social identity resources of purpose and social connection appeared to represent much of the value of work identity to survivors, and to be directly linked with the negative impact on their wellbeing when that identity was disrupted. As such, these **social identity resources may represent specific mechanisms for both social cure and curse, affirming the relevance of social identity to appraisal**. Fluctuations in the perceived availability of social identity resources also have an obvious link to secondary appraisals of coping, discussed later in this chapter.

6.2.4 Social identity resource focused coping

Following the loss or disruption of work identity, many survivors reported the restoration of wellbeing through access to social identity resources from new group memberships. This included new work or hobby groups but predominantly activities focused on injury survivor support. This was particularly evident in study 2 where a higher proportion of the participants had experienced work identity disruption through outright loss of the pre-injury work role. Subtheme 5A.2 noted survivor **motivation to restore disrupted social identity resources**. This particularly novel finding indicated that **psychological resources of purpose and connection were part of survivor coping strategies, affirming them as possible mechanisms of social cure and curse**. This adds to understanding of the value of social identity resources and is included on Pathway (4) Revitalisation through identity gain in Diagram 6.2. This pathway adapted from the SIMTIC model by Muldoon et al. (2019) argues that social identity processes may contribute to positive psychological outcomes. The application of the SIMIC theory has predominantly focused on the curative impact of *quantity* of group memberships and *compatibility* of old and new groups following a life transition

(Haslam et al., 2021). However, there is certainly evidence of the importance of specific psychological resources in research with brain injury survivors, e.g. Martin, Levack and Sinnott (2015) noted that being socially connected was a key life goal, albeit in a small qualitative study. Gracey et al., 2008 and Douglas et al., 2013 also noted the importance of social participation to wellbeing in recovery. The psychological resources that were disrupted with work identity threat were subsequently replaced by many survivors through new identity gain, indicating **a coping strategy focused on social identity**. This has significance for prospective therapeutic interventions for injury survivors, particularly when considered in connection to post traumatic growth, discussed next.

The present findings add to recent social identity applications of SIMIC to the incidence of post traumatic growth (PTG: Joseph & Linley, 2005; Tedeschi & Calhoun, 2004). PTG may be an indicator of not just coping or resilience, but psychological growth. Grace et al.'s (2015) review of PTG following ABI noted the relevance of social contact and integration in the community. This may add to understanding of the importance of social connection in the present sample: connection and PTG may be linked. More recent findings in both collectively experienced disaster (Craig et al., 2022) and ABI (Griffin et al., 2022) populations have indicated that PTG was more strongly associated with identity gain (i.e. new groups) than maintained groups. Griffin et al.'s mediation analyses concluded that it was the extent of connectedness with new groups which mediated this post traumatic growth in ABI survivors. They interpreted this as supportive of Muldoon et al.'s (2019) argument for a pathway of *identity revitalisation* through identity gain following trauma (Pathway 4 here). This is relevant to the present study where **survivors particularly reflected on renewed sense of purpose gained through new groups focused on collective coping with injury**. Sense of purpose has previously been included in a PTG workbook (Tedeschi & Moore, 2016), so its relevance is not without precedent. Ali et al., (2023) have argued that collective responses to trauma (including social identity processes) promote PTG. The present research suggests that restored sense of purpose may be part of that process.[19] A similar group response was included in Herman's trauma recovery theory which noted '*survivor mission'* (2015, p207) amongst rape survivors. Survivor mission or focusing on working for the benefit of others with a shared trauma identity was evident amongst traumatic injury survivors in the present sample. These novel findings regarding **the importance of revitalised social identity resources such as sense of purpose indicate them as possible mechanisms of the social cure and curse** worthy of further research.

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[19] There was certainly substantial evidence in the wider data corpus of psychological wellbeing and even growth being supported place through injury peer group support, but this was beyond the scope of the present research question.

6.2.5 The identity threat of stigma associated with disability.

An additional threat appraised by survivors was the prospect of gaining a burdensome or stigmatised identity through new impairments. This contributed a stigma related elaboration of the concept of identity incompatibility in the SIMIC model. Pathway 3 represents the **stress resulting from perceived incompatibility between a new disabled identity and the valued work identity**. Perceptions of disability related exclusion from the valued work identity in Study 1 were affirmed through the Study 2 finding that some survivors appraised a disability identity as incompatible (see Diagram 6.1) with their work identity. The social curse impact on this pathway was twofold. Firstly, where acquired disability was perceived as **stigmatised or marginalised this may have reduced the positive self-worth of survivors. Such an imposed stigma** has been noted in foodbank users and immigration detainees (Bowe et al., 2019; Kёllezi et al., 2021) or following ABI which Muldoon et al., described as being “othered by injury” (2019, p1280). Following injury, lasting impairments could result in the acquisition of a new and stigmatised identity of being ‘disabled’ (Dirth & Branscombe, 2016). The identity threatening nature of impairment has previously been noted as a social curse effect for ABI patients (Griffin et al. 2022; Kinsella et al., 2020) and the present studies extend this effect to a more heterogeneous sample of traumatic injury. Stigmatising response from others has been reported in wider injury rehabilitation literature too, for example with White and colleagues (2019) noting such reactions from colleagues as a RTW barrier. **The second stigma impact concerned the perceived incompatibility with the work identity**. SIMIC theory argues that identity incompatibility limits the availability of social identity resources (Jetten et al., 2009), reducing wellbeing during a life transition. This may contribute to secondary appraisal of reduced available coping resources. Recent application of the SIMIC model to refugees has noted the stress experienced while individuals negotiate conflicting social identities during a time of vulnerability (Ballentyne et al., 2021). The present findings also provide a novel affirmation of the SIMTIC argument (Muldoon et al., 2019) that experiencing trauma may result in the devaluing of important social identities. Muldoon’s argument referred to the stigma associated with a new trauma related identity, but in the present sample, the devaluation came through **devaluing impact of new stigma on a valued identity: work**. This additional social identity threat added to the complexity of primary threat appraisal but also weakened secondary appraisal of available coping resources.

6.2.6 Stigma management strategies

The **coping responses adopted by survivors were recognisable as social identity stigma management strategies**. Two strategies were evident in survivor coping responses to Pathway 3, particularly in Study 2 (Chapter 5): (i) **concealing** a disabled identity and (ii) actively **avoiding self-categorising** themselves as disabled. Firstly, survivors in both study samples (i) **concealed their disability where possible**, with explicit reference to managing perceived exclusion from their work identity. Secondly, survivors often actively **avoided self-categorising themselves as 'disabled'**, even when they had enduring impairments which interfered with work. With reference to Dirth and Branscombe's (2018) application of social identity theory to disability, **both strategies were individual rather than group level strategies, focused on individual mobility away from the stigmatised identity**. This was relevant because it indicated that coping strategies did not take advantage of social identity benefits. Concealment of burdensome or stigmatised identities from the workplace has been noted in relation to a range of health threats such as HIV and epilepsy (Flett, 2012). The negative psychological impact of a concealed stigmatised identity has been confirmed in multiple sclerosis sufferers (Tabuteau-Harrison et al., 2016). Within social identity literature, Newheiser and Barreto (2014)'s experimental research has reported that the cost of stigmatised identity concealment may be a reduced sense of belonging in the workplace identity, possibly because of reduced personal authenticity. This indicates that new identities appraised to be stigmatising could have the potential to reduce the social cure benefits (such as available support) of existing valued social identities such as the work identity. Clearly the capacity for concealment may be greater with less visible impairments. This may mean coping strategies vary by injury type, which would require further research.

The second strategy noted was of survivors (ii) **resisting self-categorising themselves as 'disabled'**, particularly when talking about the impact of their impairments on participation with work. Strategies appeared to be focused on downplaying the disabled identity and preserving the valued and positive work identity with which it may be incompatible (as discussed above). Resisting self-categorising as disabled could be derived from a pre-injury self-categorisation of being able-bodied, as noted by Dirth and Branscombe (2018). Individuals may not have the *perceiver readiness* to identify a new disabled identity for this or other reasons, such as perceiving it to be stigmatised. This indicates a period of identity negotiation similar to one previously noted in a qualitative study with refugees. Ballentyne et al.'s (2020) elaboration of the SIMIC model highlighted identity negotiation (adaptation and constraint of identity reconstruction) as another aspect of identity stress during a life transition. **Not being ready to identify with a disability identity may cut off access to both group level stigma management strategies and also group level coping resources**. It is noteworthy that the data corpus of both Studies 1 and 2 included evidence that injury peer support groups were beneficial to participants' wellbeing, but this aspect of the data was omitted in order to focus on work identity. Given the connection made in the literature between

ABI support groups, wellbeing and even post traumatic growth (Craig et al., 2022; Grace et al., 2015; Griffin et al., 2022), **the lack of a group response to acquired disability following injury may have great significance for survivor wellbeing**. Within the present model, it seems that the *Revitalisation pathway (4)* for injury survivors was potentially blocked by the pathway of *Incompatibility through stigma (3)*. Facilitating a more group based response may be a useful support intervention.

6.2.7 Secondary appraisals of available workplace social support

The importance of perceived available social support from the workplace (from both employers and colleagues) to survivors' coping appraisals was clear. However, these appraisals indicated **a more specific social identity impact than has been usually noted in the literature**. Available workplace support did seem to be beneficial for survivors' mental health (Wakefield, 2013), and stress buffering (such as in bomb disposal officers, Haslam et al., 2005 or chefs, Kang et al., 2010). Moreover, survivor appraisals, particularly in Study 2 indicated that **the availability of workplace support affirmed the continuity of survivors' work identity**. While survivors received support from more groups than the workplace, workplace social support was specifically related to positively appraising the capacity to cope with work identity threat. In Study 1 (Chapter 4) instrumental support functioned as a practical resource directly supporting the perceived continuity of the work identity (subtheme 4B.1). Emotional support was often linked with the maintenance of social connection with colleagues and related to a perception of continued belonging (subtheme 4B.2) or even 'felt understanding' which Livingstone (2022) has argued is another mechanism for the social cure. Therefore, social support and other psychological resources are added to the *Continuity pathway (1)* in Diagram 6.2. It may provide an explanation for what Semmer et al., (2008, p1) termed the 'emotional meaning' of support.

Workplace support may have been appraised as relieving work identity threat in the the research presented in this thesis. This could explain the prioritisation of maintaining social connection by injury survivors (Gavin et al., 2022) and the importance of continued communication with the workplace to successful return to work (White et al., 2019). This adds something novel to previous applications of social identity theory to trauma responses. Muldoon et al. (2019) have argued that social identity is the basis of the provision of social support following trauma, drawing on Drury et al.'s earthquake research which concluded that expectations of social support were "intrinsically relational" (2016), p211). Muldoon et al. (2019) have also argued that identity threat is an intrinsic part of the experience of trauma. The present research indicates a relationship between social support and identity threat and continuity. **Workplace support affirmed and facilitated work identity continuity when that support was available**. Survivors' positive appraisals of available workplace support may be interconnected with the affirmation of work identity continuity (pathway 1). A relationship between receipt of support and social identification has previously been suggested by Gleibs et al. (2011) in care home research. There, receiving support was associated with higher ratings of identification with the social group. In the present studies, available social support ameliorated work identity threat by affirming continuity. This adds a new dimension to the appraisal of available support. Social support as a specific coping resource to counter identity threat may be important as a novel contributor and predictor of the efficacy of social support. This novel perspective was further enhanced by the betrayal appraisals noted in Study 2.

Where workplace support was not available, survivors' **betrayal appraisals indicated the abrupt negation of expected reciprocal support from their valued work identity**. This novel form of appraisal again indicated the **link between available support and identity continuity or disruption.** Appraisals of the availability of workplace support were central to work identity continuity (1) and disruption or loss (2) pathways. In Study 2 (subtheme 5B.2) lack of support was both an indication of identity loss and a direct loss of needed support. The extent of betrayal appraisal may have been related to the extent of pre-injury identification with work since access to social identity resources has been consistently linked to strength of identification (Greenaway et al., 2016). In Study 2, survivors who had strongly identified with their work identity and then lost their pre-injury role focused quite closely on the betrayal of expected workplace support. While betrayal of expected support reciprocity has not previously been discussed in the social identity literature, there are precursors in the social identity literature and in trauma and injury research. Loss of support from the workplace had an empirically supported negative wellbeing impact on Bullock et al.'s (2020) police officers retired through injury. Furthermore, they noted that organisational injustice for police leaving the service could "shatter perceptions of identity" (p1135). Stancombe et al., (2022) noted the secondary stressor of short-lived workplace support in those affected by the Manchester Arena bombing. Furthermore, the double impact of identity threat and loss of support is central to Këllezi and Reicher's (2014) 'double insult' of trauma followed by loss of available social identity resources. This was explained in relation to the stigmatising effects of the trauma. The stigma of wartime rape rendered it 'unspeakable' thus preventing its discussion with important groups who could have been sources of social support. Likewise, in the research pesented in this thesis, **a double or even triple impact of identity threat on wellbeing was suggested**. Firstly, survivors' need for social support at a vulnerable time was undermined by the disruption of the work identity through which support may have been expected to be available. Secondly the lack of the expected reciprocal support itself highlighted the disruption of their work identity and with it an erosion of positive social identity. All of these impacts may have negatively affected survivors' wellbeing following injury. In summary, **the availability of social support seemed to operate in two different ways.** Firstly, **as a buffer to the impact of stressors** on wellbeing, as it well understood in the literature. Secondly, **as an indicator of identity continuity or disruption**. For injury survivors, the pragmatic support decisions of their workplace could actively contribute to work identity threat and betrayal of expected support.

6.3 ADDITIONAL THREATS APPRAISED BY PARTICIPANTS

It is useful to briefly reflect on some of the wider context in the data corpus which was not included in the reported themes. This is helpful for understanding both the bigger picture for survivors but also what theme interactions indicated about mechanisms of appraisal, identity pathways and access to social identity resources between key themes. While exploring survivors' primary appraisal of threats or stressors in Study 1 data, additional threats were identified which did not directly relate to work identity: *prognosis uncertainty* and *social isolation*. Diagram 6.3 illustrates how these additional threats interacted with the threats of *functional impairment, work identity threat* and *perceived stigma or exclusion* associated with new disability for Study 1 participants. It is also noted that survivors appraised threats to other valued social identities (family roles, partners, friendships) as well as the work identity. The present analysis reports only on appraisals relating to work identity.[20] In Diagram ,1 threats to valued social identities including work are in the middle section, with other threats to left and right, illustrated with data extracts.

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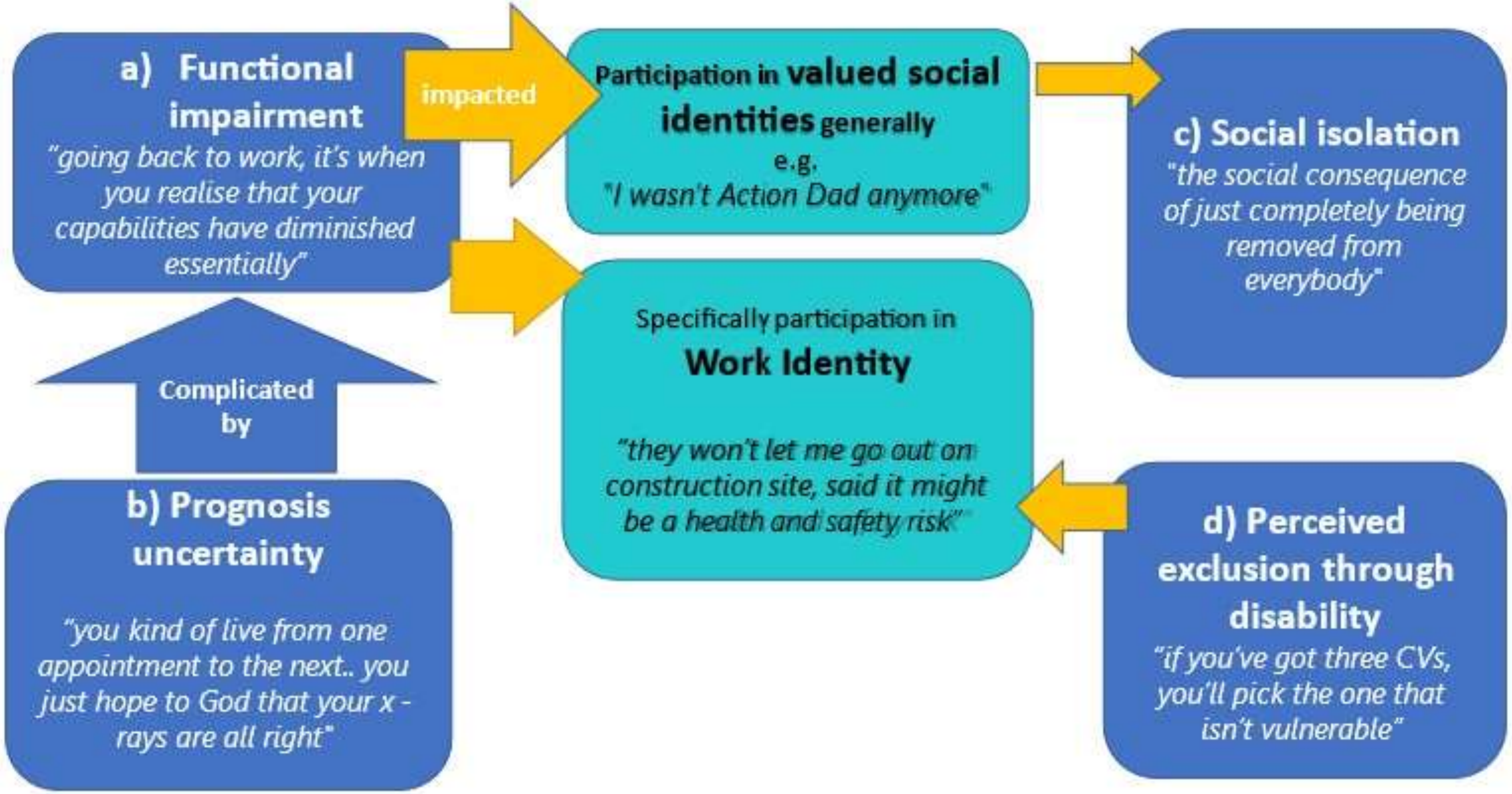
[20] More broadly in the data corpus, the impact on work identity rippled out to affect wellbeing through threat to other valued social identities, e.g. family identity through changed 'breadwinner' status. Wellbeing was also negatively impacted by threat or impairment to other social identities. And new impairments affected many other social identities changed physical capacities. There was also significant evidence in the data that peer support groups related to injuries contributed to coping strategies and identity revitalisation, but this was not reported for reasons of space.

Diagram 6.3

Overview of threats appraised by trauma survivor participants



6.3.1 The additional threat from Prognosis Uncertainty

The key threat of *Functional Impairment* (threat *a* in Diagram 6.3) was reported in relation to the impact it had on participation in the valued work identity in Chapter 4. However, *Prognosis Uncertainty* (b) contributed to appraisals of impairment. This is congruent with Shiloh et al.'s (2018) finding that the impact of injury on mental health in people with sports injury was moderated by perceptions of how much the injury defined identity. The threat of (*b*) *Prognosis Uncertainty* contributed to stress by extending the period of uncertainty about the impact of impairments on working lives/social identities. The work identity threat was likely to be complicated or extended by the additional threat of prognosis uncertainty (Diagram 6.3). Lower mood has been reported in conjunction with longer hospital stays following injury (Kendrick et al., 2017) and while this may be related to injury severity, uncertainty may also negatively impact wellbeing. Within the lived experience data, **some of the coping strategies pursued by survivors could be understood as direct responses to specific threats appraised** (congruent with the CSM model theory that threats appraised drive coping strategies). For example, survivor investment in physical recovery noted in *theme 4A* may have been motivated by the preservation of the valued work identity. Or it (focus on physical recovery may have been a direct response to the threat of acquiring a stigmatised disability identity with its various negative consequences (work identity exclusion, stress from identity incompatibility and loss of self-worth). Motivation to limit lasting impairments through physical recovery has been previously noted by Dirth and Branscombe (2016), with injury survivors observed to focus on regaining their able-bodied identity through recovery efforts. Either way, **the additional stressor of prognosis uncertainty** (threat *a*, Diagram 6.3) **had the potential to elongate a stressful period of identity negotiation**, affecting wellbeing. Coping by focusing on physical recovery may well have been a response to **the losses incurred along both curse pathways** (work identity disruption and incompatibility) described in Diagram 6.2.

6.3.2 The additional threat from Social Isolation

The additional threat of *Social Isolation* (*c*, Diagram 6.3) appraised by survivors during convalescence (often linked to reduced mobility) is relevant to social identity contributions to primary and secondary appraisal for three reasons. Firstly, isolation is likely to contribute to distress, re Cruwys et al.'s (2014) robustly evidenced argument that depression is causally linked with social isolation. This has recently been noted in relation to work disruption following the covid pandemic (Godinic & Obrenovic, 2020). Secondly, because it social connection mediates social identity resources beneficial to health and mental health (Haslam et al., 2021), then **isolation results in a double vulnerability**. Social isolation during a time of stress cuts off access to needed coping resources such as social support which might alleviate primary appraisals of stress/threat (Lazarus & Folkman, 1984). Lastly, because trauma exposure is frequently followed by social isolation or withdrawal (Drury et al., 2022; Griffin et al., 2022; Muldoon et al., 2019). These **negative impacts of social isolation provide ample motivation for survivors' to pursue renewal of the social identity resource of social connection**. This coping strategy was noted in subthemes 4A.4 and 5A.2 in Studies 1 and 2 and could be interpreted as **a socially curative coping response** linked to the Revitalisation pathway (4) in Diagram 6.3. This directly supports Muldoon et al.'s (2019) SIMTIC focus on the revitalisation of social identity as a route to post traumatic growth. Critically, the stigma management strategies deployed on the Incompatibility pathway (3) were likely to reduce survivor access to this revitalisation strategy by making them reluctant to engage with a shared disability identity. These points make it clear that there were additional sources of stress being dealt with alongside the work identity threat which is the focus of the analysis. Table 6.1 contains further detail of how survivor coping strategies related to the cure and curse pathways through work identity threat, along with the specific social identity resources involved.

6.4 CONGRUENCE OF FINDINGS WITH PSYCHOLOGICAL TRAUMA THEORIES

Chapter 2 highlighted psychological trauma theories which contribute to understanding the cognitive appraisal of extreme events. These add to the present overview of lived experience psychological responses. Janoff-Bulman (1992) theorised a shattering of the pre-trauma *assumptive world* or cognitive schemas, resulting in a need to integrate new trauma information. **The psychological impact of work identity threat within the data indicated a shocking impact on survivors, whether through loss of positive self or betrayal of expected workplace social support.** Haynie and Shepherd (2011) have previously referred to shattered assumptions in relation to the career based identity of injured marines. In the case of retired police officers, a lack of organisational justice was discussed in relation to shattered "perceptions of identity" (Bullock et al., 2020, p 1135). Informed by the present analyses, it is argued that ***social identity shattering,*** **specifically work identity (**but other identities did show similar patterns within the data) is an aspect of psychological response to traumatic injury. Muldoon et al. (2019) have noted a devaluation of valued social identity in the aftermath of trauma, if not an outright shattering. The strength of survivor betrayal responses suggested that their previous positive assumptions about the security of their work identity/expected reciprocal support had been shattered. Betrayal too is congruent with Herman's (2015) trauma recovery theory which highlighted betrayal as central to the negative impact of trauma exposure. The present research links perceptions of betrayal with identity shattering following traumatic injury. Shattered assumptions as a concept was foundational to the development of theories of PTG (Joseph & Linley, 2005; Tedeschi & Calhoun, 2004) explained as a cognitive attempt at integrating worldview changing trauma material. This overlaps with the reappraisal stage described by Lazarus & Folkman (1984). Bonanno's (2021, p16) recent work proposes that post traumatic resilience stems from a 'flexibility mindset'. Bonanno's flexibility mindset describes a reappraisal process applied to evaluating the success of coping strategies; an individual difference which contributes to variation in post trauma psychological outcomes. Bonanno does not include social identity as a contributor to this process. However, in the present research many participants actively sought new groups to regain positive identity through sense of purpose. This suggests a social identity aspect of resilience mindset not explored by Bonanno.[21] The importance of purpose is also noted in Herman's (2015, p207) trauma recovery strategy of 'survivor mission' for others with shared trauma histories. This affirms the importance of group based recovery responses to *social identity shattering*, along the gain and *revitalisation pathway (4)* (after Muldoon et al. 2019) after trauma. Recent empirical research on PTG in ABI survivors (Griffin et al., 2022) indicated that PTG was associated with new groups. This was indicated by examples in the present data where survivors gained wellbeing from engaging with injury support groups or hobby groups (subtheme 5A.2**). Prior trauma theory supports present findings indicating group level coping responses to identity shattering following traumatic injury.**

6.5 SUMMARY

To conclude, the lived experience analyses reported in Chapters 4 and 5 set out to explore and test the relevance of social identity contributions to stress appraisal and coping following injury. Two novel concepts: w*ork identity threat* or outright loss (*identity shattering*) were appraised, indicating that traumatic physical injury constitutes a life transition followed by a period of vulnerability when work identity was under threat, as theorised by SIMIC. This finding is congruent with prior theories of psychological trauma. The prospective model in diagram 6.2 summarises pathways to social cure and curse impacts on survivor wellbeing while experiencing *work identity threat*. Two positive pathways to wellbeing represented social cure processes: *work identity continuity (1)* and r*evitalisation through identity gain (4)*. Two negative pathways for wellbeing represented social curse processes: *work identity disruption and/or loss (2)* and *identity incompatibility through stigma* (3) (between work identity and acquired disability identity). The model highlights (in red in Diagram 6.2) novel social identity mechanisms that contributed to psychological responses. The disruption of social identity resources of purpose, social connection and workplace social support was central to the impact on survivor wellbeing. These social identity appraisal mechanisms may be useful for

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[21] In addition, there was also some limited evidence in the Study 2 data corpus that survivors' positive coping attitudes were associated with their valued social identities.

focusing psychological support. Psychological wellbeing was supported or undermined by the availability of social identity resources of purpose, social connection and social support. Sense of purpose directly contributed to individuals' positive sense of self. Meanwhile, social connection and social support were more closely related to affirming appraisals of the continuity or disruption of the valued work identity. Survivor coping strategies focused on the maintenance (Pathway 1) or restoration (Pathway 4) of purpose and social connection. However, the appraisal of available workplace support was interlaced with appraisals of work identity continuity or disruption. Coping responses to the threat of disability were managed individually rather than grouped with others. This was an important finding given previous trauma theory and research indicating the importance of group recovery processes, including some recent findings on PTG. Together these findings affirm that social identity appraisals (of identity threat and psychological resource disruption) were central to the impact of injury on survivors' wellbeing and also a key driver of their coping strategies. The broader threats of prognosis uncertainty and social isolation also played a part in exacerbating work identity related threats and impacts.

These lived experience findings are discussed further in **Chapter 8**, in conjunction with the Service Provider findings which are reported next, in **Chapter 7**. The overall implications for theory and recommendations for practice of all three studies are discussed in **Chapter 8**.

CHAPTER 7: Empirical Study 3: Service Provider Perspectives

The third study was a reflexive thematic analysis of qualitative data generated through interviews and one focus group with a range of service providers. Providers had relevant caseload or research expertise of injury survivor care and recovery. The overall purpose of the study was to explore provider understanding of the contribution of social identity context to survivor appraisals of threat and coping.

7.1 STUDY RATIONALE

This third study aimed to explore providers' understandings of survivor psychological response to injury. Expertise from professionals involved in post-injury care could provide a valuable perspective on the recovery contexts of trauma survivors, allowing comparison with survivor perceptions. There is a precedent for exploring the perspective of experts with field or caseload experience, for example in the psychological care of TBI patients (Wiart et al., 2016). Previous qualitative research with healthcare providers has also yielded rich data valuable for practical implementation, e.g. on the integration of psychosocial care in orthopaedic trauma treatment settings (Vranceanu et al., 2021). The survivor perspective, explored in the first two studies (Chapters 4 and 5), affirmed the relevance of social identity contributions to their appraisals of injury, recovery and RTW (return to work). Provider understanding of survivor experiences is likely to aid understanding of patterns of experience and the impact of recovery contexts. This is important because the context of recovery is part of the complex range of predictors affecting psychological morbidity and return to work following injury (see chapter 1 for an overview) (Sareen et al., 2013). For example, Chapter 1 noted that e.g. economic precarity and available support are empirically supported predictors of psychological distress following injury. Specific study aims are as follows.

7.1.1 Aims of the study

The overall purpose of the study was to explore service provider perspectives of survivor psychological distress and its impact on recovery and RTW. Specifically, this included their understanding of:

1. The contribution of social identity context to cognitive appraisals of threat and coping following injury.
2. Any broader contextual factors which might impact psychological outcomes.

7.2 METHODS

7.2.1 Study Design

Study 3 data was generated from 35 service provider participants over 12 months commencing February 2019 using semi-structured interviews (*n*=24) and one focus group (*n*=8)[22]. As with the lived experience chapters, details of ethical, methodological and researcher characteristics have already been outlined in Chapter 3. The summary in Chapter 3 included an overview of sampling approach and a step-by-step description of the stages of reflexive thematic analysis. Reflexive thematic analysis was appropriate since it allows for a combined inductive and deductive approach to analysis. Inductive analysis allowed identification of shared aspects of providers' understanding of psychological response, and deductive, theory driven analysis focused on social identity aspects of appraisal and coping responses that had been noted in lived experience studies 1 and 2. Chapter 3 and all empirical chapters were cross-referenced with the COREQ quality assurance checklist (Tong, Sainsbury & Craig, 2007).

7.2.2 Recruitment and Procedure

Sampling strategy was purposive to gain participants with caseloads representing (a) heterogeneity of injury type (as captured by the trauma survivor sampling framework: *Appendix I.e*; (b) all stages of usual care following major trauma. Injury survivors navigate a range of services including healthcare in acute/hospital, primary (GP) and rehabilitation settings, psychological care and legal/compensation provision (as mapped by Kettlewell et al., 2021). In addition, research practitioners who had specific knowledge of either psychological trauma or major trauma were also approached. Participants were existing contacts identified by principal investigators within the ROWTATE research team over five research sites (East Midlands, London, Leeds, Bristol and Cambridge), with some subsequent snowball sampling. They were approached (emailed predominantly) by one of two members of the research team (KB, JK). All interview participants were invited to choose the most convenient approach for them: interview in their home, place of work or over the telephone. A further 32 approaches did not result in interviews, mainly because of scheduling difficulties due to demanding clinical workloads. The focus group was scheduled early in recruitment at the University of Nottingham at a time convenient for healthcare staff who worked nearby. For other practitioners, one to one or small group interviews were more convenient due to busy schedules and wide geographical spread. Written consent was gained either in person or remotely prior to interview, with a counter-signed copy of the consent form sent to the participant following participation. The recruitment stopped once a diverse range of providers had been interviewed representing each target stage of care and most types of injury caseload.

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[22] Some interviews were with 2 participants hence the total of participants is greater than the number of interviews.

7.2.3 Participants

35 service providers participated either in one focus group (*n*=8) or semi-structured interview (*n*=27 over 24 interviews). Four interviews were conducted with two participants at the same time, which resulted in a natural, conversational interview with participants responding to and developing each other's points. A single participant was re-interviewed having first taken part in the focus group; this was a dual interview shared with another provider. They are counted twice for this reason. The majority of the interviews were conducted in person, usually in the service providers' workplace; 7 were conducted over the telephone.

Sampling aims were met with all key aspects of post traumatic injury care represented, see Table 7.1 for details. The majority of injury types were represented across participant caseload, with the exception of burns. Further details of individual provider expertise and caseload are collated in *Appendix Table III.f*. Participants were all working in England at the time of interview, and several participants had experience in more than one sector therefore the totals by sector listed in Table 1 exceed the total number of participants. 18 of the 25 health or psychological care service providers (72%) had specialist experience of a physical and/or psychological trauma caseload. Participants involved in research were focused either on injury or other health threats and psychological trauma. All participants from outside healthcare or psychological care worked with traumatic injury survivors to help them return to work, for example case managers or solicitors involved in injury compensation cases and one Disability Employment Advisor working for the Department of Work and Pensions.

TABLE 7.1

Participant expertise by sector plus other demographic characteristics

PARTICIPANT CHARACTERISTICS	**Number of participants**
By sector of expertise	(% of total: n=35*)
some individuals had expertise in more than one field so totals do not tally	
Healthcare	**Total 15 (42.86 %)**
Acute healthcare including 3 physiotherapists	5
Rehabilitation healthcare	7
Occupational therapy Including 5 specialists in vocational rehabilitation [VR]	6

GP	3
Occupational Health Physician (private sector)	1
Psychological care	**Total 10 (28.57 %)**
Clinical Psychologists	4
Clinical Neuropsychologists (working in rehabilitation)	3
Psychotherapist	1
Psychiatrist	1
Research focused	**Total 12 (34.28 %)**
Principal Investigator in ROWTATE research team	7
Other research	5
Research focused on psychological trauma	3
Psychological research	3
Outside healthcare:	**Total 6 (17.14 %)**
Case management	3
Solicitor with injury caseload	2
Job Centre	1
Proportion of participants with trauma caseload	**Number and % of total**
Physical trauma care	18 (51.43%)
Psychological trauma care	7 (20.00%)
GEOGRAPHICAL AREA	
East Midlands	20 **(57.14 %)**
South of England	11 **(31.43 %)**
North of England	4 **(11.43 %)**
GENDER	
Female	19 **(54.28 %)**
Male	16 **(45.71 %)**

*1 OT Participant counted twice: once for focus group, once for interview

7.2.4 Design/materials

The topic guide was designed for a broader study (ROWTATE, see Chapter 3) which aimed to explore survivor needs and any barriers and facilitators to returning to work in order to develop a vocational rehabilitation intervention, including optional clinical psychology input. The latter aim meant questions about psychological impact were included in the interview schedule which were particularly useful for the present analysis. Examples of questions used in the topic guide for both focus group and semi-structured interviews can be found in Table 7.2; a complete topic guide is available in *Appendix Table III.d*. Probe questions paid particular attention to the psychological response of survivors.

Table 7.2

Example interview questions for service providers

Topic area	Example questions
Involvement with traumatic injury patients	What is your role and experience with trauma survivors? What kinds of trauma patients have you worked with?
Specific questions to psychology professionals	Thinking about usual care in your area, how do people get referred for psychological support? How would different levels of psychological need be assessed, screened, treated? How should different levels of psychological need be met by the intervention? How would the psychological component of the intervention work to achieve return to work?
Mapping usual care services	Are there any factors affecting access to services or resource use? PROBE – barriers – facilitators, including psychological
Trauma survivor needs	Thinking about usual care, are there any gaps or unmet needs following trauma? PROBE Vocational support – psychological – emotional - physical
Assessing the planned vocational rehabilitation intervention	What goals/outcomes should it seek to achieve? What are the important mechanisms?
Barriers and facilitators to return to work following traumatic injury	What needs to happen for trauma survivors to return to work?

	What is the change that brings about the return to work outcome? PROBE: What contributes to psychological distress? How might psychological distress affect return to work?

7.2.5 Analytic procedure

All interviews were audio recorded then transcribed verbatim by an external transcription agency (approved by the University of Nottingham) and anonymised (by the thesis author) prior to analysis. Only one participant requested sight of their transcript and a small number of redactions prior to analysis. A total of 23.35 hours of recordings were made and transcribed, with a mean interview length of 59.70 minutes (range 17 to 111 minutes). Shorter durations were usually associated with remote interviews with providers under workload pressure. The focus group accounted for 88 minutes.

Reflexive thematic analysis (Clarke & Braun, 2021) was used to analyse the data. This followed a *six stage* process described in detail described in chapter 3 (Analytic procedure. Having conducted the primary analysis of data for the purposes of the parent study (2019-2020) the author *refamiliarised* (stage 1) with the audio recordings and transcribed data in 2022 to undertake the present analysis. Provider analysis was undertaken after the survivor data analyses so that provider perspectives could be compared with the lived experience findings summarised in chapter 6. *Coding* (stage 2) was undertaken by one researcher (KB) using Nvivo software with the research aims in mind, namely: **To explore service providers' perspectives of social identity context contributions to survivor appraisals of injury, recovery and return to work.** Codes applied to the data were both inductive (responsive to the data) e.g. 'adjustment', 'late onset of mental health' and deductive (responsive to previous theory) e.g. 'biopsychosocial vulnerability', 'life changing impact of injury'. These codes were grouped next, and a summary of the codes in their inductive and deductive groupings can be found in *Appendix Table III.e*. The *generation of initial themes* (stage 3) started with grouping codes for relatedness (*Appendix Table III.e.)* then reframing these in response to the study aims. These included individual and contextual factors such as individual adjustment or socioeconomic vulnerability. The deductive aspect of coding was informed by social identity appraisal themes including those developed from lived experience analyses in chapters 4 and 5. To *review* these *prospective themes* (stage 4), relevant data extracts from grouped codes were collated within initial themes using Nvivo software, then preliminary theme descriptions written. These descriptions along with exemplar extracts were discussed with the supervisory team (BK, ML). Choices were made to focus on themes which represented the most novel findings in relation to the study aims. For example, "psychological distress as a barrier to return to work" was excluded since it had previously been reported in injury literature. Novel findings were subsequently presented to and discussed with ROWTATE PPI (Personal and Public Involvement) as a form of lived experience participant checking. Final iterations of themes were *defined and named* (stage 5) to focus in on provider insights which contributed further understanding of the lived experience findings. A final validity check was undertaken with a member of the ROWTATE team (RL), who reviewed 10% of the provider transcripts while considering the research question then commented on representativeness of the first researcher's theme development. RL was an appropriate choice as a researcher independent of data generation who had an informed opinion of injury and recovery through her work and personal experience (further detail available in Chapter 3), but no experience of social identity theory. Extracts were collated under each final theme and the central organising concept of each ratified by the author before a full *write up* (stage 6).

Extracts from the data (quotes) presented in the analysis are identified by a code and overall sector expertise. The code includes letters denoting sectors of expertise[23] which may be cross referenced with *Appendix Table III.f*. for further detail of caseload experience. Where text is omitted from extracts this is indicated by ellipses […]. Where extracts include interviewer speech, this is **emboldened**.

7.3 ANALYSIS AND DISCUSSION

The themes reported here (see Table 7.3) were selected for their relevance[24] to social identity contributions to appraisal and coping and the findings already explored and tested in lived experience studies 1 and 2. Theme 1 (7A) concerned identity processes which played a role in the development of distress: *(Subtheme 7A.1) adjusting to changed self*, and (*7A.2) work identity loss*. Both implied social identity based threat appraisal. Theme 2 (7B) dealt with social identity processes which contributed to variations in survivor coping: *(7B.1) Socio-economic vulnerabilities* in injury incidence and impact, *(7B.2) availability of social support.* Both these subthemes were understood to contribute to variations in survivor vulnerability to

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[23] A=acute healthcare; GP=general practitioner; M=military; O=outside healthcare; OT=occupational therapist; P=psychological care or research; R=rehabilitation including occupational therapy; Res=research focus; T=trauma focus of caseload or research; VR=vocational rehabilitation (usually within occupational therapy)

[24] There were many other RTW barriers and facilitators identified which were outside the scope of the present question and have been reported elsewhere (Bridger et al., 2021; Kettlewell et al, 2021).

psychological distress. Finally, Theme 3 *(7C)* concerned *injury responses that delayed appraisal and coping processes*. The majority of participants reflected on the late onset or identification of psychological distress following injury, linking it to two issues in particular: survivor focus on physical recovery and a lack of understanding of psychological trauma within treatment contexts.

Table 7.3

Table of themes reported in Study 3

Theme	Subtheme
7A Identity change contributions to psychological distress	7A.1 Adjustment to changed self
	7A.2 Work identity loss negatively impacted wellbeing
7B Social identity processes contributing to coping variations	7B.1 Socio-economic vulnerabilities
	7B.2 Availability of social support
7C Injury responses that delayed appraisal and coping processes	

More broadly in the data (but not included in the themes), providers spoke extensively about the psychological distress survivors experienced and the direct and indirect ways this contributed a barrier to returning to work after injury. They observed both severe and milder forms of psychological distress, noting that even mild distress could constitute a barrier to work participation. Furthermore, almost all participants noted *unmet needs for psychological care* following traumatic injury. It was widely understood that this lack of care would contribute to entrenchment of mental health problems. This point is relevant to the later onset of distress noted by Theme 7C.

THEME 7A Identity change contributions to psychological distress

Theme 7A captured two key contributions to survivor distress which were also likely to develop. These experiences were clearly linked to survivors' changing sense of identity. Service providers spoke about (7A.1) survivors' *adjustment to changed self* usually meaning adjustment to losses or life-changing impact of injury and (7A.2) the negative *wellbeing impact of loss of their work identity*.

Subtheme 7A.1 Adjustment to changed self

When speaking about the psychological impact of injury on survivors, many providers spoke about recovery processes in terms of 'adjustment'. A participant with research experience in injury response perceived that 'losses' were central to the psychological distress experienced by injury survivors:

> *a lot of the emotional impact, I mean I didn't know until we did the study what we would find. But I was amazed to find that there wasn't very much to do with previous problems, it was all about the injury and what the impact is and the more you talk about it and describe it you can just see how people - people will have a hundred questions about this and they are just sitting there thinking about it, getting overwhelmed by it. […] And quite often that kind of mild depression is both a mixture of anxiety and depression. In a simplistic way, depression is about what you think you have lost, and anxiety is what you fear will happen in the future that will be very bad, both of which are often unrealistic. […] in the literature people sometimes talk about adjustment reactions and much of depression is just a reaction* ***P.Res-16 Psychiatrist***

This Psychiatrist expressed surprise at research findings that indicated most of the depression and anxiety experienced by survivors was a response to "*the injury and what the impact was*". The reference to "*previous problems*" was to their prior understanding that pre-existing psychiatric diagnoses would be a key predictor of post injury psychological distress such as PTSD. However, they concluded from their own research that the main cause of survivor distress was the experience of adjusting to losses "*thinking about it, getting overwhelmed*". Their interpretation of the "*adjustment reactions*" in the literature was that they were responsive to changes caused by the impact their injury had on their lives. Reviews of PTSD predictors included in empirical research note pre-existing psychiatric issues but only as one of many factors (e.g. DiGangi et al, 2013; Ozer et al, 2003). At least one review of traumatic injury specific predictors indicated that pre-existing psychiatric issues were a predictor of depression but not of PTSD (Cnossen et al., 2017). Adjusting to loss and changed self in the extract above was understood to contribute to psychological distress. Other participants understood this in relation to identity loss.

While most participants indicated that adjustment concerned a coping response to losses that could be therapeutically steered, a few used the term as a diagnostic category or psychopathological response: adjustment disorder (a psychiatric classification in the DSM-V: APA, 2013).

> *Or it might be because they're suffering from an adjustment disorder, because they've lost, they're grieving the person that was before, and not with them anymore, and they're trying to adjust to the new personality or the new injured person.* ***O-21 Solicitor***

In this case, a Solicitor specifically referred to "*adjustment disorder*" and "*suffering*" suggesting illness or psychopathology as being derived from some loss or change of self: grieving an old self and adjusting to a new self. This was not a specific reference to social identity but did indicate identity disruption as part of the threat being appraised following injury. The contribution of social identity to adjustment has been studied in acquired brain injury (ABI). Haslam et al., (2021) applied the SIMIC model linking positive adjustment with social identity continuity and gain. However, adjustment is more frequently used in the injury literature to measure psychological outcomes e.g. reviews of spinal cord injury research (Chevalier, Kennedy & Sherlock, 2009; Galvin & Godfrey, 2001) or hand injury (Turkington, Dempster & Maguire, 2018). In injury research the focus has been on psychological adjustment as an outcome measure with variance in coping and appraisal as predictors. The term 'adjustment disorder', has been criticised for medicalising a normal response to transient situational stress (Bachem & Casey, 2018). Social Identity approach to health (SIAH) research has reported loss of self after TBI (traumatic brain injury: Gracey & Ownsworth, 2012), an injury with specific cognitive impacts. What was novel in the present data was the suggestion of an identity component to the stress or threat appraisal following traumatic injury in general. Other providers said more about the specific losses that might be appraised, as follows.

Providers frequently discussed psychological adjustment in relation to losses incurred through injury, e.g. losses which affected functional capacity such as cognitive change or mobility, as well as identity and roles.

> ***What kind of psychological issues do you see coming up?***
>
> *So, things I can think of, loss I think. Loss of function, even just loss of time, they may have lost a year, they may have lost friends, they have certainly lost their functions. So, we have had some fairly high functioning athletes that have been on a national stage and had significant injuries, but then they have never been able to return, so it's about managing expectations and reviewing progress and having to come to terms with what that loss means to them. So that's going to be self-confidence, it may make some people profoundly depressed, some of those conditions could be pre-existing and it just makes those worse.* ***GP-29 General Practitioner***

This GP recognised different types of loss which included function, time, relationships, and valued roles such as being a "*high functioning athlete*". The psychological response to these losses was not spoken about specifically as adjustment by this participant, rather the process of "*managing expectations and reviewing progress*" in order to "*come to terms*" with change. This clearly described a coping process related to adjustment. This participant referred to "*loss of function*" quite generically but associated it with the disruption of a valued identity. This closely reflected the lived experience (Studies 1 and 2) link between threat to functional impairment and work identity disruption. Empirical evidence of psychological adjustment being affected by capacity to participate in an athletic identity following spinal cord injury (Tasiemski & Brewer, 2011) makes explicit how adjustment and the disruption of social identities may be linked. This GP also acknowledged the "*loss of time*" and "*lost friends*", both of which may refer to losses in social contexts: the loss of participation in pre-injury activities or wider social connection. Similar losses of social relationships have been reported in qualitative SIAH research with brain injury survivors (Muldoon et al., 2019b).

There was one particularly notable way that a small number of providers spoke of the challenge of adjusting to injury related losses. This is best described as a shattering of identity, e.g.

> *those people that emotionally are still in this: ‘it was a split second and this happened to me and my whole life has changed’ but nobody can see it. can feel it, but nobody can see it. And because its quite difficult for these people to articulate what they’re feeling, why they’re feeling like that, there’s not really the language to do that. It makes it difficult for them to then go and seek help.* ***VR Res-01 Occupational Therapist***

This Occupational Therapist working in vocational rehab highlighted the “*split second*” realisation that survivors experienced, where they recognised the enormous life changes that their injury had imposed. The provider recognised that this is so shocking that the survivor doesn’t even have “*the language*” to express this, so even seeking therapeutic help for adjustment would be difficult. This lightning strike change is reminiscent of Janoff-Bulman’s (1992) trauma theory of ‘shattered assumptions’, reviewed in Theory Chapter 2. For Janoff-Bulman a traumatic experience ‘shatters’ previously held positively biased assumptions about the safety and benevolence in the world. In the extract above, this shattering seems to specifically shatter the survivor’s sense of themselves, or identity. Another participant who had synthesised a breadth of expert and lived experience in injury research reflected on the same effect:

> *an accidental injury completely overturns fundamental assumptions we have about ourselves; it won’t happen to me, I’m in control. the biographical disruption is enormous. And most people will recover from that quite easily but we’ve got to make sure that we help them do that. It’s a shock (laughs) and it changes who you are temporarily or permanently. And your relationship to the world […] You’re someone different, you may have a disability* ***P.Res-30 Clinical Researcher***

This excerpt highlighted the inter-related nature of physically changed self and changed social roles, noting how disruptive this was of “*fundamental assumptions*”, and again the sense of accompanying “*shock*”. This Research Psychologist referred to the sociological Biographical Disruption theory (Bury, 1982) which considers the impact of biological or physical changes to self to be perceived as a threat of loss of self. However, the reflection that injury “*overturns fundamental assumptions*” was again suggestive of Janoff-Bulman’s ‘shattered assumptions’ cognitive trauma response theory (1992). For Janoff-Bulman, the source of the shock is the traumatic event and what is disrupted is positively biased assumptions about the world, life, and the self. The source of the disruptive shock in this excerpt appeared to be the impact the injuring event had on survivors' sense of self. This clearly reflected survivors' (chapters 4-6), sense of shock at newly acquired impairments, and what was disrupted was identity, personal and social. While it was only a very small number of the service providers who reflected on what might be called identity shattering, it indicated a novel way in which social identity appraisals contribute to adjustment. This was congruent with appraisals of injury disruptions of valued social identities noted in the lived experience samples (chapter 4 and 5). It further affirmed the relevance of the identity change model (SIMIC: Jetten et al., 2009) discussed in relation to survivors' data. This was applied in more detail to work identity disruption in Study 2 (subthemes 5A.1 and 5B.2). The same participant went on to reflect on variations in adjustment and this indicated some of their assumptions about what might predict positive coping:

> *Some people, it's very quick. Some people it takes longer as they realise that their injury is not going to heal and I think there's that whole sort of adapting to a new normal which some people manage very much better. I mean we found in our patient interviews that some people at twelve months had really created a new narrative about who they were and that incorporated what had happened, whereas some people were still looking back at a time before.* ***P.Res-30 Clinical Researcher***

This Researcher's reflection on what caused variations in the process of adjustment centred on identity. They implicitly attributed the "*very much better*" adjustment capacity to their ability to find a "*new narrative*" for their changed sense of self. These individual differences appeared to pivot on survivor capacity to accept permanent impairment and create "*a new normal*". This perspective suggests reappraisal within the Stress Appraisal and Coping (SAC) model and is particularly congruent with theories of post traumatic growth (PTG). Discussed briefly in the Theory Chapter 2. Joseph and Linley's Organismic Valuing Theory of PTG (2005) argues that trauma survivors' attempts to cognitively integrate the experience of trauma alongside pre-existing worldviews are influenced by several factors. These include individual differences, availability of social support, previous adversity and how 'seismic' or destructive the traumatic event was for the person. Following the 'shattering' effect of injury (Janoff-Bulman, 1992), these excerpts suggest that psychological adjustment may centre on ability to accept and make sense of a changed sense of self.

In summary, service providers perceived that a period of psychological adjustment was a common aspect of psychological response following traumatic physical injury. They understood it as a response to loss or change which for most included loss of aspects of pre-injury self. For some this loss was associated with functional impairment. These findings indicate that provider perceptions corroborate the lived experience appraisal of identity change as a threat following injury (in studies 1 and 2 of this thesis). A specific focus on the impact of work identity loss is discussed next.

Subtheme 7A.2 Work identity loss negatively impacted wellbeing

In addition to their reflections on the psychological impact of changed self, service providers recognised that the loss of work identity specifically contributed to psychological distress following injury. The majority of the sample reflected that any threat to work could be a stressor.

> *With all of that, the mental health is held in the retention of that role. Having the answer to what do you do? Having that as an identity affirming – holds everything together, gives purpose and meaning and if suddenly all of the routines, all the expectations, all things that support someone's cognitive abilities, suddenly fall down because there's a new line manager who doesn't understand personal need, treating them differently or there's a sudden big change in work difficulties that is challenging someone's cognitive abilities to keep up. Then we see the anxiety that plummets into low mood that falls out from that. Maybe then a family breakdown, family strain comes out of that person. So, I would say as a psychologist that every work story is a mental, wellbeing story as well.*
> ***PR-26 Clinical Neuropsychologist***

This Clinical Neuropsychologist working in vocational rehabilitation encapsulated the centrality of work in people's lives: it "*holds everything together*", providing day to day routine, identity affirmation, purpose and meaning. Their example was someone who had already returned to work with impairments, for whom work participation remained vulnerable. The threat of "*a new line manager who doesn't understand*" might have far reaching consequences, including anxiety and "*family breakdown*".[25] This one excerpt summed up several work identity loss issues: the centrality of work to identity; the impact of work identity loss on psychological wellbeing, particularly through loss of purpose; and the potential for this impact to ripple out to other parts of trauma survivors' lives, inducing further distress. The provider neatly described the close link between work identity and psychological wellbeing: "*the mental health is held in the retention of that role".* Providers corroborated survivor findings in Studies 1 and 2: the centrality of work identity to wellbeing; and that sense of "*purpose and meaning*" from work was a key contributor to wellbeing for survivors. As discussed in Chapters 4 and 5, these psychological resources contributed to positive identity (Haslam et al., 2021). What was novel here was the suggestion that a negative impact on work identity was described rippling out to family. An interaction between survivors' different social identities as a contributor to psychological outcomes is not without precedent. A positive interaction between different

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[25] This service provider had experience of a traumatic brain injury (TBI) caseload where the potential for long lasting functional impairments could continue to threaten the work identity long after an initial return to work was made.

social identities following brain injury has previously been noted. Walsh et al., (2015) noted that support from family could scaffold participation with work and thus contribute positively to wellbeing following ABI.

Developing this understanding of the impact of work identity threat on wellbeing, providers recognised a loss of positive identity when work was affected.

> *That is something particularly I have seen at the spinal clinic on that bit and I think it is a very, it is sometimes a bit of a challenge. This is where […] it's the mental health situation then that comes in, because when someone has had that experience and this has been their life, they are used to it, so we have had a lot where its been physical manual work on that bit, it predominantly affects men in this situation. But usually its about this sort of pride aspect almost like this was me, I am a very physical person and now all of a sudden I haven't got that, and they feel less of a person as a consequence. So then there is almost that, well I am not good for anybody now, I can't do anything else, so you have got that sort of barrier to overcome.* ***O-34 Disability Employment Advisor***

This Disability Employment Advisor (with experience of supporting people with spinal cord injuries) perceived a loss of self for survivors no longer able to work. There was a loss of "*pride*" and of personhood: "*feel less of a person*". And that loss of self-worth again was seen to affect other parts of survivors' lives than work: "*not good for anybody now*" suggesting an impact on self-worth in relationships and family life rippling out again. This loss of pride and identity: "*this has been their life*" suggested that for the men this participant was talking about their positive sense of identity was strongly associated with working. The same participant commented on a similar experience in different types of work including executive roles, so it was not limited to manual work. Such provider observations on the impact of work identity disruption were again congruent with the experiences of trauma survivors described in Studies 1 and 2. As noted there, the SIMIC model (Jetten et al., 2009) explains the protective psychological impact of identity continuity following a life transition. What was novel here was the work specific identity loss contributing to psychological distress. Other extracts indicated that this was linked to psychological resources associated with the valued work identity.

The positive value of participation in work was illustrated by an exchange between solicitors involved with survivor rehabilitation following injury.

> *O-21 they might never, ever be able to get paid again, but then it'd be really important for them to be able to do something that they can consider to be meaningful work and/or whether it's unpaid or voluntary, and there's got to be some consideration of sourcing that.*
> ***When you were saying, that they consider meaningful, what is it giving them, that I'm looking for?***
> *O-22: I would use the word identity.*
> *O-21: Self-esteem.*

> *O-22: It's very much, to you or I, what we do for work is very much part of who we are, and when somebody becomes injured that is taken away from them instantly. And often what they strive and wish to get back and returning to work gives them that identity.*
> *O-22: And also independence.*
> ***So meaningful work?***
> *O-22: Identity, independence, purpose.*
> ***Okay, that's good.***
> *O-21: Which is more, if they are the breadwinner, that is a real key issue.*
> ***O-21and O-22 Solicitors***

This exchange encapsulated several key points relating to work identity. Firstly, they understood that in losing work through injury, trauma survivors lost "*who we are*": again, identity loss. That this could be "*taken away from them instantly*" again highlighted identity shattering of the work identity. They associated work identity with: sense of purpose and meaning, self-esteem and independence, highlighting specific aspects of positive identity, in line with the central theoretical driver of the social identity approach. Meaning, purpose, identity and independence were used together, indicating how inter-connected they were. The interconnected nature of psychological resources associated with social identities has been noted by Greenaway et al. (2016). Furthermore, these participants spoke about the survivor drive to restore these resources through "*meaningful*" activities even if they could no longer do paid work. Again, they noted the ripple out effect on wellbeing through other social roles such as "*breadwinner*". In the present sample, it was frequently providers involved with vocational rehabilitation, having insight into the longer term impact of injury who recognised this survivor drive for restoration of sense of purpose, congruent with lived experiences in Studies 1 and 2. This drive to rebuild positive identity through restoring psychological resources is central to SIAH theory (restoration hypothesis: Jetten et al., 2017). This novel finding in the present data was observed primarily by providers involved with the longer term impacts of injury (rather than those working in acute care). Such providers also recognised individual variation in the relevance of this driver, as follows.

Providers perceived a range of reasons why survivors tended to want to return to work following injury:

> *I think it's very individual. It depends on what the goals of the client are. So is somebody returning to work because of financial reasons; are they returning to work because of self-perception reasons? All those things about feeling good about themselves, being part of a community, being part of a work society. So it very much depends on what the goals of the individual client are […] There is an understanding that work is important to people, gives structures to their day. It's financially good. But it's also all those other things about self-worth that are as important – equally important.* **O-23 Case Manager**

This Case Manager (a role which manages the holistic rehabilitation of injury survivors with a compensation claim) recognised multiple motivations for survivors' return to work: financial, structure, self-worth. They explicitly noted that RTW drivers related to self-worth were “*equally important*” to survivors as material benefits of work participation like structure and money. Some of the psychological motivations spoken about here were recognisable social identity resources. These included resources already noted as important to survivors in Studies 1 and 2: self-worth and the social connection aspect of being part of a work community. “*Self-perception reasons*” was suggestive of the large contribution that work identity makes to self-worth and congruent with the core understanding of the social identity approach to health, that people are motivated to belong to positive social identities for reasons of self-esteem (Tajfel & Turner, 1979). Critically, the provider noted that these motivating factors were subject to the goals of the client. In social identity terms, the psychological resources available through a social identity are more accessible the more highly identified the individual perceives themselves to be with that identity (Identification hypothesis: Jetten et al., 2017). This study provided a novel confirmation of identification as a variable contributing to how motivated a survivor might be to return to work after injury.

In summary, the impact of injury on wellbeing through work identity disruption noted in lived experience studies 1 and 2 was clearly recognised and corroborated by providers. Many noted the centrality of work to wellbeing and indicated that survivors experienced a loss of positive identity when work was disrupted. While they did not speak in social identity terms, their understanding of the psychological resources making up this positive identity was clearly aligned with SIAH theory.

Theme 7A Summary

Theme 7A highlighted that providers were aware that a large part of the psychological response to injury was related to threats perceived by survivors to their positive identity. There was a particular focus on the impact on work identity changes in the data. Theme 7B considers broader aspects of survivors’ social context which providers also thought impacted their psychological responses.

THEME 7B SOCIAL CONTEXT PROCESSES CONTRIBUTING TO COPING VARIATIONS

Theme 7B highlighted some further aspects of social context which providers understood could contribute to survivors’ vulnerability in recovery or return to work. These related to possible variations in circumstances which providers noted could affect survivor recovery and mental health outcomes. These included (7*B*.1) *socioeconomic vulnerabilities* and (7*B*.2) the *availability of support*.

Subtheme 7B.1: Socioeconomic vulnerabilities

Many of the service providers commented on the impact of social context on survivors' psychological response or RTW outcomes. Firstly, they commented on the increased likelihood of experiencing traumatic injury in some social groups.

> *more than half my major trauma patients, I think, have substance misuse problems, mental health problems, I see a lot of major and minor mental health type stuff. A preponderance of challenging socioeconomic background, people with immigration issues, you know, I'm sure you well know major trauma is skewed towards people with more socioeconomic challenge* ***RT-03 Rehabilitation Consultant***

This Consultant regarded it as common knowledge that traumatic injury was unequally distributed in the population. They noted that it was common for major trauma patients to have pre-existing substance use, mental health diagnoses and socioeconomic vulnerability. This implied structural inequalities in the incidence of traumatic injury, with it more likely to happen to people from lower status groups or those with pre-existing challenges in their lives. This provider implied that "*socioeconomic challenge*" either contributed to mental health problems, or being in a mental health problem social identity itself was a challenging identity. Both points have been noted within SIAH research. Belonging to a low status group in society has been associated with greater health risk, physically and psychologically (Marmot, 2015; Wilkinson & Pickett, 2009). SIAH has also identified a contribution to appraisal through identifying as depressed (Isaksson et al., 2017). Providers did not speak in terms of the contribution that social vulnerabilities might make to appraisals of stress (noted in the SAC model), but they did recognise that socio economic vulnerability was likely to contribute to psychological distress. Research affirms socioeconomic disparity in the incidence of traumatic injury in the UK (Snell et al., 2023) and other countries (e.g. Sweden: Brattstrom et al, 2015). Brattstrom's study also affirmed this provider's points that pre-injury substance misuse and psychiatric issues were also associated with higher incidence of major trauma. An unequal distribution of injury accords with an argument included in Muldoon et al.'s (2019) SIMTIC theory that trauma (more generally) doesn't happen equally across society, and this awareness contributes to its appraisal. Threat appraisal may be affected by accumulated stressors from social inequalities (Grasser & Jovanovic, 2022). The SIMTIC argument builds on social identity research identifying social curse or harms associated with belonging to a lower status group in society (Wakefield et al, 2019). Empirical evidence for this SIMTIC argument about vulnerability to trauma by social group has previously been noted in relation to young men being more likely to experience road traffic collisions (Muldoon & Lowe, 2012). The present evidence extends this argument to a broader range of injury types.

Beyond unequal incidence of injury, providers also reflected on variations in the **impact** of injury by pre-existing socioeconomic context. A specific socio-economic vulnerability was noted by a few providers: the impact of injury related to pre-injury employment security, for example:

> *people who've got caring responsibilities, who've got to pay a mortgage at the end of the month, who are in jobs that probably would get lost, temporary jobs or temporary contracts, whatever it is, I think that being reassured that there's someone who either provides information or advocates on their behalf or somehow will manage or negotiate with employers or provide them with information, at some point I think that would reduce some of the concerns that people have. So I guess there are families who live within one month of poverty, probably half a month of poverty, so people who are self-employed, for them employment, financial security becomes an issue quite immediately* ***P Res-05 Research Psychologist***

This provider noted that precarious employment situations would contribute considerably to survivor stress. The pre-existing precarity of temporary employment and it was implied, no savings, could quickly become an acute source of financial stress following injury. Threat to job security could threaten the home if the mortgage could not be paid. A lack of income where families "*live within one month of poverty*" would affect a whole family's means. This excerpt highlighted the contribution of material or financial distress to psychological distress. People with pre-injury employment precarity were likely to be more vulnerable to this distress. The need for support to "*negotiate*" or "*advocate*" for survivors indicated this provider recognised the material and psychological effect this would have. This is supported by a longitudinal study described in Chapter 1 which noted living in socioeconomically disadvantaged areas as one of three main risk factors for psychological morbidity following injury (Kendrick et al., 2018). Unfortunately variation in the empirical measurement of socioeconomic outcomes for injury survivors (noted following orthopaedic trauma in a review by O'Hara et al, 2020) means conclusions about which social groups might be most vulnerable have been difficult to make. Pre-injury economic precarity may contribute to threat appraisals (and psychological distress) following injury due to accumulated stressors.

A further aspect of socio-economic vulnerability was noted, related to post-injury depreciation of social status:

> *the incidence of pre-existing psychological problems is slightly higher in the injury population. So you've already got people who may well be on that trajectory anyway. That's what I think that the Zatzick thing is, because part of the Zatzick model includes actively discussing people's post traumatic concerns. And that doesn't just mean their psychological wellbeing. What's the impact of this going to be for your family, for your income, for your – helping people to problem solve for themselves. […] There's a hugely broader impact and PTSD accentuates that but down the road. They're not socially in the same place as they were, or financially. And that has a huge impact on everyone else. Dependency is a really big one, particularly I think – and this is not evidence based*

> *– on middle aged women who have been in a caring role. Or anyone who's been in a caring role. So people who have been carers themselves and then suddenly can't do it; there's a lot of guilt.* ***Res-30 Clinical Researcher***

Firstly this Researcher affirmed pre-existing psychological problems as risk factor for incidence of injury.[26] They went on to reflect more holistically on the psychological impact of injury, including financial, family impact, a need for care. They understood this as having the potential to result in depreciation of social status, paying particular attention to survivor perceptions of social role change: "*not socially in the same place*". Being socially changed such as not being able to continue with a past caring role because of a new and unaccustomed "*dependency*" was understood by this provider to contribute to psychological distress. This went beyond work identity disruption to broader social identities. This threat posed by injury to valued social role was congruent with Muldoon et al.'s (2019) SIMTIC arguments. They proposed that trauma can result in the devaluation of pre-existing social identities, undermining positive identity. Here, injury had just that effect, providing a novel affirmation of the argument. There was frequent reference made to the need to understand holistic impacts of injury by other providers in the sample, particularly those involved with rehabilitation of injury survivors. This indicated their awareness of a social impact of injury.

In summary, service providers were aware that pre-existing social and socio-economic context could contribute both to the unequal incidence of traumatic injury in the population and to variations in impact of injury, materially and psychologically. They did not speak of these variations in relation to stress and coping appraisals, but they may be inferred. Next, differences in coping resources are considered.

Subtheme 7B.2: The availability of social support

Compared to reflections on socio-economic context, a smaller number of providers commented on the significance of available post-injury support to survivors' coping capacities. Those who spoke about the impact of social support recognised it as a key contextual contributor to survivor outcomes.

> *Social support's an interesting one, because it comes out as the most significant predictor of long-term psychological problems if it's absent, and if it's there, it's a protective factor. So if you've got a good supportive environment, whether it's family, friends, work, if work are not supportive, you know, many people six months you go on half pay, you know, so that is an additional stressor psychologically. […] So the social*

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[26] This provider referenced a study which investigated predictors of PTSD at one year following hospitalisation for major trauma (Zatzick et al., 2002). That study concluded that contextual risk factors included prior trauma, stimulant intoxication and female gender.

> *contact goes down and if people, you know, don't want to ask about injuries, and you know, the amount of people that have said, nobody's asked me anything, or they think I've got three heads or whatever, you know. So that drops off, there you have the greatest vulnerability, which is about lack of social support dropping away.* ***P-18 Psychotherapist***

This psychological practitioner with trauma expertise highlighted the absence of social support as "*the most significant*" predictor of psychological problems following traumatic injury. They noted the importance of available support across survivors' networks, but also mentioned reduced pay from work as an issue support. They understood that lack of support would contribute to psychological "*vulnerability*". This was congruent with the importance of social support to injury and trauma recovery in the literature, highlighted in chapters 1 and 2. Furthermore, this provider understood social connection and its reduction as being associated with support. They linked a drop in "*social contact*" to implied stigma through other people's avoidance of the survivor: "*I've got three heads*". This corroborated lived experience findings in studies 1 and 2 where (a) the availability of workplace support contributed to coping appraisals, and (b) survivors were motivated to RTW to reconnect with colleagues. The co-occurrence of social identity resources (connection and social support) in this extract has been noted in SIAH literature (Greenaway et al., 2016). The two resources may be linked because social identity resources are mediated by access to social support, as argued by Haslam et al. (2021). Thus social isolation through the stigma implied in the extract could result in social support "*dropping away*". These interacting mechanisms (availability of support; social connection or isolation; stigma) were all understood by this psychotherapist as contributing to variations in psychological vulnerability. While they did not frame them as contributing to stress appraisal and coping specifically, the mechanisms were understandable as social identity processes discussed in Chapter 2. Furthermore, the negative impact of stigma on connection following injury is congruent with Muldoon et al.'s (2019) SIMTIC argument that trauma results in the weakening of positive social identity and its associated psychological resources. This extract indicated that even where the importance of social support to injury appraisal is recognised, it may not be framed in terms of social identity processes.

Another provider specifically highlighted a pre-existing lack of support as a marker for vulnerability post injury.

> *people with a disability on their own with no support network, that for me is the vulnerable ones because there is nothing there, they are isolated with literally no communications, have great difficulty then engaging with the world itself because they are just trapped in their little bubble in their bedsits, their apartments, they don't go out and they don't see anybody and they literally just disappear.* ***O-34 Disability Employment Adviser***

This adviser commented on the most vulnerable people as being those who had acquired a new disability through injury and also had "*no support network*" to help them. As above, they considered the impact of social isolation as having a particularly negative impact. While their perception was that having no support network led to survivors being physically "*trapped*" perhaps by a loss of mobility, the impact was understood in terms of social participation: "*they literally disappear*". While the participant was not specific about mental health outcomes, it was clear that this was not considered to be a positive recovery trajectory. It may have been implied here too that this isolation and 'disappearing' was associated with the loss of purpose so evident in studies 1 and 2. Most relevant here is that the lack of support network was a pre-injury factor, so a pre-existing vulnerability to negative outcomes from social context. The importance of support networks to recovery following injury has been noted in a previous qualitative study (Doohan & Saveman, 2013). The previous extract highlighted the weakening of social identity following injury or trauma, theorised by Muldoon et al. (2019). This extract indicated another mechanism, vulnerability through a pre-existing lack of access to coping resources. This is congruent with SIMIC model research highlighting number of pre-existing group memberships as a predictor of resilience.

The same participant went on to consider the impact of the availability of workplace support.

> *Across the whole country, you will have good employers and you will have bad employers. The good employers will make the reasonable adjustments, they will understand the situations, they will go and ask the necessary questions and do the best to support them, they are great when you find them. The bad employers are the ones that don't know and then don't take the steps to, they don't know and they go and do their own thing and that's where we have had a lot of issues in the past on that bit and dealing with certain things and it's not always a pleasant experience particularly for the individual caught in the middle.* ***O-34 Disability Employment Adviser***

This adviser equated the provision of legally required "*reasonable adjustments*" as support, and this support was focused on facilitating return to work. Despite there being a legal requirement to support impaired workers back into the workplace (Government Equalities Office, 2015) they reflected that the actual provision of this was variable. They implied that "*good*" employers would put in the effort to "*understand*" and support specific needs, which was in tune with the way survivors in Study 2 appraised positive experiences of support. Where workplace support was either not forthcoming or was inappropriate for survivor needs this provider acknowledged the psychological impact on survivors: "*not always a pleasant experience*". This account highlighted the variability of workplace derived support as another aspect of social context which could contribute to psychological outcomes.

Finally, there was a notable difference in perspective between lived experience appraisals of workplace support and employer approaches. Lived experience in Study 2 highlighted how important support was to survivor appraisals of continuity or disruption of the valued work identity. A counterpoint to this was highlighted by a provider with experience of vocational rehabilitation.

> *You've worked with a very medical model, I'm coming at it from a very commercial perspective because that is what my client's - my customers need to look at. I have to be able to justify them waiting and holding a job open for 12 months, and in some instances we can do that but not in all.*
> ***Okay, so it's up to the employer?***
> *It probably sounds a bit harsh but it's the way life is. […] The issue you've got with the employer is, is that employee being paid or not? Because you will have everything from people insured to people who have stopped receiving any form of pay after five days. The employer will need to fill that job while the individual is not fit to come back. They will maybe not be able to or want to put temporary people into that. or that skillset for that individual might be so specialised that it is actually very difficult for them to wait […] Most phased returns, they want people to be delivering 50% of the output. They need to put adjustment in for that output to be delivered, that's fine. But I think everybody keeps coming from a very medical model of how long it's going to take people to get ready and not realising the constraints that organisations and businesses have.* ***OT-20 Occupational Health Consultant***

This private sector specialist in occupational health had a particularly pragmatic view of employer "*constraints*". The material workplace support of reasonable adjustments that survivors valued in Studies 1 and 2 was balanced against the employers' "*commercial perspective*". This provider noted that decisions to hold jobs open for the period of physical recovery or to provide adjustments such as phased returns or sick pay would not always be viable for the employer. Other participants commented on the size of employer as an aspect of this constraint. This provided a particularly novel illustration of the impact of social context on support and coping. In the extract above, the provider acknowledged that "*it probably sounds a bit harsh*", implicitly recognising the negative impact that the employer's decision could have on an injured employee. Providers with practical experience of RTW processes and employer decision making recognised this an important variation in the availability of workplace support.

In summary, this theme illustrated service provider awareness of variations in another aspect of social context: available support and how this could impact psychological and RTW outcomes for trauma survivors. They recognised that survivor vulnerability could be affected by the availability of support from the workplace and more generally.

Theme 7B Summary

Theme 7B indicated that service providers were aware of social context as a contributor to survivor vulnerability. While they did not explicitly refer to social identity contributions to appraisal and coping, they recognised pre and post injury social context factors which could impact wellbeing.

Subtheme 7C Injury responses that delayed appraisal and coping processes

The final theme brings together provider observations of two specific aspects of psychological response to injury which contributed to the delayed recognition of psychological distress. The majority of participants observed that survivor distress tended to be identified or develop later. They attributed this to (a) a survivor or carer prioritisation of physical recovery and (b) a lack of awareness of psychological trauma response. The resulting later recognition of distress contributed to unmet needs for psychological care amongst injury survivors.

The late onset or identification of psychological needs in traumatic injury survivors was noted by many of the participating providers.

> *sometimes even if the [psychological] needs are assessed in the acute clinical services, the needs may not be very apparent at that point because people's priorities are quite different. So for instance, most people with considerable, significant physical injuries focus on recovering the physical component of their injuries, not recognising the psychological aspects which themselves are neglected by the patients or their carers, and/or their staff, but are only picked up once the patient tries to reintegrate into society and do what they used to do prior to the accident or injury. […] I think the problem is that at the moment, we tend to have a very short-term focus and I think some of the problems brew much later on.* ***P Res-02 Clinical Psychologist***

This psychologist noted that most survivors focused more on physical injuries than psychological distress while being treated in acute care (hospital). They observed that this "*neglected*" focus on psychological responses was shared by "*carers, and/or their staff*", implying that everyone concerned was slow to recognise psychological distress following injury. It was usual for physical injuries to be prioritised over psychological distress and then mental health issues might "*brew much later on*", specifically at the point of trying to return to normal life. This provider believed that even if psychological needs were assessed while the patient was in acute care, the distress might not yet have developed. This is congruent with a recent charity report which summarised the psychological trajectory of veterans following injury (Jones, 2021, p17). Their major trauma recovery journey graph, reproduced in Diagram 1.1, Chapter 1 indicated a wellbeing trough after discharge home. Since the threat was not apparent until survivors tried to "*reintegrate into society*", this later development of distress seems likely to be associated with survivor appraisals of the impact of impairments on roles or social identities. Other providers explained this early focus on physical over psychological concerns in different ways.

A psychotherapist specialising in trauma recovery focused in on the impact of pain and discomfort as a distractor from psychological response:

> *I think probably universal is that when people are having extensive, or long-term physical care, it actually impedes any psychological recovery for the simple reason that the pain, the discomfort, that they go through inhibits psychological recovery. […] people with ongoing physical injuries or that are presenting, that's a significant inhibitor and obstacle I think to psychological change.*
> ***Why is that?***
> *I don't think there's some very significant scientific reason, I think it's just because we're human beings and when you become overcome and preoccupied by pain you can't do anything else.*
> *It's an inhibitor, you know, if you ask anybody who's been through a significant trauma, which involves a physical injury, and if the physical injury causes you pain and discomfort, that becomes your overwhelming focus.* ***PT-18 Psychotherapist***

This psychotherapist with significant caseload experience of injury survivors perceived a simple pattern of behaviour: that the pain and physical discomfort of injury meant survivors would be "*overcome and preoccupied*" and would not recognise their psychological support needs. They referenced the inhibitory impact of pain on engaging with "*psychological change*". Such 'change' may represent adjustment and contributory appraisal and coping processes: a repression of behaviours such as rumination and help-seeking. Prior research has concluded that persistent pain may actually contribute actively to psychological distress (Rosenbloom et al., 2013). They also commented on the great many psycho-social predictors of pain perception itself, suggesting a complex relationship. Indeed, a more recent study (discussed in Chapter 1) found no significant association between pain and psychological morbidity (Kendrick et al., 2018) following injury. Psychological reactions to pain have been negatively linked to RTW outcomes (e.g. catastrophising and fear of pain by Fadyl & McPherson, 2008). However, their review also noted that the value of these conclusions was limited by methodological variability. Evidently the relationship between pain and psychological distress is a complicated one. Psychological trauma literature may offer a different explanation. Herman's (2015) trauma recovery theory highlighted the importance of re-establishing a sense of safety as the first step. It might be argued that until the body has healed from injury, survivors' have not re-established their sense of physical safety. Herman's second stage of recovery concerns integration of the trauma experience, which is when appraisal and coping processes would become central to adjustment or making sense of the traumatic injury. Within this theoretical approach, a delay in attending to psychological impact of injury would be a normal progression, even if it delays access to care.

A GP's account suggested a further attempt to make sense of this delay in psychological impact.

> *I will literally get a phone call from a patient saying, this has happened to me, I've just been discharged, I haven't got any pain relief and I need a sick note. And I haven't got any letters, nothing from the hospital usually when that happens. So, that's the first I know of what's going on. Essentially, that person, if they're significantly disabled and you're talking about months and months, someone should be sitting down and giving them a proper rehab plan on how they go further, because if they don't, that's when the mental health is going to come in. If they feel that they've just been abandoned, and they've got no real direction going forward.* ***GP-28 General Practitioner***

This example affirmed the first extract's point about later 'brewing' of psychological distress after discharge from acute care. This GP connected the later onset of "*mental health*" needs with a specific cause: survivors receiving no explicit plan for their physical rehabilitation. Uncertainties about the means of physical recovery were associated with strong negative emotions in this case: feeling "*abandoned*" by health professionals, with an implied loss of control or "*direction*" over their progress "*going forward*". Other participants noted a widespread shortfall in rehabilitation services following major trauma, as reported by Kettlewell et al. (2021) using the same data. Uncertainties about treatment also included complex injuries, with an Occupational Therapist noting the issue of 'churn' "*complicating medical situations that keep a person churning around in this NHS system*" (VR-01). A long treatment trajectory or a lack of treatment plan might delay physical recovery, and thus the recognition of mental health issues. However, the Black Stork report (Jones, 2021) suggests a bidirectional interaction between the psychological and physical impacts of injury, and the present extracts illustrate that providers sought to explain the complexity of this relationship in different ways too. These provider attempts to explain the prioritisation of physical recovery over psychological needs were a particularly novel finding in the present study. The change of focus over time could be understood to contribute to readiness to engage in appraisal and coping processes. Another aspect of injury response also contributed to this: psychological trauma.

Unfortunately, many participants acknowledged that survivors' psychological trauma responses were not recognised quickly, delaying treatment.

> *I think given we know the incidence of PTSD is so high in this group, I think a lack of understanding of the problem of PTSD for clinicians and addressing those issues in the acute phase is a big barrier. […] if you look at systems barriers there may not be a dedicated psychological service for major trauma patients within the major trauma centre, consequently clinical psychologists are spread very thinly across the whole demographic of patients within the acute centre, not just the major trauma centre. There are obviously implications with funding around that. Lack of availability nationally of*

> *clinical psychologists with expertise in dealing with patients post-injury.* ***AT-31 Trauma Consultant***

This consultant working in acute trauma care reflected on two different deficits in understanding of PTSD: knowledge amongst treating clinicians, but also a lack of clinical psychologists with trauma expertise to refer survivors on to. Other providers commented on a lack of connectivity between healthcare and psychological care services throughout survivor recovery, not just in the acute hospital phase. While most participants focused on the lack of trauma informed expertise, those with that expertise reflected on the importance of helping survivors understand their own psychological trauma responses.

Service providers with specialist trauma knowledge observed that a normal response to trauma would typically develop over time.

> *if you saw somebody and there were no injuries, no bereavement and they've been exposed to a traumatic event, and there's no significant previous history or whatever, then generally a period of six to twelve weeks would be a timeframe for some of those normal reactions, tension, fear, risks, this hyper vigilance. At which point you'll see one of three things happen, either things will improve, things won't, or they'll fluctuate. […] if you're seeing them within two or three weeks, they may not have had time to develop difficulties but it's kind of pointing out to them that these are the sort of things you should monitor for. You should monitor for avoidances, you should monitor, you know, sleep patterns. […] if people aren't given advice about avoidance and monitoring, self-monitoring, surely as night follows day, they're going to end up with problems later on* ***PT-18 Psychotherapist***

This specialist reported "*six to twelve weeks*" as the timeframe within which survivors might experience "*normal reactions*" to a traumatic event. They noted that symptoms including tension, fear, risks, this hypervigilance may or may not develop into psychological distress: "*things will improve, things won't, or they'll fluctuate*". Like other psychological trauma experts in the sample, this participant emphasised the normalisation of post traumatic distress, noting that it would only be understood as diagnosable psychological distress if other symptoms developed. They referred here to recognisable symptoms of PTSD: "*avoidances*", "*sleep patterns*" "*hypervigilance*" consistent with the DSM-V diagnostic manual (APA, 2013). This indicates another form of later onset or entrenchment of psychological problems. Similar to a preoccupation with physical recovery, entrenched PTSD is likely to delay survivors' capacity to engage with coping processes while they are focused on the distressing experience of psychological trauma. Trauma theorists (e.g. Herman, 2015 and van der Kolk, 2014) have stressed that nervous system hyperarousal following trauma must be addressed before patients are able to engage with appraisal and coping responses allowing integration. Trauma specialists in the sample noted that best practice would include provision of psychoeducation about symptoms or behaviours to monitor for, to manage distress and avoid entrenched

PTSD. The wider psychological trauma literature notes that PTSD is not the inevitable nor even the majority psychological outcome following trauma (reviewed in Chapter 2). Thus supporting survivors to identify and manage early signs of post traumatic distress may facilitate earlier engagement with appraisal and coping processes.

In summary, providers observed two specific processes in injury response that delayed the recognition of survivors' psychological distress. Being focused on dealing with physical recovery or psychological trauma was understood to delay survivors' psychological processes of coping and recovery. Providers were mostly focused on how this delayed recognition and treatment of mental health problems. However, from the perspective of cognitive appraisal, it suggests that survivors might have been dealing with a hierarchy of threat appraisal, dealing with threats to the body and mind (psychological trauma responses) before they were able to appraise social identity threat or engage in coping responses.

7.4 CONCLUSIONS

This study aimed to gain service provider perspectives of traumatic injury survivors' psycho-social responses to injury, recovery and return to work. Specifically, it explored social identity context and other contextual contributors to threat appraisal and coping. Providers observed that identity threat and availability of coping resources contributed to survivors' psychological outcomes and thus RTW. They also recognised psychological responses to injury which seemed to delay or block appraisal and coping processes. Firstly, providers corroborated the work identity threat so central to lived experience results reported in Studies 1 and 2. Provider accounts indicated that work identity loss contributed negatively to survivor wellbeing when they appraised it as undermining their positive identity. Providers also noted that dealing with changed identity more broadly contributed to psychological processes of appraisal. They predominantly understood this as 'adjustment' and understood this to vary by individual rather than being a group related process. The second theme highlighted provider awareness of the impact of social context on appraisal and coping processes. While providers did not make the link between pre-existing vulnerability through social group to threat appraisal directly, they did observe that such socioeconomic vulnerability contributed to more negative outcomes both economic and psychological. They also observed the social context contribution of available support to coping capacities and thus psychological outcomes. In addition, providers understandings of the reasoning behind workplaces not being supportive provided an interesting contrast to lived experiences of workplace betrayals of expected support. The final theme suggested that there was a hierarchy of threat appraisal at work, with survivors deploying coping response to deal first with physical recovery or psychological trauma responses. This resulted in delay to appraisal of social identity threats and reappraisal processes which were needed to come to terms with the impact of injury. While most providers did not explicitly use social identity or appraisal terminology, it was possible to understand their reflections in these terms.

Before moving on to this, the interactions between service provider themes bear consideration. The majority of service providers spoke about identity change in terms of individual *adjustment* processes in response to a threat of changed self (Subtheme 7A.1), such as functional changes. While psychological adjustment has been noted as a risk factor for post injury distress (Sareen et al, 2013: see Chapter 1), it is only one of many predictors. Although there is an extensive literature measuring adjustment as an outcome (see Chapter 2), extending this to consider social identity threat would provide more nuanced understanding of injury response. For example the physical recovery focus noted by providers (Subtheme 7C) may also be responsive to an associated social identity threat. I.e. the motivation to focus on treatment may be motivated by the need to avoid impairments appraised to be threatening to ability to work or capacity to financially support dependents contributing to work or family identities. Providers did not link these themes together, but they are clearly relevant to social identity appraisal and coping. More broadly in the data, providers acknowledged systemic reasons for unmet needs for mental health care[27] as part of the barrier to RTW. However, the reported themes indicate that late developing psychological distress also contributed to unmet need, and the reasons for the delay. They attributed this late onset or recognition of distress to an early focus on physical recovery or to psychological trauma responses (Subtheme 7C), but appraisals of social identity threat or identity shattering are also likely to develop over time. The threat and coping appraisals in subtheme 7B may also contribute to this later development of distress. This is supported by previous research as follows. Pre-existing socio-economic vulnerability (subtheme 7B.1) is congruent with injury research linking financial problems and low income with mental health problems (systematic review by Visser et al., 2017) and more specifically with “social ecological” factors and PTSD (DiGangi et al., 2013, p733). Low support (Subtheme 7B.2) has also been noted as one of many predictors of PTSD (Heron-Delaney et al., 2013; Ozer et al., 2003). Psychological distress that developed later than the acute hospital treatment stage of recovery may represent evolving appraisal and coping responses which are influenced by social context and social identity processes.

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[27] Systemic reasons were not reported here outside of the focus on a lack of expertise on psychological trauma (subtheme 1.2), but included lack of availability of appropriate mental health care which has been reported elsewhere (Kettlewell et al., 2021).

Chapter 8 will bring together provider and lived experience findings to highlight the key social identity contributions to threat appraisal and coping. The chapter will draw conclusions about key thesis findings and discuss implications for theory, future research and practice.

7.4.1 Strengths and Limitations

This study contributed valuable comparison data to lived experience accounts of injury, recovery and RTW. The appraisal of extreme events is likely to be highly subjective, so obtaining an external perspective from professionals with relevant caseloads allowed comparison of key findings. Some findings were clearly corroborated but differing findings were also helpful in identifying potentially conflicting perspectives which might reduce therapeutic success in a RTW intervention. Including providers from a broad range of treatment and support contexts across the injury recovery trajectory (including acute, rehabilitation and RTW support) allowed for commonalities to be found across all stages of the recovery journey: a marked strength, producing rich data. The inclusion of so many providers with trauma expertise both major trauma and psychological trauma contributed to the trauma relevance of the data. However, it should be noted that providers' conclusions about survivor experiences, while informed by literature, was primarily observational and anecdotal in nature. Epistemologically, this thesis understands meaning to be constructed in response to context and providers may have used anecdotal experiences of clients to confirm their own biases. It is also possible that the differing expertise of the two interviewers (trauma psychology versus clinical implementation) may have contributed to different types of probe questions regarding psychological responses. Methodologically, while data analysis was conducted by only one researcher, care was taken to minimise bias by checking thematic results with trauma survivors from a PPI group, and a well informed researcher who was not involved with data generation.

CHAPTER 8: Conclusions

This final chapter brings together the key findings of the three qualitative studies and highlights key novel contributions to understanding of injury and trauma. The discussion also highlights ways in which the service provider findings (study 3) related to the lived experience perspectives (study 1 and 2). Implications for theory and practice in injury treatment, recovery and RTW (return to work) are also considered.

8.1 RESEARCH AIMS

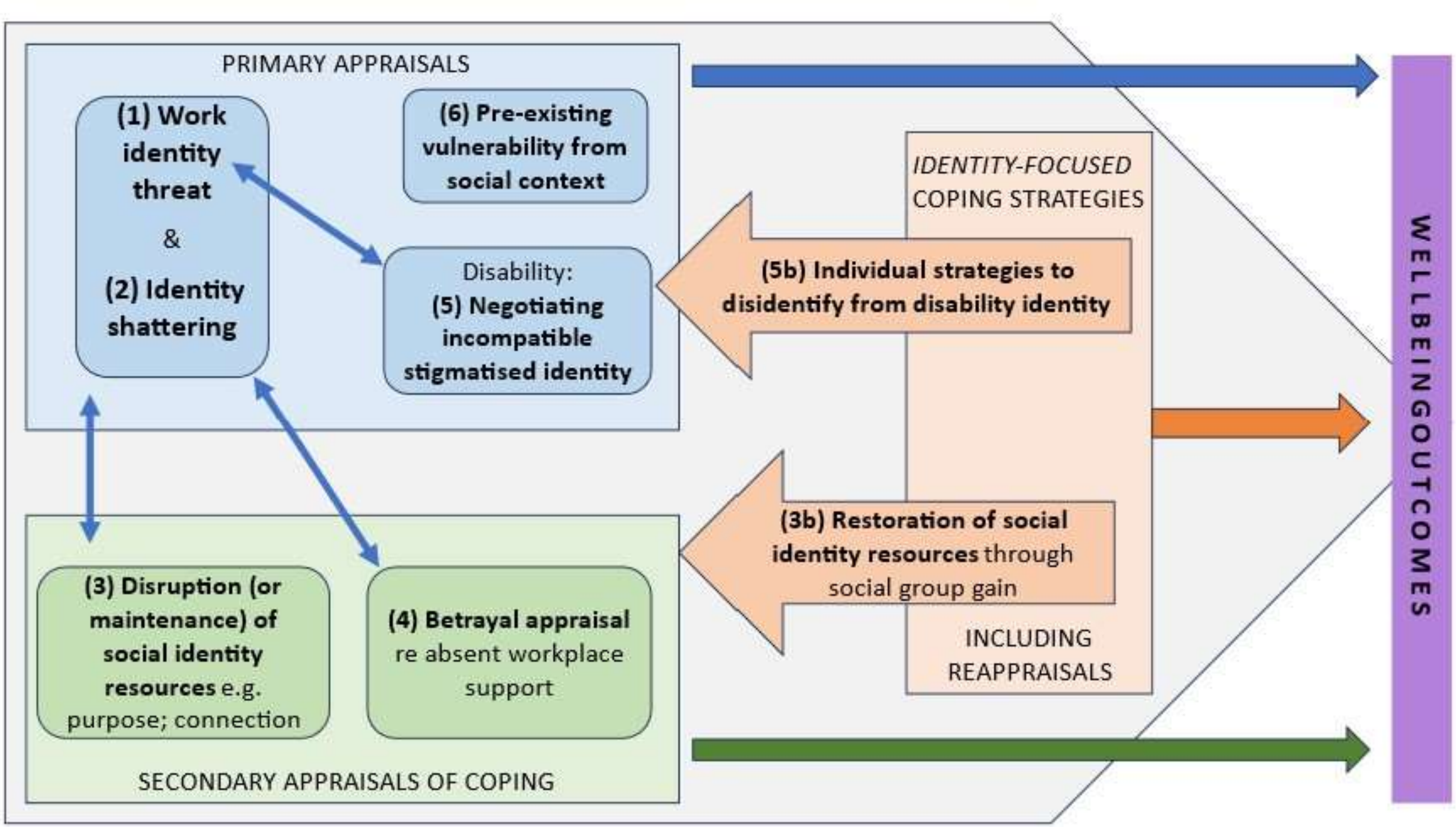
The overall research aim was to gain better understanding of psycho-social mechanisms of injury response by applying a combined theoretical framework to qualitative data. The novel analytical framework applied here combined stress appraisal and coping theories (SAC: Lazarus & Folkman, 1984) and CSM: Common-Sense Model (Leventhal et al., 1998) with the social identity approach to health (SIAH), a combination which has not previously been applied to traumatic physical injury populations and their rehabilitation.

8.1.1 Summary of seven novel findings across the three studies

Diagram 8.1 indicates that six of the novel findings fitted well with the proposed theoretical framework of social identity contributions to appraisal and coping (proposed in Chapter 2, Diagram 2.4). A seventh finding highlights the interaction of work identity threat with other threats appraised by survivors. The summary of both lived experience study findings in Chapter 6 highlighted social cure and curse mechanisms (Diagram 6.2). In this final summary, Diagram 8.1 focuses in on specific social identity mechanisms contributing to survivor appraisals of threat and coping following injury. While not explicitly labelled as such, they can be understood in terms of social cure and curse, or the impact of group identities on appraisals and coping responses leading to wellbeing outcomes.

The key findings are as follows (with more detailed discussion of each point following below): **(1)** the **primary appraisal** of **work identity threat** affected many survivors and this was corroborated by service providers. Provider observations suggested too that **(2)** ***identity shattering*** may exist beyond the work identity alone. Here this constituted the abrupt and distressing ending of a valued social identity and its associated socially curative resources. The **(3) disruption of social identity resources** or their **(3b) maintenance/restoration** contributed to survivor responses, with the latter being central to survivor coping or ***identity-focused coping strategies***. While providers recognised disrupted sense of purpose alongside work identity threat, survivors perceived a broader range of disrupted social identity resources, including social connection. Providers and survivors appraised the availability of social support differently. While providers viewed the availability of social support generally as an aspect of pre-injury social context (see finding 6) that contributed to psychological response, survivors appraised the availability of workplace support in a more nuanced way. Survivors' **(4) betrayal appraisals** indicated that available support was perceived as a measure of work identity continuity by survivors. When expected support was not forthcoming this contributed to perceptions of *identity shattering*. Meanwhile providers perceived the availability of workplace support more pragmatically or transactionally, with employers offering what they could afford. Providers' understanding of workplace support generally did not include the social identity impact of changes in available support which contributed to survivors' distress. Survivors' efforts to **(5) manage the incompatibility of disability stigma with their valued work identity** was not a focus of providers. Survivors appraised a threat to their valued work identity from new disabilities and negotiated this threat by using **(5b) individual strategies to disidentify from the disability identity;** another form of ***identity-focused coping strategies***. This indicated a further gap in understanding between the two stakeholder groups. Providers expressed some awareness of **(6) pre-injury social context** influencing incidence and impact of injury, including psychological response. This might be interpreted in relation to SIAH theory arguing that pre-existing social identities contribute to the appraisal of trauma (SIMTIC: Muldoon et al., 2019). Diagram 8.1 summarises and maps these novel findings (1-6) on to the prospective theoretical framework outlined in Chapter 2 (Diagram 2.4). Finally providers observed that some **(7) aspects of injury response** (focus on physical recovery; poor awareness of psychological trauma) **delayed the recognition of psychological distress.** It is argued here that this was a result of delayed threat appraisal and coping processes. I.e. while survivors responded to one threat, their appraisal and response to further threats (including, but not limited to, work identity threat) was delayed. This is compared with wider threats identified in survivor data (social isolation and prognosis uncertainty) not detailed within survivor themes.

Diagram 8.1 ***Novel social identity contributions to threat appraisal and coping following traumatic injury*** *(Numbered points indicate key findings discussed in the chapter.)*



8.2 SEVEN KEY FINDINGS

8.2.1 FINDING 1: Primary appraisal of work identity threat following injury

Findings in all three studies highlighted the importance of appraisal of **work identity threat/loss** by injury survivors. Study 1 survivors appraised their functional impairments through their impact on participation in a valued work identity (Subtheme 4A.1). Study 2 survivors experienced negative wellbeing impacts from both short-term stress and outright loss of work identity (Subtheme 5A.1). Providers noted that survivors experienced psychological distress with a loss of identity when work was disrupted (Subtheme 7A.2). This appraisal of a threat/loss to work identity is congruent with the SIMIC model (Jetten et al., 2009), suggesting injury as an example of a life transition when social identity may be vulnerable. Changes to work identity have been noted following acquired brain injury (ABI: Muldoon et al., 2019b) and associated with reduced wellbeing in injured police officers (Bullock et al., 2020). This is the first time work identity threat has been recognised across the full range of major trauma injury types. In the present research, variations in survivors' psychological outcomes were linked with the continuity/maintenance or loss of their pre-injury work identity. Social identity maintenance/gain is a social cure pathway identified by the SIMIC model and elaborated in the trauma focused SIMTIC model (Muldoon et al., 2019). Social identity loss would mirror this as a social curse process. Providers connected work identity threat with a negative impact on wellbeing (curse), particularly through loss of self-worth. In early SIT theory, individuals' positive sense of self is associated with the social identities they identify with (Tajfel & Turner, 1979). Furthermore, different levels of pre-injury *identification with the work identity* are likely to contribute variation to this threat appraisal, in line with *the Identification hypothesis* (Jetten et al., 20017). Participants' identification with work was not quantitatively captured, but extracts summarised in *Appendix Table II.i.* suggest there was a high level of identification in the Study 2 sample. While work identity threat was a novel application of SIMIC theory, a prior small qualitative study of injury survivors and occupational therapists has indicated that survivors prioritised RTW to regain positive purpose and identity (Gavin et al., 2022) as well as social interaction. This appraisal of work identity threat as contributing to psychological distress is useful for understanding the variability of psychological response to injury (noted in Chapter 1). In section 1.3.2.5 (the timing of psychological distress after injury) it was noted that later onset of distress had been observed both by empirical studies and anecdotally by a charity. In the latter case, the diagram reproduced in Chapter 1 (Figure 1.1 on p25: Jones et al., 2021) included a steep dip in mental health after return home.

8.2.2 FINDING 2: (Social) identity shattering

Social identity threat was not necessarily limited to the work identity. While providers did not speak in social identity terms[28], they recognised that survivors were often adjusting to identity change after injury (Subtheme 7A.1), indicating impact on other social identities. This was apparent in the survivor data too, particularly Study 2 (Chapter 5) where participants were questioned more generally about changes to important groups. There was evidence that survivors' connections to other valued groups including family, friendship and hobby and interest groups were affected by injury. However, only work identity was included in the themes reported in Studies 1 and 2 since it was most pertinent to the focus of the ROWTATE study's data generation re return to work. It is proposed that **work identity threat is a form of *identity shattering* that may be experienced after injury or trauma exposure**. This would be congruent with Janoff-Bulman's theory that trauma shatters positive pre-trauma cognitive assumptions (1992) and extend Muldoon et al.'s (2019) SIMTIC argument that trauma may result in the devaluation of social identity. If shattered assumptions are defined as a traumatic disruption of previously positive cognitive schemas (Janoff-Bulman, 1992), then *identity shattering* or *shattered identity* may be **defined as the abrupt ending of a valued social identity and its associated resources**. While the sociological theory of biographical disruption (Bury, 1982) addresses the impact of injury on physical or biological identity, social identity shattering extends to the social curse effects on wellbeing of lost access to group based resources (considered in Finding 3). This is also congruent with Herman's (2015) trauma recovery model which emphasises the need to rebuild shattered connection with others. The potential for a negative impact of identity shattering on mental health is clear, and further elaborated in Finding 4 below. One prior injury study[29] applied Janoff-Bulman's (1992) shattered assumptions theory to psychological responses to injury. Haynie and Shepherd (2011) commented on injured veterans' need to rebuild their shattered career identity. The veterans' focus on rebuilding is similar to the identity-focused coping strategies noted in Finding 3b: Restoration of disrupted social identity resources. Not only does identity shattering offer insight into the negative psychological impact of traumatic injury, survivor responses to shattering indicate pathways of prospective resilience, as follows.

8.2.3 FINDING 3: Social identity resource disruption, restoration and maintenance

Linked to work identity threat was the negative impact on wellbeing through **(Finding 3) disruption of work associated social identity resources**. This influenced both threat

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[28] With two exceptions: Research Psychologists who were familiar with SIAH.

[29] One other study (Kroger, 2020) has recently used the phrase "shattered social identity" to describe the breakdown of health care workers' self-evaluation of professional values such as hardiness when dealing with covid-19, inferring a threat to self-categorising with a valued work identity in response to extreme events. While interesting, this suggests a different mechanism of identity threat.

appraisal and **coping responses focused on resource restoration (Finding 3b)** and is a particularly novel finding. The disruption of sense of purpose and social connection clearly contributed to reduced wellbeing in Studies 1 (Subtheme 4A.3) and 2 (Subtheme 5A.2). As such these resources stood out in the data as prospective mechanisms of social cure and curse. (The availability of social support was more specifically associated with survivors' coping appraisals, dealt with separately below: Finding 4.) SIAH research recognises a set of psychological resources (support, connection, purpose and agency, Jetten et al., 2017) but tends to focus either on perceived availability of social support alone, or the availability of the resources as an integrated 'set' (Greenaway et al, 2016). Both SIMIC and SIMTIC models reference the changing availability of social identity resources (following life transition or trauma exposure) in a non-specific way (Jetten et al., 2009; Muldoon et al., 2019). A standalone, specific impact of changed or disrupted sense of purpose or social connection has not been previously noted in SIAH applications of SIMIC. Rather, SIMIC research has focused on the following processes as predictors of wellbeing following transition: multiple group memberships; social identity maintenance and gain pathways, with connection understood as a measure of identification (Haslam et al., 2023). In the present research, providers' understanding of social identity resources was considerably less nuanced than survivors'. Many providers recognised a negative impact on wellbeing through disrupted purpose, with fewer mentions of connection.

What was shared across both stakeholder groups was a perception that disrupted sense of purpose contributed to *loss of positive identity* associated with work. Both survivor and provider data suggested too that **coping responses** such as RTW or seeking new groups or activities often **focused on restoring sense of purpose** (Subthemes 5A.2 and 7A.2). In most cases this restoration of purpose took place through new work or new social groups. Restoration of sense of meaning or purpose has been noted in rehabilitation literature as an important motivation following injury (Gavin et al., 2022; Litooij et al., 2021). It is possible that sense of **purpose is a specific mechanism underlying the social identity revitalisation pathway (Finding 3b)** proposed as part of SIMTIC (Muldoon et al., 2019). Recent empirical support for a post trauma revitalisation pathway (from SIMTIC: Muldoon et al., 2019) has indicated that post traumatic growth (positive psychological outcomes) was more likely to be associated with social identity gain than maintenance (Craig et al., 2022; Griffin et al., 2021). In the case of injury survivors (study 1 and 2) who had lost a valued pre-injury work identity, new groups seemed to restore positive social identity through renewed sense of meaning or purpose. Whether other social identity resources could contribute to restored social identity remains to be further explored. For example, social connection has been noted as important to the wellbeing of work disrupted veterans (Waldhauser et al., 2021). Participants in both survivor samples also sought to maintain social connection with the workplace and were negatively affected by its disruption (Subthemes 4A.4 and 5A.2). Both purpose and connection appeared to be important to psychological outcomes and a motivator of RTW in the present research. Where the pre-injury job had been lost (Identity Shattering), restoring purpose was a particular motivator. It has been suggested that social connection is the vehicle for access to broader social identity resources (Haslam et al., 2021). However providers paid less attention to the impact of social connection in survivor psychological response, and more to available social support, considered next. These findings suggest focused social identity resource mechanisms which may be usefully targeted in support interventions.

8.2.4 FINDING 4: Betrayal appraisals related to absent workplace social support

Survivors' appraisal of betrayal when availability of workplace social support did not meet survivors' expectations (Subtheme 5B.2) was a particularly novel finding. To the author's knowledge this has not previously been reported in SIAH research. SIAH hypotheses, as outlined in Chapter 2 note that social support is anticipated to be available from the groups with which individuals strongly identify (*social support hypothesis*, Jetten et al., 2017). However the direction of the relationship between social support and identification is not well established empirically (McKimmie et al., 2019), with empirical investigations tending to consider social support as flowing from identification. Receipt of support has been linked with increased social identification in a study in care homes (Gleibs et al., 2011). Very recent longitudinal testing of the direction of this relationship (support and identification) does indicate some bidirectionality (Häusser et al., 2023), but the focus of that research was on social identity formation, not dissolution. Therefore, the present finding of an **appraisal of betrayal where expected reciprocal support was not forthcoming** suggests further nuance to the relationship. In the present survivor data, a **valued work identity was undermined** in a shocking way (a Social Curse process) by a negation of expected social support. This indicates that the appraisal of social support may function differently to the other social identity resources discussed. The strength of this emotional impact on participants in Study 2 (where more participants had experienced loss of their pre-injury job than in Study 1) indicated *identity shattering* as described above. In contrast, in study 1 the expected workplace support contributing to positive coping appraisals, perhaps not unrelated to the affirmation of identity continuity implied. This appraisal of available workplace support indicated a wellbeing pressure point for injury survivors and this was further complicated by the provider perspective, explored next.

Provider perspectives on workplace support asserted that employers' point of view may be much more transactional than survivors'. Providers from vocational rehabilitation sectors noted that employers approached provision of support such as reasonable adjustments for impairments in a pragmatic, transactional way (Subtheme 7B.2). Their perspective highlighted the likelihood that employers' financial circumstances would drive their support decisions. The potential for a big gap in approach was obvious here. Where survivors were strongly identified with their work, employers' pragmatic decisions not to support them could be viewed by survivors as a betrayal of expected reciprocal support. This apparent clash of values highlights another potential source of distress for survivors, much reflected on in Study 2 data. Previous research has linked employees' negative affect with perceiving a lack of reciprocal support from employers (Buunk, et al., 1993). More recent research has indicated that positive availability of workplace support increased coping with burnout (Kang, Twigg & Hertzman, 2010) and work stress (Haslam et al., 2005). Employer support has important implications for RTW. In rehabilitation research, Gavin et al.'s (2022) qualitative study of RTW in injury survivors noted that a lack of employer support was a barrier to RTW, and furthermore, survivors felt excluded when the workplace failed to make adaptations that would facilitate RTW. The present finding is certainly coherent with the importance of social support and integration to RTW after injury, noted by White et al (2019). While that review concerned only injury that happened in the workplace, the present research indicates the importance of workplace support across major trauma types and mechanisms. More importantly, this finding indicates that **social identity threat appraisal, including identity shattering may be an important mechanism for survivor responses to workplace support**.

8.2.5 FINDING 5: Managing the incompatibility threat of disability stigma

Survivors perceived a further threat to valued work identity from newly acquired disability. This contributed a new understanding of how stigma appraisals might operate following injury or trauma. The application of the SIMIC model to trauma (SIMTIC: Muldoon et al., 2019) focused on the potential for stigmatised trauma identities to block the availability of social support, as described by Këllezi and Reicher (2014) and outlined in Chapter 2. Elsewhere, Bradshaw and Muldoon (2019) have advocated the importance of addressing stigma/shame management in support interventions. However, both Study 1 (Subtheme 4A.2) and Study 2 (Subtheme 5A.3) findings indicated that **survivors were more concerned with the *incompatibility* of a new disability identity with their valued work identity**. This novel finding was included as a social curse pathway in Diagram 6.2, which adapted the SIMIC model to work identity threat. Previously, *identity compatibility* in the SIMIC model (Jetten et al., 2009) has been understood as a barrier or facilitator to new identity gain, e.g. as in new students from different socio-economic backgrounds (Praharso et al., 2017). However, recent research has highlighted a more nuanced impact, e.g. identity incompatibility as a possible contributor to BAME students' lower attainment in higher education (Frings et al., 2020); with the authors advocating for a deeper exploration of the complexities of incompatibility. A recent study proposed that identity negotiation (between incompatible identities) was itself a stressor in a refugee population (Ballentyne et al., 2021). In the injury survivor population, this stress of incompatibility was more apparent than the perception of threat from any stigma associated with disability, per se. While Study 3 data indicated that some providers recognised disability as part of survivor appraisals of changed self (Subtheme 7A.1), it was not enough to constitute a standalone theme. As with appraisals of support, survivor appraisals of disability, stigma and identity incompatibility were more nuanced than providers seemed to recognise. (However, providers were not asked directly about stigma in the topic guide.)

The coping strategies that survivors pursued to manage this additional threat of an incompatible and burdensome identity were a further indication of identity-focused coping strategies. Most survivors either *concealed* their disability or appeared to try to *avoid self-categorising* as disabled. These two strategies are recognisable as **(5b) individual stigma management strategies** described by the SIAH (Dirth & Branscombe, 2018) **focused on distancing or dis-identifying from a stigmatised social identity** (van Veelen et al., 2020). Firstly, the choice of individual rather than collective identity management strategies has relevance to appraisal and coping. If survivors, appraising a new stigmatising identity, avoid collective coping strategies, then an important route to collective meaning-making and appraisal may be blocked. The link between collective appraisal and PTG has recently been reported through application of SIMIC and SIMTIC to trauma (Craig et al. 2022; Drury et al., 2016) and ABI (Grace et al., 2015). There was some evidence in Study 2 (part of subtheme 5A.2) of survivors who embraced their disability identity through new groups (affirming the SIMTIC *revitalisation pathway*) experiencing positive psychological gains. These examples were surprisingly few given the recruitment of participants through peer support networks. The second theoretical application links coping strategies back to identity incompatibility. Van Veelen et al. (2020) note that *self-group distancing* processes may be more complex than a simple movement *away* from a potentially stigmatising identity. There may also be a movement *towards* a higher status group. In the present sample, survivors were probably more focused on maintaining the valued work identity than engaging with the new and unwanted disability identity. Therefore their process of negotiation of incompatible identities was less concerned with stigma than with the threat to the pre-existing identity. This may present a barrier to attempting to engage injury survivors with disability focused support groups, and it is important to consider this when developing group-based interventions.

8.2.6 FINDING 6: Pre-injury social context contributions to appraisal

While limited in extent, provider evidence indicated that **pre-injury aspects of survivors' social context contributed to their psychological response**. Providers did not speak about this in terms of appraisals of threat and coping, and it was a minority of the sample who referred to it. There were two aspects of social context reported (Theme 7B): **pre-injury availability of social support** and **pre-injury social context increasing the incidence and negative impact of injury**. Survivors did comment extensively on the **negative impact of lack of social support from wider social networks** than work but this was not the focus in the reported themes. Availability of social support is clearly linked to coping appraisals, but this has been discussed in point 3 above. For simplicity, the focus here is on the issue of vulnerability from social context and how the psychological impact of this might be understood in terms of SIMTIC arguments about trauma appraisal. In Chapter 1, pre-injury socioeconomic risks for post-injury psychological distress were noted: pre-injury low income (Sareen et al., 2013) and living in a higher deprivation area (Kendrick et al., 2018). As discussed in Chapter 2, the SIMTIC trauma focused elaboration of SIMIC argues that social identity contributes to threat appraisal of traumatic events (Muldoon et al., 2019) possibly in relation to increased social identity related vulnerability to trauma increasing the salience of the identity. Providers perceived that injury survivors' psychological response was influenced by their vulnerability to injury incidence, but also by the impact an injury could have on people who were already experiencing socio-economic precarity. This perspective was not common in the survivor data, but it did present occasionally, including in the extracts of survivors who volunteered with other injury survivors, so had insight into patterns of experience. Given the provider data was third party commentary, it could be argued that individuals may be less likely to reflect on their individual experiences in terms of vulnerability by social group. Or the survivor sample did not include many who perceived they had experienced such vulnerability. While this finding would be stronger with additional replication, this small provider theme did indicate that the socioeconomic risk factors noted in injury research may be at least partly explained by a **social identity contribution to injury threat appraisal.** As such, it may account for some variation in psychological outcomes.

8.2.7 FINDING 7: Injury responses that delay appraisal and coping

A final appraisal related finding was not specifically related to work or other social identity. Providers often reflected that psychological distress was identified late and this affected treatment and contributed to poorer psychological outcomes. They linked this with two **aspects of injury response:** (a) **survivor response to physical needs** and (b) **lack of**

psychological trauma informed healthcare. While neither point was specifically related to appraisal by providers, it was argued in Theme 7C that while survivors are focused on one threat, this may delay the recognition of other threats or deployment of coping responses. Regarding point (b), trauma specialist providers in the sample advocated psychoeducation to help *normalise* the experience of psychological trauma (Theme 7C), apparently recognising that the experience of psychological trauma could itself be appraised as threatening by survivors. Providers' other perception, that (a) survivors tend to prioritise physical over psychological recovery may be associated with one of the wider threats appraised in Study 1. Diagram 8.2 highlights some of the interacting threats appraised by survivors beyond work identity threat. Prognosis uncertainty was not included in the reported themes but noted in the Study 1 analysis of survivor data[30]. Prognosis uncertainty was congruent with Shiloh et al.'s (2016) application of CSM (Common-Sense Model) representation. They noted that patients particularly focused on the threat of their injury in relation to variation in impairment permanence. This Study 1 information supports the relevance of the present finding of a focus on physical recovery. Together, it indicates that treatment and recovery uncertainties may contribute to appraisal of threat from functional impairment. Impairment, in turn, is central to work identity threat appraisal. This interaction (represented on the left side of Diagram 8.2) could explain a survivor focus on physical recovery as motivated by reducing work identity threat. In other words, focusing on physical recovery may be a coping strategy responsive to threat to work identity. Equally, this physical focus might also be a survivor response to the perception of stigma gain through acquiring a physical disability which is likely more visible than a psychological one. Recent qualitative injury research has noted that uncertainty about recovery time is a RTW barrier (Gavin et al., 2022). It is possible that the impact of prognosis uncertainty is more subtle than just not knowing when normal activities may be resumed. The cognitive **focus on recovery may in fact delay both the appraisal of other threats and responsive coping strategies**.

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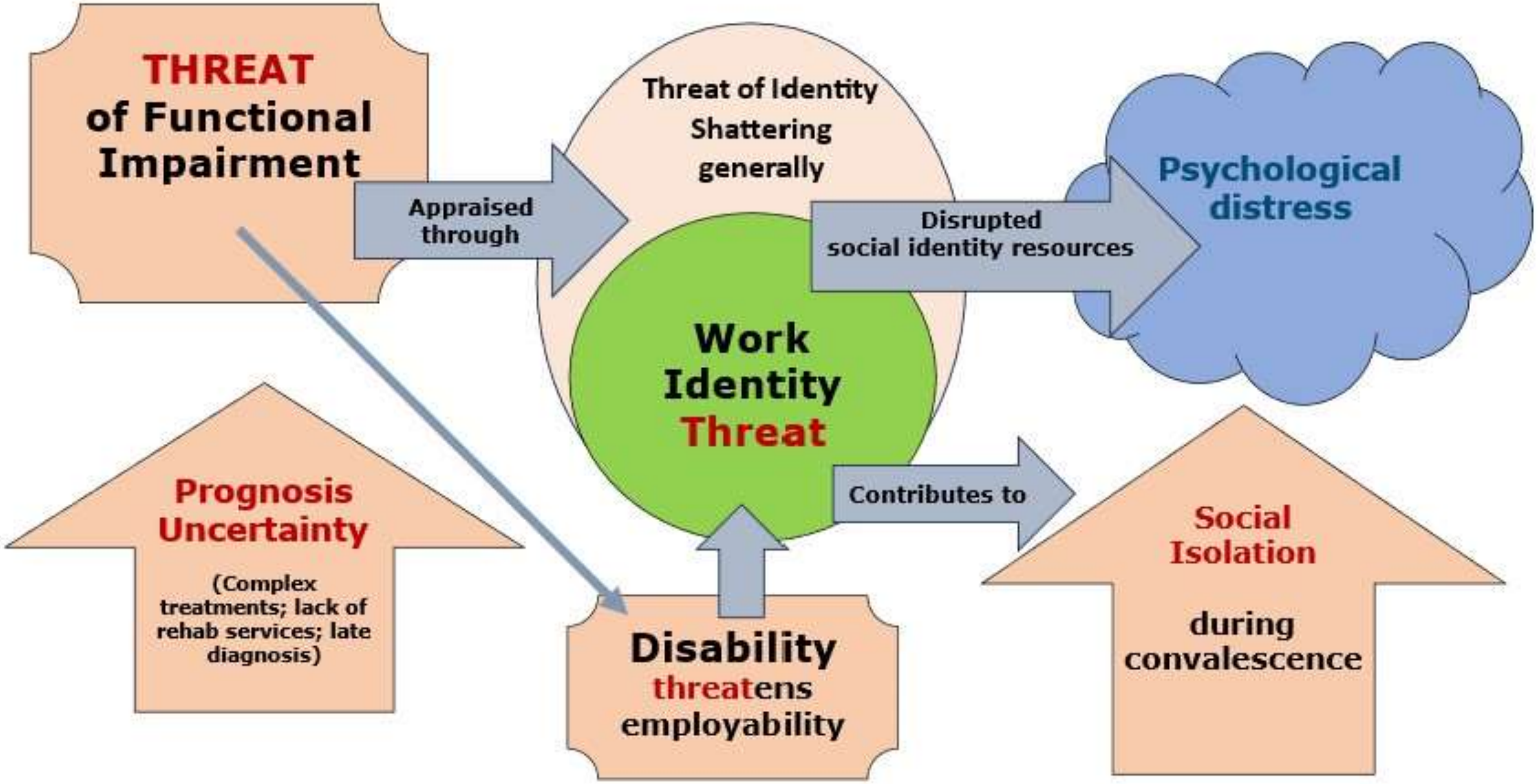
[30] One of the research aims for Study 1 was to explore any threats being appraised by injury survivors, not only those related to social identity mechanisms.

Diagram 8.2

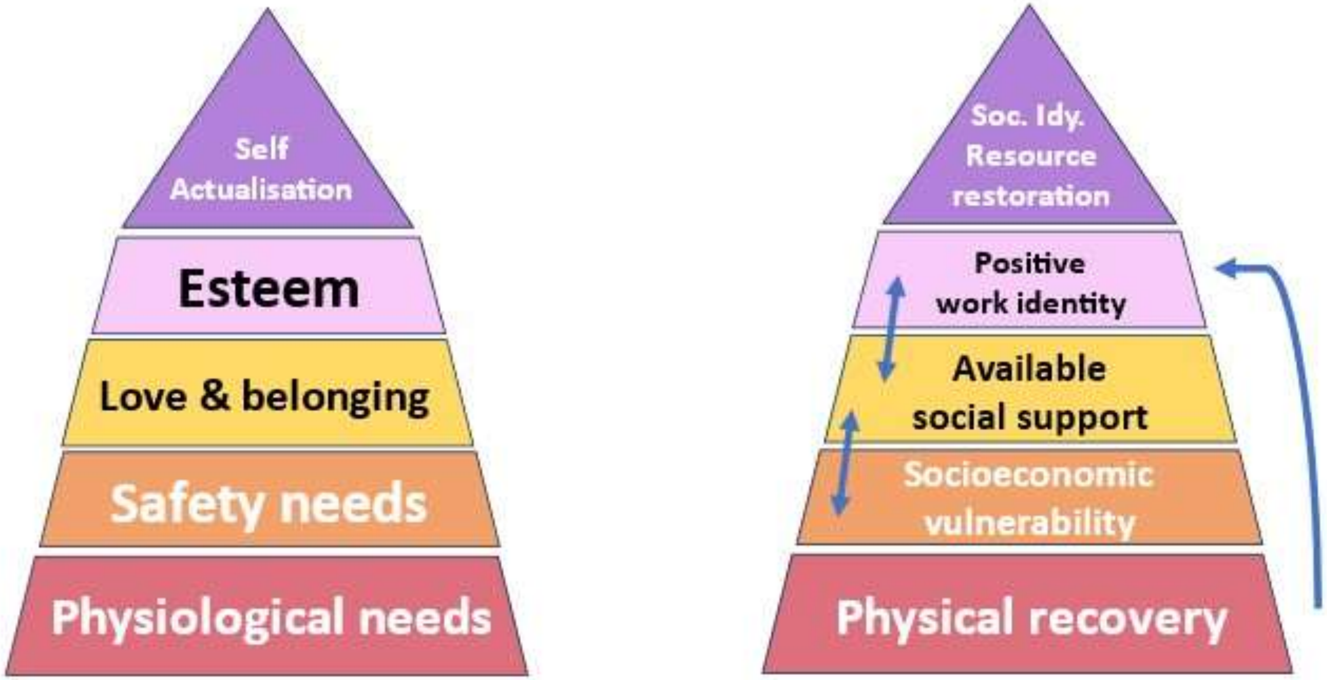
Interacting threats appraised by Study 1 survivors



Finding (7) above highlights the potential complexity at work in survivors' injury appraisals. It is not claimed here that social identity contributions are the only influences on survivor appraisal and coping. Alternative explanations for a physical recovery focus exist in psychological trauma literature. For example, 'establishing safety' may explain the physical recovery focus. Reestablishing a sense of physical safety is identified as the first priority of injury survivors, in Herman's (2015) trauma recovery model. As Diagram 8.2 illustrates (using Study 1 analysis) survivors appraised a broader range of threats than work identity or impairment, including social isolation and prognosis uncertainty. Social isolation could also be linked to social identity, e.g. empirical links exist between social isolation and mental health (Cruwys et al., 2014) or the availability of social support through social connection Haslam et al (2021). Provider subtheme 7C considered two injury responses that may indicate that injury survivors may appraise and deal with different threats at different points in their recovery journey. Diagram 8.3b brings together the full range of threats present in three studies, alongside diagram 8.3a to indicate how closely injury threats and coping responses might map onto Maslow's (1954) hierarchy of needs. In pyramid B, the blue arrows indicate that some threats interact with each other, e.g. physical recovery and the maintenance of work identity were linked for injury survivors. This includes the capacity to participate in work but also threat of disability to work, as discussed. The availability of workplace support contributes to work identity threat appraisal, as discussed in finding 3, above. Socioeconomic vulnerability might be ameliorated by available social support. There is clearly much more to be explored in injury appraisal and coping beyond the present focus on work identity threat. It is likely that work identity threat and wider identity threat interacts with contributing factors such as availability of support, social connection or isolation and levels of identification with work.

Diagram 8.3

Hierarchy of threat appraisal and coping following injury



A. Maslow’s hierarchy of needs

B. Hierarchy of threat and coping appraisals following injury

8.3 SOCIAL IDENTITY CONTRIBUTIONS TO INJURY APPRAISAL, COPING AND RETURN TO WORK

It was argued in Chapter 2 that the social identity approach to health provides a useful theoretical underpinning to better understand injury appraisal and coping. The construct of identity disruption (Vartanian et al, 2018) has been applied outside SIAH research, finding links between identity disruption and poor mental health in adults who experienced early adversity (Hayward et al., 2020), sexual assault (Boyle, 2017) and in veteran populations (McCormack & Ell, 2017; Mitchell, Frazer & Sayer, 2020). The social identity approach findings summarised in this chapter contribute **specific mechanisms for understanding psychological responses following injury**. Findings 1-6 indicated that survivors were affected by both social cure and curse pathways in relation to continuity of a valued work identity and access to associated psychological resources. Several factors contributed to this, indicating mechanisms which could help predict individual variations in psychological outcomes. The extent of work identity threat (**Finding 1**) may be influenced by individual *identification* with work identity; high identification may indicate more potential to lose *positive identity*, so more threat from work loss. The centrality of work identity for survivors in the present samples may suggest that work identity threat increased the *salience* of work and drove survivor motivation to RTW. Linked to this, *Identity shattering* (**Finding 2**) indicates a novel threat to wellbeing following injury; the appraisal of threat or outright loss of valued social identities is rarely acknowledged in clinical injury research. The *availability of workplace support* (**Finding 3**) is likely to contribute to the appraisal of work identity threat and capacity to cope with both that threat and RTW processes. *Betrayal appraisals* (**Finding 4**) indicated both the centrality of the work identity and the importance of available workplace support to psychological wellbeing. In line with SIMTIC arguments about trauma changing appraisals, the experience of injury related impairment may increase the *salience* of the work identity, and thus the likelihood of work identity threat being appraised. Further variation may come from whether or not the injured individual *appraises disability as stigmatised* (**Finding 5**) or receives that impression from the workplace or others. *Pre-existing aspects of social context* (**Finding 6**) such as extent of support network or socioeconomic vulnerability may also feed into the appraisal of threats (including but not limited to work identity threat) and available coping resources. It is recognised that economic pressures are likely to drive survivor motivation to RTW, but that work identity threat may also contribute. Survivor data indicated that (**Finding 3**) *maintaining or restoring disrupted social identity resources* of *sense of purpose* and *social connection* were central to their motivation to maintain a valued work identity. The loss of these resources may also have contributed to the negative impact of work identity shattering on wellbeing. These psychological resources were important for wellbeing, and providers perceived the influence of sense of purpose on self-esteem. **Findings 3b and 5b** suggest that threats to valued social identity were met with survivors' identity-focused coping strategies. **Finding 7** indicates that all these injury responses may interact and that responses are more complex than social identity contributions alone. However, the focus on the present research is the social identity contribution to appraisal. These findings highlight several social identity mechanisms and predictors, and a mixture of social cure and curse effects which may be further researched in future. The findings also highlight pressure points for survivors which warrant further practical support.

8.3.1 Strengths and limitations

The strengths and limitations of each study have been detailed at the end of chapters 4, 5 and 7. Overall, the present research has provided in depth qualitative exploration of lived experiences of injury across the full range of major trauma injuries. This was achieved through the novel application of a combined theoretical framework (threat and coping appraisal models plus social identity contributions, informed by broader trauma theories) which provided explanatory value in detailing specific mechanisms affecting survivor wellbeing.

The usefulness of the social identity approach to explaining trauma appraisal has already been explained at length in Chapter 2, but weaknesses remain which affect its operationalisation. Many historical criticisms of social identity theory (SIT) have been answered by subsequent developments in the social identity approach to health. Early criticisms that SIT and social categorisation theory (SCT) were too general, and therefore untestable and its hypotheses unfalsifiable (Hogg & Williams, 2000) have been superceded by a more granular approach. In the SIAH, current research is guided by a set of growing social identity approach sub-hypotheses (Haslam et al, 2018; Jetten et al., 2017) which build a more complex picture of processes. Since the 1980's SIAH research has increasingly captured individual identification with groups and explores motivations for social identity strategies rather than being vague about them (both prior criticisms; Brown, 2020). Research has moved away from the minimal group paradigm, towards testing SIAH hypotheses in real world social groups and scenarios (Hornsey, 2008), providing greater ecological validity. However some difficulties remain, particularly in the operationalisation of pinpointing single identity salience against a background of multiple social identities exist (a normative situation). The criticism that self-categorisation may only ever be "fleetingly" accessible (Hornsey, 2008, p208) remains problematic for research applied in real world contexts where identity may not be primed or pinpointed as easily as in experimental conditions. The complexity of multiple social identities has been addressed by theories such as SIMIC (Jetten et al., 2009), and Ballentyne's (2021) recent application of SIMIC to conflicting identities illustrates the relevance of this to trauma populations, discussed above. However, the more granular application of SIAH sub-hypotheses means that the full interacting complexity of social identity and self-categorisation is rarely captured in the snapshot of SIAH processes focused on in any single research approach. For this reason, qualitative approaches using SIAH are of particular value for capturing the complexities of multiple identities in real world situations (e.g. Jackson & Sherriff, 2013), their responses to context, or in times of shifting identities, such as following trauma. In the present example much of the complexity of social identities was simplified by focusing on work identity, but this did omit some important interactions with survivors' other valued social identities which could only be hinted at in the present thesis.

The retrospective nature of survivor data was both a strength and a limitation. Survivors participated in some cases many years after their experience of injury. While this captured lived experience over a longer recovery trajectory than is usually included in quantitative research, it may have under-represented shorter term psychological responses. Time since injury might also impact the accuracy of survivors' recollections, but the research focus on appraisal and coping strategies demanded a retrospective approach. Furthermore, lived experience findings were balanced through comparison with service provider perspectives, informed by both caseload experience and their knowledge of peer reviewed research.

While the provider and survivor samples were significantly diverse in terms of injury, employment and provider context, the main limitation was the self-selective nature of the survivor samples. Participants in Study 1 chose to contribute to a study with a focus on RTW, and the sample may therefore have included more survivors who identified highly with their work identity. Qualitative data collated in *Appendix table II.i* indicated that this high identification with work was the case for Study 2 survivors too. Both studies stated inclusion criteria of having been in work or study at the point of injury, and the present findings would benefit from replication with survivors who were not economically active at the time of injury. However, the focus of this thesis on work identity was an analytical choice. There was extensive evidence within the data (not included here) that other valued social identities (e.g. family; friendship groups) experienced similar patterns of social identity threat and identity-focused coping. Finally, use of injury support charities to recruit to Studies 1 and 2 may have resulted in a non-representative number of participants who self-categorised as an 'injury survivor' rather than a person with a disability. This may mean that only a limited perspective on survivor responses to acquired disability was captured.

8.4 Implications of empirical findings

8.4.1 Theoretical contribution

These findings make a significant contribution to the application of the social identity approach to understanding the lived experience of trauma survivors. The combination of theories in **the analysis framework** detailed in Chapter 2 **provided a granular approach which was effective at pinpointing social identity mechanisms of psychological response to trauma.** Combining the strengths of two stress appraisal and coping models increased the **framework's capacity to identify social identity mechanisms at all stages of stress appraisal, coping and reappraisal.** This framework has allowed specific identification of mechanisms of primary appraisal (work identity threat, identity shattering, stigma incompatibility); secondary appraisal (availability of social identity resource appraisal: purpose, connection, social support); identity-focused coping strategies (social identity resource restoration; negotiating incompatible identities). Some of these mechanisms cross the boundaries of the SAC stages (e.g. Betrayal appraisal) indicating the **value of the framework for capturing nuance and complexity in social identity processes**. This framework has potential value for application to other trauma populations beyond injury, and other health populations.

The present work has affirmed the value of both SIMIC and SIMTIC models to understanding trauma populations. From this application to injury survivors, it was clear that **sustaining a traumatic physical injury constituted a life transition when social identity could be vulnerable**, as argued by the SIMIC model of identity change (Jetten et al., 2009). This had only previously been noted in people with acquired brain injury (Gracey & Ownsworth, 2012). As summarised in Chapter 6, Diagram 6.2, **continuity and gain pathways in the SIMIC model were evident** in the present survivor samples. The findings of this thesis extend the relevance of the SIMIC model in two ways. Firstly, by indicating that the **disruption, maintenance or restoration of social identity resources (particularly sense of purpose)** have the potential to **contribute to wellbeing outcomes following a life transition.** This adds operationalisable mechanisms which may be used in future research to understand social cure and curse mechanisms affecting psychological outcomes following trauma. Of particular note is ***betrayal appraisal*** **as a novel social curse mechanism** which adds nuance to bidirectional understanding of the relationship between social support and identification. Secondly, the present research contributes a nuanced elaboration of the **SIMIC wellbeing predictor of identity compatibility: survivors' perceptions of incompatibility between newly acquired disability and the valued work identity**. This issue is also relevant to the application of SIMIC to trauma appraisal, summarised next.

The findings presented here support and extend Muldoon et al.'s (2019) theoretical application of SIAH theory to trauma populations. Their SIMTIC paper argued that trauma appraisal and therefore psychological response is influenced by social identity. The present work extends SIMTIC in four important ways. Firstly, the centrality of unwanted changes to valued social identity in trauma appraisal was affirmed by the novel form of threat appraised by participants in all three studies. ***Work identity threat*** (WIT) and more broadly ***identity shattering*** **following injury adds to the understanding of the impact of social identity change following traumatic experiences.** *Identity shattering* represents an existential threat to wellbeing which may be appraised as life-changing following trauma. Second, the present findings regarding **restoration of social identity resources, particularly sense of purpose, indicate a novel mechanism** which extends understanding of Muldoon et al.'s (2019) proposed Revitalisation Pathway. Restoration of social identity resources was a mechanism of identity-focused coping in injury survivors which may help explain why identity gain or revitalisation supports wellbeing in the SIMTIC model, and subsequent empirical research into PTG (Craig et al., 2022; Griffin et al., 2021). Third, this research extends the impact of trauma acquired stigma on wellbeing. Where Muldoon et al., (2019) focused on stigmatised identity as a barrier to social support, the present evidence indicated that **identity incompatibility between a valued pre-trauma identity (work) and a subsequently imposed, stigmatised identity (disability) was a stressor in itself**. Finally, provider perspectives indicated some empirical support for SIMTIC arguments that **pre-existing social context vulnerabilities influence trauma appraisal**. In summary, this research indicated mixed experience of social curse (e.g. identity threats) and social cure (e.g. identity-focused coping) effects following traumatic injury. This mixture of effects was congruent with previous research with trauma populations (Ballentyne et al, 2021; Këllezi et al., 2021).

8.4.2 Implications for further research

The findings of this thesis indicate the relevance of the social identity approach to health in understanding injury appraisal and coping. The theoretical framework presented here may be used to replicate and advance the present findings in a number of ways. Social identity threat as theorised by the SIMIC model (Jetten et al., 2009) was implicated as part of the psychological response to traumatic physical injury, with a specific and novel aspect identified: work identity threat (WIT). Research to develop a **WIT or more general identity shattering measure would aid quantitative testing of the impact of WIT on wellbeing after a life transition** such as injury. Quantitative evidence to predict distress related to identity threat would help target provision of support for survivor resilience and recovery. A broader identity shattering measure would allow empirical testing of its relevance to psychological outcomes following trauma more generally.

In line with wider SIAH hypotheses, it would be useful to **research associations between WIT or identity shattering on wellbeing in relation to predictors such as identification levels with work, self-rated positive identity, and perceived availability of social identity resources** (Finding 3). Given the interaction noted (in the present findings) between social identity resources such as social support and social connection, and social support and identity continuity, **the contribution of social identity resources to wellbeing outcomes should be further investigated quantitatively,** both singly and as an inter-related set of resources (purpose, social connection, social support, felt understanding). Longitudinal approaches could be used to pinpoint the relationship between available social support and perceived social identification, paying attention to objective and subjective features of social support, as suggested by Häusser et al., (2023). Quantitative testing of the **contribution that social identity resource restoration may make to social identity gain pathways** may aid understanding of recently reported post traumatic growth findings (e.g. Craig et al., 2022). Also valuable wouldbe further investigation of perceptions of ***stigma-based identity incompatibility and associated coping responses.*** Deeper understanding of this issue would help support survivors through this potentially distressing aspect of adjustment. In particular, research considering the possible benefits of ***group-based disability coping strategies*** **may help to inform support interventions**.

Ideally further **research should be conducted with a more representative cross-section of the population, with particular efforts made to include BME participants** (under-represented here). The present qualitative findings (Finding 6) can only claim to link pre-injury vulnerabilities to psychological outcomes from a provider perspective. Further research with lived experience samples **experiencing greater pre-injury vulnerabilities** would identify whether work identity threat is as important to survivors with pre-injury precarious socio-economic circumstances.

8.4.3 Implications and recommendations for practice

The context of the present research related to a vocational rehabilitation intervention aimed at supporting injury survivors back to work. Practical implications relate to three aspects of that support: (i) return to work; (ii) recognising and treating psychological distress to prevent it becoming a barrier to recovery and (iii) group-based support interventions.

Regarding **RTW (i)**, previous research to understand predictors of RTW following injury has noted a lack of research into social facilitators and barriers (White et al., 2019). **The impact that betrayal appraisals had on survivors' wellbeing indicates how central the availability of workplace support was to survivors.** However, the gap noted between provider and survivor reflections on the *meaning* of the availability of workplace support should be a key concern for case workers in vocational rehabilitation. Employers' pragmatic, economic decisions may be devastating for injured employees. As exemplified in the present data, survivors may discover that an injury which is not necessarily appraised 'life-changing' (or *identity shattering*) may become so through job or career loss due to employers' constraints. In **vocational rehabilitation, practitioners should be trained to include the social identity aspect of RTW motivation in assessments.** Explicitly addressing maintenance of positive social identity through work as a survivor motivation to RTW (separate from economic necessity) **will add to the relevance of needs assessments.** Employers and case workers who focus on **strengthening perceptions of continued identification with the workplace, or available social support are likely to be more successful at facilitating RTW. Challenging ableist attitudes in the workplace to injury acquired disability** is also recommended to reduce the stress of identity incompatibility as a further barrier to RTW.

Regarding **psychological assessment (ii), routine acknowledgement of the negative psychological impact of work identity threat and identity shattering** would improve identification of survivors at risk of later development of psychological distress. This recommendation need not be limited to vocational rehabilitation and psychological care, but contribute to better understanding (in healthcare settings) of the longer-term outcomes of major trauma, a priority noted by McElroy et al., (2023). By **acknowledging work identity threat to patients in clinical settings** (perhaps by inclusion of work questions in basic psychological assessment tools deployed in hospitals), service providers in healthcare may more quickly identify sources of distress. However, the present findings also indicate **work identity threat/identity shattering as a contributor to the delayed onset of psychological problems following injury** (Jones, 2021). Recognising this will help **target the timing of psychological assessment and psychoeducation** or support for injury survivors. Such preventative care would help to ease the individual and economic burden of undiagnosed psychological problems and reduce the barrier this presents to RTW. This is of course dependent upon there being sufficient capacity to refer on to appropriate psychological care, a problem raised by Finding 7.

Finally, the present findings indicate ways that **group-based support (iii)** could be encouraged in survivors. Several aspects of the present research indicated that survivors met *social identity threats* (e.g. WIT, identity shattering, social isolation) with *identity focused coping strategies.* Despite this, survivors tended to pursue individual (disability) stigma management strategies before or instead of accessing peer support groups as a response to acquired disability. Group based approaches to support are likely to increase survivor coping and positive psychological outcomes when pre-injury valued identities have been compromised. **For example,** approaches such as Groups4Health (Cruwys et al., 2022). create pathways to social identity resources such as social connection and support. The present research indicates how significant the resource of sense of purpose is following work identity threat or loss. Sense of purpose may even be a facilitator of Post Traumatic Growth. However, stigma negotiation is likely to be a barrier to these gains, affirming the need to address stigma management in support interventions (Bradshaw & Muldoon, 2019). The present research indicates the need for care to be taken to affirm ingroup rather than a stigmatised outgroup identification in establishing support groups for injury survivors. This is more likely to encourage participation and identity gains.

To conclude, this analysis of three rich datasets has provided a unique depth of insight into the lived experience of injury, recovery and RTW. The samples were representative of the heterogeneity of major trauma, providing insights for healthcare and vocational rehabilitation sectors. The relevance of social identity theory contributions to injury threat appraisal and coping have been explored and affirmed. These findings also add to existing empirical support for the application of social identity approach to health theory to trauma appraisal.

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Appendices

Appendix Section I – Documents referred to in Chapter 4 (Trauma survivors Study 1)

a) ***Appendix I.a.:*** Recruitment flyer for study 1 Focus Group (Leeds; London flyer followed same format)

b) ***Appendix I.b***.: Focus Group Participant Information Sheet

c) ***Appendix I.c***.: Interview Participant Information Sheet

d) ***Appendix I.d.:*** Consent form (Focus Group example; Interview format is in *Appendix Section III*)

e) ***Appendix Table I.e***. Trauma survivor participant sampling framework

f) ***Appendix I.f.*** Full interview schedule used in ROWTATE Work Package 1

g) ***Appendix Table I.g.*** Study 1 coding framework

Appendix I.a.

Are you a trauma survivor?

Do you want to share your opinions about your experiences and current services?

Are you interested in taking part in research?

- Were you admitted to hospital for **3 days or more** as a result of a major trauma?
- Are you over **18 years** of age?
- Would you like to take part in a group discussion to help us understand how current trauma services work and hear about your experiences? We also want to hear your opinions on our programme to help people get back to work after trauma.

You will be reimbursed for your time (£20 gift voucher) and offered travel expenses for attending the group.

The date for the group is **16th May 2019 1.30-3.30pm** in the Academic Department of Rehabilitation Medicine, Leeds General Infirmary.

If yes and you are interested in taking part, please get in touch.

Your feedback will **help us design and develop** a programme to support people in returning to work after major trauma.

If you would like to know more information about the study, please get in touch with Day One or contact the research team:

Nottingham Research team:

Dr Jade Kettlewell
Email: **WITHHELD**

Kay Bridger
Email: **WITHHELD**

Day One Leeds:

Becky Baldaro Booth

Email: **WITHHELD**

Appendix I.b.: Focus Group Participant Information Sheet

Participant Information Sheet (Service User Focus Groups)

Date: 10.01.19

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

Name of Researcher(s): Jade Kettlewell and Kay Bridger

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

This study aims to find out your views and opinions about how best to help injured patients make a successful return to work. We also want to find out what support is currently provided to injured patients and what other support they would find helpful. We will use this information to develop a programme to help injured people return to work (our programme is called ROWTATE).

Why have I been invited?

You are being invited to take part because you were admitted to hospital for at least 3 days after an injury.

We are inviting up to 20 participants like you to take part in one of two focus groups.

Do I have to take part?

No. It is up to you to decide if you want to take part in this research. If you agree to take part, we will ask you to sign a consent form and will give you a copy to keep. However, you would still be free to withdraw from the study at any time, without giving a reason by advising the researchers of your decision. This will not affect the care you receive or your legal rights.

What will happen to me if I take part?

You will be invited to take part in a discussion group (called a focus group) with other people who have had an injury. The researchers will discuss the study with you, what it involves, possible dates and times of the focus groups and answer any questions you have. If you agree to take part, you can agree the date of the focus group you wish to attend with the researcher. You will be sent a consent form to sign and send back to the researcher before the focus group takes place. You will also be sent a brief questionnaire about your injury to complete and send back.

The focus group will last around 90 minutes with a refreshment break. During the focus group, you will be asked about the impact of your injury on your work and how this affected you and your family. We will also ask about your experiences of getting back to work after injury and what helped or hindered you in getting back to work. We will ask about the help or support you had in getting back to work and what help or support you would have liked to receive. We will share our ideas with you about our ROWTATE programme and ask your views on this and how you think it could be improved. We will be audio recording these groups so that we do not miss any important points. The audiotapes will be typed up, and we will remove any names of people (including your own name) or services when we do this so that you remain anonymous.

Expenses and payments

Travel expenses will be offered for you to attend the focus group.

What are the possible disadvantages and risks of taking part?

We do not anticipate any risks associated with taking part in the focus groups. A possible disadvantage is that it may inconvenience you to attend the group, but we will try to arrange the focus groups at a time that is suitable for participants and at an easily accessible location.

What are the possible benefits of taking part?

We cannot promise the study will help you but the information we get from this study will help us develop the ROWTATE of the return to work programme, which may help injured patients in the future.

What if there is a problem?

If you have a concern about any aspect of this study, you can speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting the School Research Ethics Officer. All contact details are given at the end of this information sheet.

Will my taking part in the study be kept confidential?

All information collected about you during this research would be kept strictly confidential. Any audio digital recordings and electronic data will be anonymised with a code as detailed above. A password-protected list of code numbers and participant names will be stored separately from the audio recordings. All such data are kept on password-protected databases sitting on a restricted access computer system and any paper information (such as your consent form, contact details and any research questionnaires) would be stored safely and confidentially in lockable cabinets in a swipe-card secured building and would only be accessed by the research team.

Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (named above) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at: https://www.nottingham.ac.uk/utilities/privacy.aspx/

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

With your consent, we will keep your personal information on a secure database in order to contact you for future studies.

Anything you say during an interview/focus group will be kept confidential, unless you reveal something of concern that may put yourself or anyone else at risk. It will then be necessary to report to the appropriate persons.

What happens to the data provided?

To maintain confidentiality, and ensure your privacy, you will be assigned a unique identification number (for example P01/A for participant 1 recruited from centre A), which will be used instead of your name. We will save all audio recordings and research data using your unique study identification number so that none of the data will have your real name or other individual identifiers associated with them. Your name and any other information about you will not be disclosed outside the study centre.

Access to the information will be limited to the research team and any relevant regulatory authorities. Computer held data including the study database will be held securely and password protected. All data will be stored separately on secure university networks. Access will be restricted by user identifiers and passwords (encrypted using a one way encryption method). The research team will have access to personal and research data, and a transcriber will have access to some research data. Where a transcription service is used, an appropriate confidentiality contract will be in place between the university-approved provider of the transcription service

The research will be undertaken by research staff at the University of Nottingham. Data will be analysed and stored by the University of Nottingham. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research. Your optional consent for the use of your anonymised data in future research is requested as part of the Participant Consent Form. Such usage in the future research would have to be approved by investigators at the University of Nottingham before anonymised data is released.

With your permission, we would like to use fully anonymised direct quotes in research publications.

We would also like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. All personal information that could identify you will be removed or changed before information is shared with other researchers or results are made public. Data sharing in this way is usually anonymised (so that you could not be identified).

What will happen if I don’t want to carry on with the study?

Even after you have signed the consent form, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed.

If you withdraw we will no longer collect any information about you or from you. If you withdraw from the study within 14 days of the date you signed the consent form, we will keep the anonymous research data that has already been collected and stored as we are not allowed to tamper with study records, but we will not include your data in the analysis. If you withdraw at a later date, your information may have already been used in some analyses and may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally-identifiable information possible.

What will happen to the results of the research study?

This research will help us to develop the ROWTATE programme to help injured people return to work. The findings from the focus group may be published as an article in a research journal for publication. You will not be identifiable in any publications. The study findings may also be presented to local patient or service provider groups, at academic conferences and to relevant charities. You will be asked if you want a summary of the study findings. If you would like to receive this, we will send this to you after the end of the study.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by the National Institute for Health Research (NIHR).

Who has reviewed the study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 150-1811).

Further information and contact details

If you have a concern about any aspect of this project, please speak to the researcher [TBC] or the Chief Investigator Dr Kate Radford, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with it. If you remain unhappy and wish to complain formally, you can do this by contacting the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen’s Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail: WITHHELD

Researchers: Jade Kettlewell

Phone: WITHHELD

Email: WITHHELD

Kay Bridger

Phone: WITHHELD

Email: WITHHELD

Chief Investigator(s): Dr Kate Radford (work package lead)

Rehabilitation and Ageing, School of Medicine

Phone: **WITHHELD**

Email: **WITHHELD**

Professor Denise Kendrick

Division of Primary Care, School of Medicine

Phone: **WITHHELD**

Email: **WITHHELD**

Research Ethics Officer: **WITHHELD**

Appendix I.c.: Interview Participant Information Sheet

Participant Information Sheet (Service User/Carer Interviews)

Date: 10.01.19

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

Name of Researcher(s): TBC

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

This study aims to find out your views and opinions about how best to help injured patients make a successful return to work. We also want to find out what support is currently provided to injured patients and what other support they would find helpful. We will use this information to develop a programme to help injured people return to work (our programme is called ROWTATE).

Why have I been invited?

You are being invited to take part either because you were, or care for someone that was admitted to hospital for at least 3 days after an injury.

We are inviting up to 20 participants like you to take part in an interview.

Do I have to take part?

No. It is up to you to decide if you want to take part in this research. If you agree to take part, we will ask you to sign a consent form and will give you a copy to keep. However, you would still be free to withdraw from the study at any time, without giving a reason by advising the researchers of your decision. This will not affect your legal rights.

What will happen to me if I take part?

You will be asked to take part in an interview. Interviews can be done over the phone or face-to-face, whichever you prefer. After reading this information sheet, the researchers will discuss the study with you, what it involves and answer any questions you have. If you agree to take part, the researcher will agree the interview date and time with you. If you are doing an interview face-to-face, the researcher will ask you to complete a consent form before the interview starts. If you are doing the interview over the phone, the consent form will be completed with you over the phone.

You will also be asked to complete a brief questionnaire about your injury before the interview starts.

The interview will last up to 60 minutes. During the interview, you will be asked about the impact of your injury (or that of the person you cared for) on your work and how this affected you and your family. We will ask your views and opinions on what help or support you (or the person you cared for) had in getting back to work and what NHS and other services you received. We will also ask what help or support you would have liked to receive. We will ask about things that might affect whether providing support can help people get back to work. Lastly, we will share our ideas with you about our ROWTATE programme and ask for your views on this.

We will be audio recording the interview so that we do not miss any important points. The audiotapes will be typed up, and we will remove any names of people (including your own name) or services when we do this so that you remain anonymous.

Expenses and payments

Travel expenses will be offered if you need to travel to attend the interview.

What are the possible disadvantages and risks of taking part?

We do not anticipate any risks associated with taking part in the interview. A possible disadvantage is that it may inconvenience you to attend an interview in person or be available at a specific time during the day. We will arrange the interview at a time and date that is suitable for you and if you prefer, it can be conducted over the phone.

What are the possible benefits of taking part?

We cannot promise the study will help you but the information we get from this study will help us develop the ROWTATE of the return to work programme, which may help injured patients in the future.

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting the School Research Ethics Officer. All contact details are given at the end of this information sheet.

Will my taking part in the study be kept confidential?

All information collected about you during this research would be kept strictly confidential. Any audio digital recordings and electronic data will be anonymised with a code as detailed above. A password-protected list of code numbers and participant names will be stored separately from the audio recordings. All such data are kept on password-protected databases sitting on a restricted access computer system and any paper information (such as your consent form, contact details and any research questionnaires) would be stored safely and confidentially in lockable cabinets in a swipe-card secured building and would only be accessed by the research team.

Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (named above) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at: https://www.nottingham.ac.uk/utilities/privacy.aspx/

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

With your consent, we will keep your personal information on a secure database in order to contact you for future studies.

Anything you say during an interview/focus group will be kept confidential, unless you reveal something of concern that may put yourself or anyone else at risk. It will then be necessary to report to the appropriate persons.

What happens to the data provided?

To maintain confidentiality, and ensure your privacy, you will be assigned a unique identification number (for example P01/A for participant 1 recruited from centre A), which will be used instead of your name. We will save all audio recordings and research data using your unique study identification number so that none of the data will have your real name or other individual identifiers associated with them. Your name and any other information about you will not be disclosed outside the study centre.

Access to the information will be limited to the research team and any relevant regulatory authorities. Computer held data including the study database will be held securely and password protected. All data will be stored separately on secure university networks. Access will be restricted by user identifiers and passwords (encrypted using a one way encryption method). The research team will have access to personal and research data, and a transcriber will have access to some research data. Where a transcription service is used, an appropriate confidentiality contract will be in place between the university-approved provider of the transcription service

The research will be undertaken by research staff at the University of Nottingham. Data will be analysed and stored by the University of Nottingham. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research. Your optional consent for the use of your anonymised data in future research is requested as part of the Participant Consent Form. Such usage in the future research would have to be approved by investigators at the University of Nottingham before anonymised data is released.

With your permission, we would like to use fully anonymised direct quotes in research publications.

We would also like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. All personal information that could identify you will be removed or changed before information is shared with other researchers or results are made public. Data sharing in this way is usually anonymised (so that you could not be identified).

What will happen if I don't want to carry on with the study?

Even after you have signed the consent form, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed.

If you withdraw we will no longer collect any information about you or from you. If you withdraw from the study within 14 days of the date you signed the consent form, we will keep the anonymous research data that has already been collected and stored as we are not allowed to tamper with study records, but we will not include your data in the analysis. If you withdraw at a later date, your information may have already been used in some analyses and may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally-identifiable information possible.

What will happen to the results of the research study?

This research will help us to develop the ROWTATE programme to help injured people return to work. The findings from the interviews may be published as an article in a research journal for publication. You will not be identifiable in any publications. The study findings may also be presented to local patient or service provider groups, at academic conferences and to relevant charities. You will be asked if you want a summary of the study findings. If you would like to receive this, we will send this to you after the end of the study.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by the National Institute for Health Research (NIHR).

Who has reviewed the study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 150-1811).

Further information and contact details

If you have a concern about any aspect of this project, please speak to the researcher [name] or the Chief Investigator Dr Kate Radford, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with it. If you remain unhappy and wish to complain formally, you can do this by contacting the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail: FMHS-ResearchEthics@nottingham.ac.uk

Researcher: TBC

Chief Investigator(s): Dr Kate Radford (work package lead)

Rehabilitation and Ageing, School of Medicine

Phone: **WITHHELD**

Email: **WITHHELD**

Professor Denise Kendrick

Division of Primary Care, School of Medicine

Phone: **WITHHELD** Email: **WITHHELD**

Research Ethics Officer: **WITHHELD**

Appendix I.d.: Consent form (Focus Group)

Participants Consent Form – Focus Groups

Final version 1.0: 01.10.2019

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

REC ref: 150-1811

Name of Researchers: Kay Bridger, Jade Kettlewell

Name of Participant:

Please initial box

1. I confirm that I have read and understand the information sheet (version 1.0 date 10.01.2019) for the above study which is attached and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐
3. I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐
4. I understand that the focus group will be audio recorded using a digital device and that anonymous direct quotes from the focus group may be used in the study reports. ☐
5. I understand that what I say during the focus group will be kept confidential unless I reveal something of concern that may put myself or someone else at any risk. It will then be necessary to report this to the appropriate persons. ☐
6. I understand that information about me recorded during the study will be made anonymous before it is stored. It will be uploaded into a secure database on a computer kept in a secure place. Data will be kept for 7 years after the study has ended and then destroyed. ☐
7. I agree that my personal data (address, telephone number) will be kept for 12 months to three years after the end of the study so that we are able to contact you about the findings of the study. ☐
8. **Optional**: I agree that my research data may be stored and used in possible future research during and after 7 years, and shared with other researchers including those working outside the University. ☐
9. I agree to take part in the above study. ☐

Name of Participant Date Signature

Name of Person taking consent Date Signature

Appendix Table I.e. Trauma survivor participant sampling framework

Types of Injury/presenting problem:

De-gloving injuries	**Traumatic Brain Injuries**	**Amputation**	**Cognitive impairment**
Stabbing	**Late Medical Complications**	**Fall**	**Orthopaedic**
PTSD	**SCI**	**Poly-trauma**	**Knees**
Milder mental health problems	**Severe mental health problems**	**RTC**	**Visual Impairment**
Pelvic Injuries	**Speech/ communication difficulties**	**Upper Limb**	**Disfigurement**

Appendix I.f.: Full Interview Schedule for Study 1

Materials	Questions
Introduce self / role; **ROWTATE is developing an intervention to help people who have experienced a serious injury to return to work.** **Interviews with such people as yourself are to understand what support they received following trauma and to explore their views on how best to support people make a successful return to work after injury.**	
Personal **(Sampling framework)** **Fill in Baseline participant questionnaire**	In a few sentences, would you tell me about the kind of injury you had? What was your job before your injury? Are you now in the same job as pre-injury? Have you experienced any loss of earnings? At what stage did you realise you were going to have problems getting back to work? Can you tell me about your journey back to work? • Did you receive rehabilitation with a focus on RTW? • Where did this come from? [Where are you now on your journey back to work?]
	How can injury affect a person's ability to work? How important was getting back to work for you?
Services mapping diagram **Maybe use diagram / write on it**	In your experience, what services are available to help people back to work after injury? • Emotional / Physical / Psychological / Vocational / Financial • Was this specific to your type of injury? • Is this available to everyone? Is there anything/ any kind of support or help that you didn't get that you might have wanted? i.e. are there gaps in the services available to return to work? • Probe re psychological • What support could be provided? By whom?
	OUTCOMES What kind of things were important to you after your injury? What did you want to achieve or work towards? • return to work/new job • increased independence Regarding return to work, what was important to you long term? What might be important to other people with injuries? What goals should the RTW 'programme' hope to achieve?(e.g. physical health, mental health, other) How should these processes be delivered? By whom?
Snowball sampling / further interviews	Can you tell me about any services / service providers that you know of who support rehabilitation who we should talk to? Do you know of any other people who have had traumatic injuries who you think we should speak to (specifically about returning to work)

Appendix Table I.g.: Overview of Coding Framework

Grouped codes	**Inductive code examples**	**Deductive code examples**
Psychological responses	e.g. Resilience; Positive wellbeing; Triggers for distress; Depression; Anxiety; PTSD; Motivation to return to work	
Coping strategies	Motivation for physical recovery; Attitude choosing; Talking about distress;	Meaning-making; Social comparison; Seeking support
Primary threat appraisals (SAC ref)	Physically changed self; Stigma or exclusion; Concern for close others' wellbeing;	Identity*; Cause*; Social context**; Control*; Consequences*; Timeline*; Blame/Responsibility**; Self-injury relationship**; Coping capacity** Stigma or exclusion;
Secondary appraisal of coping (SAC)	Available support; Meaning of work; Peer support;	by social identity resource: Availability of social support; Sense of connection; Meaning making; collective efficacy
Identity disruption or continuity (SIMIC)	None noted	Identity or role disruption/continuity; New group membership

- *Health threat representations from the Common-Sense Model, Leventhal et al., 1998…**Injury specific representations from Shiloh -REF

Appendix Section II – Documents referred to in Chapter 5 (Trauma survivors Study 2)

a) ***Appendix II.a.:*** Powerpoint slides used for recruitment

b) ***Appendix II.b***.: Recruitment poster

c) ***Appendix II.c***.: Interview Participant Information Sheet

d) ***Appendix II.d.:*** Consent form

e) ***Appendix II.e***.: Baseline data collection form

f) ***Appendix I.f*.:** Topic guide

g) ***Appendix II.g.:*** Participant Debrief sheet

h) ***Appendix II.h***.: Summary of Study 2 coding framework

i) **Appendix Table II.i**.: Survivor appraisals of work and injury impact

Appendix II.a.: Powerpoint slides used for recruitment

Research interviews to understand Injury Survivor experiences

Please contact me if you:

- Were admitted to hospital because of an accident, fall, assault or other unintentional injury
- Are 18 years of age or older
- Would like to take part in an interview (on phone or video call) to talk about your experiences with a researcher?

(taking part is voluntary but you will be given a £20 voucher in thanks for your help)

Researcher: Kay Bridger
Email: [redacted] Research office telephone: [redacted]

Research interviews to understand Injury Survivor experiences

Are you an Injury Survivor?

Did you experience an injury that kept you off work or study for a while?

Sharing your experiences could help improve understanding of the challenges people deal with while recovering from injuries

Please contact me if you:

- Were admitted to hospital because of an accident, fall, assault or other unintentional injury
- Are 18 years of age or older
- Would like to take part in an interview (on phone or video call) to talk about your experiences with a researcher?

(taking part is voluntary but you will be given a £20 voucher in thanks for your help)

Contact details:

Researcher: Kay Bridger
Email: [redacted]
Research office telephone: [redacted]
@[redacted]

Appendix II.b.: Recruitment

Have you experienced an injury that kept you off work/study for a while?

Are you interested in taking part in research?

Sharing your experiences could help improve understanding of the challenges people deal with while recovering from injury

ABOUT YOU:

- Were you admitted to hospital because of a **major trauma**?
- Are you over **18 years** of age?
- Would you like to take part in a 'phone **interview** to talk about your experiences?

If yes and you are interested in taking part, please get in touch to find out more.

Researcher: **Kay Bridger**
Email: **kay.bridger2017@my.ntu.ac.uk**
Telephone: 0115 848 4341
🐦 @Kay_Bridger

You will be offered a £20 voucher as thank you for your time, but your participation is entirely voluntary.

Appendix II.c.: Interview Participant Information Sheet

Invitation to participate in: Interviews with individuals recovering from traumatic injuries

Researchers at Nottingham Trent University are exploring the understanding of people's experiences of recovering from being injured, including their return to work journey.

You are being invited to take part in an interview for a research study. Thank you for agreeing to take the time to consider this.

Your participation in the study is voluntary. This research aims to talk to people:

- Who have experienced an injury that needed hospital treatment.
- Who were employed (including voluntary work) or a student at the time they were injured.
- Who are currently aged 18 or over.
- Who had to take time off work/study because of their injury, even if only for a short time.

If you agree to take part, you would will be interviewed (over the telephone or through internet based software e.g. Teams if you use it) about your experiences of injury, recovery and your return to work experiences. This will be at a time that you agree is convenient for you.

All the information you provide will be treated confidentially. You can withdraw from the study up to three weeks after the interview, without giving a reason, and without any consequences for you You can do this by contacting one of the researchers using the email or telephone number below. After three weeks, we will keep information about you that has already been collected as it will already have been included in analyses.

The audio recording of the interview will be stored electronically in a password-protected computer to which only the researchers working on the project will have access, and the audio recording will be deleted once the contents of the interview have been transcribed and analysed. If the interview takes place on Teams, the recording may include video but this will only be used for research purposes (to transcribe the conversation) and then deleted.

Extracts from your interview may be used in academic publications/reports. However, your individual details and information you provide will be anonymised as required by Data Protection law, and will only be seen by those researchers working directly on the project. Your personal name and details will be kept anonymous in all publications.

Please note that you will be invited to talk about your experiences of injury and recovery this may bring up potentially distressing events around your experiences. You are free to refuse to answer any question that you do not wish to answer. You are free to take a break from the interview at any point, or to withdraw entirely if it causes distress.

The interview will last between 45 and 90 minutes. **You will be offered a £20 voucher as a thank you for giving your time for this interview.** This will be posted to you. Accepting this voucher does not affect your right to withdraw from the study if you choose to.

The research is part of my PhD doctoral research in psychology at Nottingham Trent University. The research team is led by Dr Blerina Kellezi Email **WITHHELD** Telephone **WITHHELD**

If after you have read this information sheet you have more questions, feel free to **contact me, Kay Bridger** (the Principal Investigator) by email (see below) or by phoning the research telephone: **WITHHELD**.

Thank you for your interest in this study and for taking the time to read this information.

Kind regards,

Kay Bridger

Doctoral Candidate; student number **WITHHELD**

Email **WITHHELD**

Telephone: **WITHHELD**

School of Psychology
Nottingham Trent University
50 Shakespeare Street
Nottingham NG1 4FQ

Appendix II.d.: Consent form

NOTTINGHAM
TRENT UNIVERSITY

Participant Consent Form – Interviews

(format for taking consent remotely)

Title of Study: Interviews with individuals recovering from traumatic injuries

Researcher will telephone the participant and talk them through each point of the consent form, initialling the boxes in response to the participant affirming consent to each point.

Name of Participant:

Researcher to initial box on behalf of participant

1. The participant has read the information sheet and understands the purpose of the study and has had an opportunity to ask questions. ☐
2. The participant understands that participation in the interview is voluntary and that they are free to withdraw at any time without giving a reason and without their rights being affected. ☐
3. The participant agrees to take part in this research. ☐
4. The participant agrees to the interview being recorded using audio recording equipment and/or Teams software. ☐
5. The participant understands that they may withdraw from the above study up to three weeks after participating. After three weeks, the data collected from them may have been used in analyses. ☐
6. The participant understands that what they say during the interview will be kept confidential and information which identifies them will not be made publicly available. ☐
7. The participant agrees for part of the interview to be reproduced in academic publications (but without their name or any details that could identify them). ☐

______________________________	____________________	____________________________
Name of Participant	Date	Time of consent being taken

_Kay Bridger______________ ______________ ____________________

Name of Person taking consent Date Signature

Appendix II.e.: Baseline data collection form

- *My interest is psychological. Measure depression/anxiety but little exploration of injury recovery journey. Interest in RTW but also the impact on your life more gen*
- *I'm aiming to interview about 20 people, and sometimes patterns of experience emerge. So I'm taking some basic details to help me look for that type of pattern.*
- Go through the key questions – short and sweet….ASK: prefer Teams or phone? Privacy?
- Then RECORD consent ASK ABOUT TRAUMA SURVIVOR terminology

DEMOGRAPHIC INFORMATION TO BE COLLECTED FROM EACH PARTICIPANT:

NAME	AGE NOW	GENDER
TIME SINCE INJURY Before covid? Current covid rules?	INJURY TYPE (parts of body affected) PAIN a particular problem?	INJURY VECTOR Home Workplace Road Public place
HOW LONG IN HOSPITAL REHAB	EMPLOYMENT TYPE AT TIME OF INJURY Employed self-employed student voluntary work	JOB ROLE/TITLE
HAVE YOU RETURNED TO YOUR PRE-INJURY WORK/STUDY? Reduced hours? Retired?	HOW MUCH TIME OFF WORK?	If different work post-injury, what is job role now?
HIGHEST EDUCATIONAL QUALIFICATION?	DESCRIBE YOUR ETHNICITY	WHERE DO YOU LIVE? POSTCODE

- I want to send you a **£20 voucher** as a small thank you for your time. Do you have any objection to being sent an Amazon voucher?
- Email address or street address

If no, what other kind of voucher would be acceptable?

Appendix I.f.: Topic guide

Thank you for agreeing to be interviewed for my research. **Aware asking about a difficult time: if upset – do you have someone you can talk to after?** The context of the research is to understand more about how you (as a person who was injured) thought about and coped with your injury and the process of returning to work. I've already carried out some interviews with trauma survivors/recovering injury patients [ASK – PREF TERM] as part of another study – ROWTATE. Heard some difficult experiences. Assure you I won't judge your thoughts – helps understand the psychological difficulties

Go through oral consent… ? Trauma survivor / Recovering injury patient / or….?

Topic focus	Question + probes	Check probed (tick off)
BRIEF **Injury** **Context of injury** **Threat (incident/injury)**	**1Tell me about your injury?** • Where were you injured (body)? • How did it happen? • If work-related, did this give you any concerns about RTW? • Was your injury 'life-changing'?	• Event appraised as traumatic? Blame? **Note** how speak about it – probe later • work related? • RTW concerns? • Life-changing injury?
BRIEF **Check where they are in process** **Appraisal of treatment** **Level of threat injury poses to job**	**2Where are you in your recovery journey?** • How long did your treatment take? • To what extent has your injury prevented you from doing your job? • When did you realise it would interfere with doing pre-injury job? How did you feel about that?	• Is treatment still ongoing? • Treatment a threat? • Pain? How did pain affect you? • Stages of recovery?
Meaning of work identity **Work identity and social identity resources** **Group membership/participation changes? – LISTING TASK – see below** • **Groups before**** • **Rate 1-7** • **Changes**	**3Tell me about your life before the injury and how it has changed since?** • What parts of your life have been most affected? • How important was work to you before your injury? • Is there anything else about being at work that motivated you to want to return? • Is work any more or less important to you now? • What has your injury stopped you doing? Social? • **What groups did you belong to before the injury (RATE)** - How important was each group BEFORE… change after?	• Work changes – check age/retirement £! Consider: social support; group efficacy; sense of connection; sense of purpose Work MEANING • Work autonomy: how much say did you have in work decisions? • CHANGES TO VALUED SOCIAL IDENTITIES/GROUP MEMBERSHIPS (**notes on reverse of demog. Sheet) • Gain from groups….friends? • Changed importance?

	- What specifically did you get out of those groups? • Have you gained any new groups since your injury? • How have your close relationships been affected?	• New groups? • Homelife - Family/independence
Appraisal of injury threat **Maybe trauma event** **Maybe stigma** **Coping resources**	**4How do you feel when you think about your injury?** • Have you felt depressed or anxious or worried about anything in particular? • Some people have mentioned 'stages' of recovery…was there any difference in how you felt about your injury at different times during your recovery? • How did you feel about the injury event itself? • Do you ever think about who is to blame for the injury? • Have your feelings about the injury affected your thinking about going back to work? • What has helped you to cope with your feelings?	• Trauma event appraised as threat • PTSD? Hypervigilance, anxiety? • Stages of recovery – emotional/psychological… how did you feel at different stages of recovery?
Perceived support - **Family** - **work** **Coping resources**	**5What support do you feel you had if you needed help?** • Who has been most important in supporting you? • How important was workplace support to you? • Did you have any new (injury related) groups of people who helped you? Who • If peer support – what did they help with?	• Work – check finance; adjustments • Family / partner? • Healthcare? counselling • Any peer support?
Stigma	**6Has your injury resulted in you changing the way you see yourself?** • Has your injury changed the way others relate to you? • Did you think about what people at work thought about you?	• Mental health changes • Ask for example
"big picture question" **Existential threat?** **Meaning making**	**7Where would you fit your injury into the story of your life?** • Do you just want to put it behind you, or have you learnt anything from it? **Has your injury and recovery journey changed you at all?** • As a person? Your attitude to life/work? • Have you found any positive meaning in your experience?	• Priorities? • Attitude? • Work? How would you compare the injury to previous difficult or traumatic life events?

Mop up question	**What would you say to a newly injured person about how to cope with their recovery journey?**	• What sort of things would make someone more vulnerable following injury?

IMPORTANT GROUPS; supplementary table to record group membership

- What groups did you belong to before your injury?
- (Groups could take any form: leisure or social groups (book club or gardening club); community groups (church group) sporting groups (rugby); work groups (sales team); professional groups (trade union) or any others you can think of)
- How important was each group to you before the injury 1-7, 1= not at all important 7= very important to me
- Ask for more information – Explain why you scored it like that?
- Can PROBE What specifically did you get out of participating with that group?
- PROBE Did the importance of any of the groups change after your injury?

GROUP	**Importance before injury**	**Importance after injury**

- PROBE – Tell me more about how your participation changed
- Looking for PARTICIPATION, GROUP BASED SUPPORT, BELONGING, PURPOSE,
- Did any new groups become important after your injury?

Appendix II.g.: Participant Debrief sheet

Debrief

Many thanks for taking part in our study.

If you feel that you have been emotionally affected by any of the topics that were discussed in the interview and feel some support would be helpful, we recommend contacting one of the following free services, talking to your GP, or if you prefer, self-referring to NHS psychological services (Google **IAPT** NHS services).

Shout is a free, confidential, anonymous text support service

- Text SHOUT to 85258 or look online: giveusashout.org

The **Samaritans** provide urgent help 24/7

- Call the Samaritans on 116 123

Mind's Infoline offers local information on support in your area

- Call Mind on 0300 123 3393 or Text 86463 9am-6pm Monday to Friday

The **Calm** (Campaign Against Living Miserably; thecalmzone.net) helpline is aimed at men

- Call the Calm helpline 5pm to midnight on 0800 585858

If you have any further questions about the study or decide in the next three weeks that you would like to have your data withdrawn from the study (with no consequences for you), please contact the lead researcher on the project:

Kay Bridger
Doctoral Candidate, student number: **WITHHELD**
Division of Psychology
Nottingham Trent University
50 Shakespeare Street, Nottingham NG1 4FQ
e-mail: WITHHELD telephone: WITHHELD

Thanks again

Appendix II.h. Summary of Study 2 coding framework

Grouped codes	Inductive code examples	Deductive (social identity) code examples
Appraisal of threat	Injury as life-changing or not; Negative changes to self; Treatment as threat or not	Identity or role threat: work; family; relationship
Coping strategies	Inspirational stories from peers (other injured); Coping by attitude; Coping by talking; Solution focused coping	Work maintain or gain; Sense of purpose
Coping resources	Meaning of work	Contextual vulnerability or resilience; Peer support; Collective efficacy
Reappraisal	Injuring event appraisal (includes blame); Meaning-making; Positive changes to self (PTG)	
Wellbeing/Distress triggers	Shattering of positive assumptions; Stages and phases; Previous adverse experience	Social isolation; ; Stigma consciousness;
Changes to important groups	Vicarious shattering; Loss of valued activities	Family change: gain/cure & loss/curse; Friends/groups change: gain/cure & loss/curse
Social identity resource changes		Soc id Support: positive & negative; Social connection: pos&neg

Appendix II

Appendix Table II.i.: Survivor appraisals of work and injury impact: participant extracts from Study 2

Ppt no./Pseud	Gender	Age	Injury	Appraisal of injury as life-changing or not	Identification with work/meaning of work:	Role threat or loss at time of injury
3001 **Aaron**	m	56	Poly; late diagnosis of mTBI	*from a physical perspective I'm as good as I'm going to be, so I've got all this metal work in the screws and stuff… it became apparent that this was a sort of moderate brain injury… where more mundane routine things were a struggle*	*So it was important for me to provide. I always saw that as my responsibility. Old fashioned traditional male type thing. the primary goal was that I've always been the provider and always wanted to be the provider. And generally, although I've had difficult, challenging jobs, I've always thrived on the challenges you know, difficulties and whatever else.*	*the comment that was made to me in the offer was well at least this way you can have a chunk of money and go and get a job doing what you want to do. Really reinforced that they didn't feel as if it was genuine, which was probably the most hurtful part…. I don't feel that they understood what the real situation was, and therefore I don't think. I didn't get the feeling that they really wanted to help me or were prepared to do what was needed to support me.*
3002 **Paul**	m	44	TBI	*I was in a wheelchair for a year and the medics said I would never walk again. … I walk without crutches, just a splint on my left leg. and I've actually I walked up Mount Snowden in 2018.*	I enjoyed my job and without being big headed. I was good at it. I was hitting my targets and I was earning without again being bigheaded, I was earning a lot of money	I haven't worked since my accident, but still I'm still employed by them. Still get paid, which is a miracle really.
3003 **Keith**	m	65	TBI	*the initial awareness of the potential long term impact, just wasn't there… In terms of recovering. It took me about a year. And I got back to fully functioning at work. … new me is just as well functioning as the old me. If anything the New me is better functioning.*	I mean that that gives me identity. That's who I was. I was I was a project manager at [Employer1]. That's who I was. I was many other things, I was a Christian, still am. I was a husband, but a key part of me being me was this professional person at work.	I was always on an upward trajectory back to work.
3004 **Anthony**	m	36	Spinal cord	*I'm a wheelchair user. I've got basically no movement below the shoulders. I've got impaired movement in my arms. … I'm at a plateau waiting for the ripples to happen in terms of medical developments.*	It's just, it's a positive thing that I continue to contribute to the world. I work for a company that. I work I'm paid in money which then gets taxes, so I'm helping to contribute to society. …spent time in industry doing during that new thing then stayed on and did a PhD. So it was a bit of luck really, that I stumbled into the line of work I'm in now. So no, no real plan.	*I was out of action for a year basically and then returned to the university… I was really in the second of my second year and trying to work out what I was gonna do once me degree finished. So again mindset wise I was probably not in a hugely dissimilar place any other student, just had a different set of burdens.*
3005 **Anita**	f	43	TBI	*life before: always on the go. Life now dominated by fatigue…the whole walking wounded thing was*	I guess identity. Um, I'd always been a really active person and have always kind of done night school classes or hobbies after work alongside working	I'd left because it was not a job that I was allowed to feel useful

				a bit of anathema to. Yeah, I don't know, I don't think it's acceptance now because its just very shit. I think the impact on family dynamics and on any future with that in terms of you know adopting or fostering and it obviously affects potential relationships.	and frequently baking before work and that sort of thing… I guess making a difference is really important. And helping others and probably being knackered at the end of the day	
3006 Carole	f	44	Severe TBI and daily seizures – disability. 24 hr carer	*I said earlier that my world was open. And now it's a shoebox, it literally is. I'm in a wheelchair…I'm limited because of the seizures, so it's not that I can't walk or can't get upstairs, can't go to restaurants that don't have a downstairs toilet – I can't do this because of the seizures…* *But there is purpose to be found even if you are no longer your former functioning self. You're not any less of a person, you're not any less worthwhile.*	*I was in a new job, I was ever so keen on progressing in that job and so happy in my life you know feeling fulfilled and… I made a difference, I saved lives, I saved hundreds of lives, or helped save them. I've also helped people to the end of their life comfortably, I've been there for them, and their families. It was my whole world really. It was my essence of being.*	*I wanted to get better and I wanted to walk and I wanted to get back to work and you know when I was dismissed from my work on medical grounds after a year it was a big blow.* *I wanna be back like I was. I want to be a nurse in intensive care, I want to be back studying and I want to be a psychologist. I don't want to just have to try and accept it. So it doesn't ever really give me the meaning that I had*
3007 Sharon	f	27	Poly incl burns, deglove	*I still get back pain, pelvic pain, I've still got nerve damage so I have sort of different tools for my posture and I have to have a mouse, I can't just use a laptop. But nothing drastic. the brain injury wasn't, although its on my list of injuries, it's not something that's affected me massively.*	*I was in my second year at university… I'd always, you know, like always from a little girl like just imagined myself on my graduation day with my hat and I was doing a degree that I loved. So yeah it was pretty important.* *I worked part time cleaner and part time marketing assistant for the cleaning company.*	*I deferred for a year, graduated a year later… So I genuinely thought I was going to go back in the September and sit second year exams but I think once I got home I realised that wasn't going to happen.* it was just such a good feeling to get it done because that was something I never knew if I would ever get there. It felt so unachievable at one point you know to then two years to yeah, it was a proud moment.
3008 Ethan	m	38	Spinal cord	*tetraplegic, which is what I am. Which means I've got a full impairment on all four limbs. …well it changes everything. I think it's widely known that spinal cord injuries are the most severe physical injury that anyone can endure, bar death. so it changed my career, my relationships at the time with family, friends and partner. It affects all aspects of*	so I suppose work in many ways would come first, but with my, many of my friends anyway, they were pretty intense with their work patterns too because of their jobs.	I wasn't able to return to that because I couldn't click because I can't move my fingers. I couldn't clinically examine so I had to terminate my course and I did another couple of courses after that instead…. not doing what I wanted to do, what I felt was what I was my calling as it were Seeing my friends progress and me sort of. sitting fairly stationary. Literally and metaphorically and yeah, not being not doing

				physical and motor sensors. it affects your financial aspirations and what you outgoings are.		what I wanted to do, what I felt was what I was my calling as it were. .I mean it's quite vocational career pathway so
3009 **Liam**	m	62	polytrauma	I was wheelchair bound for two and a half years, I couldn't really get back into it. And then learning to walk, again	*I did a physical job every day of my life, starting four, five o'clock in the morning and worked every hour god sent literally, I was a grafter. … It was everything to me. You know I started this business and created and developed products. I'm a developer of things.*	*I couldn't do the physical side of it. Me not being able to do things I saw as a weakness and I felt I was letting myself down by going in there and telling people what to do and pointing the finger. I'd never ever done that. I've been the worker. I've always been the one that gets stuck in and does it. And I tried to do it on a couple of occasions and I hurt myself…I've never been back to work per se.*
3010 **Dean**	m	36	Amputation arm	I'd lost my arm above the elbow…everything is quite kind of like problem: solution kind of tasks. But I mean some things have been made easier with prosthetics…. I never like to refer to myself as disabled because I know there's people much worse off than me. Yeah, it's learning to live with a disability now is kind of part two of my life, really.	*I used to put a lot of time and effort into work anyway, I've it's always been a point of contention that I don't work normal hours… I don't switch off from work and that's an issue for me. It's just, I like to be helpful. So that's one of my foibles I suppose.*	I was able to carry on with the same job and still get paid the same and they did put a lot of faith in me in that they said I was still viable work, you feel you're winning a bit because I can still do everything. Like it's all computer based so it's just typing keys on a keyboard.
3011 **Nick**	m	59	Polytrauma incl TBI	Before I could lift that. Now it's more of a struggle. And I do know that with the risk factor, I've got to be careful, cause some of the damage I did to me body you know, it's not designed anymore as it was before. … I'm doing everything that I was before	*I did want to get back to work. I keep saying the word again, just to get back to normal and you know as much as probably most of us don't want to go to work it does bring a bit of normality. … basically because me whole life's revolved around the five days at work and the weekend off. Some people probably think there's more to life than that, but that's basically all I know. I just wanted to get back to that.*	So they immediately take your driving licence off you after a traumatic brain injury because you're in the epilepsy zone. …I managed to work, I had friends who I worked with who picked me up when I worked anywhere a bit far away sort of thing. So it took a year and a half to get it back.
3012 **Doug**	m	62	polytrauma	*I never thought I was going to be not back to normal. I mean I'm pretty much 98% back…I've still got ligament issues a little bit and my leg and pelvis, but listen I can do pretty much everything that I could do before*	*It was a job. It's always been a job that pays, right. I quite enjoyed what I'm doing. … As an IT project manager. I fell into that. That's not something really that I chose to do.*	*I was never worried about not being able to work again, no. Because I wasn't worried about not being able to not walk again, so I knew I was going to be walking again, so work I never considered that. Never, wasn't a worry at all, never.*
3013 **Tina**	f	31	polytrauma	*I'm technically classed as disabled because of the injuries that I have and what I am able to do..*	I absolutely loved it. Loved the team, loved the patient caseload so I was very happy there. There was lots of	*The fact that I couldn't return back to my actual exact role at that time was really, really upsetting. …*

				I had a nerve injury in my pelvis. Quite a lot of nerve damage… *It will affect my entire life. It willl affect everything, but I will try and let it have as minimum an impact as possible. And try and get as many positives out of it as I can, but it will always be there.*	prospects for progression and things like that. Lots of new changes within the service that were coming up and you know there were potential other jobs for me to go into, which would be a promotion. So I kind of had my career planned. So.. happy.	*if I'm having episodes of that I might not sleep for three nights in a row and that's where, working full time wouldn't really work…* *at the moment my hours have been dropped to 21 on like a flexible working contract and that can be reviewed in a year depending on how things are going, how things are at the minute I would definitely I would struggle with full time*
3014 **Jen**	f	30	polytrauma	*they think I should make an 80 to 90% recovery… right now it's a huge part of my life. but in a few years it will be just something that happened… because it's not life changing* *I can't just sit around, I could have been paralysed like, yeah, just got that motivation to get back to how I was*	*I really am into my work. It's important, I may be a bit sad, but like I just… I really care about work. So I'll go. I'll go above and beyond like if things are happening out of hours, I'll be there. People need me to be there, even if it's even if I'm not on call. So yeah, it's just yes, a big part of my life.*	at work, we have insurance and they did the return to work plan for me and they have an occupational therapist that I worked with to yeah, make a plan
3015 **Eve**	f	56	polytrauma	*I had an injury to my head. It was a laceration, but my brain wasn't damaged…* *the everyday things that you would consider as normal, it's just extra effort. It takes extra effort I think, and it's it hurts sometimes.* *You know I will never stop rehabilitating. You can never stop…* And a lot of it, you know, is about psychologically as well. What you let it stop you or you know, having the courage to and the mindset actually to say well anything is possible actually.	*I had a big job. I was, you know part, I was on the board of the [Sector 1] establishment… I had been such a big part of that team. A high performer. Um, I mean, it's a very complex, big job and big stakeholder in a military, government. And I was very well respected by people.*	*they were incredibly supportive with me to start with. Incredibly supportive. But it all changed about probably six months afterwards when I started to talk to them about, things that I would like to come and do maybe a couple of hours here and there and try and be a bit of a rehabilitate myself back and basically I went, I went in to see the CEO and he had a conversation to terminate my employment. And so that adds to the psychological injury. So I was absolutely just knocked sideways. … I never felt isolated apart from the work. I felt they really isolated me. So you know, at a certain point when they no longer wanted me. And that's so hard.*
3016 **Geoff**	m	65	TBI and fr shoulder	*I have flashbacks occasionally about something…So physically no, not a great deal of damage, lots of aches and pains, obviously…. I sort of look at myself and think Yeah but you walked away from it, you carried on.*	*Had I thought of taking early retirement? No I hadn't. I was going to work until I was 62. I didn't like the stress, but I loved the job. I loved it. I really did enjoy doing it. I really did. And the sort of characters you met, sort of old school.* *… I was following an 8 wheeler tipper, it's boring to you, but I was looking at the back door and thought that's a*	*Well life-changing. It all happened at once…. Anyway after a lot of faffing around and it was you know well we'll pay you off. So it was decided that I would finish... so the staff were all brought in, all my staff, and it was announced that *I* had decided to take early retirement.*

					flipping good idea. If we did that and we did that, and it suddenly dawned on me, You've been gone three years, why.. So but you don't get it out of you.	
3017 Marnie	f	36	Polytrauma incl deglove	*I'm actually fine now. Living life normally. However, if .. they nearly had to take my arm off. So if that happened, I think I'd have found it a lot harder to come to terms with I wouldn't have been able to live a normal life.* *but because I've sort of healed up properly and I can use everything again then. I've just sort of moved on.*	I mean, I'm not the most career driven person to be honest, so I mean I really the main thing is, I really liked my place of employment, really got on with my colleagues and my boss. So it's just a happy, happy place to work as opposed to you know, being really career driven	*I was just sitting at a desk. It was it was alright. Actually have to because I still have my arm. I could still just type and do everything like I used to.*
3018 Phoebe	f	40	Polytrauma inclu TBI	*I have now got double vision, if I'm not looking straight forwards… its altered my appearance, but as things became more apparent with the brain injury you put things in perspective don't you? And you realise that actually that's not important in comparison to other ways in which its changed my life? decision-making is difficult.*	I miss the people I used to work with. I sort of miss the challenge and almost this might sound stupid, but almost the status that came with it. You know, being a head of English in a grammar school, a very well respected grammar school was, I really liked that. it made me feel like I'd really achieved something	I was determined to just carry on with my career as I had always seen it. I didn't have any understanding. I don't think at that point of what the long term effects would be… *I'm medically retired from teaching now I get my teacher pension, so it's not like I've just sort of gone. Oh I can't do it. They don't just hand it out to anyone. ..* *I don't know if they thought I was trying to pull a fast one, or if you know they just they were just angry because I wasn't doing what they'd employed me to do even though I was, they didn't understand that I was trying my very best and they didn't understand the nature of my injuries despite me giving them a report about it from the initial report that the occupational therapist had done*
3019 Mark	m	43	Polytrauma incl TBI	*a major life changing event so, in literally two seconds the life changed and all of it, find new ways of working, new ways of living and everything.* *my wife will sort of say What actually survived the accident… still have long living injuries that I've gotta deal with.* *one particular registrar said you'll only have 20% use of your leg. So I said No I'm not having that. I*	*I mean I quite enjoyed doing what I was doing, I was meeting lots of people. You know I've had a lot of good feedback from students … So yeah it was very good. I mean it was something I was interested in and I thought it would be useful to get back to … So we were quite dependent on my wage to get us through things then suddenly that disappeared. So it was very important time*	*Things sort of got a bit strange, then cause all the stuff I designed, before I had the accident. the course the courses I was teaching they suddenly decided that that was me trying to elicit work from the outside. They tried to get me removed on the basis of, you know, gross misconduct. .. they just didn't want to make changes they didn't want to have me just like work part time or anything like that. they wanted me full time but I know couldn't be possible. I think they just tried to find a way of getting rid of me without paying me anything*

				used to do a lot of running, I'm not gonna accept that so I didn't. Still can't run, but I can walk. I just didn't accept what they were telling me, you know, that I was going to have limited mobility.		
3020 **Danny**	m	57	Polytrauma inclu spinal	*I was five and a half years in the wheelchair…* *I always say that it was what got me into the wheelchair got me out of it. I am a racer and I won't, I won't be beat. I've got out the wheelchair so why would I let it stop me now.* *it just makes it a different fight doesn't it, before I was fighting for fitness for the ability to go fast. And then it became a job of fighting for fitness for the ability to just do everyday things.*	*I always say that it was what got me into the wheelchair got me out of it. I am a racer and I won't, I won't be beat. I've got out the wheelchair so why would I let it stop me now…* *It's been my life since I was 17, 18…. in them 10 seconds when you set off from the [Track 1], you set off from the start line in the [Track 1]. I will live more in the first 10 seconds and most people ever do in the rest of the lives.*	*I tried to keep a positive attitude and I had had still got the bikes. So I've got, had guys riding my bikes and that was a focus for me. … I was like you're not stopping me from it. … And me doing the job as a mechanic. like jumping out the chair onto the floor and working away at bikes and lifting myself back into the chair.*
3021 **Nessa**	f	40	Poly – spine, elbow, coccyx	*I'm getting faster and I'm getting stronger and I know I'll be alright, … it is improving as time goes on and that is I mean that pain is is a coccyx pain its not. Think its not the fractured bit*	when we adopted our eight year old we knew that we needed to parent differently and that's when I began looking into therapeutic parenting more trauma informed stuff and then having been a teacher, I was like right, trauma informed approaches to schools. This is like, this is the way forward. This is what I want to do. So yeah I it yeah, so it was important for me to be able to continue to use that. That's our plan and my husband's given up his job so.	*I was worried we won't be able to foster right because of the practical, with practically having small children and but it became quite clear the stronger I got, the more mobile I got and as I built my strength up again. I was like, no I can do it, it's Ok.*
3022 **Jason**	m	42	Poly - Spinal cord, arm, wrist	*Mobility. how I get around. Continence. Other than that I kind of like to think I'm just an average Joe, you know. For me, I am lucky, I am lucky that it's, that those are the main aspects in my life that are affected… It could have stopped me driving, it could have stopped me going on holiday, could have stopped me doing all sorts of stuff, but it hasn't. I do class meself as pretty fortunate that I can still do all those things.*	*I liked the work. I liked, I do like to be busy. I'm always, always been that sort of person. Got to be busy. Got to be doing something… So I liked the work. I wasn't a massively sociable person from being young but the social aspect that work brought was important to me. You know being around others on a daily basis*	*Right so basically you have to stand up to do that work. You have to be stood up to do that work efficiently. So you just can't not do it as a wheelchair user. It's pretty much impossible. Same goes for mechanics as well.*

3023 Clare	f	46	Poly with ABI	*the brain injury, has complex manifestations…impact is massive. its changed my whole life. Changed my priorities… I cannot work even though I'm working part time at the moment. I cannot work and have a life as well.*	*work was really important. Yeah Work was: I identified myself through my work. … My identity I was an assistant neuropsychologist. was very proud of that. And that was you know, that was how I choose to identify myself.*	*I had a place on the reserve list, really high on the reserve list at [Town 1] to train as a clinical psychologist, but I had to pull out, once I had diagnosis of ABI, because they advised that it would be not a good idea.*

Appendix III – Documents referred to in Chapter 7 (Service Provider Study 3)

a) ***Appendix III.a.:*** Key Informant Focus Group Participant Information Sheet

b) ***Appendix III.b***.: Key Informant Interview Participant Information Sheet

c) ***Appendix III.c***.: Interview Consent form (interview example: consent form shared with survivor participants, focus group example included in Appendix Ithe same for survivor participants)

d) *Appendix Table III.d* : Full interview schedule used in ROWTATE Work Package 1

e) ***Appendix Table III.e***.: Study 3 coding framework

f) ***Appendix Table III.f.:*** Details of participant expertise and caseload

g) ***Appendix Table III.g.*** Study 1 coding framework

Appendix III.a.: Key Informant Focus Group Participant Information

Participant Information Sheet (Key Informant Focus Groups)

Final Version 1.0. Date: 10.01.19

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

Name of Researcher(s): Jade Kettlewell and Kay Bridger

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

This study aims to find out your views and opinions about how best to help injured patients make a successful return to work. We also want to find out what support is currently provided to injured patients and what other support they would find helpful. We will use this information to develop a programme to help injured people return to work (our programme is called ROWTATE).

Why have I been invited?

You are being invited to take part either because you have experience of providing services, referring to services or commissioning trauma services.

We are inviting up to 10 participants like you to take part in a focus group.

Do I have to take part?

No. It is up to you to decide if you want to take part in this research. If you agree to take part, we will ask you to sign a consent form and will give you a copy to keep. However, you would still be free to withdraw from the study at any time, without giving a reason by advising the researchers of your decision. This will not affect your legal rights.

What will happen to me if I take part?

You will be invited to take part in a focus group with other key informants. The researchers will discuss the study with you, what it involves, possible dates and times of the focus groups and answer any questions you have. If you agree to take part, you can agree the date of the focus group you wish to attend with the researcher. You will be sent a consent form to sign and send back to the researcher before the focus group takes place.

The focus group will last around 90 minutes with a refreshment break. During the focus group, we will discuss the impact of injury to individuals and their families, and the effect this may have on their ability to return to work. We will discuss your opinions of current services, and any gaps that you feel there are in these services. We will ask you about return to work services, their purpose, what support is usually provided and potential barriers to their delivery/success. We will share our ideas with you about our ROWTATE programme and ask your views on this and how you think it could be improved. We will be audio recording these groups so that we do not miss any important points. The audiotapes will be typed up, and we will remove any names of people (including your own name) or services when we do this and each audio recording will be given a unique code so that you remain anonymous.

Expenses and payments

Travel expenses will be offered for you to attend the focus group.

What are the possible disadvantages and risks of taking part?

We do not anticipate any risks associated with taking part in the focus groups. A possible disadvantage is that it may inconvenience you to attend the group, but we will try to arrange the focus groups at a time that is suitable for participants and at an easily accessible location.

What are the possible benefits of taking part?

The study may not be of direct benefit to you, but the information we get from this study will help us develop the ROWTATE of the return to work programme, which may help injured patients in the future.

What if there is a problem?

If you have a concern about any aspect of this study, you can speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting the School Research Ethics Officer. All contact details are given at the end of this information sheet.

Will my taking part in the study be kept confidential?

All information collected about you during this research would be kept strictly confidential. Any audio digital recordings and electronic data will be anonymised with a code as detailed above. A password-protected list of code numbers and participant names will be stored separately from the audio recordings. All such data are kept on password-protected databases sitting on a restricted access computer system and any paper information (such as your consent form, contact details and any research questionnaires) would be stored safely and confidentially in lockable cabinets in a swipe-card secured building and would only be accessed by the research team.

Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (named above) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at: https://www.nottingham.ac.uk/utilities/privacy.aspx/

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

With your consent, we will keep your personal information on a secure database in order to contact you for future studies.

Anything you say during an interview/focus group will be kept confidential, unless you reveal something of concern that may put yourself or anyone else at risk. It will then be necessary to report to the appropriate persons.

What happens to the data provided?

To maintain confidentiality, and ensure your privacy, you will be assigned a unique identification number (for example P01/A for participant 1 recruited from centre A), which will be used instead of your name. We will save all audio recordings and research data using your unique study identification number so that none of the data will have your real name or other individual identifiers associated with them. Your name and any other information about you will not be disclosed outside the study centre.

Access to the information will be limited to the research team and any relevant regulatory authorities. Computer held data including the study database will be held securely and password protected. All data will be stored separately on secure university networks. Access will be restricted by user identifiers and passwords (encrypted using a one way encryption method). The research team will have access to personal and research data, and a transcriber will have access to some research data. Where a transcription service is used, an appropriate confidentiality contract will be in place between the university-approved provider of the transcription service

The research will be undertaken by research staff at the University of Nottingham. Data will be analysed and stored by the University of Nottingham. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research. Your optional consent for the use of your anonymised data in future research is requested as part of the Participant Consent Form. Such usage in the future research would have to be approved by investigators at the University of Nottingham before anonymised data is released.

With your permission, we would like to use fully anonymised direct quotes in research publications.

We would also like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. All personal information that could identify you will be removed or changed before information is shared with other researchers or results are made public. Data sharing in this way is usually anonymised (so that you could not be identified).

What will happen if I don't want to carry on with the study?

Even after you have signed the consent form, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed.

If you withdraw we will no longer collect any information about you or from you. If you withdraw from the study within 14 days of the date you signed the consent form, we will keep the anonymous research data that has already been collected and stored as we are not allowed to tamper with study records, but we will not include your data in the analysis. If you withdraw at a later date, your information may have already been used in some analyses and may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally-identifiable information possible.

What will happen to the results of the research study?

This research will help us to develop the ROWTATE programme to help injured people return to work. The findings from the focus group may be published as an article in a research journal for publication. You will not be identifiable in any publications. The study findings may also be presented to local patient or service provider groups, at academic conferences and to relevant charities. You will be asked if you want a summary of the study findings. If you would like to receive this, we will send this to you after the end of the study.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by the National Institute for Health Research (NIHR).

Who has reviewed the study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 150-1811).

Further information and contact details

If you have a concern about any aspect of this project, please speak to the researcher [TBC] or the Chief Investigator Dr Kate Radford, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with it. If you remain unhappy and wish to complain formally, you can do this by contacting the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail: **WITHHELD**

Researcher: Jade Kettlewell

Phone: **WITHHELD**

Email: **WITHHELD**

Kay Bridger

Phone: WITHHELD

Email: WITHHELD

Chief Investigator(s): Dr Kate Radford (work package lead)

Rehabilitation and Ageing, School of Medicine

Phone: WITHHELD

Email: WITHHELD

Professor Denise Kendrick

Division of Primary Care, School of Medicine

Phone: WITHHELD

Email: WITHHELD

Research Ethics Officer: WITHHELD

Appendix III.b.: Key Informant Interview Participant Information Sheet

Participant Information Sheet (Key Informant Interviews)

Date: 10.01.19

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

Name of Researcher(s): Jade Kettlewell and Kay Bridger

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

This study aims to find out your views and opinions about how best to help injured patients make a successful return to work. We also want to find out what support is currently provided to injured patients and what other support they would find helpful. We will use this information to develop a programme to help injured people return to work (our programme is called ROWTATE).

Why have I been invited?

You are being invited to take part either because you:

Have experience of providing services, referring to services or commissioning trauma services.

Are an employer with experience of employees returning to work post-injury.

Are involved in military rehabilitation services.

Are involved with the Trauma Audit Research Network (TARN).

Work for the Department for Work and Pensions (DWP).

We are inviting up to 20 participants like you to take part in an interview.

Do I have to take part?

No. It is up to you to decide if you want to take part in this research. If you agree to take part, we will ask you to sign a consent form and will give you a copy to keep. However, you would still be free to withdraw from the study at any time, without giving a reason by advising the researchers of your decision. This will not affect your legal rights.

What will happen to me if I take part?

Interviews can be done over the phone or face-to-face, whichever you prefer. After reading this information sheet, the researchers will discuss the study with you, what it involves and answer any questions you have. If you agree to take part, the researcher will agree the interview date and time with you. If you are doing an interview face-to-face, the researcher will ask you to complete a consent form before the interview starts. If you are doing the interview over the phone, the consent form will be completed with you over the phone.

The interview will last up to 60 minutes. During the interview, we will discuss the impact of injury to individuals and their families, and the effect this has on ability to work. We will ask about your experiences and opinions of current services, and any gaps that you feel there are in these services. We will ask you about return to work services, their purpose, what support is usually provided and potential barriers to their delivery/success. We would like to hear your views on return to work services and how you think they could be improved. We will also share our ideas with you about our ROWTATE programme and ask for your views on this.

We will be audio recording the interviews so that we do not miss any important points. The audiotapes will be transcribed, and we will remove any names of people (including your own name) or services when we do this so that you remain anonymous.

Expenses and payments

Travel expenses will be offered for you to attend the interview.

What are the possible disadvantages and risks of taking part?

We do not anticipate any risks associated with taking part in the interview. A possible disadvantage is that it may inconvenience you to attend an interview in person or be available at a specific time during the day. We will arrange the interview at a time and date that is suitable for you and if you prefer, it can be conducted over the phone.

What are the possible benefits of taking part?

The study may not be of direct benefit to you, but the information we get from this study will help us develop the return to work programme (ROWTATE), which may help injured patients in the future.

What if there is a problem?

If you have a concern about any aspect of this study, you can speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting the School Research Ethics Officer. All contact details are given at the end of this information sheet.

Will my taking part in the study be kept confidential?

All information collected about you during this research would be kept strictly confidential. Any audio digital recordings and electronic data will be anonymised with a code as detailed above. A password-protected list of code numbers and participant names will be stored separately from the audio recordings. All such data are kept on password-protected databases sitting on a restricted access computer system and any paper information (such as your consent form, contact details and any research questionnaires) would be stored safely and confidentially in lockable cabinets in a swipe-card secured building and would only be accessed by the research team.

Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (named above) is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at: https://www.nottingham.ac.uk/utilities/privacy.aspx/

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

With your consent, we will keep your personal information on a secure database in order to contact you for future studies. Anything you say during an interview/focus group will be kept confidential, unless you reveal something of concern that may put yourself or anyone else at risk. It will then be necessary to report to the appropriate persons.

What happens to the data provided?

To maintain confidentiality, and ensure your privacy, you will be assigned a unique identification number (for example P01/A for participant 1 recruited from centre A), which will be used instead of your name. We will save all audio recordings and research data using your unique study identification number so that none of the data will have your real name or other individual identifiers associated with them. Your name and any other information about you will not be disclosed outside the study centre.

Access to the information will be limited to the research team and any relevant regulatory authorities. Computer held data including the study database will be held securely and password protected. All data will be stored separately on secure university networks. Access will be restricted by user identifiers and passwords (encrypted using a one way encryption method). The research team will have access to personal and research data, and a transcriber will have access to some research data. Where a transcription service is used, an appropriate confidentiality contract will be in place between the university-approved provider of the transcription service

The research will be undertaken by research staff at the University of Nottingham. Data will be analysed and stored by the University of Nottingham. All research data and records will be stored for a minimum of 7 years after publication or public release of the work of the research. Your optional consent for the use of your anonymised data in future research is requested as part of the Participant Consent Form. Such usage in the future research would have to be approved by investigators at the University of Nottingham before anonymised data is released.

With your permission, we would like to use fully anonymised direct quotes in research publications.

We would also like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. All personal information that could identify you will be removed or changed before information is shared with other researchers or results are made public. Data sharing in this way is usually anonymised (so that you could not be identified).

What will happen if I don’t want to carry on with the study?

Even after you have signed the consent form, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed.

If you withdraw we will no longer collect any information about you or from you. If you withdraw from the study within 14 days of the date you signed the consent form, we will keep the anonymous research data that has already been collected and stored as we are not allowed to tamper with study records, but we will not include your data in the analysis. If you withdraw at a later date, your information may have already been used in some analyses and may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally-identifiable information possible.

What will happen to the results of the research study?

This research will help us to develop the ROWTATE programme to help injured people return to work. The findings from the interviews group may be published as an article in a research journal for publication. You will not be identifiable in any publications. The study findings may also be presented to local patient or service provider groups, at academic conferences and to relevant charities. You will be asked if you want a summary of the study findings. If you would like to receive this, we will send this to you after the end of the study.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by the National Institute for Health Research (NIHR).

Who has reviewed the study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 150-1811).

Further information and contact details

If you have a concern about any aspect of this project, please speak to the researcher [TBC] or the Chief Investigator Dr Kate Radford, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with it. If you remain unhappy and wish to complain formally, you can do this by contacting the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen’s Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail: WITHHELD

Researcher: Jade Kettlewell
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Kay Bridger
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Chief Investigator(s): Dr Kate Radford (work package lead)
Rehabilitation and Ageing, School of Medicine
Phone: WITHHELD
Email: WITHHELD

Professor Denise Kendrick
Division of Primary Care, School of Medicine
Phone: WITHHELD
Email: WITHHELD

Research Ethics Officer: WITHHELD

Appendix III.c.: Interview Consent form

Participants Consent Form – Interviews

Final version 1.0: 01.11.2018

Title of Study: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention

REC ref: 150-1811

Name of Researchers: Kay Bridger and Jade Kettlewell

Name of Participant:

Please initial box

10. I confirm that I have read and understand the information sheet (version 1.0 date 10.01.2019) for the above study which is attached and have had the opportunity to ask questions. ☐

11. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐

12. I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐

13. I understand that the interview will be audio recorded using a digital device and that anonymous direct quotes from the interview may be used in the study reports. ☐

14. I understand that what I say during the interview will be kept confidential unless I reveal something of concern that may put myself or someone else at any risk. It will then be necessary to report this to the appropriate persons. ☐

15. I understand that information about me recorded during the study will be made anonymous before it is stored. It will be uploaded into a secure database on a computer kept in a secure place. Data will be kept for 7 years after the study has ended and then destroyed. ☐

16. I agree that my personal data (address, telephone number) will be kept for 12 months to three years after the end of the study so that we are able to contact you about the findings of the study. ☐

17. **Optional**: I agree that my research data may be stored and used in possible future research during and after 7 years, and shared with other researchers including those working outside the University. ☐

18. I agree to take part in the above study. ☐

Name of Participant	Date	Signature
Name of Person taking consent	Date	Signature

Appendix Table III.d: Full interview schedule used in ROWTATE Work Package 1

KEY INFORMANT TOPIC GUIDE for interviewing Service Provider:

Materials	Questions
Introduce self / role; **Interviews with service providers are to understand usual care for trauma survivors including any gaps or barriers, and then to explore the proposed vocational rehabilitation programme** **Consent form**	
	What is your role and experience with trauma survivors?
Sampling framework	**Which kinds of trauma patients have you worked with?** (indicate on **sampling framework**) • Who do you see? • What do you do?
Services mapping diagram **Use diagram / write on it**	**Thinking about usual care, what services are currently available for people following trauma?** CHECK: • What is provided through your service? • Are we missing any services on the diagram? • Emotional / Physical / Psychological / Vocational / Financial • Referral process to vocational rehab. Where / How / by Whom / differ by injury? Are there any factors affecting access to services or resource use? CHECK: • Barriers to use of services? • Who does / does not get referred, and by whom? • Does anyone get 'lost': Gaps and cracks with screening? TO PSYCHOLOGISTS: Thinking about usual care, how do people in your area get referred for psychological support? • Level 1 / 2 / 3 • What is the current (usual care) practice? Where are they currently referred?
	Again, thinking about usual care: are there any gaps or unmet needs following trauma? CHECK: • Emotional / Physical / Psychological / Vocational / Financial • What support could be provided? By whom? TO PSYCHOLOGISTS: At what stage (**services mapping diagram**) would trauma patients be assessed? What are they assessed with (tools)? Link to **Logic model**

Preliminary Logic model with processes (the map of the proposed VR intervention) Shared before interview	Does the vocational rehabilitation logic model seem feasible to deliver? What goals should the intervention seek to achieve? What should be done? (what's missing) What are the most important mechanisms in the model? - Can you suggest any evidence that supports any of the processes? How should these processes be delivered? By whom? TO PSYCHOLOGISTS: What needs to happen to achieve return to work? Are these (show logic model) the right outcomes? Are there any other outcomes? What is the change that brings about the return to work outcome? What mechanisms or resources bring about that change? How would the psychological component of the intervention work to achieve return to work? How should the psychological intervention fit with vocational rehabilitation?
PSYCHOLOGICAL Stepped care: 3 level model	Thinking about different levels of psychological need (at assessment / screening): How can each level of need be met within the part of the intervention delivered by a Clinical Psychologist?
Snowball sampling	Can you recommend any other service providers to interview? Can you recommend any trauma survivors (PPI) to interview?

***Appendix Table III.e.*: Overview of Study 3 coding framework**

Code group	**Inductive code examples**	**Deductive codes evidencing social identity processes**
Return to work barriers	Delayed physical recovery Cognitive impact of injury Employer issues Psychological issues Systemic issues	
Psychological issues	Coping attitudes Adjustment Late onset or identification Triggers of distress	‘life changing’ effects of injury Work identity loss Loss of purpose
Unmet psychological care need	Lack of screening Lack of provision Disconnect between physical and psychological care Late referral for care Goldilocks: systemic referral gaps Lack of trauma informed care Mental health stigma	
Other stressors	Finance/compensation Family impact Pain, sleep	Impact on family roles Biopsychosocial vulnerability
Good practice in psychological support	Trauma informed psychoeducation Holistic assessment of needs	Importance of social support

Appendix Table III.f.: Details of participant expertise and caseload

Participant identifier	Field of expertise at time of interview	Caseload experience
VR Res-01	Occupational therapy with vocational rehabilitation focus	*mostly traumatic brain injuries … I've seen quite a few amputees of various different types, people who just have quite serious orthopaedic and musculoskeletal problems following trauma. People who've had very little physical problems but mostly emotional trauma following an event*
P Res-02	Clinical Psychology & Clinical Research	*in my clinical work, I have seen people with trauma, psychological trauma, but those were not as a consequence of a physical trauma. … the people who I've seen with traumatic experiences are those who've had a diagnosis of a health condition. … in my research job, I would have recruited from trauma centres.*
RT-03	Rehabilitation Consultancy	*probably about half of my work is major trauma… so that's the poly traumas and some of the sort of secondary referrals for the complex limb injury … I'll see anybody who's got complex rehab need, so that predominantly is head injury, cord injury, traumatic amputation, those kind of things*
R-04	Physiotherapy	*the cohort of patients I have they're usually the ones who aren't going to go home from here. I'll support people on a non-neurological bed-base, who've got neurological issues.*
PT Res-05	Research psychology	*I've worked with mental health advocacy, and people who've had injuries as research.*
PT Res-06	Clinical Psychology & Research	*I've worked in a pain clinic where we did a trial of a return to-work intervention, so that's really with chronic pain, not more acute end. I work with people with chronic pain, back into work, involving sort of, you know, a bit of CBT plus. … And lately I work in cancer, so I work with people who, you know, they often have mental health problems probably as a result of having cancer, so people have been traumatised by intensive care treatment*
VR-07/24	Occupational therapy with vocational rehabilitation focus	*supporting people returning to work with complex trauma …kind of adult neuro and neuro rehab. my work was within the brain injury service, but I also worked in orthopaedics, both lower limb and upper limb, and medicals. So there were amputations and there was people with spinal cord.*
RAT-08	Physiotherapy	*physiotherapist and team leader on a major trauma ward*
RAT-09	Occupational therapy	*occupational therapist on a major trauma ward*
RPT-10	Clinical Neuropsychology	*people with acquired brain injury… generally trying to address the neurological or neuro-psychological aspects.*
VRM-11	Occupational therapy with vocational rehabilitation focus	*I'm a vocational OT within the neuro team in military rehabilitation*
VR Res-12	Occupational therapy with vocational rehabilitation focus	*I'm an occupational therapist. I was with the traumatic brain injury service but now I'm working here on a research project*
RA-13	Rehabilitation Consultancy	*rehabilitation consultant*

RAT-14	Rehabilitation Consultancy	*I am a rehab consultant. I work in the major trauma unit and also I run a clinic for patients after discharge for major trauma.*
P-15	Clinical Psychology	*I work in a generic health psychology service, which is in a community NHS trust, and we work with adults across their lifespan with all kinds of, typically, long-term, more chronic health conditions, which includes trauma, physical trauma, car accidents often. We might work with people as a result of chronic pain through car accidents, or psychological trauma through traumatic accidents and things like that*
P Res-16	Psychiatry	*in the past I have done what's called liaison psychiatry which is a kind of psychiatry which is practised in hospital. And injury research.*
RAT-17	Rehabilitation Consultancy	*at any one time we've got between 80 and 100 trauma patients in the hospital but we only have one ward with 17 beds dedicated to major trauma, so patients are dispersed through the hospital.*
PT-18	Psychotherapy	*we see a real wide range of people with trauma. ..quite regularly seen people who had been victims of road traffic collisions and accidental, or usually industrial injuries. Almost all of those will have had some physical injuries, which may or may not have either recovered, resolved or been adequately treated.*
R-19	Speech and Language Therapy	*working for about 20 years, primarily in the NHS. So my two areas of expertise have been stroke and traumatic brain injury and progressive neurological*
OT-20	Occupational Health Physician, private	*We provide advice to employers on supporting people going back to work. I am ex-military, so I've had quite a lot of experience in the past of military type trauma, and in my current role, it's much more, complex trauma, complex PTSD as well at times when there's an incident at work*
O-21	Solicitor	*we are involved at the Major Trauma Centre stage and it is usually a distress call from a family member who's been advised to seek legal assistance if there might be a legal claim. If there's been a road traffic collision, an accident, at work and something's fallen on somebody*
OR-22	Solicitor (experience of Physiotherapy)	*I qualified as a Physio in '96 and worked in a major trauma centre. then I moved into private practice, so I worked in private practice, musculoskeletal therapist, then for the next eighteen years, finally finished up last year, but in tandem with that I qualified with a Law degree in 2014, then moved onto my LPC and qualified as a solicitor in 2017. So I'm now a member of the Serious Injury Team here with the background of a Physio and quite a lot of experience in rehab, which is very useful.*
O-23	Case Management	*My clinical career has predominantly been within the field of neurology and neurosurgery …since the 90's working as a clinical case manager: everything from orthopaedic type injuries through to the most severe catastrophic injury; so brain, spinal cord injury, ventilated people.*
PT-25	Clinical Neuropsychology	*I have no experience of trauma that isn't brain injury related*
PR-26	Clinical Neuropsychology	*I see people who have had a traumatic brain injury. So, they would be dealing with neurological, psychological and physical trauma. That's concurrent with survivors of car crash, assaults, industrial accidents, things like that. Also, I'll see stroke survivors and there's a growing recognition of the incidents of psychological trauma through acute stroke experiences.*

GP-27	General Practice	*in my kind of general practice career, I've had a number of patients who've suffered injuries. …you know, a bad fracture that's then ended up, you know, being complicated afterwards and, you know, or sort of emergency surgery and referral trauma and then post-operative complications, that kind of thing. So I've had a number of patients like that.*
GP-28	General Practice	*I don't have masses of trauma*
GP-29	General Practice	*I specialise in sports medicine so see a lot of injuries in that regard. Chronic and acute. And the other hat I wear is, I am regularly called to the most dangerous, life threatening and fatal collisions, falls off bridges and buildings and stabbings and assaults and things that are happening. So, I see things as they happen. They will often go straight to the trauma centre.*
P Res-30	Clinical Research (experience of primary care)	*I've actually worked intermittently in clinical practice and research throughout my life. […] patient evidence from research into the social and emotional impact of unintended injuries in adults…practitioner interviews and focus groups*
AT-31	Accident and Emergency consultancy	*I am an acute practitioner. We see primarily blunt trauma so high velocity car accidents, falls from height … a large proportion of our patients have associated brain injuries.. around 40% which is not unsurprising given those mechanisms.*
PT-32	Clinical Psychology in acute care	*anything that would be classed a major trauma, so it could be multiple fractures, or it's usually road traffic accidents, falls from height, usually multiple fractures or any kind of multiple injuries so assaults and things like that. We do also get, sometimes we'll have burns and things on the wards*
O-33	Case Management	*I'm a musculoskeletal physio by background, so I started with orthopaedic injuries essentially, then over a period of time I've gained experience in case management. I've dealt with neurological injuries, I've done with brain injury, I've done spinal cord injuries. So, yes, I've done the full spectrum of injuries now… mild whiplash kind of injury to catastrophic brain injuries, bad car injuries, all sorts of injuries*
O-34	Disability Employment Advice	*My job title is Disability Employment Advisor and dealing with the trauma side of things, my connection on there is I have done a lot of work in the past with the community head injuries service over at the [Organisation 1], but also I took over from my predecessor with - we go to the spinal injury vocational rehabilitation clinic, which also has the health changes employability clinic there.*
O-35	Case Management	*my background is in nursing. I moved into the area of case management in [Country 1]. And that was focused purely on 99.5% of injury work, sometimes major, sometimes minor trauma but it was all focused on, it was focused on insurance, workers compensation type injuries*

AS FOOTNOTE 21: A=acute healthcare; GP=general practitioner; M=military; O=outside healthcare; OT=occupational therapist;
P=psychological care or research; R=rehabilitation; Res=research focus; T=trauma focus of caseload or research;
VR=vocational rehabilitation (usually within occupational therapy)

Appendix IV - Research ethics documents

a) ***Appendix Table IV.a:*** Nottingham Trent University emailed ethical approval

b) ***Appendix Table IV.b:*** Nottingham Trent University ethical approval application form, updated in response to review

c) ***Appendix Table IV.c:*** ROWTATE study approval letter: University of Nottingham

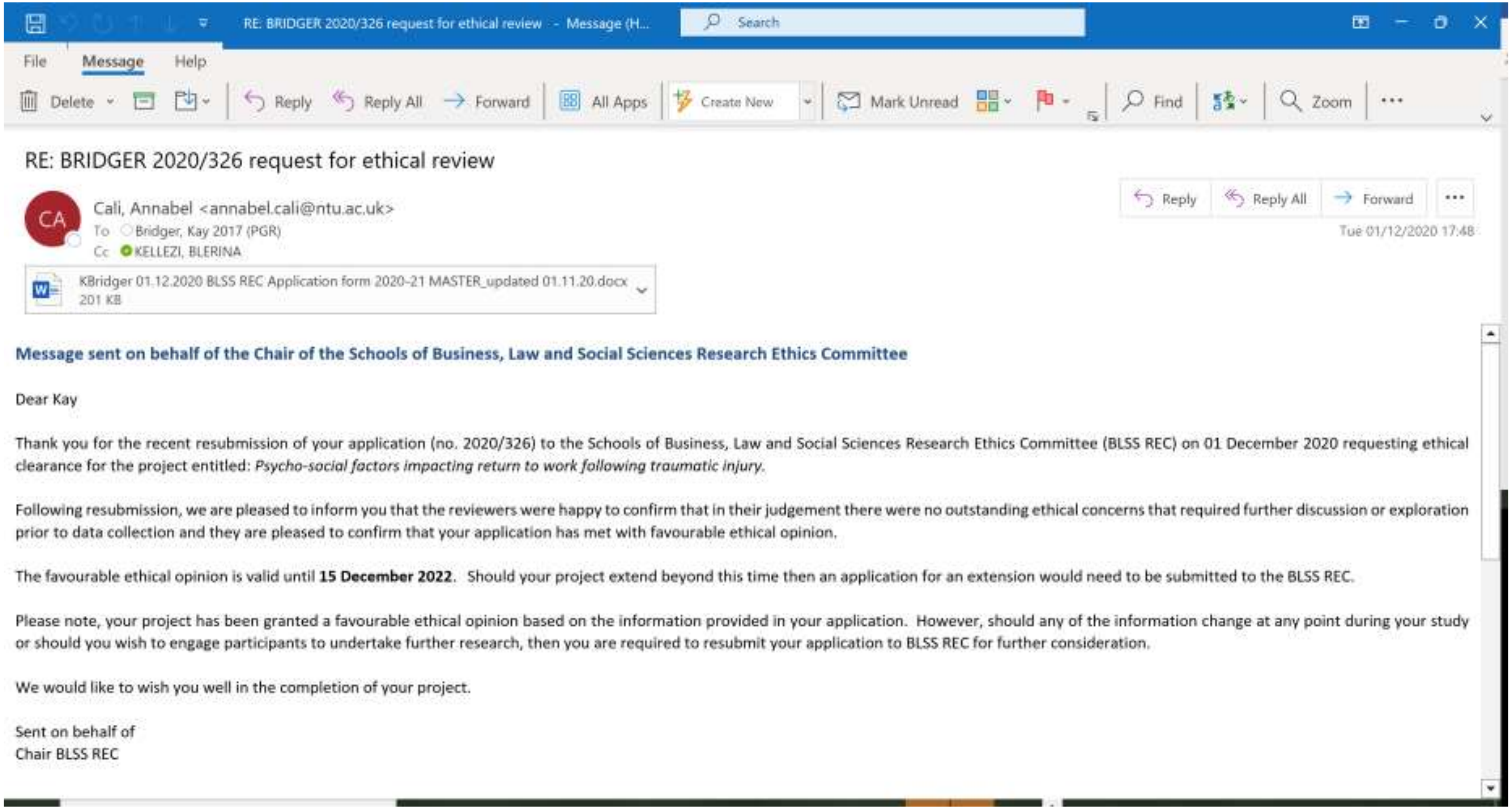
d) ***Appendix Table IV.d:*** ROWTATE study approval letter: Health Research Authority

e) ***Appendix Table IV.e:*** Good Clinical Practice Certificate January 2019

f) ***Appendix Table IV.f:*** Good Clinical Practice Certificate July 2021

Appendix IV

Appendix Table IV.a: **Nottingham Trent University emailed ethical approval**



RE: BRIDGER 2020/326 request for ethical review

Cali, Annabel <annabel.cali@ntu.ac.uk>
To Bridger, Kay 2017 (PGR)
Cc KELLEZI, BLERINA

Tue 01/12/2020 17:48

KBridger 01.12.2020 BLSS REC Application form 2020-21 MASTER_updated 01.11.20.docx
201 KB

Message sent on behalf of the Chair of the Schools of Business, Law and Social Sciences Research Ethics Committee

Dear Kay

Thank you for the recent resubmission of your application (no. 2020/326) to the Schools of Business, Law and Social Sciences Research Ethics Committee (BLSS REC) on 01 December 2020 requesting ethical clearance for the project entitled: *Psycho-social factors impacting return to work following traumatic injury.*

Following resubmission, we are pleased to inform you that the reviewers were happy to confirm that in their judgement there were no outstanding ethical concerns that required further discussion or exploration prior to data collection and they are pleased to confirm that your application has met with favourable ethical opinion.

The favourable ethical opinion is valid until **15 December 2022**. Should your project extend beyond this time then an application for an extension would need to be submitted to the BLSS REC.

Please note, your project has been granted a favourable ethical opinion based on the information provided in your application. However, should any of the information change at any point during your study or should you wish to engage participants to undertake further research, then you are required to resubmit your application to BLSS REC for further consideration.

We would like to wish you well in the completion of your project.

Sent on behalf of
Chair BLSS REC

***Appendix Table IV.b:* Nottingham Trent University ethical approval application form, updated in response to review**

NOTTINGHAM TRENT UNIVERSITY

SCHOOLS OF BUSINESS, LAW AND SOCIAL SCIENCES

APPLICATION FORM FOR ETHICAL APPROVAL OF A RESEARCH PROJECT – 2020-21

For use by members of academic staff and postgraduate research students

PLEASE NOTE THAT IT NORMALLY TAKES BETWEEN 3-6 WEEKS TO PROCESS APPLICATIONS, DEPENDING ON WHETHER THE APPLICATION NEEDS TO GO TO A FULL MEETING OF BLSS SREC (PLEASE SEE GUIDANCE NOTE: BLSS/Ethics 01 – PAGE 6). IF YOU ARE ASKED TO REVISE YOUR APPLICATION, IT MAY TAKE LONGER.

Who should use this form?

This form is for use by academic staff and research degree students in the Schools of Business, Law and Social Sciences. If you are a student on a taught masters or undergraduate programme, you should follow the procedure laid down by your School REC.

If you are a PhD student, you should normally have received project approval before you apply for ethical approval. If there is a problem with this seek advice from your PhD supervisor.

Please note, that if following your application for project approval you find that you need to revise your research plans such that this ethics application no longer covers all aspects of your intended project, you will need to submit a revised application for ethical approval.

Can I begin work before the project is ethically approved?

If your project requires ethical approval (see overleaf and Section 1) you **must not** undertake primary data collection until a favourable ethical opinion is received from the BLSS Schools Research Ethics Committee or from an external REC. Collecting primary data in the absence of ethical approval, or in the face of an adverse ethical opinion, may constitute a disciplinary offence.

If, after receiving ethical approval, factors beyond your control change your project such that the information provided in this form no longer holds, the approval will automatically become void, and you should re-apply for ethical approval.

Is there any help available to complete this form?

Yes. Guidance on filling in this form can be found in Guidance Note BLSS/Ethics 01. If you are a member of staff you can find the guidance document on the research SharePoint site here. If you are a PhD or Professional Doctorate student please click this link which will take you to NOW, and then follow this pathway to access the form: NOW Homepage > Student Communities > NTU Doctoral School > Content > Ethics Guidance. Professional doctorate students may also find guidance in their course learning rooms.

In this site, you will also find documents dealing with specific issues in research ethics, and some examples of participant information sheets and consent forms.

Further advice is available through Research Operations. Please email WITHHELD.

Please note that any subsequent amendments to approved projects need to be re-submitted to BLSS SREC for further consideration. Application forms and associated documentation, including issuance of approval, will be retained indefinitely. No research or personal data will be retained, with the exception of contact details of researchers.

Please make sure that you complete the Declaration at the end of the form.

Postgraduate research students must ask their Director of Studies/Lead Supervisor to countersign the form before it is submitted. Forms submitted without countersignatures will be returned.

Completing the Form

Which sections should I complete?

Different sections of this form should be completed for different kinds of projects:

If your project involves:	
Desk-research only, using only secondary or published sources	See Section 1.
An application to an external research ethics committee (for example, those relating to research in the NHS)	Complete Sections 1-4.
Collection and/or analysis of primary, unpublished data from, or about, identifiable, living human beings (either in laboratory or in non-laboratory settings)	Complete Sections 1-7. Please also complete the checklists in Sections 8–14 and provide information, as requested, if any of the checks are positive.
Collection and/or analysis of data about the behaviour of human beings, in situations where they might reasonably expect their behaviour not to be observed or recorded	
Collection and/or analysis of primary, unpublished data from, or about people who have recently died	
Collection and/or analysis of primary, unpublished data from, or about, existing agencies or organisations	
Investigation of wildlife in its natural habitat	Complete Sections 1-5 and 15.
Research with human tissues or body fluids	Do not complete this form. Please contact your School Associate Dean for Research to discuss alternative arrangements for ethical review.
Research with animals, other than in their natural settings.	Do not complete this form. Please contact your School Associate Dean for Research to discuss alternative arrangements for ethical review.

Please type or write legibly in dark ink. You are asked to keep your answers as brief as possible, but you should provide sufficient detail for members of the Research Ethics Committee to form a view on the ethics of your proposed research. Where it is necessary, you may use up to one continuation sheet for each section of the form.

Submitting the form

Email your application to:

Annabel Cali

Research Operations

Arkwright Room B113

Email: WITHHELD

1 Does this project need ethical approval?

	Yes	**No**
Does the project involve collecting and/or analysing primary or unpublished data from, or about, living human beings?	x	
Does it involve collecting and/or analysing primary or unpublished data about people who have recently died, other than data that is already in the public domain?		x
Does it involve collecting and/or analysing primary or unpublished data about or from organisations or agencies of any kind, other than data that is already in the public domain?		x
Does it involve research with non-human vertebrates in their natural settings or behavioural work involving invertebrate species not covered by the Animals (Scientific Procedures) Act 1986*? *The Animals (Scientific Procedures) Act 1986 was amended in 1993. As a result, the common octopus (octopus vulgaris), as an invertebrate species, is now covered by the act.		x
Does the project involve any of the following activities: 1) Access to websites normally prohibited on university servers, for example pornography or sites of organisations proscribed by the UK Government. 2) Investigation into extremism or radicalisation. 3) Accessing and using data of a potentially damaging nature which has been obtained from a source which may not have the requisite authority to provide it. Here, potentially damaging can mean anything from information on cases of domestic abuse to data on international spy networks. In case of uncertainty, please consult Research Operations or your School Associate Dean for Research. 4) The acquisition of security clearances, including the Official Secrets Act. Hereinafter referred to as '**Special Risk Research**'.		x

FOR STAFF ONLY: If you have answered NO to all the questions above, you do not need to submit your project for ethical approval.

2 Information about the project

Title of Project: Psycho-social factors impacting return to work following traumatic injury

Name of Principal Investigator (PI): Kay Bridger

Names of co-investigators (CIs) (If any of the CIs are not employed at NTU, please give the name of their organisation):

n/a

How many additional research staff will be employed on the project?

n/a

Please give their names (if known) and their organisational affiliation:

Project start date: December 2020

Estimated end date of the project: 15th December 2022

Who is funding the project? PhD is match funded by ARC East Midlands and NTU (Centre for Public and Psychosocial Health, NTU, School of Psychology)

Has funding been confirmed? Yes (PhD commenced 1st October 2019)

(For PhD and Professional Doctorate students only) Have you applied for and received project approval? Yes, and annual monitoring

If so, please give date of approval: 20/03/2020 (annual monitoring 29.10.2020)

(For PhD and Professional Doctorate students only) Please provide the name of your Director of Studies/Lead Supervisor and any other members of the supervisory team:

Dr Blerina Kellezi; Dr Mike Rennoldson; Prof Denise Kendrick (University of Nottingham); Dr Kate Radford (University of Nottingham)

Which learned society's code of ethical practice is most relevant to your project? (*for example, the Social Research Association, the British Psychological Society, the Socio-legal Studies Association*)? BPS

3 Does the project require Data and Barring Service (DBS) check (formerly CRB checks)

More information on DBS checks can be found by consulting document BLS Ethics 01 Guidance Staff and Students and/or from your Schools HR team (staff) or School Office (students):

	Yes	**No**
Does the project involve direct contact by any member of the research team with children, (under 18 years of age), vulnerable adults or adults in the custody of the criminal justice system?		**x**
If you have answered Yes to the above question, please explain the nature and frequency of the contact required by the project, and the circumstances in which it will be made. Please note that you may require DBS clearance and enquiries should be made of your Schools HR team to determine whether you do. This is not part of the BLSS SREC process; it must be obtained through Schools HR (staff) or your School Office (students). See section 3 in the Guidance Notes BLSS/Ethics 01.		

4 Is this project liable to scrutiny by external ethical review arrangements?

	Yes	**No**
Has a favourable ethical opinion been given for this project by an NHS or social care research ethics committee, or by any other external research ethics committee?		x
Will this project be submitted for ethical approval to an NHS or social care committee or any other external research ethics committee?		x

If you have answered YES to either of these questions, please sign the declaration at the end of the form and send a copy to Research Operations. Accompanying this should be a copy of the external body's ethical approval.

Ethical approval obtained at an institution with whom you are collaborating: please note that it is the responsibility of researchers to remain vigilant for unethical behaviour (defined as being in opposition to the NTU Research Ethics Policy and Code of Practice for Research) of any members of the project team, regardless of institutional affiliation and the location of the ethics committee that has approved the research. If such concerns arise, researchers should inform the Chair of the most appropriate NTU REC along with their School ADR and line manager.

PhD/Professional Doctorate students must ask their Director of Studies/Lead Supervisor to countersign the form before submitting it.

Note - if you are applying to an NHS or Social Care REC, you are advised to consult Guidance Note BLSS/ Ethics 01

If you have answered NO to both these questions, please proceed to Section 5.

5 About the project

If the information required below is provided in a succinct form in a previous document, such as your application for external funding or for approval of a PhD/Professional Doctorate project you may submit this document (or preferably the relevant section from it) either in whole or partial answer to the questions below.

(i) What are the aims and objectives of the project (**maximum 250 words**)?

This application concerns study 3 of the PhD. The aim of the study is to explore the impact of social context on cognitive psychological response to traumatic physical injury, applying the theoretical model described by the synthetic review.

This study proposes to interview 20 traumatic injury survivors.

(ii) Briefly describe the principal methods, the sources of data or evidence to be used and the number and type of research participants who will be recruited to the project (**maximum 500 words**).

For this study, 20 traumatic physical injury survivors will be recruited firstly through PPI consulting on the parent study (an NIHR funded programme grant). Secondly, participants will be recruited through charitable organisations which support injury survivors. The PI of this proposal has successfully recruited a similar population for study 1 and 2 of the PhD.

Semi-structured interviews will be conducted using a topic guide focused on psycho-social aspects of recovery from injury and informing return to work decision making. Interviews will be conducted over the telephone or through virtual meeting software. Interviews will be recorded and transcribed verbatim. The data will then be coded using theoretically driven thematic analysis (Braun & Clarke, 2013).

(iii) What research instrument(s) will be used to collect data? n/a

If you are using an externally validated scale, please specify:

If you are not using an externally validated scale, please attach a copy of the research instrument you will use to collect data (for example, a measurement scale, questionnaire, interview schedule, observation protocol for ethnographic work, or, in the case of unstructured data collection, a topic list).

6 Confidentiality, anonymity, security and retention of research data

	Yes	**No**
Are there any reasons why you cannot guarantee the full security and confidentiality of any personal or confidential data collected for the project?		x
Is there a significant possibility that any of your participants, or people associated with them, could be directly or indirectly identified in the outputs from this project?		x
Is there a significant possibility that confidential information could be traced back to a specific organisation or agency as a result of the way you write up the results of the project?		x
Will any members of the project team retain any personal or confidential data at the end of the project, other than in fully anonymised form?		x

If you have answered NO to <u>any</u> of these questions, please explain briefly how you will ensure the confidentiality, anonymity and security of your research data, both during and after the project.

Confidential data in the form of audio recordings, transcripts and demographic details to be stored separately and securely to consent forms which can be identified. The data will be kept in password protected PCs and any paper copies of consent forms kept in locked cupboards.

Unique identifying codes will be assigned to recordings and transcripts. Transcripts will be anonymised so that people or organisations cannot be identified directly.

In published work, all participants will be given pseudonyms with all identifiable information removed to ensure anonymity. Participants will be informed of these procedures through the Participant Information Sheet. Participants will decide based on this information whether they would like to take part in the study.
If the answer to <u>any</u> of these questions is YES, please explain: • why it is necessary for the research to be conducted in the way you propose, such that the usual standards of confidentiality and security cannot be respected; • what steps you will take to maximise confidentiality and security, within the constraints imposed by the research design; • what steps you will take to ensure that participants understand and consent to the implications of these constraints.

7 Informed consent

Please see Guidance Note BLSS/Ethics 02 for examples of model participant information sheets and participant consent forms, together with advice on how to use them

	Yes	**No**	**N/A**
Will all participants be fully informed before the project begins why the project is being conducted and what their participation will involve?	x		
Will every participant be required as a condition of their participation to give fully-informed consent to participating in the project, before it begins?	x		
Will all participants be fully informed about what data will be collected, and what will be done with this data during and after the project?	x		
If audio, video or photographic recording of participants are to be used, will fully-informed consent be secured as a condition of participation before recording begins? If yes, please provide further details below.	x		
Will every participant understand what rights they have to not take part, and/or to withdraw themselves and their data from the project if they do take part?	x		
Will they also understand that they do not need to give you reasons for exercising these rights and that there will be no repercussions as a result?	x		
Will the project involve deceiving or covert observation of participants? If YES, please provide a justification and explain the debrief process in the box below.		x	

If you have answered YES to <u>any</u> of the above questions, please explain briefly how you will implement your answers.

A participant information sheet (PIS) and consent form will be provided to participants in advance of the interview.

The PIS explains why the project is being undertaken and what their participation will involve.

The PIS provides details of how the data will be collected, stored and anonymised.

The PIS explains the participant rights to take part and to withdraw, and they do not need to give a reason for their withdrawal.

Participants will be asked each consent question as part of the recording, to record the participants consent. The researcher will initial each declaration on the consent form, which includes consent to be audio recorded or recorded through MS Teams.

A copy of the consent form will be emailed to the participant following the interview. This will include the contact details necessary should they decide to withdraw their data.

You are required to attach copies of your participant information sheet and consent form as evidence of your plans.

Appended to this document are:

- Recruitment poster for wall display and/or social media
- Participant information sheet for trauma survivors
- Consent form for interviews
- Topic guide for interview
- Debrief sheet
- List of demographic information to be collected from each participant

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If You have answered NO to <u>any</u> of questions 1-6 above, please explain:

- the reason for you proposing to conduct the project without ensuring that all of its participants give prior fully-informed consent; and
- why you consider that reason to be sufficient justification to proceed on this basis.

8 Risk of harm – to researchers, individual participants and participating organisations

(If there is any possibility that the project involves significant risks to researchers, you are advised to consult section 8 of Guidance Note BLSS/Ethics 01 on the assessment and management of risk, and to submit a risk assessment form to the relevant authority).

	Yes	**No**
Could your research be classified as Special Risk research (see section 1 of this application form). If so, please consult Section 8 of Guidance Note BLSS/Ethics 01 for more information. If Yes, your application will be required to be endorsed by your School Associate Dean for Research (please see foot of this application document). This applies to both members of staff and Postgraduate Research Students.		**x**
Does your project involve collecting data on a face-to-face basis*		**x**
• If you have answered yes to the above question* has your COVID-19 Face-to-Face Risk Assessment been inspected by Health and Safety?		
• If you have answered yes to the above question* has your COVID-19 Face-to-Face Risk Assessment been signed by the Head of Department?		
Is there any foreseeable risk that your project may lead to:	**Yes**	**No**
• Physical harm to participants or researchers?		x
• Psychological or emotional distress to participants?	x	
• Harm to the reputation of participants, or their employers, or of any other persons or organisations?		x

If you have answered YES to the question on Special Risk research, please explain/confirm:

- Explain why it is necessary to conduct the research in such a way as to qualify it as Special Risk research.
- If applicable, confirm that access to websites which may be proscribed by the UK Government or may be subject to surveillance by security services will be undertaken using the University network.
- Explain what, if any, steps will be taken, in addition to those listed in Section 6, to ensure that data obtained during the research project will be stored securely.
- If applicable, confirm that the transmission of data obtained during the research project to any co-investigators outside of the University network will be in encrypted format and using Zend, which encrypts files during transmission.
- If applicable, explain why the transportation of research data or materials is required and that an encrypted memory stick will be used where such transportation is necessary or unavoidable.

If you have answered YES to this question* please complete the COVID-19 Face-to-Face Risk Assessment template

If you have answered YES to any of the remaining questions, please explain:

- the nature of the risks involved, and why it is academically necessary for the project to incur them;
- how you propose to mitigate them;
- the arrangements by which you will ensure that participants understand and consent to these risks;
- any arrangements you will make to refer participants to sources of help, if they are seriously distressed or harmed as a result of taking part in the project;
- your arrangements for recording and reporting any adverse consequences of the research.

There is a possible risk of emotional distress for participants asked to recall their experiences of recovery from traumatic physical injury. However, understanding psychological response to injury is the focus of the research and as such it is necessary to include this.

Participants will not be asked to report any personal emotional issues or experiences, but they may choose to talk about such experiences and this may distress them.

The lead researcher has experience of interviewing traumatic injury survivors and will carefully monitor participants for distress. If a participant becomes upset or distressed, the researcher will ask the participant if they want to stop the interview or pause the recording. The lead researcher will use a private room to conduct the interviews where the content will not be overheard.

The risk of emotional distress will be included in the participant information sheet including the possibility of taking a break during the interview or stopping altogether. A debrief sheet will be given to each participant which will include signposting of sources of free mental health support. If a participant indicates that they would like to discuss the issues raised with a professional counsellor, the options listed on the debrief sheet will be highlighted and they will be told how to self-refer for counselling support through local NHS IAPT services.

9 Risk of disclosure of criminal offences, harm or potential harm

If the project is likely to involve work with children, or the discovery of physical or mental abuse of children, you should consult section 9 of the Guidance Note: BLSS/Ethics 01 before completing this section of the form.

	Yes	**No**
Is there a significant risk that the project will lead participants to disclose evidence of previous criminal offences, or their intention to commit criminal offences?		x
Is there a significant risk that the project will lead participants to disclose evidence that children or vulnerable adults are being harmed, or are at risk of harm?		x
Is there a significant risk that the project will lead participants to disclose evidence of serious risk of other types of harm?		x

If you have answered YES to <u>any</u> of these questions, please explain: • why it is academically necessary for these risks to be incurred; • what actions you would take, if such disclosures were to occur; • whether you will take advice before taking these actions, and from whom; • what information you will give participants about the possible consequences of disclosing information about criminal offences or risks of harm.

10 Payment of participants

	Yes	**No**
Do you intend to offer participants cash payments or any other kind of inducements or compensation for taking part in your project? If the answer is NO, please proceed to section 11.	x	
Is there any significant possibility that such inducements will cause participants to consent to risks that they might not otherwise find acceptable?		x
Is there any significant possibility that the prospect of such inducements will systematically skew the data provided by participants in any way?		x
Will you inform participants that accepting inducements does not negate their right to withdraw from the project?	x	
If you have answered YES to <u>any</u> of these questions, please explain: • the nature of the inducements or the amount of the payments that will be offered; • the reasons why it is necessary to offer them; • why you consider that they are ethically and methodologically acceptable. Participants will be offered a £20 voucher to compensate them for their time. This is considered respectful of participants' contribution rather than an inducement and will be explained as such in the participant information sheet, while simultaneously informing them that it does not affect their rights to withdraw from the project.		

11 Capacity to give valid consent

Please note, from October 2007 research involving people who are mentally incapacitated and cannot give valid consent must be cleared through the NHS research ethics procedures, not through a university REC

Do you propose to recruit any participants from the following groups?	**Yes**	**No**
• Children under 18 years of age.		x
• People with learning difficulties.		x
• People with communication difficulties, including difficulties arising from limited facility with the English language.		x
• Very infirm people.		x
• To your knowledge, people with mental health problems or other medical problems that may impair their cognitive abilities.		x
• Any other people who may not be able fully to understand the nature of the research and the implications for them of participating in it.		x

If you have answered YES to any of these questions, please explain how you will ensure that the interests and wishes of participants (and in the case of children, the wishes of their parents or guardians) are understood and taken into account.

While it is not intended to directly recruit participants with mental health problems or impaired cognitive abilities it is possible that people who have suffered a traumatic injury might be affected in either of these ways.

Survivors of traumatic physical injury may be affected by depression, anxiety, travel phobia or PTSD and those who have sustained a head injury may experience cognitive impairments. The researcher has experience of interviewing trauma survivors and is sensitive to the possible mental health and cognitive effects of their experience.

The researcher has undertaken CRN informed consent training delivered by NIHR and should it become apparent that a participant is not fully able to give consent then the interview will be terminated.

12 Is participation genuinely voluntary?

Do you propose to recruit participants from the following groups?	**Yes**	**No**
• Employees or students of NTU or of organisation(s) that are formal collaborators in the project.		x
• Can your research be considered to be pedagogic research, as defined as the use of student-related data for academic research purposes? See section 12 of BLSS Ethics 01 Guidance Document for further detail, particularly the distinction from learning analytics.		x
• Employees recruited through other business, voluntary or public sector organisations.	x	
• Pupils or students recruited through educational institutions other than NTU.		x
• Clients recruited through voluntary or public services.	x	
• People who are resident in social care or medical establishments.		x
• People recruited by virtue of their employment in the police or armed services.		x
• People in the custody of the criminal justice system.		x
• Other people who may not feel empowered to refuse to participate in the research.		x

If you have answered YES to question 2, please explain how you will ensure voluntary participation, informed consent and clarification of your role as researcher as distinct from teacher.

If you have answered YES to any of these questions, please explain how your participants will be recruited, and what steps you will take to ensure that their participation in this project is genuinely voluntary.

Participation will be advertised through known contacts and third sector (charities). Response to this will be voluntary and this is made clear in the participant information sheet and also in the invitation.

1. Known contacts within the PPI advisory group to the parent study will be asked if they are willing to be interviewed.
2. The ARC (Applied Research Collaboration) which funds the research will be approached to ask if any of their PPI advisory group meet recruitment criteria.
3. Known contacts at two traumatic injury charities will be approached: After Trauma (London) and Day One (Leeds) and asked if they will share the invitation poster with their members.
4. Other charities which provide support to people with specific types of injuries will be approached directly and through social media to ask them to advertise the invitation

poster with their beneficiaries. Relevant charities include injury type e.g. The Spinal Injuries Association or Pace Rehabilitation for amputation, and also injury cause: Roadpeace (road traffic accident charity) and the Nottinghamshire Veterans' Service

In the case of beneficiaries of injury charities it will be made clear that participation will not affect access to their charitable services.

13 Online and Internet Research

If you intend to conduct any part of your project online, please consult Guidance Note BLSS/Ethics 03 before completing this section

	Yes	**No**
Will any part of your project involve collecting data by means of electronic media, such as the internet or email?	x	
Is there a significant possibility that the project will encourage children under 18 to access inappropriate websites, or correspond with people who pose risk of harm?		x
Is there a significant possibility that the project will cause participants to become distressed or harmed, in ways that may not be apparent to the researcher(s)?		x
Will the project incur any other risks that arise specifically from the use of electronic media?		x

If you have answered YES to <u>any</u> of these questions, please explain:

- why you propose to use electronic media;
- how you propose to address the risks associated with online/internet research, especially those flagged above (if relevant).

Email or telephone will be used to make contact with participants and to share study documents. Given the current covid related restrictions on face to face contacts, interviews will be conducted either on the telephone or via a software virtual meeting platform such as MS Teams, which has been approved for use (NHS ethics) for the parent study. This is proposed in order to safeguard the safety of both researcher and participants regarding covid infection.

Please ensure that your answers to other questions in this form address them in ways that are relevant to online research.

14 Other ethical risks

	Yes	No
Are there any other ethical issues or risks of harm raised by your project that have not been covered by previous questions?	X	

If you have answered YES, please explain:

- the nature of these issues and risks;
- why you need to incur them;
- and how you propose to deal with them.

Note that if your professional code of conduct requires you to report misconduct in other members of your profession, you should deal with any risks that your research might trigger this obligation in this section.

As noted in section 11 above, there is a risk that traumatic injury survivors have a) mental health issues and therefore may be vulnerable to distress and/or b) cognitive impairment caused by head injury and therefore may be unable to give informed consent.

Participants will be carefully monitored for signs of either issue and if it is not ethical to continue with an interview it will be terminated.

Apart from these issues, the research asks participants to talk about experiences which may be sensitive and thus lead to emotional distress. The response to this has been detailed in section 8 above.

15 Research with non-human vertebrates in their natural settings or behavioural work involving invertebrate species not covered by the Animals Scientific Procedures Act (1986).

The Animals (Scientific Procedures) Act 1986 was amended in 1993. As a result, the common octopus (octopus vulgaris), as an invertebrate species, is now covered by the act.)

	Yes	No
Will any part of your project involve the study of animals in their natural habitat?		**x**
Will your project involve the recording of behaviour of animals in a non-natural setting that is outside of the control of the researcher?		**x**
Will your field work involve any direct intervention other than recording the behaviour of the animals available for observation?		**x**

Is the species you plan to research endangered, locally rare or part of a sensitive ecosystem protected by legislation?		**x**
Is there any significant possibility that the welfare of the target species or those sharing the local environment/habitat will be detrimentally affected?		**x**
Is there any significant possibility that the habitat of the animals will be damaged by the project, such that their health and survival will be endangered?		**x**
Will project work involve intervention work in a non-natural setting in relation to invertebrate species other than *octopus vulgaris*?		**x**

If you have answered YES to any of these questions, please explain:

- the reasons for conducting the project in the way you propose, and the academic benefits that will flow from it;
- the nature of the risks to the animals and their habitat;
- how you propose to mitigate these risks.

Principal Investigator's Declaration

Please tick **all** the boxes relevant to your project and sign the form below.

PhD/Professional Doctorate students must ask their Director of Studies/Lead Supervisor to countersign it before it is submitted.

I request that this project is exempt from review by the BLSS Schools Research Ethics Committee, because it will be, or has been, reviewed by an external REC. I have completed Sections 1-4 and attach/will attach a copy of the favourable ethical review issued by the external REC Please give the name of the external REC here:	
I request a statement of ethical approval from the BLSS Schools Research Ethics Committee and confirm that I have answered all relevant questions in this form honestly.	x

I confirm that I will carry out the project in the ways described above, and that I will request a fresh ethical approval if the project subsequently changes in ways that materially affect the information I have given in this form.	x
I confirm that I have read and agree to abide by the code of research ethics issued by the relevant national learned society, and that I have ensured that all members of my research team (if any) also do so.	x
I confirm that I have read and agree to abide by the University's Research Data Management Policy, and that I have ensured that those members of my research team (if any) who are employees of NTU also do so.	x
I confirm that I have read and agree to abide by the University's Research Integrity policies, and that I have ensured that those members of my research team (if any) who are employees of NTU also do so.	x
I confirm that I have read the appropriate guidance documents: BLSS Ethics 01 (Staff and Students General Guidelines) BLSS Ethics 02 (Informed Consent) BLSS Ethics 03 (Online Research)	x
I confirm that I have completed all sections of the application form as appropriate.	x
I confirm that I have attached a copy of the Participant Information Sheet, Consent Form, Questionnaire and any other relevant documentation as appropriate.	x
I confirm that I have signed and dated the application form.	x
PhD/Professional Doctorate students only: I confirm that I have ensured that my application form has been endorsed by my Director of Studies/Lead Supervisor.	x
PhD/Professional Doctorate students only: I confirm that I already have project approval.	x

Signed__Kay Marie Bridger__________________________________(Principal Investigator or student)

Date_____01/12/2020____

I have read this form and confirm that it covers all the ethical issues raised by this project fully and frankly. I also confirm that these issues have been discussed with the PGR and will continue to be reviewed in the course of supervision.

Countersigned_____Blerina Kellezi________________________(Director of Studies/Lead Supervisor)

Date_____01/12/2020____

Note: If you are submitting this form by email, you should type your name in the signature space: an email attachment sent from your university inbox will be assumed to have been virtually signed by you.

If you are a student and are submitting this form by email, please attach an email from your Director of Studies/Lead Supervisor confirming that they are prepared to make the declaration above and to countersign this form: this email will be taken as a virtual countersignature.

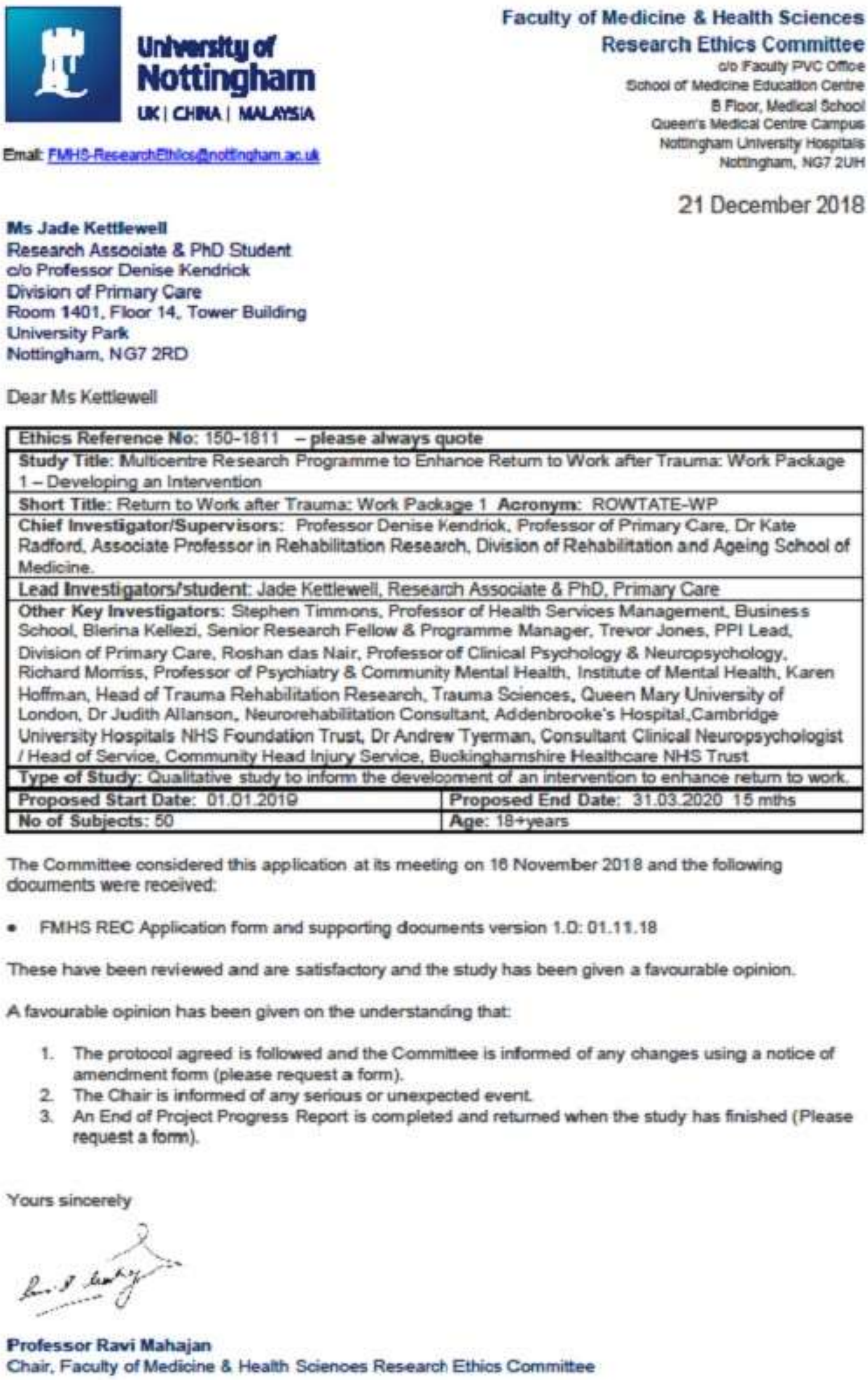
Special Risk Research Only

I have read this form and confirm that appropriate steps have been taken to mitigate the special risks associated with the proposed project.

Countersigned____(School Associate Dean for Research)

Date____

Appendix Table IV.c: ROWTATE study approval letter: University of Nottingham



University of Nottingham
UK | CHINA | MALAYSIA

Email: FMHS-ResearchEthics@nottingham.ac.uk

Faculty of Medicine & Health Sciences
Research Ethics Committee
c/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH

21 December 2018

Ms Jade Kettlewell
Research Associate & PhD Student
c/o Professor Denise Kendrick
Division of Primary Care
Room 1401, Floor 14, Tower Building
University Park
Nottingham, NG7 2RD

Dear Ms Kettlewell

Ethics Reference No: 150-1811 – **please always quote**	
Study Title: Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention	
Short Title: Return to Work after Trauma: Work Package 1 **Acronym**: ROWTATE-WP	
Chief Investigator/Supervisors: Professor Denise Kendrick, Professor of Primary Care, Dr Kate Radford, Associate Professor in Rehabilitation Research, Division of Rehabilitation and Ageing School of Medicine.	
Lead Investigators/student: Jade Kettlewell, Research Associate & PhD, Primary Care	
Other Key Investigators: Stephen Timmons, Professor of Health Services Management, Business School, Blerina Kellezi, Senior Research Fellow & Programme Manager, Trevor Jones, PPI Lead, Division of Primary Care, Roshan das Nair, Professor of Clinical Psychology & Neuropsychology, Richard Morriss, Professor of Psychiatry & Community Mental Health, Institute of Mental Health, Karen Hoffman, Head of Trauma Rehabilitation Research, Trauma Sciences, Queen Mary University of London, Dr Judith Allanson, Neurorehabilitation Consultant, Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Dr Andrew Tyerman, Consultant Clinical Neuropsychologist / Head of Service, Community Head Injury Service, Buckinghamshire Healthcare NHS Trust	
Type of Study: Qualitative study to inform the development of an intervention to enhance return to work.	
Proposed Start Date: 01.01.2019	**Proposed End Date**: 31.03.2020 15 mths
No of Subjects: 50	**Age**: 18+years

The Committee considered this application at its meeting on 16 November 2018 and the following documents were received:

- FMHS REC Application form and supporting documents version 1.0: 01.11.18

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

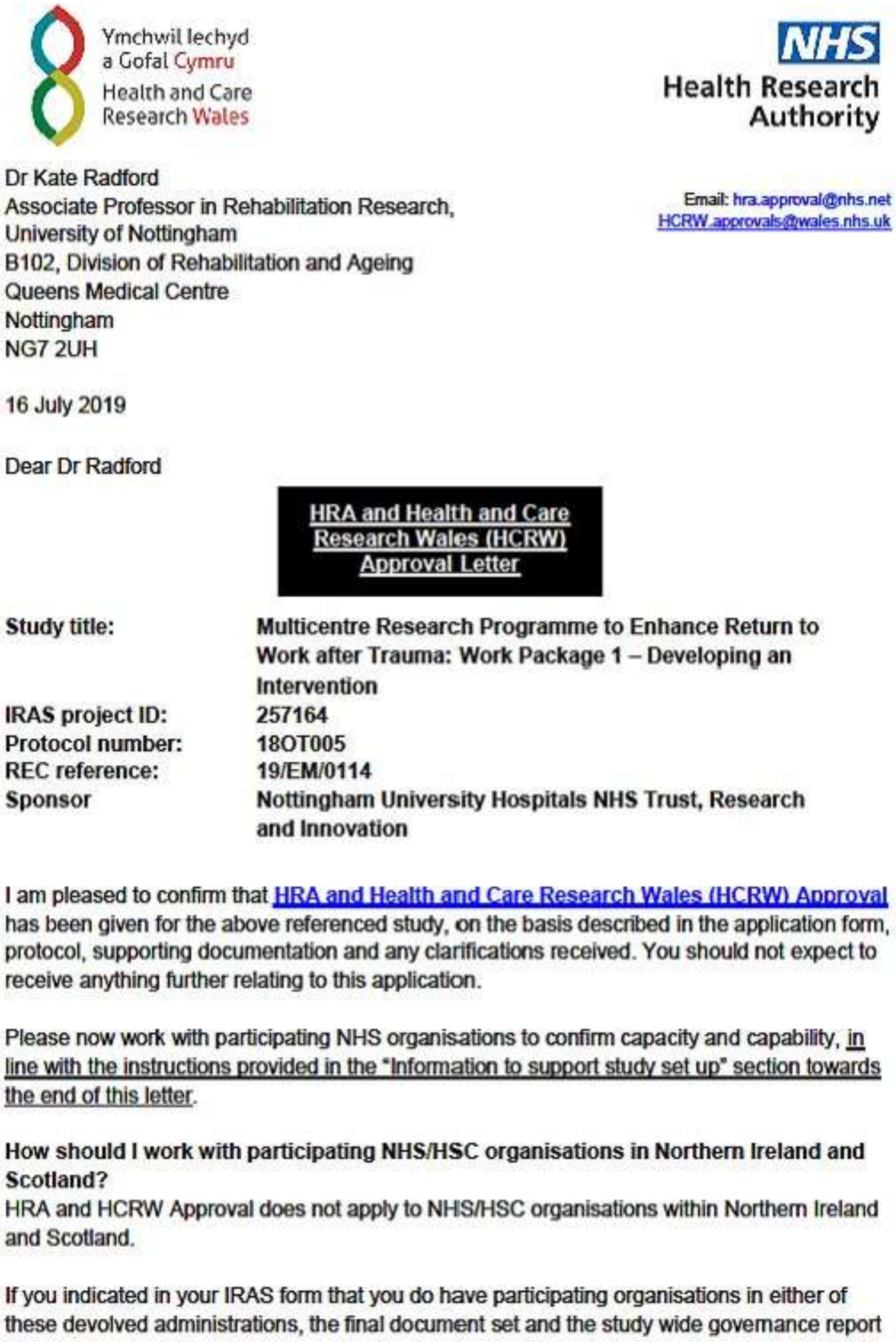
A favourable opinion has been given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix Table IV.d: **ROWTATE study approval letter: Health Research Authority**



Ymchwil Iechyd
a Gofal Cymru
Health and Care
Research Wales

NHS
Health Research
Authority

Email: hra.approval@nhs.net
HCRW.approvals@wales.nhs.uk

Dr Kate Radford
Associate Professor in Rehabilitation Research,
University of Nottingham
B102, Division of Rehabilitation and Ageing
Queens Medical Centre
Nottingham
NG7 2UH

16 July 2019

Dear Dr Radford

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Multicentre Research Programme to Enhance Return to Work after Trauma: Work Package 1 – Developing an Intervention**
IRAS project ID:	**257164**
Protocol number:	**18OT005**
REC reference:	**19/EM/0114**
Sponsor	**Nottingham University Hospitals NHS Trust, Research and Innovation**

I am pleased to confirm that HRA and Health and Care Research Wales (HCRW) Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

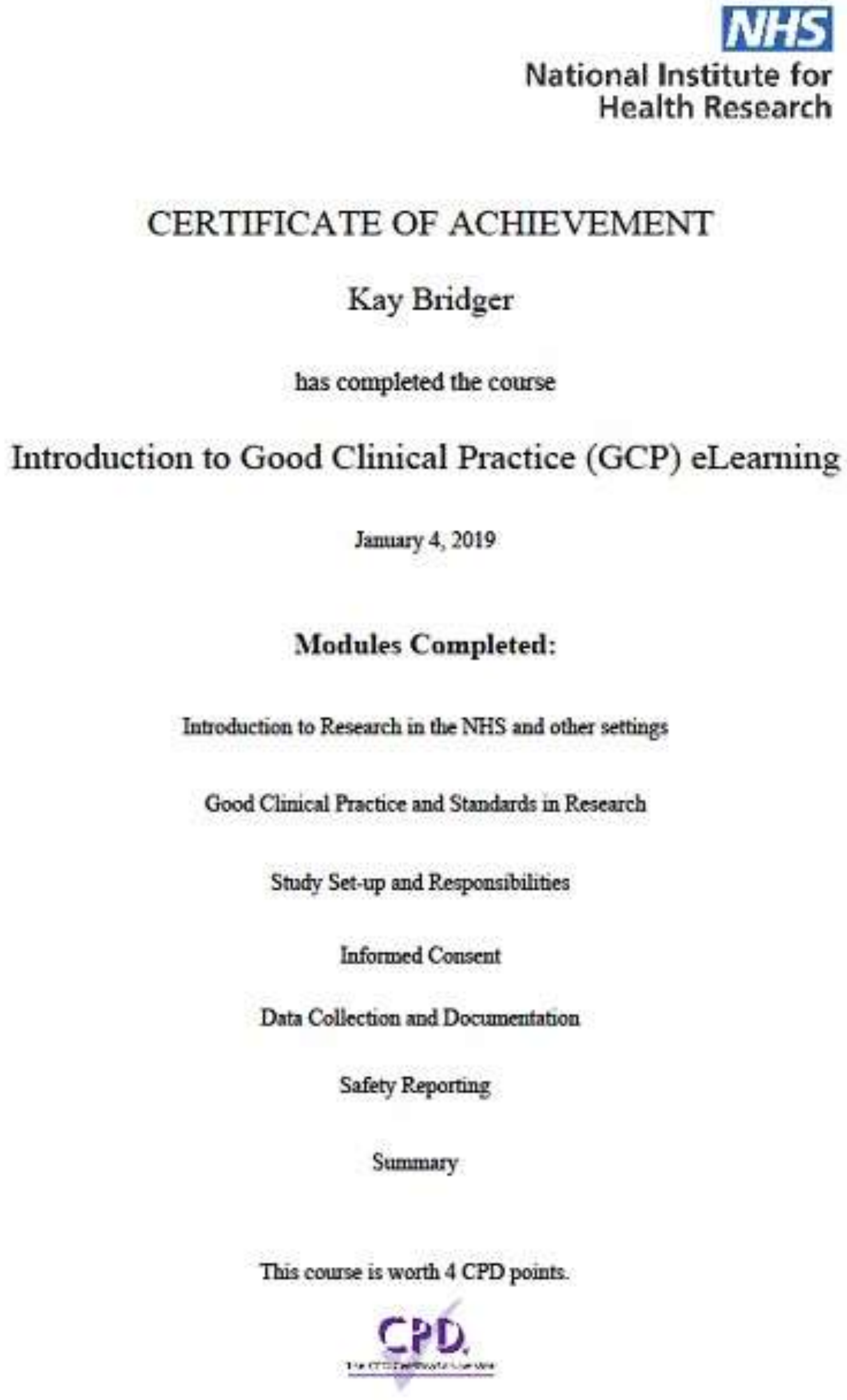
Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report

Appendix Table IV.e: **Good Clinical Practice Certificate January 2019**



NHS
National Institute for
Health Research

CERTIFICATE OF ACHIEVEMENT

Kay Bridger

has completed the course

Introduction to Good Clinical Practice (GCP) eLearning

January 4, 2019

Modules Completed:

Introduction to Research in the NHS and other settings

Good Clinical Practice and Standards in Research

Study Set-up and Responsibilities

Informed Consent

Data Collection and Documentation

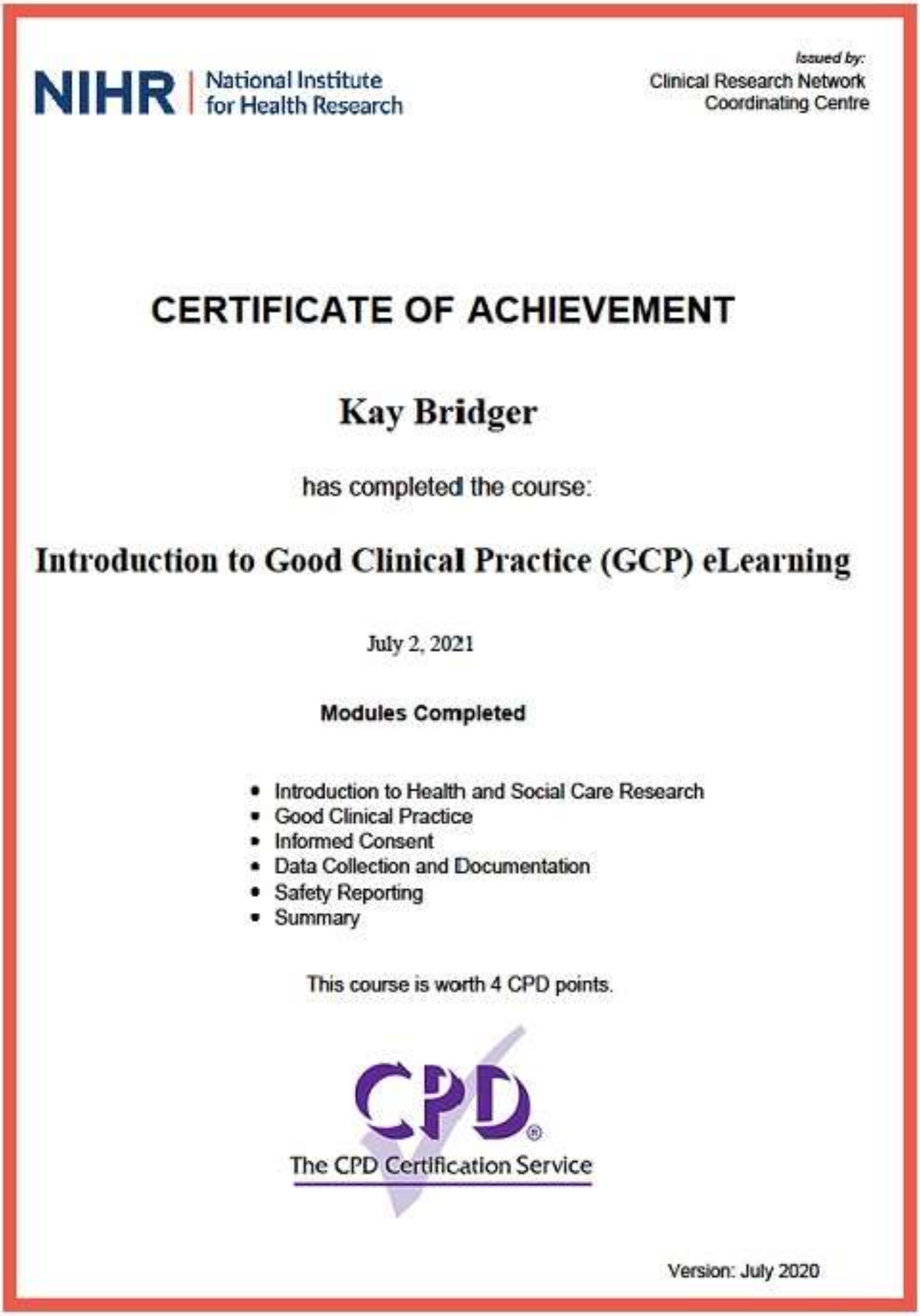
Safety Reporting

Summary

This course is worth 4 CPD points.

CPD

Appendix Table IV.f: **Good Clinical Practice Certificate July 2021**



NIHR | National Institute for Health Research

Issued by:
Clinical Research Network
Coordinating Centre

CERTIFICATE OF ACHIEVEMENT

Kay Bridger

has completed the course:

Introduction to Good Clinical Practice (GCP) eLearning

July 2, 2021

Modules Completed

- Introduction to Health and Social Care Research
- Good Clinical Practice
- Informed Consent
- Data Collection and Documentation
- Safety Reporting
- Summary

This course is worth 4 CPD points.

CPD®
The CPD Certification Service

Version: July 2020

Appendix V – Miscellaneous, including Acronyms and List of Tables etc

a) ***Appendix V.a.:*** List of acronyms used in the thesis

b) ***Appendix Table V.b.:*** **Referred to in Chapter 2 (Theory)** Statistically significant (and non-trivial) findings of Common-Sense Model pathway testing, summarised from Hagger et al. 2017 meta-analytic review

c) **Appendix V.c.:** List of Tables, Diagrams and Figures

Appendix V.a.: List of Acronyms used in the thesis

ABI: Acquired Brain Injury

ASD: Acute Stress Disorder

BAME: Black Asian Minority Ethnicity

CSM: Common Sense Model (of stress regulation)

ICF: International Classification of Functioning (See World Health Organisation, 2001)

IPA: Interpretative Phenomenological Analysis

GT: Grounded Theory

PPI: Public and Patient Involvement

PTS: Post Traumatic Stress

PTSD: Post Traumatic Stress Disorder

ROWTATE: Return to Work After Trauma; NIHR funding study at University of Nottingham

RTA: Reflexive Thematic Analysis

RTW: Return To Work

SAC: Stress Appraisal and Coping

SCI: Spinal Cord Injury

SCT: Self Categorisation Theory

SIAH: Social Identity Approach to Health

SIT: Social Identity Theory

TARN: Trauma Audit and Research Network

TBI: Traumatic Brain Injury

TPI: Traumatic Physical Injury

QoL: Quality of Life

Appendix Table V.b. Statistically significant (and non-trivial) findings of Common-Sense Model pathway testing, summarised from Hagger et al. 2017 meta-analytic review

Representation/Coping strategy	+ve or -ve/ dir/indirect	Coping strategy (CS) OR Outcome (O)
Emotional representation	Direct, +ve	CS: Avoidance; emotion venting; seeking social support
	Direct -ve	CS: problem-focused generic; cognitive reappraisal
	Indirect +ve	O:disease state; distress
	Indirect -ve	O: physical functioning, social functioning; wellbeing
Control (perceived control)	Direct +ve	CS: problem solving (gen/specific); cognitive reappraisal; social support
	Indirect +ve	O: physical functioning; role functioning; psychological wellbeing
	Indirect -ve	O: psychological distress; disease state
Identity	Direct +ve	CS: Avoidance; cognitive reappraisal; emotion venting
	Indirect -ve	O: physical, role, social functioning
	Indirect +ve	O: distress (psychological)
CS: Avoidance	Direct +ve	O: Disease state; distress
	Direct -ve	Physical, role, social functioning; wellbeing
CS: Emotion venting	As Avoidance	EXCEPT -ve direct on disease state
CS: Problem-focused generic coping	Direct +ve	O: role functioning
	Direct -ve	disease state, distress, and role functioning
Chronic timeline	Indirect +ve	O: psychological social functioning; physical functioning wellbeing
	Indirect -ve	O: distress; disease state
DETAIL OF SPECIFIC INDIRECT EFFECTS and how they can cancel each other out		
Perceived consequences had zero total indirect effects	Indirect +ve	(O)disease state and distress through (CS)avoidance (O) functioning and wellbeing through problem focused generic coping
	Indirect -ve	(O)disease state and distress through problem-focused (CS)generic coping (O)functioning and wellbeing through avoidance
Identity	Indirect +ve	(O)disease state and distress through (CS)avoidance (O)physical, social functioning through problem-focused generic coping – TRIVIAL SIZE
	Indirect -ve	(O) physical, role, social functioning, wellbeing through (CS) avoidance (O) distress, disease state through (CS)problem-focused generic coping

Control (perceived)	Indirect +ve Indirect -ve	(O)physical and role functioning, wellbeing through (CS) generic and specific problem focused coping (O)disease state, distress through (CS)problem focused coping; cognitive reappraisal
Illness coherence	Indirect +ve Indirect -ve	(O) physical, role, social functioning through (CS) emotion venting; avoidance (O) distress through (CS) emotion venting; avoidance
Outcomes (tended to be consistent with total indirect)		
Timeline	Indirect +ve Indirect -ve	(O)physical functioning, social functioning, wellbeing through (CS) problem focused generic coping (O)disease state and distress through (CS) problem focused generic coping
Emotional representation (closely mirror the direct and total indirect effects for this variable and indicated that this dimension was generally associated with maladaptive outcomes)	Indirect +ve Indirect -ve	(O)distress through (CS) avoidance, emotion venting (O)psychological wellbeing through (CS) avoidance (O) social, role, physical functioning through (CS) avoidance and emotion venting (O)wellbeing, physical function through (CS) problem-solving generic coping

Appendix V.c.: List of Tables, Diagrams and Figures