

The impact of exposure to suicidal behaviour in institutional settings

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1 Summary

1.1 Aim

The purpose of this study was: 1) to identify the impact of exposure to a suicide or an attempted suicide for adult residents or staff working within either a prison or inpatient setting; 2) To consider the mechanisms by which future suicidal behaviour may occur as a result of that exposure.

1.2 Method

Computerised database searches (PubMed, PsycINFO, Criminal Justice Abstracts, Scopus, Cochrane database, Ministry of Justice, Correctional Service Canada) were performed in September 2018 to obtain relevant research papers, without any restriction on publication date. Hand searching of relevant articles and review and contacting of authors were also conducted. Publications were included if they included samples of 50% or more of relevant populations and specifically identified the impact of exposure to suicidal behaviour in adult institutions. Studies were excluded if they were narrative reviews, described effects but provided no evaluation or did not provide first-person primary data. Studies were evaluated for quality using the format provided by Hawker (2002) due to the mixed methodologies of the included studies.

1.3 Results

Of 7,696 studies for the impact of exposure to suicidal behaviour retrieved, 27 met inclusion criteria for evaluation of study quality and included in the synthesis. Eight major themes (with 21 sub-themes) were identified: Prevalence of exposure; Early Cognitions; Early Emotion; Professional competence; Institutional roles and expectation; Professional responses; Coping and Support; and Longer- term outcomes and vulnerabilities.

Confidence in each sub-theme was scored based on evidence strength, quality, and consistency across settings. One very strong sub-theme (vulnerabilities to poorer outcomes) and seven strong sub-themes (rates of exposure; shock and confusion; a crisis of confidence; interpersonal support; long-term stress response; relationship with own suicidal behaviour; and clustering) were identified within the literature. Eight sub-themes held moderate confidence (blame and responsibility; attitudes and attributions to the deceased; guilt; loss, grief and devastation; sadness, distress and empathy; anxious avoidant responses; communication and updates; additional helpful or unhelpful factors). Five sub-themes held limited confidence (institutional expectations linked to both 'business as usual' and 'feeling rules and positioning of support'; active or overzealous prevention; avoidant coping; and development & learning).

1.4 Conclusion

The rate of exposure to suicide amongst both staff and residents within institutional settings is exceptionally high. Approximately two to three times the rate of community samples, resulting in widespread and in some cases, long-lasting, effects for both staff and residents. The universal presence of shock, confusion and emotional reactions, including loss and guilt, is in keeping with bereavement and community studies. The consistent presence of anxiety responses in the short, medium and long-term suggests this is an area for intervention, particularly for staff groups. Differences were also identified dependent on the setting or role. Residents in both settings reported greater ongoing confusion resulting from limited communication, with prison samples emphasising the positive role of appropriate peer-support mechanisms (although not identified within inpatient samples).

A crisis of professional confidence was reported by staff groups in both settings along with 'anxious avoidant' impacts on their professional behaviour. There was evidence that institutional and peer expectations, especially around emotional expression, affected the perceived appropriateness of certain responses and may affect coping. The importance of interpersonal support was highlighted across groups, with suggestions that the positioning of this support and willingness to pursue access differed, depending on the role and setting. Evidence was presented that the most beneficial support structures came from within existing groups, rather than from external bodies. However, this review did not aim to consider the effectiveness of specific postvention interventions and conclusions are tentative.

Of concern, was strong evidence of long-term and profound mental health and wellbeing effects on a proportion of those exposed. Evidence of longer-term outcomes can be distinguished by role, as an artefact of the aims of available studies. There was strong evidence amongst staff of ongoing intrusive memories and emotional saliency over many months or years, although no causally confirmed relationship to PTSD. For residents, there was strong evidence of a relationship between their exposure to suicide and own suicidal behaviour although the direction of this relationship remains unclear. Furthermore, the cumulative impact of exposure and/or proximity (e.g. witnessing compared with awareness of the event) to suicide on vulnerability to long-term negative effects emphasises the prioritisation of these individuals for postvention support.

The short, medium and long-term effects of exposure to suicide in the community amongst kin, non-kin and community professionals have been widely documented. The growing prominence of postvention research and interventions reflects this increasing awareness. The exceptional rate of exposure, coupled with the mirroring of effects for community samples, suggests that both staff and residents within institutional settings are high priority groups for intervention.

1.5 Recommendations

Recommendations from this review include a need for high quality longitudinal research to understand the relationship between impacts and support on long-term outcomes. Across groups, the exceptional high rate of exposure suggests a need for a specific and ongoing intervention with clearly defined and evidence-based structures to minimise negative outcomes. These may include the facilitation of appropriate emotional expression, mindful of the possible initial blaming/negative attitudes towards the deceased. Consideration of prioritisation for those with greatest proximity or cumulative exposure to suicide is also recommended. Within staff groups, interventions which address professional and personal anxiety resulting from the exposure and which include compassionate responses provided on an opt-out basis are recommended. As are the facilitation of team-based support and opportunities for reflection. The review suggests that informal or external support mechanisms should not be relied upon. For residents, appropriate communications and transparency around suicide is recommended to help resolve confusion and prevent blaming along with appropriate peer postvention support delivered within clear boundaries.

Table of Contents

1	Summary	1
1.1	Aim	1
1.2	Method.....	1
1.3	Results	1
1.4	Conclusion	2
1.5	Recommendations	3
2	Introduction	7
3	Method	10
3.1	Protocol and registration	10
3.2	Search strategy.....	10
3.3	Study eligibility	10
3.4	Definition of Exposure to Suicide	11
3.5	Data extraction and procedure	23
3.6	Quality Assessment	23
3.6.1	Individual study quality	23
3.6.2	Confidence of evidence within themes	24
3.7	Study Characteristics.....	25
3.8	Data synthesis	26
4	Results and discussion	27
4.1	Strength, Body and Consistency of evidence for each theme	27
4.2	Prevalence of exposure.....	30
4.2.1	Rates of exposure	30
4.2.2	Prevalence of exposure conclusion	30
4.3	Early reactions.....	30
4.3.1	Early cognitions	30
4.3.2	Early emotions	32
4.3.3	Early reactions conclusion.....	34
4.4	Professional competence.....	34
4.4.1	A crisis of confidence	34
4.4.2	Professional competence conclusion.....	35
4.5	Institutional roles and expectation	36
4.5.1	'Business as usual'	36
4.5.2	'Feeling rules' and the positioning of support	37
4.5.3	Institutional roles and expectation conclusions	38
4.6	Professional responses.....	38
4.6.1	Anxious avoidant responses	38

4.6.2	Active or overzealous prevention	39
4.6.3	Professional responses conclusion	39
4.7	Coping and support.....	40
4.7.1	Avoidant coping	40
4.7.2	Interpersonal support	40
4.7.3	Additional helpful and unhelpful factors	41
4.7.4	Communication and updates.....	42
4.7.5	Coping and support conclusion.....	42
4.8	Longer term outcomes.....	42
4.8.1	Stress responses.....	43
4.8.2	Relationship with own self-harm and suicidal behaviour	43
4.8.3	Clustering mechanism.....	44
4.8.4	Vulnerabilities for poorer outcomes after exposure	45
4.8.5	Development and learning.....	46
4.8.6	Longer term impact conclusion	46
5	Discussion.....	48
5.1	Consistent findings across samples.....	48
5.2	Unique resident factors.....	49
5.2.1	Resolving confusion	49
5.2.2	Own suicide and self-harm behaviours.....	49
5.3	Unique staff factors.....	50
5.3.1	Resolving anxiety	50
5.4	Differences between settings	50
5.4.1	Emotional expression.....	50
5.4.2	Positioning of support structures	51
5.4.3	Positioning of peers	51
5.5	Limitations of the literature	52
5.5.1	Definitions of Exposure	52
5.5.2	Strength of current evidence	53
5.5.3	Causal relationships	53
5.5.4	Research questions	54
5.6	Limitations of this review.....	54
6	Conclusion.....	55
7	Recommendations.....	56
7.1	Future research.....	56
7.2	Recommendations across groups	57
7.3	Recommendations for staff.....	57

7.4	Recommendations for residents.....	57
8	References.....	58
9	Appendix A: Quality Assurance	65

2 Introduction

Suicide within prisons and inpatient settings continue to be a major concern with rates consistently higher than within community settings. Internationally, systematic reviews have reported that for both prisons and inpatient settings, rates of suicide occur 3 to 12 times as often than within the general population (Fazel, Ramesh & Hawton, 2017; Walsh Sara, Ryan & Large, 2015). For every suicide, there are, on average, 10 attempted suicides within these institutional settings, (Spießl, Hübner-Liebermann & Cording, 2002). This exceptional rate of both suicides and attempts, means that staff and co-residents are regularly exposed, either directly or indirectly, to suicidal behaviour. The loss of a client to suicide is relatively common with one in two psychiatrists reporting losing a patient to suicide (Gutin et al, 2010) with 52% of prison staff and 48% of those in prison reporting having witnessed a suicide or attempted suicide during their career (Favril et al, 2017; Slade & Lopresti, 2014). However, suicidal behaviour is not experienced equally across these settings, with residents in the early stages of both prison and mental health inpatient stays experiencing the highest rates of suicide (Ministry of Justice, 2018; Australian Government, 2017; Walsh et al, 2015; US Department of Justice, 2015; Bowers, Banda and Nijman, 2010). Consequently, staff and residents within those settings are likely to experience greater rates of exposure.

The effects of a suicide in the community on those with a close relationship to the deceased are well documented, with many systematic reviews considering the impact and postvention needs of those bereaved by the death of a family member or close other (e.g. Maple et al, 2018; Shields, Kacanagh & Russo, 2017). Relatedly, there is clear evidence that exposure to the suicidality of a family member (including ideation, attempts and suicide) has a strong and consistent relationship with a subsequent increased risk of suicidal behaviours in the exposed person along with other major mental health disorder including depression, bipolar disorder, psychiatric morbidity and complicated grief disorder (summarised in Jordan, 2017). There is also a wide literature and reviews considering the effects on health or therapy staff affected by a death of patient in the community (Dewar, Eagles, Kllienm Gray & Alexander, 2000; Alexander, Kleinm Gray, Dewar & Eagles, 2000; Adrienssens, 2012; Hendin, Haas, Maltzberger, Szanto & Rainowicz, 2004). Many similarities are present between different populations in the initial affective response to the event, including shock, confusion, sadness, a sense of loss and anger all frequently reported (Jordan, 2001). Moreover, commonly this is followed by questioning regarding whether they could or should have prevented the suicide, which result in differing levels of guilt and anxiety (Jordan, 2001; Kendall & Wiles, 2010).

There are clear differences, dependant on relationship, in the depth and processing of grief and mourning, with the possibility of lasting deep emotional significance for family members. This is often due to a perception of the 'choice' to die by the deceased, leading to a feeling of abandonment, rejection and desertion (Sands, 2009) and cultural stigmatisation of suicide

(Feigelman, Gorman & Jordan, 2009). Conversely, studies focussing on professional groups emphasise the impact of suicides on their practice and professional standing. For health professionals, a suicide appears to routinely result in a serious questioning of professional competence, fear of professional consequences from investigation, and immediate changes to professional practice out of fear of a further event (Alexander, et al., 2000). This provides evidence that professionals, who have differing levels of relationship and proximity to the deceased, are acutely affected by a suicide, although seemingly in a different manner to those with personal relationships. Connectedly, there is consistent evidence from systematic reviews that exposure to suicide is a risk factor for later suicide to both kin and non-kin (Maple, Cerel, Sanford, Pearce & Jordan, 2017; Pitman, Osborn, King, & Erlangsen, 2014). Given the potential major health implication, it is important to understand how this impact may translate for both professional and peer groups within high exposure populations.

Although much is known about the impact of exposure to suicide on family and community health professionals, there is far less evidence on the effects on peers or for other professional groups who work with those who die by suicide, particularly within institutional settings. (Barry, 2017; Hales et al., 2015; Seeman, 2015). Both staff and residents within institutional settings over the medium to long term have the potential to form close or friendly relationships with those who engage in suicidal behaviours, and the likely impact of this type of relationship cannot be easily disentangled or assumed from examination of the community professional, or family bereavement literature. To capture the distinct differences in this experience, it is important to capture the impact of the exposure to suicide and suicidal behaviours within these settings, as distinct from the bereavement of a close person, where mourning is more personal. Studies have suggested that institutions may provide the opportunity for suicide contagion amongst residents leading to a clustering of suicides (Taiminen, 1994). Although the evidence on clustering is mixed, there is some evidence of an effect (Hawton et al, 2014; Niedzwiedz, Haw, Hawton & Platt, 2014). This suggests that gaining a deeper understanding of how 'contagion' may occur might also benefit suicide prevention approaches in these settings. We must develop a clearer understanding of the impact for both staff and peers within institutions. Exposure (direct or indirect) has also been shown to have a lasting impact on many other groups e.g. community professional and schools (Wurst et al, 2013), and has relevance for the development of effective response (and the mitigation of any long-term impacts) which requires a focussed understanding of their needs.

The idea of postvention refers to activities developed with, or for, people bereaved by suicide to help facilitate their recovery and mitigate adverse outcomes (Andriessen, 2009). As highlighted by Shield et al. (2017), it is necessary to have a good working understanding of the grief process in order to develop effective interventions. Although institutional settings have exceptionally high rates of suicide, few structured interventions on postvention support for such settings have been recorded in the literature. Indeed, a systematic review in 2011

failed to identify a single study evaluating suicide postvention interventions within institutional settings (Szumilas & Kutcher, 2011). This points to the need for greater attention to be paid to the development of services to meet the needs of these high exposure groups.

Therefore, the purposes of this study were: 1) to identify the impact of exposure to a suicide or attempted suicide within either a prison or inpatient setting, amongst people resident or working in that setting; 2) to consider the mechanisms by which future suicidal or self-harm behaviour may occur as a result of that exposure.

3 Method

3.1 Protocol and registration

The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were followed (Moher, Liberati, Tetzlaff, & Altman, 2009), and the protocol was prospectively registered ("PROSPERO - International prospective register of systematic reviews"; registration number CRD42018110188). to minimize reporting bias through adherence to the initial protocol and to avoid duplication.

3.2 Search strategy

A systematic search for eligible studies was carried out during September 2018 in the following databases: PsycINFO, PubMed, Scopus, Criminal Justice Abstracts, Sociological Abstracts, Social Services Abstracts, ASSIA and Cochrane Library. Additional targeted searches were conducted by hand-searching citations and reference lists of reviews and articles. Targeted searches were conducted on Google Scholar, Ministry of Justice and Correctional Services Canada websites on exposure to suicide and clustering of suicide. Targeted searches on specific authors and contacting those authors (identified from previous papers), were conducted separately.

Keywords: (suicide OR suicid* OR near-lethal OR life threatening OR self-harm OR self-injury OR self-inflicted death OR hanging OR ligature OR death OR sudden death*) AND (prison OR corrections OR correctional OR jail OR custod* OR penal OR detention OR penitentiary OR incarceration OR inpatient) AND (effect OR impact OR outcome OR consequence OR result OR Exposure OR contact OR experience* OR witness* OR cluster* OR contagion OR imitation OR identification OR postvention).

3.3 Study eligibility

Inclusion and exclusion criteria were as follows:

- i. Study design: All studies utilising recognised research methodology and presenting primary evidence with analysis were included. All reviews, commentary, opinion and those which did not present primary evidence or non-analysed observations were excluded.
- ii. Population: Both staff and residents in prison or inpatient settings were included. Samples not in prison or inpatient at the time of the death (e.g. community or outpatient samples) were excluded. Papers with samples with less than 50% of eligible participants (or where patient sample was not specified) were excluded. Papers with less than 50% of the sample aged 18 or over were excluded.
- iii. Intervention: Papers must include direct or indirect exposure to suicide, sudden death or near-lethal self-harm whilst in prison or as inpatient. Papers examining non-suicidal self-harm but without evidence regarding near-lethal events were excluded.
- iv. Outcomes: All directly measured or identified outcomes were included. Findings based on third party observations of others were excluded. Papers considering

whether deaths were a cluster, without specific analysis of the mechanism, were excluded.

- v. Studies in any language including unpublished (e.g. doctorates) reports were considered.

3.4 Definition of Exposure to Suicide

For the purpose of this review, a broad definition for exposure to suicide was implemented due to very few studies providing a definition or clarity regarding the location, proximity or relationship between the participants and deceased. As such, the following definition of exposure to suicide was developed and utilised for this review: 'Self-reported or author-defined exposure to another's suicidal behaviour (suicide or attempted suicide) whilst they both were either working or residing within the same institution'. Table 1 outlines a summary of definitions or assumed relationships outlined in the review papers.

Figure 1: PRISMA flow diagram of search strategy for systematic review

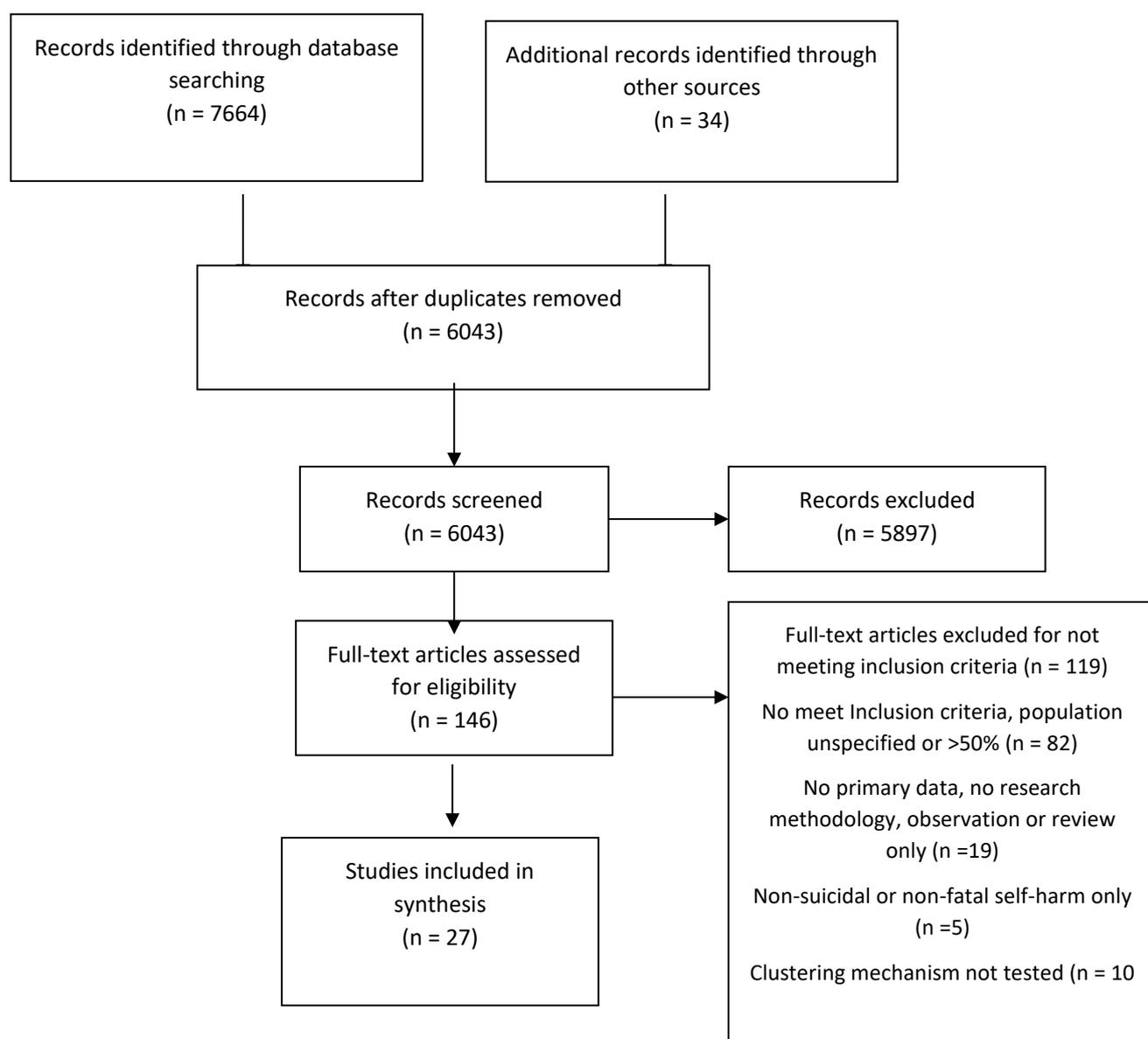


Table 1. Characteristics and findings of included studies (N = 27)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
1	Awenat et al., 2017 Interview N=20	Mental Health Staff One NHS Trust UK	24% male /70% female Age unknown	Lifetime professional direct exposure or hearing about an inpatient suicide or attempted suicide	Participants' background experience, training to work with patients who are suicidal, understanding of mental health, suicidality and therapeutic approaches.	Themes: Experiences of suicidality, conceptualising suicidality, talking about suicide.	28 (Mod)
2	Barry, 2017 Interview N=14	Prison Staff Irish Prison Service, Republic of Ireland	Age & Gender unknown	Lifetime professional experience of dealing with a suicide in prison	Participants' experiences of dealing with a death in custody, emotional responses to a prisoner's death, engagement with support, coping in the aftermath of their encounter with a death.	Themes: Responding to deaths in custody, keeping up appearances, impact of experiencing death in custody, moving 4 between two worlds	22 (Low)
3	Bertee, 2012 Questionnaire N=65	Prison Staff, USA	87% male /13% female Age unknown	Lifetime professional experience of witnessing or hearing about resident	Impact of a range of experience of being a correctional officer. Variables included: contact with inmates, experiences of violence and suicide, practices in self-care, employ supports Secondary Traumatic Stress Scale (STSS)	Reports of social, environmental, personal and professional support negatively correlated with IES score. Negative correlation between job satisfaction and STSS score.	25 (Mod)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
				suicide in prison	Impact of Events Scale-Revised (IES-R)		
4	Bohan & Doyle, 2008	Qualitative N=9 Nurses acute MH ward, Ireland	Age & Gender unknown	Lifetime professional experience of inpatient suicide or suicide attempts.	Explore psychiatric nurses' experiences of and reactions to a patient suicide or suicide attempt and elicit their perceptions of the support they received post-incident.	Four themes: nurses' experience of patient suicide/suicide attempts, nursing care following an incident of suicide/suicide attempt, feelings experienced by nurses following a suicide/suicide attempt and the support for nurses following a suicide/suicide attempt.	24 (Mod)
5	Borrill et al, 2004	Interviews N=50 Prison Staff England & Wales.	50% male /50% female Age unknown	Direct involvement in a prison suicide within previous 3 – 7 months.	Reaction to death, coping strategies, training or preparation for coping with SID in future, Trauma Symptom Inventory, Social Support Scale, Styles of Coping, + 3 unidentified scales	50% distress/shock /tearfulness tiredness, smoking, drinking, 36.7% above PTSD clinical threshold, 10% persistent visual images, 20% guilt about own actions, 20% questioned if could have done more. Pressure to be at work due to already stretched service, 50% did not want/need time off, 50% found talking to others helpful.	20 (Low)

	Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
6	Bowers et al, 2006	Interviews N=56	Mental Health Staff, One NHS Trust, UK	56% male /44% female Age unknown	Lifetime professional exposure to all types of serious untoward incident including suicide and attempted suicide.	A multi-method longitudinal investigation of links between adverse incidents and staff factors, using The Operational Philosophy and Policy Interview: general care philosophy, concept of purpose of acute inpatient psychiatry, interdisciplinary relationships, team strengths and weaknesses, ward structure, recent history of events and changes on the ward, plans for changes in practice.	Themes: Depression and demoralisation of staff team. Ruminations and guilt about whether anything could have been done, and fear of re-occurrence. Support, investigation and debriefs perceived positively and negatively depending on factors. Patient responses perceived as minimal or risk of imitation.	25 (Mod)
7	Cotton et al, 1983	Interviews N=23	Psychiatric staff Long-stay psychiatric unit, USA	Age & Gender unknown	One year after four inpatient suicides.	Description of events on the unit after SID, personal reactions to SID from moment of hearing news to present, impression of which activities and administrative decisions were or were not helpful throughout.	Staff response phases: Working in shock, emergence of overwhelming feelings, new growth around emotional scars.	22 (Low)
8	Dhaliwal & Harrower, 2009	Interviews N=9	Prisoners, Midlands Prison, England & Wales.	Gender unknown Mean Age = 42	Exposure is not the focus; ever supported other prisoners after a prison suicide.	The aim is to explore Listeners' experiences through a qualitative reflection on their practice, and how Listeners make sense of their experience (not specific to suicide).	Themes: Benefits of being a listener, personal growth, changes in beliefs/attitudes, challenges, resilience, needs	26 (Mod)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating	
9	Favril et al., 2017	Questionnaire N=1203	Prisoners, 16 Flemish prisons, Belgium	100% male Mean age: 37.7 (11.9)	Ever been confronted with or witnessed suicidal behaviour by fellow prisoner.	Relevant aims of study to investigate a wide range of both importation and deprivation variables in relation to suicide ideation while incarcerated. Demographic variables, criminological variables, employment status, cell accommodation and overcrowding perception, drug use, medication, psychiatric history. Paykel Suicide Scale Social Support Scale Measuring the Quality of Prison Life	Exposure to SRB in prison & attempted suicide history positively associated with suicidal ideation.	33 (High)
10	Freyne & O'Connor, 1992	Case Study N=6	Prisoners, Forensic psychiatric hospital, UK	100% Male Mean age = 25.7	Psychiatric patients with distress after witnessing or were friends with someone hanging incident in prison.	Describe the psychological distress occurring in the prisoners who witnessed or were friends of prisoners who hanged themselves. DSM-III R PTSD criteria. Previous psychiatric history Premorbid personality	Difficulty sleeping and nightmares Intrusive thoughts and memories of victim. Withdrawn, diminished interest in activities, social isolation. Depression, flattened affect & feeling numb. Feelings of self-blame. Anxiety & tearfulness. Suicidal thoughts.	17 (Low)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
11	Hales et al., 2003 Questionnaire N=355	Prisoners, Young Offenders Institution, England & Wales.	100% male Mean age: 18.01	Lifetime number of people known who had attempted suicide, separated into known in prison.	Determine the number and proportion of young male prisoners who have known people who have attempted suicide inside (and outside) prison, their relationship with such people and the relationship between knowing a suicide attempter and own self-harming behaviour. Questionnaire for study: demographic details, total number of people known who had attempted suicide, total number of DSH incidents & suicide attempts (including own).	20% attempted suicide/DSH. Sig. association between own SRB and total number of people known who had attempted/completed suicide. Length of time in prison and own DSH associated with number of people known to ppt who had attempted suicide (neither significant if died by suicide).	31 (High)
12	Hales et al., 2014 Interview N=68	Prisoners, Young Offenders Institution, England & Wales.	100% male Mean age: 19	Lifetime experience of contact with another's SRB in prison.	Generate a thematic account of the experience of contact with another's SRB in prison and explore the core concerns of young male prisoners who have had the experience.	Themes: Events preceding, during and after incident. Appraisal of victim and motivations. Emotional response to incident. Support experiences.	33 (High)
13	Hales et al. 2015 Case Study N=90	Prisoners, Young Offenders Institution, England & Wales.	100% male Mean age: 19.44	Contact with an incident of SRB in prison within the previous 6 months.	Ascertain whether young male prisoners who have had contact with another person's SRB while in prison are more likely to have mental health difficulties 6 months after that contact. The nature and extent of any difficulties and any	Witnesses more likely to have engaged in own SRB prior to interview. Witnesses higher impulsivity. Witnesses more likely to have been bullied in prison. Witnesses more depression and/or anxiety 6	36 (High)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
					factors associated with any morbidity. Interview: Demographics, family & psychiatric history, offence/detention history, life events, substance misuse, details of incident & whether formal debriefing/time with officers/outcome info General Health Questionnaire 28.	months after	
14	Hamaoka et al., 2007 Questionnaire N=12	Psychiatric staff Psychiatric ward in hospital Country: USA	Age & Gender unknown	Responding to or became aware of an inpatient suicide – 13 months previously.	Examine medical student's responses to an inpatient suicide. How you learned of the suicide, your role (if any) during the event of in the patient's care, personal reactions, most difficult aspect of event, positive response (if any), actions taken by clinical staff to address your concerns, perceived effect on colleagues, perceived future effect on self, helpful interventions, ways in which clinical staff might better address medical students' concerns regarding patient suicides.	92% sensitivity towards colleagues. 58% appreciation of help. 58% prevention recommendations 58% saw incident as personal education. 42% sadness & nightmares. 42% sense of loss.	16 (Low)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
15	Hargate et al, 2017 Interviews N=11	Mental Health Staff, Medium-secure Mental Health Unit, UK	82% male/ 18% female Age unknown	Lifetime professional experience of self-harm and/or suicidal behaviour in other people.	Experience of self-harm and SRB in other people (patients) and what aspects are important when providing and receiving support.	Three superordinate themes: The impact of suicide and self-harm (desensitisation, self-harm, desire to help); the role of others (Talking, Support); the importance of understanding and experience (including training and education; need for clarity).	34 (High)
16	Hayes, 1997 Case Study N=9	Prisoners, County Detention Center, USA	100% male Age unknown	Suicides occurring by residents in same institution.	Summarise each of the nine recent deaths and identify common features of suicides.	56%with prior history of SRB and/or psychiatric inpatient treatment No evidence to suggest contagion though 2/9 victims die by suicide shortly after suicide of prominent person in community.	18 (Low)
17	Kayton & Freed, 1967 Mixed Method: Patient records and questionnaire N=87	Psychiatric staff and patients, USA	Age & Gender unknown	Direct exposure or made aware of inpatient suicide 7-17 days previously.	Analysis of patient and staff reactions to a specific suicide. Nursing notes, patients' charts, informal discussions, psychiatric observations. Questionnaire for study: Free-response reactions to incident, checklist reactions to incident (none, mild, moderate, severe)	Staff taught patients nothing could have been done Denial and resistance Psychotic patients: disorganised thinking, guilt & anger. Hopelessness and despair. Anger towards staff. Responses intensified in patients with prior SRB. Staff felt compulsive urge to help, shock/numbness, detachment,	15 (Low)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating	
						sadness/ sympathy, and anger at patient.		
18	Marzano, 2011	Mixed Method: Interview and questionnaire N=60	Prisoners, E&W	100% female Age: 25.5 or 26	Lifetime exposure (non-specific) to other prisoners' suicidal or self-harm behaviours	Identify socio-demographic, criminological and psychological variables associated with near-lethal self-harm.	“Prisoners who had engaged in near-lethal self-harm were significantly more likely than controls to have lost a family member to suicide... However, cases were no more likely than controls to report a family history of attempted suicide and self-harm, or to have been exposed to friends’ or other prisoners’ suicidal and self-harming behaviours”	34 (high)
19	McKenzie, 2007	Secondary data N = 657 SID (424 natural causes)	Prison, Dataset of all deaths in all prisons for 10 years (1993 - 2002), England & Wales.	Age and Gender unknown.	All prison deaths for 10-year period.	Aimed to estimate the effect size, or contribution of imitative behaviour to the overall suicide rate.	No significant clustering of natural causes. Suicide imitation rate of 2.1% at 15 days to reach a maximum, of 6% at 120 days.	24 (mod)

	Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
20	Rissmiller & Rissmiller, 1990	Case Studies from Case Notes N=4	Psychiatric inpatients, Long-stay psychiatric facility, USA	100% male Mean age: 29.25	Suicides occurring by residents in same institution.	Psychiatric history. Previous SRB. Participation in group discussions of suicide. Length of stay.	5-12 year history of schizophrenia 75% had one previous attempt at suicide 50% (1 missing data) participated in groups 3 months – 5 years stay length	16 (Low)
21	Rivlin et al., 2013	Interviews N=120	Prisoners 19 English prisons Country: UK	100% male	Lifetime knowledge of people in prison who had self-harmed or died by suicide.	Investigated distal (e.g. childhood trauma) and more proximal (e.g. recent life events) factors, together with a range of environmental factors amongst prisoners with near-lethal suicide attempts (Adapted Checklist)	Cases were no more likely than controls to have been exposed to self-harm or suicidal behaviours whilst in prison.	35 (High)
22	Sacks & Eth, 1981	Case Study from case notes. N=3	Psychiatric patients, USA.	33% male / 67% female Mean age: 31.6	Patients who died by suicide within same institution.	Focus on how the suicide of one patient may have strongly affected two other patients. Circumstances of suicide/attempt Family history of suicide Relationships with Staff	Same school at different times. Similar pathologies regarding failure. Anger with staff for not preventing others	16 (Low)
23	Slade & Lopresti, 2013	Questionnaire N=281	Prison Staff, 6 English prisons, England & Wales.	65.4% male / 44.6% female	Someone they had contact with or witnessed serious self-harm, suicide	Outline potential impact on staff of challenging experiences. Experience of SRB, experience/witness of challenging situation Emotional Labour Scale	No significant impact on resilience. Acceptance of suicide highest with exposure 2-5 times, lowest 10+ times. Lower bond between staff and prisoners after 10+ exposures to serious DSH.	27 (Mod)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
			Mean age: 41.4	attempt or suicide (separate categories).	Agnew Relationship Measures Attitudes Towards Suicide Scale Resilience Scale		
24	Taiminen et al, 1992 N=6	Clinical record and interview Inpatients from psychiatric hospital, Finland	83% male / 17% female Mean Age: 40.8.	Patients who died by suicide in same institution.	To examine accumulation of suicides in order to determine whether it was caused by the Werther effect.	Reported four main factors: Suggestion or the Werther Effect; breakdown of the professional self-confidence of staff; propagation of a hopeless atmosphere; psychotic identification.	18 (Low)
25	Takahashi et al, 2011 N=531	Hospital Staff, Inpatient and outpatient services, Japan	29% male / 71% female Mean age: 41.9	Unspecified exposure to inpatient suicide.	Examine experiences of psychiatric nursing staff exposed to inpatient suicide. Questionnaire designed for study: Experience of exposure to completed inpatient suicide, availability of mental health care services for affected nursing staff, perceived need for post-event mental health care initiatives, on-site support systems, presence and scope of educational training conducted for professional development of psychiatric nurses Impact of Events Scale Revised	Ppts who encountered suicide: 13.7% high PTSD risk individuals 80% no mental health care implemented 26.4% attended suicide & prevention seminar in last 3 years	27 (Mod)

Study	Design	Population, Setting & Location	Gender & Age	Exposure	Aim of study and measures	Relevant Outcomes/Findings	Quality Rating
26	Wright et al, 2006 Questionnaire N=49	Prison Staff, UK	63% male / 37% female Age unknown	Lifetime event: Closely involved in dealing with a specific prisoner suicide.	Investigate the incidence of trauma-related symptoms in members of prison staff who have experienced a recent prisoner suicide; and test mediators. Measures included: Trauma Symptom Inventory; Locus of Control of Behaviour Scale; 28-item Problem Solving Style Questionnaire; The Life Orientation Test; The Significant Others Scale	CLINICAL PTSD: Prior exposure to SID predicted 38% variance in traumatic symptoms Greater direct involvement in incident associated with higher symptom scores. NORMAL RANGE SYMPTOMS: Problem-solving helplessness & avoidance correlated negatively with traumatic symptoms	27 (Mod)
27	Zemishlany et al, 1987 Case Study from clinical notes N=3	Psychiatric inpatients, England & Wales.	100% female Mean age: 24.6	Three cases of suicide attempt by burning in one institution.	Previous suicide attempts Verbal admission of imitation Psychiatrist observations	"The tendency to suicide attempts existed in all three patients, but it seems reasonable to suggest that the choice of method and timing were influenced by imitation"	15 (Low)

3.5 Data extraction and procedure

Specific findings as reported by the author or where specific evidence was provided against the study questions were extracted, and pre-specified study characteristics were recorded. A second individual extracted data independently, and any disagreements resolved.

A meta-analysis could not be performed due to a lack of homogeneity within the study types, outcomes and measures. Overall, the review included only 6 quantitative papers with no overlap in the use of measures or specific outcomes. Therefore, a narrative synthesis prompted by recommendations from guidance on systematic reviews (Popay et al, 2006) was conducted.

Narrative synthesis was deemed the most appropriate analysis approach and demonstrated rigour through adherence to the original protocol. To assure validity in the narrative synthesis, the researcher followed the framework for narrative synthesis recommended by Popay et al. (2006).

Framework for Narrative Synthesis:

- Developing a theory of how the intervention works, why and for whom
- Developing a preliminary synthesis of findings of included studies
- Exploring relationships in the data
- Assessing the robustness of the synthesis

There is no consensus on the methods for a narrative synthesis. However, to meet standards of rigour, the review sought to identify and explain the heterogeneity (any differences between the studies' reported findings within the primary evidence), to ensure that synthesis went beyond a traditional literature review. The synthesis into transparent themes, detailing all data, enabled an integration of the findings and determined the quality of the evidence.

Initial synthesis started by reducing and grouping the primary data into an organised and manageable system. A summarised display of the different effects reported by the studies was developed. From this display, the research team reviewed and compared the findings to identify emerging patterns and themes. The final stage of the synthesis was to assess the robustness of the evidence utilising the quality appraisal grading plus the breadth and consistency of the evidence. This process is described in section 3.6.

3.6 Quality Assessment

3.6.1 Individual study quality

Eligible studies were assessed as to the reliability of the results using the quality checklist (Appendix A) outlined by Hawker (2002), due to the heterogeneity of paradigms and methods

(including Case study, Qualitative and Quantitative). Each study was scored on 9 elements of research quality on a 4-point scale from 1-4 (good (4), fair (3), poor (2) and very poor (1)). Therefore, each paper could receive a maximum score of 36 and minimum score of 9 with an overall rating based on this score. There were no suggested cut-offs for classifying the quality rating of an article by Hawker et al (2002). Following the suggestions by Lorenc, Petticrew, Whitehead et al, (2014) the following quality grading system was employed: 'high quality' (24–36 points), 'medium quality' (24–29 points) and 'low quality' (9–24 points). The overall rating is provided in Table 1. Within the included papers, 11 were graded as Low quality, 9 as Moderate quality and 7 as High quality. The relatively high number of low-quality studies may reflect the topic of study (both suicide and clustering of suicide) as one difficult to capture due its rarity and unpredictability.

Although it is acknowledged that the inclusion of low-quality studies may skew or bias conclusions, the exclusion of these studies would represent a significant loss in the available data for this rare event. Therefore, the studies have been retained with descriptions of the size, strength and scope of each finding with caveats included, where relevant, on conclusions derived solely from low quality studies.

3.6.2 Confidence of evidence within themes

To aid interpretation, each theme also received an overall confidence rating based on three elements, building on the recommendations outlined by Department for International Development (2014). The individual scores and overall confidence rating for each theme is outlined alongside conclusions in section 4.8 (Table 5).

3.6.2.1 Strength of evidence

Each theme is scored on the strength of the evidence for the theme, based upon the number of high, moderate and low-quality papers underpinning the theme, as outlined in Table 2.

Table 2: Descriptor for strength of evidence coding

Strength	Descriptor
High	Many/ Large majority of single studies reviewed have been assessed as being of a high quality, demonstrating adherence to the principles of research quality.
Moderate-High	Approximately equal numbers of high and moderate quality papers
Moderate	Of the single studies reviewed, approximately equal numbers are of a high, moderate and low quality, as assessed according to the principles of research quality (or are largely moderate quality).
Moderate-Low	Includes equal numbers of moderate and low-quality papers.

Low	Many/Large majority of single studies reviewed have been assessed as being of low quality, showing significant deficiencies in adherence to the principles of quality.
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3.6.2.2 Body of evidence

The body of evidence was also scored, as follows, based upon the number of papers which reported the theme: Small = 1-2 papers; Small-Medium = 3-4 papers; Medium = 5-6 papers; Medium-Large = 7-8 papers and Large = 9+ papers.

3.6.2.3 Consistency of evidence

The consistency of the theme across both inpatient and prison settings was also noted (Yes/No).

3.6.2.4 Overall confidence rating

Finally, utilising the three elements, each theme was finally given with a confidence rating based upon the following descriptors outlined in Table 3. A summary of themes, grading and scoring is outlined in Table 5.

Table 3: Confidence rating descriptors

Categories of evidence (points in Table xx)	Strength + Body + Consistency
Very Strong (9-10)	Large body of high-quality evidence and consistent
Strong (7-8)	Large/Medium body of high-quality evidence and generally consistent
Medium (5-6)	Medium body of moderate quality studies, generally consistent.
Limited (3-4)	Low-medium body of moderate-to-low quality studies and generally not consistent.
No evidence (1-2)	No/few studies exist.

3.7 Study Characteristics

This review identified 27 studies (Figure 1) published between 1967 and 2017 from 6 different countries (Belgium, Finland, Ireland, Japan, USA and UK). These included 3,404 participants comprising a total of 2,473 prisoners, 459 prison staff, 694 hospital staff and 74 inpatients included across the studies.

The mean age and sex of the sample was only available for some of the resident populations only, for whom the mean age was 26.85 years (prisoners: 23.11 years, inpatients: 33.06) and 69.63% of the overall resident sample were male.

There were 15 studies from prison and 12 from inpatient settings. There were 11 focussed on staff groups only; 12 on residents and 4 which included both staff and residents.

The methodologies used in the papers were varied, with 10 qualitative studies (using interviews), 7 quantitative studies (2 cohort studies, 4 cross-sectional questionnaire and 1 population studies) and 5 case studies. There were 5 mixed method studies which employed both interviews and questionnaires.

3.8 Data synthesis

A meta-analysis was not achievable for this review, due to the low numbers of quantitative studies and a large heterogeneity in the included studies, resulting in no overlap in either measures or specific outcomes. A thematic synthesis of findings was undertaken, in line with the approach taken by Hawker (2002).

4 Results and discussion

The following themes and sub-themes were synthesised, based upon the findings and evidence within the included papers; see Table 1. The detailed strength of evidence ratings which are collated into the overall confidence in theme rating are reported in Table 5.

The study numbers assigned in Table 1 are used from herein to refer to individual studies within the synthesis of results, conclusions and recommendations.

Table 4: Table of themes and sub-themes

Theme	Sub-themes			
1. Prevalence of exposure	Rates of exposure			
2. Early Cognitions	Shock and confusion	Blame and responsibility	Attitudes and attributions to the deceased	
3. Early Emotions	Guilt	Loss, grief and devastation	Sadness, distress and empathy	
4. Professional competence	A crisis of confidence			
5. Institutional roles and expectations	Business as Usual	'Feeling rules' and the positioning of support		
6. Professional responses	Anxious avoidant	Active or overzealous prevention		
7. Coping and Support	Avoidant Coping	Interpersonal Support	Communication and updates	Additional helpful factors
8. Longer term outcomes	Stress responses (PTSD & Intrusive memories)	Suicidal and self-harm behaviour (including Clustering)	Vulnerabilities for poorer outcomes	Opportunity for learning and development

4.1 Strength, Body and Consistency of evidence for each theme

The strength of the evidence (based upon the quality of research underlying each theme) the breadth of the body of evidence (the number of research papers reporting each theme) and

the consistency of the evidence across both inpatient and prison settings are outlined in Table 5 (as outlined in Method). Further, a summary of the overall confidence in each paper is provided in Table 5 to aid interpretation. Where overarching themes had multiple sub-themes were present, only the sub-themes were rated, due to variability in the ratings.

In all, one very strong theme (vulnerabilities to poorer outcomes) and six strong themes (rates of exposure, shock and confusion, crisis of confidence, interpersonal support, intrusive memories and emotional saliency and relationship with own suicidal behaviour) were identified within the literature.

Table 5: Overall confidence scoring for each theme

Theme	Sub-theme	N High Quality	N Moderate Quality	N Low Quality	Strength of evidence	Body of evidence	Consistency across settings	Overall confidence in evidence
Prevalence of exposure	Rates of exposure	3	4	0	4	4	Yes	Strong
Early Cognitions	Shock and confusion	2	3	3	4	4	Yes	Strong
	Blame and responsibility	1	2	2	3	3	Yes	Moderate
	Attitudes and attributions to the deceased	1	3	2	3	3	Yes	Moderate
Early Emotions	Guilt	2	0	3	3	3	Yes	Moderate
	Loss, grief and devastation	1	1	1	3	2	Yes	Moderate
	Sadness, distress and empathy	1	1	3	3	3	Yes	Moderate
Professional Competence	A crisis of confidence	1	4	3	4	4	Yes	Strong
Institutional roles and expectations	Business as Usual	0	2	2	2	2	No	Limited
	'Feeling rules' and the positioning of support	0	1	4	1	3	Yes	Limited
Professional responses	Anxious avoidant	0	3	2	3	3	Yes	Moderate
	Active or overzealous prevention	0	2	2	2	2	No	Limited
Coping and support	Avoidant Coping	0	1	3	1	2	Yes	Limited
	Interpersonal Support	3	2	1	4	3	Yes	Strong
	Communication and Updates	2	1	2	3	3	No	Moderate
	Additional helpful and unhelpful factors	0	3	2	3	3	Yes	Moderate
Longer term outcomes	Stress responses (PTSD & intrusive memories)	2	0	2	4	3	Yes	Limited
	Suicide and self-harm behaviour	5	1	0	5	3	Yes	Strong
	Clustering mechanism (imitation)	0	3	4	3	4	Yes	Strong
	Vulnerabilities for poorer outcomes	2	3	4	4	5	Yes	Very Strong
	Development and Learning	0	0	4	1	2	Yes	Limited

4.2 Prevalence of exposure

4.2.1 Rates of exposure

Seven studies report on level of prevalence of exposure to suicidal behaviours amongst groups not specifically targeted for their exposure experience [3, 10,11,18,21, 23, 25]. Overall, the confidence rating for evidence within this theme was strong. Six studies were prison studies with one inpatient study identified.

Research across Belgian prisons state that 47% of prison residents self-report exposure to suicidal behaviour [10], and in the UK young offenders 29.6% reported exposure to another's suicidal behaviour whilst in prison [11]. In addition, for young offenders who reported exposure, one-third of those incidents had been directly observed with 6% reporting the behaviour as that of their cellmate [11]. For adult women in prison rates of 43-51% exposure to another prisoner's suicide and of 71-74% for exposure to attempted suicide were reported [18]. For adult male prisoners, a rate of 68-71% exposure to another prisoner's self-harm or suicidal behaviour was reported [21].

Within the sole inpatient staff sample, an exposure rate to suicide of 55% was reported [25]. For prison staff samples, one study [23] reported 66.5% of staff having contact with someone who subsequently died by suicide, with 60% having witnessed a fatal or near fatal suicide attempt. Another prison study [3] did not report prevalence but staff reported having heard about or witnessed an average of 6.45 (SD = 8.35) episodes of suicidal behaviour.

4.2.2 Prevalence of exposure conclusion

The rates of exposure to suicidal behaviour within institutions are between 24-74% amongst an over 18 adult populations, with 50-60% of both staff and residents report having been exposed to a death by suicide. A recent systematic review of community exposure to suicide reported a life-time prevalence of 21.83% (Andriessen et al, 2017), which suggests the level of exposure within institutional populations is two to three times higher than adult community levels.

4.3 Early reactions

The section of early reactions contains the themes of both *early cognitions* and *emotions*, which describe the initial reactions of staff and residents in prisons and inpatient settings, following a suicide or attempt.

4.3.1 Early cognitions

Nine studies presented findings on the initial cognitive responses to suicide in both staff and residents [1, 4, 5, 6, 7, 8, 12,15,17]. Overall, the confidence rating for evidence within this theme was strong. The cognitive response is broken down into three sub-themes, which

relate to the thoughts, attitudes or attributions emergent from the literature; a) *shock and confusion*, b) *blame and responsibility*, and c) *attitudes and anger towards the deceased*.

4.3.1.1 Shock and confusion

Eight studies [4, 5, 6, 7, 8, 12, 15, 17] indicated that shock and confusion were present after a death by suicide. Overall, the confidence rating for evidence within this sub-theme was strong. This theme is related mainly to the initial reactions of staff and residents upon hearing of a suicide, largely that of the suicide being unexpected. Of these studies, four reported findings from the perspective of both prisoner and inpatient in the same facility as the deceased [8, 12, 15, 17]. Within the resident cohorts, two studies reported shock as a response to hearing another prisoner had died [8, 12], two reported confusion or being unable to understand why this happened [8, 15], and one reported both denial and disorganised understanding of the suicide [17]. Four studies including staff cohorts also found a shock response although without the confusion identified within resident samples [5, 6, 17].

For these findings, there is a homogeneity of response to suicide within staff cohorts, with a wider variety of responses within resident cohorts (confusion, disorganised understanding and denial). It is not possible to confirm as to the reason for this difference, although plausible that staff would have less uncertainty and greater information. For example, staff would have more detailed case knowledge both before and after a death, clearer roles and processes in the event of a suicide and are more likely to gain answers to questions. Connectedly, one inpatient study highlighted that the sample felt they wanted more information including on 'why and how people start feeling like that' [15]. This suggests that rather than protecting residents through limiting information, that appropriate and more transparent information and updates to enhance clarity can be beneficial.

4.3.1.2 Blame and responsibility

Five studies reported findings around blame and responsibility for the deceased's suicide [1, 6, 7, 12, 17]. Overall, the confidence rating for evidence within this sub-theme was moderate. Within this sub-theme is the sense of responsibility, personal blame or being at fault arising from the suicide. This sense of responsibility appeared more in the staff cohorts, with participants reporting the anticipation or fear of blame being placed on them [1, 6, 7]; a sense of professional exposure/vulnerability for losing a resident to suicide with implications for their career [6]; and anger towards the deceased [7, 17] for putting them in this position of perceived blame/responsibility. In addition, a change in personal responsibility was identified [1] with medics suggesting that once they had experienced a suicide they then felt "There's very little you can do if somebody decides to kill themselves".

Amongst the resident cohorts, only one (moderate quality) prison study included aspects on responsibility and blame [12]. Here, the prisoners reported a fear of being blamed by prison staff for the suicide. In addition, there were elements of assuming personal responsibility for

the suicide either in the form of feeling as though they didn't do enough to stop the suicide, or through the deceased having suggested they were to blame prior to their death.

The likely prominence of this sense of blame and responsibility amongst staff cohorts (four out of five studies) is likely due to the position of responsibility already held by staff. This fear of a 'culture of blame' is in keeping with community health studies where professionals are being held more accountable for decisions and actions through audit and investigation (Power 2004). The sense of responsibility or anticipation of blame may stem from a place of not wanting to appear incompetent, ignorant of policy, or negligent in one's role as care provider and therefore is related to the 'a crisis of confidence' outlined in section 4.3.

4.3.1.3 Attitudes and anger towards deceased

Six studies had findings related to this sub-theme [1, 4, 5, 6, 12, 17]. Overall, the confidence rating for evidence within this sub-theme was moderate. This sub-theme relates to attitudes towards the deceased or attributing blame. Within the studies, there appears to be two distinct attitudes or attempts at resolution. One approach is indifference towards the deceased and/or their suicide [5, 6, 17]; two studies report staff reactions of indifference [5, 17; prison staff and inpatient staff respectively], and one an indirect finding based on staff perceptions of the reaction of inpatients [6]. The other approach is a more negative, fault-centric approach to the deceased, which is primarily present for inpatient staff and for prisoners [1, 4, 12, 14]. In this resolution approach, individuals tend to blame the deceased's mental state [12], alcohol and/or drug use [1, 12], or there is the possession of generally disrespectful, dismissive, or anger-based attitudes towards the deceased with perceptions that the suicide had been a 'spiteful act', or that the deceased had shown a lack of appreciation for all of the work undertaken with them previously [4, 12, 14, 17].

It is notable that at this initial stage of responding to a suicide, there is an absence of evidence for positive regard towards the deceased from either staff or residents. It may be that positive regard develops over time; or that the participants did not feel able to express greater positivity in their attitudes. There is evidence that, over time, less negative attitudes are more apparent in some inpatient staff groups with evidence of their attendance of the deceased's funeral with their family.

4.3.2 Early emotions

Seven studies present findings on the initial emotional responses to suicide in both staff and residents [2, 5, 6, 12, 14, 15, 17]. Overall, the confidence rating for evidence within this theme was moderate. Here, emotional response is broken into three clear subthemes of emotion emergent from the literature; a) *guilt*, b) *loss, grief and devastation*, and c) *sadness distress and empathy*.

4.3.2.1 Guilt

The only emotion consistently reported by all cohorts (healthcare staff, prison staff, inpatients and prisoners) was the feeling of guilt, present within five studies [5, 7, 12, 15, 17]. Overall, the confidence rating for evidence within this sub-theme was moderate. However, guilt may strengthen in different contexts between the cohorts. For prison staff, guilt appears to become stronger upon contact with the deceased's family [5], whereas for inpatient staff, there was some relief after family contact [7]. Conversely, for prisoners, guilt appears as more of a survivor's guilt in that they are still alive, and the deceased is not [12]. Both inpatients and inpatient setting staff describe guilt as a "guilt-trip" [15].

A sense of guilt is also identified within many community settings and indeed has been considered the most common emotional response to suicide (Halligan & Corcoran, 2001). It is also widely acknowledged as present within many types of bereavements (Li, Stroebe, Chan & Chow, 2014), which may account for its consistency across groups in this review. In staff, this emotion, across the wider literature, also appears to be strongly linked with a threatening of professional identity and reputational damage (Faberow, 2005) and linked with the 'Crisis of Confidence' discussed in section 4.4.

4.3.2.2 Loss, grief and devastation

This sub-theme captures the sense of personal loss felt in the event of suicide. Interestingly, these emotions/feelings appear to be found exclusively within the inpatient staff cohort [6, 14, 15], as none of the studies report these feelings from residents or prison staff in the wake of a suicide. Overall, the confidence rating for evidence within this theme was moderate within a specific sub-group. This feeling of loss appeared to be exacerbated when the deceased patient was well-known to staff [6], and sometimes extended into feelings of loss for the family of the deceased [14]. One study [15] involving hospital staff implicates loss as a product of greater levels of therapeutic relationships; the authors further suggest that loss may be a more difficult emotion for prison staff to experience, due to what the authors describe as the emphasis on security over welfare in that setting [15].

4.3.2.3 Sadness, distress and empathy

Five studies reported findings related to sadness, distress and empathy [2, 5, 6, 12, 17]. Overall, the confidence rating for evidence within this sub-theme was moderate. This has been differentiated as sadness and empathy not specifically related to personal loss. All studies used qualitative methods to collect their data. Inpatient staff were represented in two of these studies [6, 17] wherein they report sadness, sympathy and upset over the loss of a patient who died by suicide. Similarly, prison staff are referred to in two of the studies [2, 5] in which empathy, distress and tearfulness were reported following the suicide of a prisoner. Finally, sadness was reported in the prisoner cohort [12], although sadness, distress and empathy were not reported within the inpatient cohort.

4.3.3 Early reactions conclusion

There are consistent immediate and early responses across both staff and residents. There can be strong confidence that all groups report a sense of initial shock, with residents also reporting confusion. There is moderate confidence for all other sub-themes suggesting similarity across all suicide deaths. Within both staff groups, this was often reported alongside a concern that they would be blamed or held responsible for the death. There was also some indication of a fear of blame within some prisoner, but no inpatient samples. An initial indifferent, negative or blaming response to the deceased was also noted across most groups, which may be linked to concerns regarding being held accountable for the death. However, these findings could also be understood as part of the process of personal negotiation, of making sense or providing meaning to the death, as outlined in many bereavement studies (Mallon and Stanley, 2015; Shields, Kavanagh and Russo, 2017). It may be that when this process includes an attribution of blame to the deceased that it may initially interrupt a sense of positive regard towards the deceased. The evidence that these are the 'natural' responses is also supported by studies on bereavement by suicide, which also states that suicide bereavement per se draws higher levels of guilt, blame and responsibility related to the death by suicide, coupled with anger towards the deceased (Jordan, 2001).

Three further emotional states are reported in the literature included in this review, guilt, loss and sadness. Feeling guilty is widely acknowledged by both staff and residents in all settings and is a consistent finding, although the focus of the guilt appears to differentiate. There are differences in the reporting of a feeling of loss, as exclusively within inpatient staff and with sadness reported across both staff groups and prisoner samples. The personal aspect may reflect the settings, with prison staff reporting that the vocalisation of sadness and loss were 'off limits' (see section 4.2) and inpatient staff feeling able to acknowledge having formed a closer bond with the deceased. Although outlined in attitudes to the deceased, anger is also a commonly reported emotional reaction, which is often anchored within a personal sense of frustration or rejection. In addition, several studies report this early process as exhausting [7] with sleep difficulties and tiredness reported [5].

It is noted that there is little in the literature capturing the emotional response of inpatients to suicide. It is likely that this is due to the prominent use of questionnaires capturing psychopathology or through case notes only. It will be important for further research to provide a more rounded evaluation of the emotional experience of inpatients who experience a suicide in their setting.

4.4 Professional competence

4.4.1 A crisis of confidence

This theme relates to diminished professional competency, either actual or perceived, as well as the process of questioning whether one can prevent another person's suicide. Although

linked with trying to resolve blame and responsibility (section 4.2.1.2), this theme captures the crisis of confidence in their staff's own ongoing practice. Eight studies [1, 4, 5, 6, 7, 15, 17, 23] have reported findings for this theme, all but one of which were within the inpatient setting. Overall, the confidence rating for evidence within this theme was strong.

Two studies [15, 17] had findings from an inpatient resident's perspective from both high and low-quality studies. These studies highlighted the emergence of insecurity, hopelessness and despair after the suicide [17], as well as residents beginning to question whether suicide could ever be prevented or wishing they could have done more to prevent the suicide [15].

This theme was much stronger within the staff cohort with a stronger professional anxiety being notable across all studies. This anxiety has different strands. So, whilst there are similarities with residents in a general anxiety and depression [17, 4] as well as a sense of suicide being "untreatable" [1], there were some distinctions in how a crisis of confidence presents for staff.

The most common issue reported was a fear regarding their professional reputation and/or competence as a professional and is reported as striking at the core of feelings about professional competence and esteem [5,7]. This fear resulted in the staff questioning their own usefulness in suicide prevention or feel a failure, particularly after an unsuccessful resuscitation attempt [1, 5] and a sense of demoralisation both personally and across the team [7, 6].

Quite specific to their role as "caregiver", staff reported fears for other patients, including causing more harm to other residents [1], fear of another suicide occurring despite their best prevention efforts [6], or because of heightened perception of risk in other patients [7].

4.4.2 Professional competence conclusion

This theme is reported widely and suggests strong confidence in the presence of this theme and across settings. This review indicates that the crisis of confidence appears to split through a lens of perspective on the individual's relationship to the deceased; staff notably have confidence issues arising from their professional ability to continue to prevent and intervene in suicide (perhaps due to a duty of care), whilst residents do not appear experience this "burden" of duty to the same extent from the findings in the studies. This crisis starts early in the process, within hours, but can continue for an extended period after the initial reactions have subsided.

This crisis of confidence is a commonly reported health professional responses to a suicide, whereby, in contrast, it was identified within a single prison study. There is suggestion that this crisis of confidence is directly linked to the sense of guilt or responsibility (Faberow, 2005; Kendall and Wiles, 2010). However, if managed well, this crisis process could also provide a

catalyst for professional and personal learning and for practice development [7]. However, many studies report things being done 'to them' or 'to the ward' after the event and these studies (including the prison study) rarely reported individual learning [5, 6] suggesting that the full potential for learning and development may have been stifled.

4.5 Institutional roles and expectation

This theme encapsulated the perceived expectations of the institution, including mainly staff but also resident views of their roles and expected response to the suicide.

4.5.1 'Business as usual'

Four studies (two set within prison and two within hospital settings) provided qualitative evidence of an institutional expectation that the priority was to return to 'business as usual' [1, 2, 5, 6]. Overall, the confidence rating for evidence within this theme was Limited.

All four studies report a driving force to return to full operation or to re-establish the ward/prison routine 'as quickly as possible', and all studies report this affecting staff negatively due to not being allowed time to deal with their own feelings. This was more strongly stated in the prison studies, whereby, returning to full operational duties was the priority once the emergency response procedures had been concluded [2, 5]. Similarly, staff reported an unwillingness to either take time off work or to appear reluctant to engage in all expected roles. Conversely, they still expressed a wish for management to remove them from some tasks or to provide mandatory time off, suggesting they did not want to return to work and wished the element of choice to be removed. In conflict with this expectation, two studies reported an ongoing effect on the wider institution with one prison-based study reporting a prison after a suicide as 'eerie and bleak' [2] and within hospital settings a reported change in ward 'atmosphere' [6]. This suggests that there is a widespread effect of suicide within an institution although staff feel compelled to return to 'normal' as quickly as possible.

Within two studies, there was also a sense of continuing forward, perhaps acknowledging the occurrence of the suicide, but driven by a need to continue working for the sake of either keeping up professional appearances or for the sake of continuing to manage the workings of the prison. Both studies [2, 5] used qualitative interviews with prison staff, and one being specific to prison officers [2]. Reports from prison staff suggest a desire to get back into the daily, regular running of the prison, due to being mindful of other prisoners and the impact a suicide may have [2]; this is echoed where "getting on with it" is suggested as a helpful distraction, to dwelling on the incident [5].

4.5.2 'Feeling rules' and the positioning of support

Five papers provide direct or indirect evidence on emotional expression and the culture of support within the institution [2, 5, 6, 7, 14]. Overall, the confidence rating for evidence within this theme was Limited.

Two prison staff papers [2, 5] alone report a strong embedded cultural expectation of not showing emotion. These were referred to as 'feeling rules' [2] with the vocalisation of sadness, distress or loss being 'off-limits'. Staff also felt uncomfortable about disclosing their feelings to anyone inside the prison and preferred to share these with an outsider [5]. This was labelled in one paper as a masculine cultural expectation which places a high value on bravado [2]. It was considered that empathy was an acceptable emotion to be expressed in prison, but it was considered that this should be brief and neutral in content. Those who transgressed these rules would be considered weak or viewed with suspicion. Overall, the two prison papers provide evidence of an unwillingness to engage in specialist institutional support structures. One paper [2] reports the use of humour (including 'black' humour) with colleagues as the main support structure and a safe way to talk about the death due to the 'feeling rules'. Another paper outlines that unstructured peer support (either from colleagues, family, friends) were the main source of support. There was evidence of a limited willingness to engage with more formal support structures beyond an initial contact with a local 'Care Team' (trained staff members to provide listening support and signposting). This was partly due to a lack of trust in some trained co-workers or from external support services, or because staff did not feel 'deserving enough' [5]. However, although there was evidence of a reluctance to proactively engage, there was a consistent wish for them to be approached and for support to be offered directly to them [2,4]. Interestingly healthcare staff in prison settings do not report the same 'rules' with one study outlining how they 'had a group of close colleagues who met together to talk about it' [5].

Five papers provided findings on aspects of the culture within a hospital setting [1, 14, 7, 6, 4]. The indications on culture within hospital settings contrasts somewhat with that prison, whereby hospital-based papers discuss team support [6, 4], being actively involved in funerals and open grieving [7] and expressions of approval for the support offered by the organisation [14]. This suggests a culture allowing greater emotional expression and willingness to engage with support. The studies suggest there is often a mix of formal and informal structures around peer support which are both based within their current team and is different to the support structures indicated in the prison studies. This picture is not consistent however, with one study [1] presenting the culture as focussed on 'blame-seeking' with suspicion around clinical supervision. This study also reports severe and enduring effects on staff and ongoing anxieties around engaging with patients or supervisors regarding suicidal behaviour.

4.5.3 Institutional roles and expectation conclusions

There can be limited confidence for this theme, since the evidence is derived largely from low quality studies. However, the evidence provided suggests that although both settings have an expectation of a swift return to operations, prison staff have a stronger embedded culture, which appears at odds with the needs of the individual staff members after direct or close indirect exposure to a suicide. Amongst prison staff, the additional perceived expectation to limit emotional expression, to not show weakness or seek support, conflicts with the experience of strong emotional responses and the appreciation of support, when received. However, across both staff groups, there is an appreciation of proactive systems of support and amongst prison staff, of the use of mandatory actions to globally support staff and prevent labelling e.g. through mandated time off.

There are indications of differences in the mechanisms of support available within the two settings. The limited available evidence suggests that within the hospitals, a core support structure is embedded within staff members' current team. In contrast, within prisons the perceived support structures are largely external to their own team. This may be related to a more consistent team structure within hospitals and the use of supervision, reflection and ward round, which has no equivalent structure within prison settings. However, given the limited confidence in the evidence, it would be premature to rely on this interpretation.

4.6 Professional responses

Eight studies reported findings for this theme [1, 2, 5, 6, 7, 8, 17, 23]. This theme is in the context of changes in work behaviour, and as such, findings are exclusively for prison and inpatient staff. Overall, there is a Moderate confidence rating for the evidence within this theme. Two sub-themes emerge from the literature in relation to work related behaviour changes; *anxious avoidant responses* and *active or overzealous prevention*.

4.6.1 Anxious avoidant responses

This sub-theme had the largest number of findings under this theme, from five studies [1, 2, 6, 7, 23]. This sub-theme relates to behaviours from staff that imply avoidance of regular tasks, or that provoke anxiety in enacting those behaviours resulting from the death by suicide. Overall, there is a Moderate confidence rating for the evidence within this sub-theme.

Three of these studies were focused on inpatient staff [1, 7, 6], two of which met standards for moderate quality [7, 6] and one of which was high quality [1]. Each of these three studies employed qualitative interviews by design amongst different types of hospital staff (e.g. doctors, nurses). Staff reported that they became perhaps too acutely aware of risk, sometimes to the "detriment of the patient", becoming paralysed in their work with patients [1], as well as becoming more fixated upon paperwork and documentation after the suicide occurred [1]. Other studies indicated that staff were late to work more often, experienced

anger at patients, or were perhaps even became neglectful at times [7]. In addition, it was reported that nurses delegated or confirmed some of their decision making to doctors, ensuring these decisions were physically documented [6].

In terms of prison staff, two further studies addressed this cohort [2, 23], one of which used qualitative interviews and met standards for moderate quality [2], with the other having used cross-sectional questionnaire design and being of high quality [23]. Findings indicated reluctance to perform certain job-related duties such as being on guard at night [2], as well as avoidance of environmental stimuli they associated with the suicide such as a specific door or a television show [2]. Also, of note in the findings is that some prison staff reported decreased bond generally with prisoners after a suicide [23].

4.6.2 Active or overzealous prevention

This “active prevention” behavioural change is present in four studies across both prison and inpatient staff [2, 4, 6, 17], evenly between moderate and low-quality studies; although only one of the four studies identified are for prison staff and is low quality [2]. Overall, there is a limited confidence rating for the evidence within this sub-theme.

In qualitative interviews, prison staff report an increased awareness of prisoner vulnerabilities, particularly in the context of the “bleak” and “dark” atmosphere that they felt enveloped the prison after the suicide. It was also reported that due to this, staff feared further incidents due to this sensitivity to the perceived emotional vulnerability of prisoners. This finding appeared to be derived from an “aggregate” feeling of experiencing numerous deaths by suicide over time, as opposed to the impact of one specific death. With regards to inpatient staff, three studies had findings under this sub-theme [4, 6, 17]; these studies used either qualitative interviews [4, 6] or questionnaires/observation as their design [17]. Here, findings indicate that inpatient staff behaviour had heightened prevention strategies to prevent another suicide; namely, doctors tended to place inpatients on special observations [6], staff had acquired a compulsive urge to help inpatients [17] or became hypervigilant [4].

4.6.3 Professional responses conclusion

Within this theme there appears to be three distinct behaviour changes that can occur within staff exposed to a suicide within prison or hospital. The most consistent and confident finding across settings are the anxious avoidant behaviours, with an almost equal number of studies and findings being represented in both prison and inpatient staff. Most findings for overzealous prevention was in inpatient staff (three of four studies). It may be posited that anxiety-based avoidance behaviours are a more widespread professional response to a suicide, whereas other responses are dependent on cultural differences between institutional settings (as outlined in section 4.5).

4.7 Coping and support

Nine articles reported findings related to the coping responses of people exposed to the suicide [1, 2, 5, 7, 8, 12, 13, 15, 26]. In this theme, all cohorts are represented; however, the fewest findings were for inpatients and prisoners. Overall, there is a Moderate confidence rating for the evidence within this theme. Within this theme of coping, four distinctive subthemes arise; avoidant coping, interpersonal support, additional helpful and unhelpful factors and communication and update.

4.7.1 Avoidant coping

Four studies reported findings under this sub-theme [2, 5, 7, 8] which relates to the active attempts at personal coping undertaken, rather than the professional responses detailed in Anxious Avoidant Responses. Overall, there is a Limited confidence rating for the evidence within this sub-theme.

For prisoners, the sole finding from the literature that fits under this sub-theme was having a good sense of humour [8]. Similarly, prison staff reported humour as one of their responses as a safe way to talk about the death due to the 'feeling rules' [2]. Prison staff indicated additional avoidant responses; namely, they noted their limited ability to express emotions [2] and increase in (or reuptake of) alcohol use and smoking [5]. For inpatient staff, there were some similarities to these responses; they also reported alcohol use and other self-destructive behaviours and absenteeism [7], although not the unwillingness to express their emotions. Although identified only across mostly low-quality studies, suggesting low strength of evidence, avoidant coping was consistently identified across both settings and populations suggesting it may have some relevance.

4.7.2 Interpersonal support

Six studies indicated interpersonal support as a coping strategy which was used by all cohorts, [3, 4, 12, 13, 14, 15]. Overall, there is a Strong confidence rating for the evidence within this sub-theme.

For inpatients exposed to suicide, they indicated that it was not simply talking that was important, but the need for responsive support [15], a sentiment mirrored for inpatient staff who reported that being able to talk openly as a very important response to a suicide [15], although a small proportion report they experienced a lack of support [14]. Aspects of staff interpersonal support are outlined in 'Feeling Rules' (Section 4.5).

Prisoners (within two high quality studies) reported that speaking to other people helped them [12] but with caveats, reporting that counselling had no impact [13] (no additional details were provided). Prison staff reported being able to receive emotional support was helpful in terms of coping [3]. One high quality paper [15] presenting the views of residents

who have experience of both settings, report that residents perceive a different support culture; prisons were viewed as unsupportive and uninterested and would leave people a bit more hopeless. This was supported by a further high-quality prison study reporting that many residents wanted staff to have asked how they were or to speak to someone [12].

Additionally, noted from across high-quality papers, inpatients have a strong reliance on staff for their support [15] whereby in prisoner samples, peer support is more commonly reported although some reported that peers could also be unsupportive [8, 12]. Similarly, there were differences between the view of who should provide the support, with inpatient staff stating that peers were the most helpful as they could let out their true feelings, which they felt unable to consider with a stranger [14]. Conversely, prison staff and prisoners report a more mixed or negative view of the value of peer support, linked to 'Feeling rules' outlined in section 4.5.

4.7.3 Additional helpful and unhelpful factors

Eleven studies reported findings for factors that helped or hindered in coping strategies after a death by suicide in the institution [1, 2, 3, 4, 5, 7, 12, 13, 14, 15]. Overall, there is a Moderate confidence rating for the evidence within this sub-theme. Largely represented within this sub-theme are the staff cohorts from solely moderate and low-quality studies, whereas inpatients and prisoners have significantly less findings around this although from solely high-quality studies [12, 13, 15].

Some distinctions do arise between these cohorts with four studies reporting additional helpful factors [1, 2, 3, 4, 7], with factors seemingly inconsistent across settings. Inpatient staff reported it was helpful to be able to access supervision and protected time to discuss and reflect on their practice [1, 4], be given a break from the ward or time off immediately afterwards [4] and being able to attend the funeral of deceased and grieve alongside the family [7]. Prison staff highlighted a helpful factor as positive job satisfaction [3]. It is also reported that having a compartmentalisation process between their professional and personal lives in the form of an extended journey home from work [2].

Regarding other factors that staff found helpful or a hinderance, two studies report time away from usual duties would be helpful [4, 5]; prison staff however reported a barrier due to having to ask for time off work following a suicide (which would be seen as a weakness). Additionally, for a sub-set, having to return immediately to close contact with prisoners or working nights (as suicide most likely to occur) was distressing [5], with staff reporting it helpful to have respite from some duties although some stated they found continuing to work a distraction [5]. Similarly, an inpatient study reports not having time away as having been unhelpful [4].

4.7.4 Communication and updates

Five studies report findings regarding the importance of providing information and the way communication was undertaken [1, 2, 5, 13, 15]. Overall, there is a Moderate confidence rating for the evidence within this theme.

Both prisoners and inpatients reported that updates were unclear, and the communication process from staff was lacking clarity [13, 15]. There was a similar finding from both staff cohorts around not being informed in a considerate way [1; inpatient staff], a lack of effective debriefing after the suicide or not being informed before the debriefing to provide time to prepare for it [2, 5; prison staff]. Within these responses, the underlying sense is that effective, available and sensitive information sharing would be helpful.

4.7.5 Coping and support conclusion

The use and importance of interpersonal support was the strongest theme, also present across all cohorts, although the nature of that support differed. For example, prisoners found counselling to be ineffective (although the reasons were not outlined) and both prison staff and residents report a mixed view of the nature and limitations of peer support.

A sub-theme presented across cohorts was the wish for more transparent and compassionate communication after the suicide, with sensitive reporting and debriefing being highlighted and with moderate confidence of the evidence.

Across staff cohorts there was limited indications of similarities in some of the avoidant coping strategies e.g. excessive alcohol but there are also distinct approaches to coping following a resident suicide. Use of humour was reported in both prison cohorts, but neither of the inpatient ones. Also, prison staff report that a more distancing response would have been helpful (time away from front-line duties) with inpatient staff reporting a more involved response as helpful (attending the funeral). These differences may represent a distinct cultural difference between the institutional settings when a suicide occurs.

There was a further limited theme across staff cohorts that they would welcome compulsory time away from duties/off immediately after a suicide (rather than having to request it). In addition, there is moderate evidence from inpatient staff that protected time for reflection on their practice and a mix of formal and informal structures of support are helpful.

4.8 Longer term outcomes

There is consistently reported evidence relating to two outcomes over the longer term: Stress Responses (Post-traumatic Stress Disorder (PTSD) and trauma-related responses); and Own self-harm or suicidal behaviour. Based upon the time spans reported, these effects seem to remain at 3 months to at least one-year post-incident.

4.8.1 Stress responses

Ten papers (eight staff and two prisoner studies) reported ongoing difficult consequences which are likened to trauma-related reactions [1, 2, 5, 6, 7, 10, 12, 13, 14, 25], including post-traumatic stress disorder, intrusive memories of the event, and an ongoing emotional impact. Overall, there is a Strong confidence rating for the evidence within this sub-theme, across both settings and most populations.

4.8.1.1 Post-traumatic stress disorder

Four studies report the presence of PTSD symptomology [5, 9, 13, 25]. Overall, there is a Limited confidence rating for the evidence within this sub-theme.

Two low quality studies used measurement tools to measure trauma symptoms or, specifically, PTSD [5, 25] with 36.7% of prison staff scoring above the clinical threshold (Trauma Symptom Inventory, Briere, 1995). Within inpatient staff, a rate of 13.7% as high-risk for PTSD was reported (Impact of Events Scale-Revised, reference). For prisoner samples, there is a mixed picture. The one high-quality paper [13] undertaking a cohort study comparing witnesses and non-witnesses of suicidal behaviour identified significant differences in general psychopathology, anxiety and, depression but not in trauma-related symptoms or drug use. However, the timeline in this study was 'within the last 6 months' indicating short to medium term impacts at that point. This finding contrasts with an older and low-quality study of seven hospital admissions from prison [9] where the patient reported witnessing a cellmate's suicide (by hanging). This reports that 4 of 7 met the DSM III criteria for PTSD with increased arousal and mental reliving present in all cases, usually for months, although two cases report a short duration (2 weeks).

4.8.1.2 Intrusive memories and continuing emotional saliency

Six studies across both staff groups and prisoners report ongoing intrusive memories or continued anxiety [1, 5, 6, 7, 12, 13]. Overall, there is a Strong confidence rating for the evidence within this sub-theme, which is present within most populations.

Inpatient staff reported nightmares [14] and both staff groups and prisoners reported intrusive painful recollections, flashback or images in their mind [5, 12]. Three studies also reported heightened alertness [6] and continuing emotional saliency about the event in inpatient staff [1] and continuing anxiety amongst both prisoners and inpatient staff [6, 13].

4.8.2 Relationship with own self-harm and suicidal behaviour

Six studies [4, 9, 11, 13, 18, 21] analysed the effect of exposure on people's own self-harming behaviour or suicidal ideation. Overall, there is Strong confidence rating for the evidence

within this sub-theme. However, only papers exploring the relationship for prisoner samples were identified, with none for inpatient or staff samples limiting the generalisability of the theme.

A cross-sectional study across multiple prisons in Belgium [9] identified that exposure to suicidal behaviour in prison was significantly related to current suicide ideation with a reasonable effect size [1.87]. A UK study with young offenders (<21 years) [13] confirmed a significant relationship between witnessing the suicidal behaviour of others and their own lifetime suicide-related behaviour although effect size is not provided. The authors state that this difference was likely pre-existing before the exposure, with 28% of the witness sample reporting lifetime suicide related behaviours prior to the event.

A further UK study with young offenders [11] found a significant relationship between in-prison exposure on lifetime self-harm behaviour (irrespective of intent), although the effect size was small (OR 1.18). The relationship with lifetime exposure to suicidal behaviour by others was also significant with a stronger effect size (OR 1.73) but not only through community exposure. This suggests that multiple (both community and prison) or context-specific exposure (being exposed in the context in which you are currently residing) may develop a stronger effect. However, a UK study on adult women [18] found prisoners who engaged in near-lethal self-harm [18] were no more likely than controls to have been exposed to other prisoners' suicidal and self-harming behaviours. This finding was replicated in a similar UK study on male prisoners [21].

One qualitative study [4] with staff reports patients 'playing up' after a suicide although this is not defined and was the only reference to a change in patient behaviour.

In summary, there is high strength evidence of a low strength effect on the relationship between exposure to suicidal behaviour in prison and own self-harm and suicidal behaviour. Most studies have not confirmed that exposure occurred prior to the self-harm and suicidal behaviour and no prospective studies were identified, so a causal explanation cannot be assumed.

4.8.3 Clustering mechanism

Seven studies provided findings relevant to the mechanism by which a cluster of suicides (three or more) had occurred [15, 17, 19, 20, 22, 24, 27]. Overall, there is a Strong confidence rating for the evidence within this sub-theme. Five studies were on inpatient samples (one moderate and four low quality) with two moderate quality prison studies [15, 19].

All but one study provided evidence of imitation of method, and the remaining study identifying no contagion mechanism. Although authors provided additional suggestions, no evidence nor analysis of other discrete mechanisms were provided e.g. identification. Four

provided a series of case studies of the circumstances of the deaths and limited case details e.g. diagnosis. Two provided details on three cases [22, 27], one compared four cases [20]. One case control study compared nine cases [15], one study undertook case reviews and qualitative interviews with staff [24] and one examined all prison suicides in a ten-year period [19].

One low-quality cross-sectional study [17] reported results of 'identification with the patient' (with the patient reporting as if they themselves had died by suicide) and although not explored further, there was no evidence that this identification led to suicidal behaviour as might be predicted by the suicide clustering literature on identification. A further study [24] also suggests 'psychotic identification' due to patients with psychotic or borderline disorders often having a 'weak ego and a diffuse identify'. However, this hypothesis was not tested. A moderate-quality case control prison study stated the deaths were not clustered and suggested that there was no mechanism at play in this cluster [15]. A further moderate quality study utilising space-time-method clustering analysis of 647 deaths in prison, identified a likely imitation rate of 5.8% [19].

All case studies and mixed case/interview studies (one moderate and three low quality studies) identified imitation of method as a likely mechanism [20, 22, 24, 27] based upon a similarity in methods within a group (over weeks or years), which were considered out-of-keeping with the normal behaviour. However, comparative data was not provided in any of these studies. The one moderate quality study distinguished direct exposure (witnessing) from indirect exposure (the 'Werther effect') and concluded that the mechanisms of contagion may differ depending on the context. There is suggestion from this review, that although the 'Werther effect' may occur, the stronger evidence is for imitation after direct witnessing [24].

4.8.4 Vulnerabilities for poorer outcomes after exposure

Nine studies identified additional factors that may relate to poorer long-term outcomes after exposure to suicide (i.e. trauma-related responses and/or suicidal or self-harm behaviours) [1, 5, 7, 9, 11, 13, 17, 26], although only three tested a relationship using analytical methods [11, 13, 26]. Overall, there is a Very Strong confidence rating for the evidence within this sub-theme amongst most populations.

Four papers identified a key factor as the intensity of exposure to suicidal behaviour, either through proximity, involvement or having prior exposure(s) [1, 5, 9, 26]. Three papers suggest vulnerability due to prior exposure to suicidal behaviour, across both staff groups and prisoners [1, 5, 26]; two reported a higher level of involvement or proximity to a suicide for both staff groups and prisoners led to higher trauma-related symptoms [5, 9]. The consistency of this finding suggests that intensity increases the risk, beyond exposure gained from an awareness of a suicide. However, although present in both low and moderate quality

studies, all four studies have limitations in making causal inferences, with none controlling for other possible causes of the reported difficulties.

For PTSD symptoms in prison staff the following vulnerabilities were identified in one low quality paper: high degree of involvement in the incident, low level of optimism, hopelessness, negative coping style, low perceived control and avoidant coping [5]. Within a prisoner population who had been exposed to suicidal behaviour, also having witnessing bullying or stressful life events raised their vulnerability to later suicidal behaviour [13]. Importantly, one high quality questionnaire-based prisoner study directly analysed the vulnerability to being exposed to suicide, finding that the length of time in prison and own self-harming behaviour were the only significant vulnerability factors [11].

4.8.5 Development and learning

Four studies report suicides as opportunities for development and learning [7, 14], although only by staff. Overall, there is a Limited confidence rating for the evidence within this sub-theme, with evidence only in low-quality papers. Two studies report how inpatient staff used the opportunity for team learning [7, 14]. One paper [7] describes the changing patterns of the inpatient staff stating that staff transformed their concerns about their professional competence into broader questions regarding policy, treatment and training and that joint learning led to an increased sense of competence. These studies provide emphasis on a team-based coping and support approach in achieving these outcomes. Prison staff reported operational learning about responding to a death in custody and a sense of autopilot and honing their instincts [2], and a wish for practical training like first aid [5], although no mention of policy changes or improvements in understanding suicide prevention was noted.

4.8.6 Longer term impact conclusion

Most papers (19 out of 27) included one or more long-term impacts across staff and residents. Generally, fewer impacts were reported by inpatients than for the other three groups, which would appear to be an artefact of the study type (case study/notes and short-term interviews) used most commonly with this sample. Overall, there is moderate to strong confidence in the evidence for long-term impacts, although limited evidence for PTSD or development and learning taking place.

There are consistent findings from across staff and prisoner groups that within a sub-group there will be ongoing stress-related reactions, including ongoing anxiety and intrusive memories. Although consistently reported, the proportion reporting these effects are generally presented as small, which suggests that these effects are not the common long-term reaction. This is consistent with community patient studies across professions, that the heightening of anxiety, stress and guilt including thoughts about the suicide and trauma symptoms diminish over time (Gulfi, Dransart, Heeb and Gutjahr, 2010). There is, however,

also strong and consistent evidence that the intensity of the exposure (either through repetition or proximity) may increase vulnerability to poorer longer-term outcomes. It will, therefore, be important for interventions to identify and focus attention on this sub-group.

There is also strong evidence of a relationship, for both resident groups, between exposure to suicidal behaviour in prison and own self-harm (non-lethal self-harm) and suicidal behaviours; although whether this is a causal relationship has not been supported. Importantly, none of the studies were prospective nor controlled for suicide related behaviours prior to exposure, and it is equally plausible that those with a history of self-harm may be more likely to know others with a similar history (and hence exposed), as confirmed by one author. Additionally, there are no attempts to explore the reasons for the relationship between exposure to suicide and own harmful behaviour within those that state a relationship.

Within the clustering research, a relatively consistent finding was the identified similarities in the method of suicide amongst three or more deaths. Although there is limited evidence of a consistent or widespread clustering mechanism with a rate of under 6% identified within the highest quality study, there can be moderate confidence of a small effect ; in addition, the contagion effect may be stronger amongst those with closer relationship or higher intensity of exposure (see 4.8.3). The research indicates the mechanism is through either suggestion (through indirect exposure known as the 'Werther effect') or imitation (after direct witnessing) although this effect is not widespread and is limited to method selection only. However, there is no evidence provided that suggests there is an increase in suicidality or other mechanisms at play e.g. identification. Importantly, there are notable methodological failings in many of the case studies used to explore the clustering phenomenon in these contexts, with a lack of comparative data or wider context provided to reduce the bias in the interpretation. Moreover, due to many of these studies being based on a priori assumptions of clustering, it is plausible to conclude that there may be an emphasising of the presence of clustering due to the 'pattern recognition' which led to these studies. Indeed, one study excluded deaths which did not fit the pattern [19].

There is limited confidence for evidence of positive growth or post-incident learning and there were setting differences, with inpatient staff developing their own understanding within their teams whilst earning for prison staff was focused on developing a more efficient response to future incidents.

5 Discussion

This review aimed to identify the impact of exposure to a suicide or attempted suicide, on residents or staff, within a prison or inpatient setting; and to consider the mechanisms by which future suicidal behaviour may occur as a result of that exposure.

Overall, one very strong theme (vulnerabilities to poorer outcomes) and six strong themes (rates of exposure, shock and confusion, crisis of confidence, interpersonal support, intrusive memories and emotional saliency, and relationship with own suicidal behaviour) were identified within the literature. Most remaining themes had moderate underpinning evidence and confidence, and six themes having weak or limited evidence, all related to staff coping. Based upon the themes in which there can be moderate/strong confidence, a series of conclusions can be drawn.

5.1 Consistent findings across samples

There is strong evidence of an exceptional rate of institutional exposure to the suicidal behaviour of others amongst both staff and residents. On average, 50-60% of both staff and residents will be directly exposed to the suicidal behaviour of others, suggesting a level of exposure of two to three times higher than the lifetime rate in the community (Andriessen et al, 2017).

A strong and consistent finding is that all cohorts report a sense of initial shock on hearing the news of a suicide. There can also be confidence in the consistency of other early reactions, including a feeling of guilt, which is widely acknowledged by both staff and residents across settings, although the focus of the guilt is differentiated. A feeling of sadness is also universal, with some inpatient staff reporting a more personal sense of loss. Both staff groups also reported concerns that they would be blamed or held responsible for the death with some prisoners also concerned about being blamed, although not inpatients. Reports of initial indifferent, negative, angry or blaming attitudes about the deceased was also present across most groups. These findings have parallels within bereavement studies, where these responses are part of the process of personal negotiation, of making sense or providing meaning to the death (Mallon and Stanley, 2015; Shields, Kavanagh and Russo, 2017).

Smaller sub-groups within each cohort report ongoing and long-term stress-related reactions including ongoing anxiety and intrusive memories. There is moderately strong evidence that the intensity of exposure (either through repetition or proximity) may increase vulnerability to these poorer longer-term outcomes. It will therefore be important for interventions to identify and focus attention on those with high intensity exposure.

Overall, there are consistent early and ongoing responses across both staff and residents in both settings, which reflect directly with the community literature (Jordan, 2001). This suggests that these factors translate between community and institutional settings and across cohorts.

5.2 Unique resident factors

5.2.1 Resolving confusion

There can be moderate confidence that residents in both settings will report a stronger sense of initial confusion than staff, which appears exacerbated by limited information or development of understanding as to why suicide occurs (either generally or specifically). To aid residents in resolving their confusion, uncertainties, and concerns, a recommendation from both resident samples was the provision of greater information beyond the initial notification, particularly to help them understand 'why and how people start feeling like that' delivered in a compassionate manner.

5.2.2 Own suicide and self-harm behaviours

There is a moderate evidence of a small relationship between exposure to suicidal behaviours and own self-harm, suicide ideation and suicidal behaviours, although none provided for near-lethal self-harm. However, this relationship has not been shown as causal and it is equally plausible to be due to those with a vulnerability to suicidal behaviour themselves, having a closer relationship with those who also engage in these behaviours.

There is a weak evidence from this review indicating that, when clustering happens, the mechanism of resident clustering is related to either suggestion through learning about the suicide (e.g. Werther effect) or imitation through closer proximity or witnessing the event. There is no evidence that any other mechanism can account for any of the clusters analysed in these samples. However, the likelihood of a suicide being a result of imitation was under 6% so is a reasonably limited factor in preventing suicide. This finding is reflective of other suicide cluster studies, which suggest that the mechanism may be less direct than modelling or imitation would suggest (Taiminen & Helenius, 1994). It has been suggested that it is the interplay between microsocial/environmental impacts (such as inexperienced staff or deterioration in morale) and individual factors, which develop or mitigate risk of suicide clustering (Modestin & Wurmle, 1989). Therefore, it is important to understand the context for both residents and staff when considering the impact of one suicide on future risk of suicidal behaviours.

5.3 Unique staff factors

5.3.1 Resolving anxiety

Within staff groups there is moderate but consistent evidence of an underlying theme regarding anxiety, which flows throughout the different stages of the impact of suicide. The role of anxiety starts quickly with feeling responsible, guilty or that you may be blamed by others. Alongside this is a notable professional crisis of confidence, particularly in inpatient staff but also present in prison staff. There are also widely reported anxious avoidant and restrictive professional practice changes which, whilst helping to manage staff anxieties, will affect other residents directly and change their environment. The role of anxiety continues through to personal outcomes for some staff members, with limited evidence of excessive drinking and anxieties affecting work (e.g. working at night). These personal outcomes continue into the long term with heightened stress responses, anxiety and, albeit limited, evidence of PTSD symptomology in those exposed to suicide with some evidence that it is ongoing anxiety that may contribute to these outcomes.

For prison staff, there is limited evidence that this may be coupled with a culture of hiding emotional expression and 'keeping up appearances', which means there is a mismatch in any natural resolution of these anxieties. Therefore, successful resolution of anxiety relating to suicide may be a useful avenue for intervention.

There is also moderate evidence in the review that if the naturally occurring anxiety and crisis of confidence is managed as a team, then it could act as a catalyst for professional and personal learning with practice development. However, this requires the team taking ownership, and this positive growth was not present in situations where changes were made 'to them', suggesting that the full potential for learning and development may have been stifled. It may therefore be helpful to facilitate teams in taking ownership for their own learning and development.

5.4 Differences between settings

There are three areas where the impact of exposure to suicidal behaviours differs between settings: Emotional expression; Positioning of support and Positioning of Peers.

5.4.1 Emotional expression

Within the prison setting, there was moderate evidence of perceived expectation (from the institution and peers) that it was not appropriate to feel certain emotions, nor to express them. The fear of being viewed as weak or vulnerable was expressed by prison staff but also by prisoners. This sense of being judged was also noted as a reason for not approaching support services, asking for time off or a change of duties (although they reported wanting it).

None of the hospital samples reported any expectation that feeling or expressing certain emotions was 'wrong' which may account for a broader range of emotions reported by those studies. For example, the reporting of a feeling of loss was exclusively reported within inpatient staff. This personal aspect may reflect the settings, as prison staff specifically reported that the vocalisation of sadness and loss were 'off limits' (see section 4.2) and that only a certain level of empathy was appropriate.

There is limited evidence that these 'feeling rules' were internalised by staff to dictate how they 'should' feel, with the review identifying a wide range of emotions reported by staff. However, some emotions, especially ongoing anxiety, may lead to a long-lasting impact, including PTSD symptomology. A lack of acknowledgement or hiding of their real feelings can be detrimental to staff in the long term (Slade, 2013) and the open expression of emotion is supported by this review.

5.4.2 Positioning of support structures

There is moderate to strong evidence that inpatient staff welcome and receive good support and that both informal and formal support is largely from amongst their colleagues or within a structured team framework. Within these team-based structures, there is evidence of reflection, support and learning based upon developing a deeper understanding of suicidal behaviours or in bringing meaning to the event, which is considered helpful. This is in sharp contrast to prison staff who view support systems as external to their teams with an unwillingness to be emotionally honest with colleagues and using black humour as a method to express themselves. However, prison staff appear reluctant to engage with external structures due to it being perceived as a weakness. The focus of learning and developing in this cohort is focussed on responding to an incident with little evidence of a more personal understanding or prevention focus.

Prison staff provided some indication that to mitigate these issues, it would be necessary to remove the element of 'asking' from support systems, gaining changes in work profiles or having time off. The high levels of long-term stress responses, potentially at three times the levels in inpatient staff, suggests a more compassionate but mandatory structured support system may be helpful. Linking with resolving anxiety (section 4.6.1), this system may benefit from facilitating more ownership of professional learning and development within their existing teams.

5.4.3 Positioning of peers

Conversely, for residents, there is the opposite positioning of support which also supports differences in taking responsibility for their peers. In comparison to inpatients, there was moderate evidence that prisoners appear to take on more responsibility for fellow prisoners and are more likely to use a peer support network. Although possible that this may be due

to a perception of prison staff being unsupportive or unresponsive, it may equally be an artefact of the sample. For example, the prisoner samples providing those findings were predominately younger adults (up to 21 years old) where peer relationships remain prominent. It may also be that the institutional expectations are that prisoners should take more personal responsibility than patients.

The prisoners indicated that counselling and ad hoc staff support was not universally helpful with the strongest call being for more proactive and ongoing staff engagement and communication. This need to be approached proactively, suggests they did not feel able to ask or achieve the required support. In contrast, the inpatient samples (both directly and from staff perception) report relying more heavily on support from staff, without any reference to peer support. This need for staff to provide support appears to be largely meet inpatient needs, however, it may be problematic if staff are also affected by the death and appropriate staff support and monitoring is recommended.

The concerns amongst both prison groups regarding looking vulnerable, a reluctance to seek support but wanting more support to be offered, may reflect an institutional culture and so it could be argued that prisoners may also benefit from more group-based activities in the event of a suicide within a more structured and proactive support system. For inpatients (due to their preference for direct staff support) it will be important for inpatient staff to be well supported post-suicide, since they must also provide additional emotional support to residents.

5.5 Limitations of the literature

5.5.1 Definitions of Exposure

There were variations in the definition of exposure to suicide utilised within studies in this review which are detailed in Table 1. Although included studies suggested that participants had been either directly involved or had been notified of a suicide death, some of the earlier clustering case studies and one more recent national clustering study, did not confirm that personal exposure had taken place, limiting conclusions regarding the role of exposure from these studies. Most studies utilised a lifetime definition of exposure (e.g. 'have you ever..') with only four studies reporting, or attempting to specify, the timeline of the effects of exposure.

A notable limitation were few studies separated their findings relating to the quality or type of exposure; for example, whether the individual witnessed a suicide (direct trauma), had been informed of a suicide at their institution (indirect or secondary trauma) or whether they experienced a single or repeated, chronic or sustained exposure (chronic trauma). Although each type of event may have similarities in outcome, there may also have differences in their effects which are difficult to ascertain at present.

5.5.2 Strength of current evidence

5.5.2.1 Methodology and Focus

There was only one theme supported by very strong evidence identified in this review, with only a small sub-set of strong themes identified. The bar for strength and confidence was set relative to the studies included in this review and may be lower than would be expected in systematic reviews in other fields. This field of study currently has few prospective studies, few comparison or control groups, limited definitional clarity and often has differential focus of questions (and methodology) when considering the impact on either staff or residents. The difficulty in researching this specific question may account for some of this lack of clarity but there was evidence of good quality qualitative and quantitative studies in the review demonstrating it is possible to develop better evidence. There were no studies which appeared to gather or use data close to the event, relying on memories of an event over an unspecified timeframe (sometimes years). Neither were there studies which attempted to measure any aspect over a repeated timescale to ascertain the normal or abnormal trajectory of effects to inform the effective timing of interventions.

A further limitation was in the follow-up of full cohorts with most participant studies utilising participants who had remained in the environment, therefore staff who had left prison work were not represented in the findings. Although it is not possible to confirm the consequence of the absence of this group to the conclusions, the effects outlined in this review may instigate some staff to leave front-line work and may affect the strength of some reported effects.

5.5.3 Causal relationships

A methodological issue within many studies are the causal assumptions made, where none can be ascertained. This causal issue was particularly prominent when considering the question of an exposure to suicidal behaviour pathway (either as clustering or longer term). In considering whether a specific exposure leads to own suicidal behaviour, no specifically-focussed prospective studies were identified during the review, with a reliance on cross-sectional or cohort studies to compare groups. Importantly, there was very little control over whether the long-term outcomes were directly related to the suicidal exposure or whether effects were due to wider exposure to a difficult environment with multiple events. Additionally, studies almost exclusively based their analysis on prior or lifetime suicidal behaviour. The use of lifetime behaviour is unhelpful in determining the direction of the effect, i.e. whether those with a history are more likely to be exposed, or whether exposed individuals were more likely to have suicidal behaviour. Both possibilities are important and although true prospective studies may be practically difficult, longer-term studies, which measure the impacts over time would add greatly to the quality of the evidence base.

Within the clustering literature, there was only one identified study which robustly considered the mechanism of any contagion effect. Most studies are based on case studies of identified clusters but without enough detail or comparison to be able to make firm conclusions. Future studies would benefit from greater exploration of the detailed relationships (including temporal and environmental) between cluster individuals, include non-cluster cases and remove inherent bias from case selection which limits the firmness of conclusions.

5.5.4 Research questions

There was a notable paucity of literature capturing the emotional response of inpatients to suicide; likely due to the prominent use of questionnaires capturing psychopathology or methodologies using case notes only for this group. Connectedly, the number of inpatients represented in this review is very small in comparison to prisoner or staff groups. It will be important for further research to provide a more rounded evaluation of the emotional experience of inpatients who experience a suicide in their setting.

There are also differences in the focus of research questions with studies considering suicide clustering being more commonly completed on psychiatric inpatients but all engagement directly with residents about the relationship between exposure and suicidal behaviour occurring only in prison samples. In addition, many of the earlier studies focussed on a series of short case studies based upon a pre-existing belief of linkage. These therefore provide biased evidence and are difficult to interpret without control or comparison data and limits the validity of the findings.

5.6 Limitations of this review

This systematic review was challenging due to the heterogeneity of methodologies employed to explore this area over the last 50 years. In addition, the research quality in this review was highly variable, with reasonably equal numbers of studies rated as low, moderate and high quality. However, despite these issues there were enough convergence of themes to warrant including them together. No themes were generated solely on low quality research, but these papers could not be excluded due to the level of detail presented in other studies. Therefore, if they had been excluded, the utility of this review to identify specific recommendation would have been seriously affected. However, it is important that higher quality research is undertaken in some areas identified in this review to confirm the more tentative conclusions.

The large number of low-quality studies in this review affects the confidence that can be given for some identified themes. However, if all low-quality studies were removed, further bias and skew in the remaining data became apparent (e.g. only under 21 in the prison resident group) and many studies considering clustering mechanisms. Due to the extremely rare event

under examination in this review, and the resultant limitations in research methodology for some questions, all papers were retained in the review and a more detailed analysis of theme confidence was undertaken to reduce bias. Only themes considered to have moderate or high confidence were included in the final conclusions.

Several studies were excluded from the review due to the lack of specificity in describing the samples. For example, many studies on the impact of patient deaths did not identify the setting of the death specifying only the job role e.g. therapist. The integration of these experiences therefore may lose some of the unique features of the different settings in which staff work and their specific needs. There were several personal commentaries on their own experience or the perceived experiences of others, which are largely descriptive. Without testing, analysis or interpretation these were excluded from this review although no additional findings were apparent.

This review did not aim to consider the impact of further events related to a suicide e.g. investigations or inquest, for which further studies and reviews were identified but excluded. These were excluded as they did not consider the impact of the initial suicide but of later effects. However, these are reported as being traumatising for staff (Ludlow, 2015) and so should be considered when developing postvention approaches for institutional settings.

Finally, the effectiveness of specific postvention interventions with these groups was not targeted in the search. Therefore, interpretations regarding the effectiveness of interventions (including support) are limited to those routinely noted within impact studies.

6 Conclusion

This review has confirmed that suicide within an institutional setting (prison or mental health inpatient) has profound, widespread and long-lasting effects for both staff and residents. Across all groups, the rate of exposure was exceptionally high, around two to three times that of community samples. This exceptional rate supports the need for greater research into the effects of suicide exposure within institutions with a focus on identifying effective support to both residents and staff in the event of a suicide.

The review confirms the universal presence of shock and confusion and a wide range of emotions reported, including loss and guilt, in keeping with bereavement and community studies. The consistent presence of anxiety responses across the short, medium and long-term suggest this is an area of notable concern but also opportunity for intervention, particularly for staff groups. Anxiety is present in the initial anxieties around fear of blame or a crisis of professional confidence, through anxious avoidant reactions to their work place or

home life and present within anxious emotional saliency and heightened stress in the longer term.

There was widespread acknowledgement of the benefits of interpersonal support, although the current positioning and active pursuit of this support differed depending on whether they were staff or resident, and their respective setting. Furthermore, evidence suggested that the most beneficial support structures came from within existing groups or teams, rather than from external bodies. However, this review did not aim to consider the effectiveness of specific postvention interventions with these groups. Therefore, interpretations regarding the effectiveness of interventions, including support, are limited to those routinely noted within impact studies and further exploration is required.

Of concern, was strong evidence of long-term and profound mental health and wellbeing effects on a proportion of those exposed. There was strong evidence amongst staff of ongoing intrusive memories and emotional saliency over many months or years, although it was not confirmed that the exposure led to PTSD. For residents, there was strong evidence of a relationship between their exposure to suicide and own suicidal behaviour although the direction of this relationship remains unclear. Furthermore, the cumulative impact of exposure and/or proximity to the suicide on vulnerability to long-term negative effects emphasises the need for institutions to prioritise these individuals for intervention and postvention support.

The effects of exposure to suicide in the community amongst kin, non-kin and community professionals has been widely documented, with evident short, medium and long-term effects. The growing prominence of postvention research and interventions have reflected this increasing awareness. Many of these effects have been mirrored in this review within co-residents and professional groups within institutional settings, which viewed along with an exceptional rate of exposure creates an argument that these populations are a high priority group for intervention.

7 Recommendations

The following recommendations are drawn from the conclusions and cover future research avenues and responses for postvention approaches for both staff and residents.

7.1 Future research

- Greater clarity in the definitions utilised in analysis to differentiate the types of exposure.
- Longitudinal studies to capture to effect of a specific exposure over the longer-term for all exposed groups (including when no longer within the setting), especially the relationship with own suicidal behaviour.

- Exploration of the relationships between the type of impacts, support approaches and long-term outcomes to identify effective postvention support.
- Long- term and emotional impact studies with inpatient residents.
- High quality research testing the mechanisms of clustering within institutions

7.2 Recommendations across groups

- The exceptionally high rate of exposure within these groups suggests a need for an integration into standard practice of ongoing support to mitigate the effects of suicide exposure.
- To acknowledge and normalise the reactions after a suicide with guidance on management or places for both personal and professional support, including over the longer term.
- Encourage openness to express reactions and provide compassionate responses acknowledging the potential personal loss and anxious responses. However, the expected articulation of negative attitudes/blaming to the deceased needs to be managed appropriately.
- Consideration to prioritise intervention for those with increased proximity or cumulative exposure to suicidal behaviour.

7.3 Recommendations for staff

- To address and support personal and professional anxieties resulting from exposure to suicidal behaviours over time.
- Facilitating peer-led reflection – The facilitation of support mechanisms including reflection and learning coming from within current teams is suggested as more effective than solely external supports.
- Support and compassionate responses (e.g. time away from duties) should be offered as opt-out rather than opt-in, especially for prison staff.

7.4 Recommendations for residents

- Whilst remaining considerate to wider implications (e.g. Werther effect), to consider ongoing communication regarding the suicide and activities to prevent blaming, and confusion; and to encourage appropriate grieving and emotional expression about the death over the following weeks.
- Within prisoner groups, there may be benefits to facilitating suicide postvention peer support within clear boundaries.

8 References

- Alexander, D., Klein, S., Gray, N., Dewar, I. & Eagles, J. (2000) Suicide by patients: questionnaire study of its effect on consultant psychiatrists, *British Medical Journal*, 320, 1571–4.
- Andriessen, K., Rahman, B., Draper, B., Dudley, M. & Mitchell, P (2017) Prevalence of exposure to suicide: A meta-analysis of population-based studies. *Journal of Psychiatric Research*, 88, 113-120. doi: 10.1016/j.jpsychires.2017.01.017.
- Andriessen K., de Gucht, V., & Maes, S (2012) The impact of traumatic events on emergency room nurses: Findings from a questionnaire survey, *International Journal of Nursing Studies*, 49(11), 1411-1422. doi.org/10.1016/j.ijnurstu.2012.07.003
- Adriessen, K. (2009) Can Postvention be prevention?, *Crisis*, 30 (1) 43-47. DOI 10.1027/0227-5910.30.1.43
- Australia Government (2017) Deaths in Prison Custody, Australia Institute of Criminology. [Accessed on 17 December 2018 at <https://aic.gov.au/publications/mr/mr20/deaths-prison-custody>]
- Awenat, Y., Peters, S., Shaw-Nunez, E., Gooding, P., Pratt, D., & Haddock, G. (2017). Staff experiences and perceptions of working with in-patients who are suicidal: Qualitative analysis. *The British Journal of Psychiatry*, 211(2), 103-108. doi:10.1192/bjp.bp.116.191817
- Barry, C. (2017). 'You just get on with the job': Prison officers' experiences of deaths in custody in the Irish prison service, *Prison Service Journal*, (230), 53.
- Bertee, T. (2012) Predicators of vicarious trauma and secondary traumatic stress among correctional officers, *Psychology Dissertations*, Philadelphia College of Osteopathic Medicine. Paper 228.
- Bohan, F., & Doyle, L. (2008). Nurses' experiences of patient suicide and suicide attempts in an acute unit. *Mental health practice*, 11(5), 12-16.

- Borrill, J., Paton, J., Regan, L., & Cassidy, T. (2004). The impact on staff of a self-inflicted death in custody. *Prison Service Journal*, (151), 2-6.
- Bowers, L., Simpson, A., Eyres, S., Nijman, H., Hall, C., Grange, A. & Phillips, L. (2006) Serious untoward incidents and their aftermath in acute inpatient psychiatry: the Tompkins Acute Ward study, *International Journal of Mental Health Nursing*, 15(4):226-34.
- Cotton, P., Drake, E., Whittaker, A. & Potter, J (1983) Dealing with suicide on a psychiatric inpatient unit, *Hospital and Community Psychiatry*, 34 (1), 55-59.
- Dewar, I., Eagles, J., Klein, S., Grey, N., & Alexander, D. (2000). Psychiatric trainees' experiences of, and reactions to, patient suicide. *Psychiatric Bulletin*, 24, 20–23
- Dhaliwal, R., & Harrower, J. (2009). Reducing prisoner vulnerability and providing a means of empowerment: Evaluating the impact of a listener scheme on the listeners, *The British Journal of Forensic Practice*, 11(3), 35-43. doi: 10.1108/14636646200900021
- Faberow, N (2005) The Mental Health Professional as suicide survivor, *Clinical Neuropsychiatry*, 2 (1) 13-20.
- Favril, L., Vander Laenen, F., Vandeviver, C., & Audenaert, K. (2017). Suicidal ideation while incarcerated: Prevalence and correlates in a large sample of male prisoners in flanders, belgium. *International Journal of Law and Psychiatry*, 55, 19-28. doi:S0160-2527(17)30027-4 [pii]
- Fazel S., Ramesh T., & Hawton K. (2017) Suicide in prisons: an international study of prevalence and contributory factors. *Lancet Psychiatry*. 4 (12):946-952. doi: 10.1016/S2215-0366(17)24424-3.
- Feigelman, W., Gorman, B. S., & Jordan, J. R. (2009). Stigmatization and suicide bereavement. *Death Studies*, 33(7), 591–608. doi:10.1080/07481180902979973
- Freyne, A. & O'Connor, A., 1992. Post-traumatic stress disorder symptoms in prisoners following a cell mate's hanging, *Irish Journal of Psychological Medicine*, 9(1), pp. 42-44.

- Gulfi, A., Castelli Dransart, D.A., Heeb, J., & Gutjahr, E (2010) The Impact of Patient Suicide on the Professional Reactions and Practices of Mental Health Caregivers and Social Workers, *Crisis*, 31:4, 202-210
- Gutin, N., McGann, V. L. & Jordan, J.R. (2010). *The impact of suicide on professional caregivers*. In: Jordan, J. R. and McIntosh, J. L. (Eds.) *Grief after suicide*, Routledge, 93-115.
- Hales, H., Davison, S., Misch, P., & Taylor, P. J. (2003). Young male prisoners in a young offenders' institution: Their contact with suicidal behaviour by others, *Journal of Adolescence*, 26(6), 667-685. doi:[http://dx.doi.org/10.1016/S0140-1971\(03\)00063-0](http://dx.doi.org/10.1016/S0140-1971(03)00063-0)
- Hales, H., Freeman, M., Edmondson, A., & Taylor, P. (2014). Witnessing suicide-related behavior in prison: A qualitative study of young male prisoners in England. *Crisis*, 35(1), 10-17. doi:10.1027/0227-5910/a000223
- Hales, H., Edmondson, A., Davison, S., Maughan, B., & Taylor, P. J. (2015). The impact of contact with suicide-related behavior in prison on young offenders. *Crisis*, 36(1), 21-30. doi:10.1027/0227-5910/a000292
- Halligan, P & Corcoran, P. (2001) The impact of patient suicide on rural general practitioners. *British Journal of General Practice*, 51(465):295-6.
- Hamaoka, D. A., Fullerton, C. S., Benedek, D. M., Gifford, R., Nam, T., & Ursano, R. J. (2007). Medical students' responses to an inpatient suicide: Opportunities for education and support. *Academic Psychiatry*, 31(5), 350-353. doi: 10.1176/appi.ap.31.5.350
- Hargate, R., Howden, S., Tarpey, E., & Walker, T. (2017). The PARALLEL Study (imPAct of experiencing Another's self harm and suicidal bEhaviour in hospital). *Journal of forensic practice*, 19(4), 258-268.
- Hawker, S., Payne, S., Kerr, C., Hardey, M., & Powell, J. (2002). Appraising the Evidence: Reviewing Disparate Data Systematically. *Qualitative Health Research*, 12(9), 1284–1299. <https://doi.org/10.1177/1049732302238251>

- Hawton, K., Linsell, L., Adeniji, T., Sariaslan, A., & Fazel, S. (2014). Self-harm in prisons in England and Wales: an epidemiological study of prevalence, risk factors, clustering, and subsequent suicide. *The Lancet*, 383(9923), 1147-1154.
- Hayes, L. M. (1997). From chaos to calm: One jail system's struggle with suicide prevention, *Behavioral Sciences and the Law*, 15(4), 399-413.
- Hendin H., Pollinger Hass A., Maltsberger J., Szanto K. & Rabinowicz H (2004). Factors Contributing to Therapist's Distress After the Suicide of a Patient. *American Journal of Psychiatry*, 161, 1442-1446.
- Jordan, J. (2017) Postvention is prevention—The case for suicide postvention, *Death Studies*, 41:10, 614-621, DOI: 10.1080/07481187.2017.1335544
- Jordan, J. (2001) Is Suicide bereavement difference? A reassessment of the literature, *Suicide and life-threatening behaviours*, 31 (1) 91-102, DOI: 10.1521/suli.31.1.91.21310
- Kayton, L., & Freed., H. (1967). Effects of a Suicide in a Psychiatric Hospital. *Archive of General Psychiatry*, 17, 187-194.
- Kendall, Kathleen and Wiles, Rose (2010) Resisting blame and managing emotion in general practice: the case of patient suicide. *Social Science & Medicine*, 70 (11), 1714-1720. (doi:10.1016/j.socscimed.2010.01.045).
- Li, J., Stroebe, M., Chan, C., & Chow, A. (2013). Guilt in Bereavement: A Review and Conceptual Framework,. *Death Studies*, 38(3), 1-7.
- Ludlow, A. Schmidt, B., Akoensi, T., Liebling, A., Giacomantonio, C & Sutherland, A, (2015) Self-inflicted Deaths in NOMS' Custody Amongst 18–24 Year Olds: Staff Experience, Knowledge and Views. *The Independent Review into Self-Inflicted Deaths of 18-24 year olds in Custody (Harris Review)*, 2015. [Accessed no 17 December 2018 at https://www.rand.org/pubs/research_reports/RR916.html]
- Lorenc. T., Petticrew, M., Whitehead, M., et al. (2014) Appendix 5. Quality assessment for the systematic review of qualitative evidence. In: *Crime, fear of crime and mental health:*

synthesis of theory and systematic reviews of interventions and qualitative evidence. Southampton, UK: NIHR Journals Library.

Mallon, S., & Stanley, N. (2015). Creation of a death by suicide: How do bereaved young adults come to understand the death of a friend as suicide?, *Crisis*, 36(2), 142-147.

Marzano, L., Hawton, K Rivlin, A. & Fazel, S (2011) Psychosocial influences on prisoner suicide: A case-control study of near-lethal self-harm in women prisoners, *Social Science & Medicine*, 72(6):874-83. doi: 10.1016/j.socscimed.2010.12.028

Maple, M, Pearce, T., Sanfrod, R., Cerel, J, Castelli Dransart, D., A., & Adiresson, K. (2018) A Systematic Mapping of Suicide Bereavement and Postvention Research and a Proposed Strategic Research Agenda, *Crisis*, 39(4), 275–282.doi: /10.1027/0227-5910/a000498

McKenzie, N. and Keane, M. (2007), Contribution of Imitative Suicide to the Suicide Rate in Prisons. *Suicide and Life-Threatening Behavior*, 37: 538-542. doi:10.1521/suli.2007.37.5.538

Ministry of Justice (2018) *Safety in custody quarterly: update to June 2018*. [Accessed on 19 September 2018 at <https://www.gov.uk/government/statistics/safety-in-custody-quarterly-update-to-june-2018>]

Modestin, J. & Wurmler, O. (1989) Role of modelling in in-patient suicide: a lack of supporting evidence, *British Journal of Psychiatry*, 155, 511-514.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med*, 6(7): e1000097. <https://doi.org/10.1371/journal.pmed.1000097>

Niedzwiedz, C, Haw, C., Hawton, K.& Platt, S. (2014) The Definition and Epidemiology of Clusters of Suicidal Behavior: A Systematic Review, *Suicide and life threatening behaviour*, 44 (5), 569-581 <https://doi.org/10.1111/sltb.12091>

- Pitman, A., Osborn, D., King, M. & Erlangsen, A. (2014) Effects of suicide bereavement on mental health and suicide risk. *Lancet Psychiatry*, 1(1):86-94. doi: 10.1016/S2215-0366(14)70224-X. Epub 2014 Jun 4.
- Popay, J. et. al. (2006) *Guidance on the conduct of narrative synthesis in systematic reviews*. London: Institute for Health Research
- Rissmiller, D. J., & Rissmiller, F. (1990). Inpatient suicide epidemics and suggestions for prevention, *Hospital & Community Psychiatry*, 41(8), 922-924.
- Rivlin A. , Hawton K., Marzano , L, &Fazel S. (2013) Psychosocial Characteristics and Social Networks of Suicidal Prisoners: Towards a Model of Suicidal Behaviour in Detention. *PLOS ONE*, 8(7): 68944. Doi: 10.1371/journal.pone.0068944
- Sacks, M and Eth, S, (1981) Pathological identification as a cause of suicide on an inpatient unit, *Hospital and Community Psychiatry*, 32(1):36-40.
- Sands, D. C. (2009). A tripartite model of suicide grief: Meaning-making and the relationship with the deceased. *Grief Matters: The Australian Journal of Grief and Bereavement*, 12(1), 10–17.
- Seeman, M (2015) The impact of suicide on co-patients, *Psychiatric Quarterly*, 86 (4) p 447-457. doi: 10.1007/s11126-015-9346-6.
- Shields, C., Kavanagh, M., & Russo, K. (2017). A Qualitative Systematic Review of the Bereavement Process Following Suicide. *OMEGA-Journal of Death and Dying*, 74(4), 426-454.
- Slade, K and Lopresti., S (2013) *Promoting Resilience in Prison Staff*. Accessed on 29 September 2018 at <http://irep.ntu.ac.uk/id/eprint/2343/>
- Spieß, H., Hübner-Liebermann. B., & Cording, C. (2002) Suicidal behaviour of psychiatric in-patients, *Acta Psychiatrica Scandinavia*, 106 (2), 134-138.

Szumilas, M., Kutcher, S. (2010). Systematic Review of Postvention Programs, *Canadian Journal of Public Health*, 102, 1, 18-29.

Takahashi, C., Chida, F., Nakamura, H., Akasaka, H., Yagi, J., Koeda, A., Takasuri, E., Otsuka, K & Sakai, A. (2011) The impact of inpatient suicide on psychiatric nurses and their need for support, *BMC Psychiatry*, 11, 38.

Taiminen, T. J., & Helenius, H. (1994). Suicide clustering in a psychiatric hospital with a history of a suicide epidemic: A quantitative study. *The American Journal of Psychiatry*, 151(7), 1087-1088.

<http://dx.doi.org/10.1176/ajp.151.7.1087>

Taiminen, T., Salmenpera, T., & Lehtinen, K. (1992). A suicide epidemic in a psychiatric hospital. *Suicide & Life-Threatening Behavior*, 22(3), 350-363.

US Department of Justice (2015) *Mortality in Local Jails and State Prisons, 2000–2013* - Statistical Tables, Office of Justice Programs, Bureau of Justice Statistics [Accessed on 17 December 2018]

Walsh, G., Sara, G., Ryan, C.J., & Large, M. (2015). Meta-analysis of suicide rates among psychiatric in-patients, *Acta Psychiatrica Scandinavica*, 131 (22) 174-184.

World Health Organization (2017). *Suicide Data*. [Accessed on 17 December 2018 at http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/]

Wright, L., Borrill, J., Teers, R., & Cassidy, T. (2006). The mental health consequences of dealing with self-inflicted death in custody, *Counselling Psychology Quarterly*, 19(2), 165-180.

Zemishlany, Z., Weinberger, A., Ben-Bassat, M., & Mell, H. (1987). An Epidemic of Suicide Attempts by Burning in a Psychiatric Hospital, *British Journal of Psychiatry*, 150(5), 704-706. doi:10.1192/bjp.150.5.704

9 Appendix A: Quality Assurance

APPENDIX D

1. Abstract and title: Did they provide a clear description of the study?
 - Good Structured abstract with full information and clear title.
 - Fair Abstract with most of the information.
 - Poor Inadequate abstract.
 - Very Poor No abstract.
2. Introduction and aims: Was there a good background and clear statement of the aims of the research?
 - Good Full but concise background to discussion/study containing up-to-date literature review and highlighting gaps in knowledge. Clear statement of aim AND objectives including research questions.
 - Fair Some background and literature review. Research questions outlined.
 - Poor Some background but no aim/objectives/questions, OR Aims/objectives but inadequate background.
 - Very Poor No mention of aims/objectives. No background or literature review.
3. Method and data: Is the method appropriate and clearly explained?
 - Good Method is appropriate and described clearly (e.g., questionnaires included). Clear details of the data collection and recording.
 - Fair Method appropriate, description could be better. Data described.
 - Poor Questionable whether method is appropriate. Method described inadequately. Little description of data.
 - Very Poor No mention of method, AND/OR Method inappropriate, AND/OR No details of data.
4. Sampling: Was the sampling strategy appropriate to address the aims?
 - Good Details (age/gender/race/context) of who was studied and how they were recruited. Why this group was targeted. The sample size was justified for the study. Response rates shown and explained.
 - Fair Sample size justified. Most information given, but some missing.
 - Poor Sampling mentioned but few descriptive details.
 - Very Poor No details of sample.
5. Data analysis: Was the description of the data analysis sufficiently rigorous?
 - Good Clear description of how analysis was done. Qualitative studies: Description of how themes derived/ respondent validation or triangulation. Quantitative studies: Reasons for tests selected hypothesis driven/ numbers add up/statistical significance discussed.
 - Fair Qualitative: Descriptive discussion of analysis. Quantitative.
 - Poor Minimal details about analysis.
 - Very Poor No discussion of analysis.

6. Ethics and bias: Have ethical issues been addressed, and what has necessary ethical approval gained? Has the relationship between researchers and participants been adequately considered?
- | | |
|-----------|---|
| Good | Ethics: Where necessary issues of confidentiality, sensitivity, and consent were addressed. |
| | Bias: Researcher was reflexive and/or aware of own bias. |
| Fair | Lip service was paid to above (i.e., these issues were acknowledged). |
| Poor | Brief mention of issues. |
| Very Poor | No mention of issues. |
7. Results: Is there a clear statement of the findings?
- | | |
|-----------|---|
| Good | Findings explicit, easy to understand, and in logical progression. Tables, if present, are explained in text. Results relate directly to aims. Sufficient data are presented to support findings. |
| Fair | Findings mentioned but more explanation could be given. Data presented relate directly to results. |
| Poor | Findings presented haphazardly, not explained, and do not progress logically from results. |
| Very Poor | Findings not mentioned or do not relate to aims. |
8. Transferability or generalizability: Are the findings of this study transferable (generalizable) to a wider population?
- | | |
|-----------|--|
| Good | Context and setting of the study is described sufficiently to allow comparison with other contexts and settings, plus high score in Question 4 (sampling). |
| Fair | Some context and setting described, but more needed to replicate or compare the study with others, PLUS fair score or higher in Question 4. |
| Poor | Minimal description of context/setting. |
| Very Poor | No description of context/setting. |
9. Implications and usefulness: How important are these findings to policy and practice?
- | | |
|-----------|---|
| Good | Contributes something new and/or different in terms of understanding/insight or perspective. Suggests ideas for further research. Suggests implications for policy and/or practice. |
| Fair | Two of the above (state what is missing in comments). |
| Poor | Only one of the above. |
| Very Poor | None of the above. |
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