On the reciprocal effects between multiple group identifications and mental health: A longitudinal study of Scottish adolescents

Kirsty Miller[1], Juliet R. H. Wakefield[2]*, & Fabio Sani[1]

[1]School of Social Sciences, University of Dundee, Dundee, Scotland.

[2]Division of Psychology, Nottingham Trent University, Nottingham, England.

Word count (exc. figures/tables): 4999

*Requests for reprints should be addressed to Juliet Wakefield, College of Business Law & Social Sciences, School of Social Sciences, Nottingham Trent University, 50 Shakespeare Street, Nottingham
NG1 4FQ. Tel +44 (0)115 941 8418 (e-mail: juliet.wakefield@ntu.ac.uk).

Abstract

Objectives: The aim of the study was to investigate the link between social group identification and mental health outcomes in a sample of secondary school pupils. Based on previous work, it was predicted that multiple high group identifications would protect against psychological ill-health. Furthermore, it was predicted that better mental health would also predict greater number of group identifications, thus creating a 'virtuous circle'.

Design: A longitudinal questionnaire design was used.

Methods: 409 Scottish secondary school pupils aged 13-17 completed a questionnaire twice over a year. Pupils' responses regarding their mental health and the extent of their identification with three groups (the family, school, and friends) were measured.

Results: A path analysis of the data showed that greater number of high group identifications predicted better mental health outcomes amongst participants. However, better mental health also predicted greater number of high group identifications, suggesting that there is a cyclical relationship between both variables. These results remained even when age and gender were controlled for.

Conclusions: The findings have both theoretical and practical implications. They highlight the importance of conceptualizing the link between group identification and mental health as cyclical, rather than uni-directional. This reconceptualization has implications for mental health promotion strategies, as it highlights the importance of attempting to turn a potentially 'vicious cycle' of social dis-identification and mental ill-health into a 'virtuous cycle' of social identification and mental health.

Practitioner Points:

- Results showed that in a population of 409 high school pupils, the more high group identifications pupils had, the better their mental health outcomes.

- Better mental health also predicted a greater number of high group identifications over time.

- The findings suggest that we would benefit from conceptualising the relationship between group identification and mental outcomes as being cyclical rather than uni-directional.

- Viewing the relationship between group identification and mental health in this way enables us to consider interventions which help turn a 'vicious cycle' into a 'virtuous cycle'.

Limitations:

- A potential limitation of the work relates to the use of self-report questionnaires which may elicit socially desirable responses.

- The sample only consists of high school pupils from main-stream public schools within Scotland.

Introduction

Group life is an important aspect of human existence: we tend to live, work, and play within groups (e.g. Tuomela, 2007; Tomasello, 2014). Indeed, recent work within the social identity tradition of social psychology (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) has shown that being part of social groups, or more specifically, feeling *identified* with these groups (i.e., experiencing a subjective sense of belonging to a group and commonality with its members; Sani, Madhok, Norbury, Dugard, & Wakefield, 2015a) can have a variety of positive outcomes for health and wellbeing. This 'social cure' literature (e.g., Jetten, Haslam, & Haslam, 2012) has consistently found a link between group identification and health-related outcomes, including psychological health, physical health, and health-related behaviours.

For instance, focusing specifically on mental health, identification with a wide range of different groups (including the family, the school, professional groups, and support groups) has been linked to a variety of positive psychological outcomes, including improvements in symptoms of depression, anxiety, stress, PTSD, and cognitive decline (e.g., Sani, Magrin, Scrignaro, & McCollum, 2010; Wakefield, Bickley, & Sani, 2013; Reicher & Haslam, 2006; Swartzman, Sani, & Munro, 2016; Haslam et al., 2010). One of the dominant accounts of the process through which group identification might impact upon mental health is that group identification promotes the feeling that one will receive social support from fellow group members during times of stress or crisis, as well as promoting a sense of identity, meaning, and purpose (e.g., Sani, 2012). In turn, such outcomes are likely to lead to improved mental health (e.g., Haslam, Jetten, Postmes, & Haslam, 2009).

The Relevance of Multiple Group Identifications

Based on this line of reasoning, we could legitimately argue that there could be a positive relationship between the number of groups with which one identifies and one's psychological health. This is because each additional group has the potential to provide more (and often unique types of) support, meaning, and purpose to one's life, thus contributing to mental health (Jetten, Haslam, Haslam, Dingle, & Jones, 2014; Jones & Jetten, 2011; Ysseldyk, Haslam, & Haslam, 2013). Furthermore, possessing multiple group memberships also means that should any memberships cease (as often happens during life transitions; e.g., Praharso, Tear, & Cruwys, 2016; Seymour-Smith, Cruwys, Haslam, & Brodribb, 2016), other groups will still be available to provide support.

However, we must qualify this statement by saying that these benefits depend on the types of groups (and the norms of the groups) in question. For example, groups that encourage harmful behaviours (such as substance misuse or self-harm) could clearly be detrimental for mental wellbeing (e.g., Dingle, Stark, Cruwys, & Best, 2014). Similarly, identifying with a stigmatized group (such as 'addicts' or 'people with depression') can also have negative consequences for mental health (e.g., Cruwys & Gunaseelan, 2016).

However, it is possible that the potential negative outcomes of identifying with such groups can be attenuated by possessing multiple group memberships. For example, exploring the related topic of health behaviour, Miller, Wakefield, and Sani (2016a) showed that having more group identifications is linked to healthier behaviour, even when one of the groups in question may possess norms that encourage unhealthy behaviour. Discussing these findings, the authors suggested that identifying with multiple groups means that the healthy norms of some groups help to 'cancel out' the unhealthy norms of other groups. We suggest that similar processes may occur with regards to mental health outcomes: identifying with multiple groups can help to dilute the potentially deleterious mental health effects of belonging to a stigmatized group, or to a group which possesses harmful norms.

Ultimately, this argument implies that, regardless of the nature of the groups with which one identifies, identifying with multiple groups is generally likely to have benefits for mental health. Indeed, this idea has been supported by a variety of recent studies. For example, Sani, Madhok, Norbury, Dugard, and Wakefield (2015b) found that a greater number of group identifications was associated with both lower self-rated depression and lower odds of having received a prescription for antidepressants in the last six months. Cruwys and colleagues (2013) found that the number of groups to which an individual belongs was a significant negative predictor of depression symptoms both two years and four years later. Further research has also demonstrated that multiple group memberships protect against potentially stressful life events such as starting university (Iyer et al., 2009), having a stroke (Haslam et al., 2008), experiencing brain trauma (Jones et al., 2011), or giving birth (Seymour-Smith et al., 2016).

The Reciprocal Relationship Between Number of Group Identifications and Mental Health

Consistent with the 'social cure' approach, the majority of longitudinal studies have tested the hypothesis that more group identifications predict better mental health. However, it is also important to consider another possibility. It is entirely plausible (and consistent with the etiology of mental illness) that feeling low psychologically will lead to reduced connection with others (e.g. Wade & Kendler, 2000; Hirschfeld et al., 2000). Thus, it could be argued that those with mental ill-health would become more insular, and that this in turn would reduce the number, and variety, of groups with which they identify.

Based on this theory, we could predict a cyclical relationship between number of group identification and mental health. For example, larger numbers of group identifications could lead to a reduction in psychological problems, which in turn could decrease feelings of

isolation, therefore increasing the likelihood of the individual identifying with more groups, and so on. Indeed, recent analyses of large-scale population data regarding the relationship between mental health and social (or community) participation have suggested that there is a reciprocal relationship between the two constructs. For example, a panel analysis of nationally-representative Australian data found that mental wellbeing was related to more community participation the following year, and, in turn, greater community participation was linked to better mental wellbeing a year later (Ding, Berry, & O'Brien, 2015). Similarly, data from the British Household Panel survey showed a reciprocal relationship between social participation and perceived mental health, even after controlling for important covariates such as employment status and household wealth (Yu, Sessions, Fu, & Wall, 2015).

While these findings are important to the extent that they support the idea of a reciprocal link between social (or group) based factors and mental health, there is an important distinction to be made between the notion of social/community participation and social identification. Social participation refers to the objective aspects of group belonging, which is in direct contrast to group identification, which refers to the subjective experience of belonging to a group: "the emotional and value significance to [us]" of that group membership (Tajfel, 1972, p. 31). Taking this distinction between objective and subjective measures of group life into account, we thus intend to investigate whether there is a similar reciprocal relationship between social identification and mental health as there is between social participation and mental health. We believe that providing evidence of the existence of this 'virtuous cycle' between group identification and mental health will provide the impetus for researchers to begin developing early interventions intended to create and reinforce the cycle, and to prevent the development of a 'vicious cycle' of social dis-identification and mental ill-health (e.g., Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005).

Multiple Group Identifications in Adolescence

In the current study, we will therefore investigate not only whether more group identifications predict better mental health, but also whether better mental health predicts more group identifications. To do this, we will use a sample of adolescents: a population whose psychological wellbeing appears to be worsening (McGorry, 2013). Furthermore, despite over half a million young people in the UK being diagnosed as suffering from psychological problems (Office for National Statistics, 2004), adolescents tend to have been neglected in the social and health literature (Dingle et al., 2014).

As well as the concerning rates of mental ill-health amongst adolescents, there is another reason for us selecting an adolescent sample for the current study. This relates to the fact that as young people enter adolescence, they tend to see their social groups (e.g., peer groups) as increasingly important to their lives (e.g., Hogg, Siegel & Hohman, 2011). In particular, feelings of acceptance and belonging to these groups are particularly important around this time (e.g. Allen & Bowles, 2012), while the relative importance of family and peer groups is also changing (Hogg et al., 2011), thus leaving young people potentially vulnerable to losing important groups. Additionally, adolescence tends to be associated with a search for a sense of self or identity (e.g. Erikson, 1995; Kroger, 2004) – something that can be provided through group membership (Turner et al., 1987). This makes adolescents a particularly suitable group to study from a social identity perspective (Miller, Wakefield, & Sani, 2016a; 2016b).

Indeed, various authors have called for more group-focused research involving adolescent samples: a recent series published in The Lancet highlighted the need to consider young people's health from a 'social determinants of health' perspective, specifically considering the social groups that play a central role in their lives (Sawyer et al., 2012; Viner et al., 2012; Catalano et al., 2012; Patton et al., 2012). Given the opportunities for prevention

and treatment offered by the 'Social Cure' perspective, we agree that such work is desperately needed, and we hope that the present study will go some way to remedy this dearth in the literature.

In relation to the link between multiple social identifications and mental health we are only aware of one longitudinal study (Benish-Weisman, Schiefer, Möllering, & Knafo-Noam, 2015) that has considered this relationship in an adolescent sample from a social cure perspective. The authors measured German and Israeli adolescents' identification with three groups: the family, the school, and the nation (Germany/Israel respectively). Consistent with the social cure approach, a positive relationship was found between number of group identifications at Time 1 and self-esteem a year later. However, when the reverse analysis was carried out, Time 1 self-esteem also predicted number of group identifications at Time 2, thus supporting the authors' (and our) reciprocal hypothesis.

While this work is promising, self-esteem does not necessarily provide an optimal indicator of mental health. It would therefore be useful to examine the impact of group identifications over time in an adolescent population using a more general measure of psychological health. We also suggest that a more appropriate choice of groups could have been used: while family and school groups are likely to be important to young people (both of which were considered by Benish-Weisman and colleagues [2015] in their study), there may be groups that are more immediately relevant to adolescents than the nation (which was the final group considered by Benish-Weisman and colleagues). Indeed, various studies have suggested that the family, the school, and *friends* tend to be the most central groups in adolescents' lives (e.g. Sawyer et al., 2012; Miller, Wakefield & Sani, 2015). Moreover, we know that the friendship group tends to become increasingly important during adolescence – often more so than other groups (e.g. Hogg et al., 2011). Exploring identification with friends, family, and school would therefore enable us to provide an ecologically valid

exploration of the effect of three key group identifications on adolescents' mental health (and vice versa). In addition, it will be the first study to consider the reciprocal relationship between multiple group identifications and a general measure of mental wellbeing in this population.

The Present Study

With this in mind, the aim of the present study is, first, to investigate whether identification with three key groups (the family, the school, and friends – as recommended by Sawyer et al., 2012) will have a positive impact on adolescents' psychological health over time. To provide a more thorough overview of psychological health than Benish-Weisman et al.'s (2015) initial study, we will measure general mental health (rather than self-esteem). Our first hypothesis is therefore that number of high group identifications (0-3 inclusive) will be a positive predictor of adolescent psychological health over time.

Our second aim is to consider the reverse pathway: that psychological wellbeing will predict number of high group identifications. Consistent with previous adolescent research (Benish-Weisman et al., 2015) we predict that feeling psychologically healthy will promote group identification. Our second hypothesis is therefore that better mental health will predict more high group identifications over time.

Method

Participants and Procedure

This work is part of a longitudinal study which involved collecting data from 409 high school pupils (204 males, 203 females; M_{age} = 14.73 years, *SD* = 1.04, *age range*: 13-17 years) from three Scottish public (non-fee-paying) secondary (high) schools.

All public secondary schools within one local education authority (chosen for its proximity and ease of access for the principle researcher) were contacted to request their assistance with the project. The schools that were willing and able to participate fully in both time-points of the study were used. Each school obtained parental permission for all pupils to participate in the study. Pupils also gave their personal informed consent before participating, and were reminded of their right to withdraw at any time. Only one individual chose not to participate.

Responses were collected via paper-and-pencil questionnaire at Time 1 (T1) and again at Time 2 (T2). The second session took place an average of 11 months later, and at both time points, questionnaires were completed in class time under exam conditions, either in assembly or in class. The questionnaire was administered either by the researcher or by class teachers. In cases where the researcher was not present, the teachers administering the questionnaire were fully briefed on ethical and procedural considerations. In order to encourage honest responses, participants completed the questionnaire anonymously (although codes were used to allow the linking of T1 and T2 data).

Questionnaire Measures

Group Identification

Participants' *identification* with three distinct social groups was measured: the family, the school, and a friendship group. Concerning 'family', participants were instructed to consider "your immediate family or the people you live with most of the time, for example,

your parents, carers, step-parents, or other family members who live with you in your house".

With regards to 'school', participants were asked to think about it in terms of "an institution

with its history, values and beliefs". Finally, concerning the group of 'friends', participants

were asked to think about "the group of friends that you spend most time with or your 'best'

friends".

Group identification was assessed with Doosje et al.'s (1995) four-item scale. All

items (e.g., "I feel strong ties with members of [group]") were rated using a 1 ('I strongly

disagree') to 7 ('I strongly agree') scale, with higher values indicating greater identification.

Participants completed the scale with reference to the family (Cronbach's $\alpha = 0.92$), the

school (Cronbach's $\alpha = 0.89$), and a friendship group (Cronbach's $\alpha = 0.91$).

We created three binary variables to allow us to sum the number of high group

identifications participants had (for further examples of this method see Sani, Madhok,

Norbury, Dugard, & Wakefield, 2014, 2015a, 2015b; Miller et al., 2015, 2016a). One

variable was created for each group identification measure; family (T1: $M = 0.85$, $SD = 0.36$;

T2: $M = 0.79$, $SD = 0.40$), school (T1 $M = 0.59$, $SD = 0.49$; T2 $M = 0.54$, $SD = 0.50$), and

friendship group (T1 $M = 0.82$, $SD = 0.38$; T2 $M = 0.81$, $SD = 0.40$). We did this by

calculating each participant's mean identification score for each of the three groups. If a

participant's mean score was less than 6 for a particular group, they received '0' for that

binary variable (indicating the participant did not identify highly with that group), while if

their mean score was between 6 and 7 (inclusive) they received '1' for that binary variable

(indicating the participant felt highly identified with that group). We chose these stringent

scores as we wanted to ensure that only those pupils who definitely identified highly with

each group were included in the 'high' category. We then summed the three binary variables

to create a variable indicating each participant's number of group identifications. This

variable ranges from 0 (the participant did not identify highly with any groups) to 3 (the participant identified highly with all three groups).

Mental Health

We assessed *mental health symptoms* with the 12-item version of the General Health Questionnaire (GHQ-12; Goldberg, 1972). This is a well-validated and extensively-used instrument designed for the detection of mild psychiatric disturbance. The scale has been used successfully with adolescents (Baksheev, Robinson, Cosgrave, Baker, & Yung, 2011; Goldberg and Williams, 1988), and each item assesses the frequency with which the participant has experienced a particular symptom over the past month (e.g., "Feeling unhappy and depressed"), using a scale ranging from 1 ('never') to 4 ('all the time').

The instrument's creator recommends bimodal scoring (0-0-1-1) over Likert-scaled scoring (0-1-2-3) (Goldberg and Williams, 1988). A binary variable was therefore created, where responses of 1 and 2 were assigned scores of '0' (indicating the symptom absence), and responses of 3 and 4 were assigned scores of '1' (indicating symptom presence). Each participant's 12 binary scores were then summed to create a GHQ-12 score, which could range between 0 and 12, with higher values indicating poorer mental health (Cronbach's α = 0.89).

Demographic Variables

Participants indicated their *gender* (female = 0, male = 1) and *age*.

Results

Descriptive Statistics, Tests of Differences, and Correlations Between T1 and T2 Variables

T1 and T2 means and standard deviations for number of high group identifications and GHQ-12 scores are presented in Table 1. GHQ-12 increased significantly between T1 (2.77) and T2 (3.52), $t(385) = 5.17$, $p < .001$ indicating worsening mental health. Mean number of high group identifications decreased significantly between T1 (2.26) and T2 (2.14), $t(385) = 2.51$, $p = .01$.

There was a positive correlation between T1 and T2 GHQ-12 ($r = .65$, $p < .001$), and similarly, between T1 and T2 number of high group identifications ($r = .53$, $p < .001$). As expected, number of high group identifications at T1 was negatively correlated with T2 GHQ-12 ($r = -.40$, $p < .001$). Gender was negatively correlated with GHQ-12, with females having higher scores than males (and therefore experiencing worse mental health). This relationship was stronger at T2 ($r = -.33$) than T1 ($r = -.28$). Males tended to have more high group identifications than females. Age did not correlate with any variable.

(TABLE 1)

Cross-Lagged Model

Next, we conducted a cross-lagged path analysis in AMOS 20.0 (Arbuckle, 2011). This model included T1 and T2 number of high group identifications, T1 and T2 GHQ-12, and gender (age was not included, since it was not found to correlate with any other variable). Since path analysis requires a complete data-file, we removed 23 cases before analysis due to missing data. Results are reported in Figure 1. Model fit indices are as follows: $X^2(1) = 24.06$, $p < .001$; CFI = 0.96; RMSEA = 0.25; 90% CI [0.17, 0.33]; SRMR = 0.04. All reported regression weights are standardized. Supporting Hypothesis 1, T1 number of high group identifications had a negative, statistically significant impact on T2 GHQ-12 (*beta* = -

.10, $p = .018$). Moreover, supporting Hypothesis 2, T1 GHQ-12 had a negative, statistically significant impact on T2 number of high group identifications (*beta* = -.18, $p < .001$). Unsurprisingly, T1 number of high group identifications had a positive, statistically significant impact on T2 number of high group identifications (*beta* = .44, $p < .001$), while T1 GHQ-12 had a positive, statistically significant impact on T2 GHQ-12 (*beta* = .55, $p < .001$). Finally, gender had a negative, statistically significant impact on T2 GHQ-12, indicating that mental health symptoms were more pronounced in females than males (*beta* = -.17, $p < .001$). The R^2 values for T2 number of high group identifications and T2 GHQ-12 were .30 and .45 respectively, indicating that the T1 predictors explained 30% and 45% of the variance in the two outcome variables respectively.

(FIGURE 1)

Comparing the paths between T1 number of high group identifications and T2 GHQ-12, and between T1 GHQ-12 and T2 number of high group identifications, our model revealed the latter to be stronger than the former (*betas* = -.10 and -.18 respectively). To explore this difference in more depth, we re-ran our model after constraining these two key paths, so that their unstandardized values were both equal to 1. We then used a chi-square difference test (e.g., Klein, 1998) to compare the fit of this new version of the model to our original model. We found the fit of the constrained model to be significantly poorer than the fit of our original model, $X^2_{\text{diff}} (2_{\text{diff}}) = 1073.91$, $p < .001$. We can therefore conclude that the two paths are not of comparable size, and that GHQ-12 are a stronger predictor of number of high group identifications over time than vice versa.

Discussion

Before we discus our results, it is worth noting that despite having a large RMSEA value, our other measures of fit are excellent, suggesting that our conclusions are supported. Indeed, recent work has suggested that several values should be taken into account (especially when the model has small degrees of freedom, as in our case; Mueller & Hancock, 2008; Kenny, Kaniskan, & McCoach, 2014). As a result, we can tentatively claim that our results supported Hypothesis 1: with each additional high group identification that participants possessed at T1, their T2 GHQ-12 declined (thus indicating improved mental wellbeing), even after controlling for T1 GHQ-12. This is consistent with the 'social cure' perspective: the idea that there will be a positive relationship between the number of groups with which one identifies and one's psychological health (due to the quantity and quality of support provided, e.g., Jetten et al., 2014). It also supports previous work showing that multiple group identifications can protect against psychological problems in adults (e.g. Sani et al., 2015b; Cruwys et al., 2013; Iyer et al., 2009; Haslam et al., 2008; Jones et al., 2011).

Additionally, the current findings are amongst the first to show that multiple high group identifications are beneficial for adolescent mental health. Our results are also consistent with those of Benish-Weisman et al. (2015), who found that stronger identification with the family, school, and nation predicted higher levels of self-esteem. However, the current work goes beyond this by showing that multiple group memberships in adolescence also protect against general psychological disturbance.

We also considered adolescents' identification with their family and school. However, rather than exploring our participants' identification with the nation, we examined the extent of their identification with their friends. This allowed us to support and extend Benish-Weisman et al.'s findings by exploring the impact of adolescents' identification with the three social groups commonly considered to be most important to those at this life-stage (e.g.

Sawyer et al., 2012; Hogg et al., 2011). This enhanced the ecological validity of our study, and it is reassuring that our findings were consistent with Benish-Weisman et al.'s.

Hypothesis 2 was also supported, with better mental health (as indicated by lower GHQ-12) predicting more high group identifications over time. These results are also consistent with those of Benish-Weisman et al. (2015), although we extend their results by exploring the predictive power of general mental health (rather than simply self-esteem).

Taken together, our results suggest that while number of high group identifications is a positive predictor of GHQ-12 over time, GHQ-12 is also a positive predictor of number of high group identifications over time. These findings extend the work of Yu et al. (2015) and Ding et al. (2015), who explored the relationship between community participation and mental health by showing that this relationship is also present between group identification and mental health. Ultimately, these results support our initial prediction: that there is a cyclical relationship between number of high group identifications and mental health. To this extent, we suggest that it would be beneficial to conceptualize these variables as both influencing, and being influenced by each other. We feel this provides a useful insight into ways in which mental ill-health can be treated and prevented.

Covariates

It is worth noting that gender was also a significant predictor of T2 GHQ-12, with females reporting higher scores (and therefore worse mental wellbeing) than males. This is unsurprising, as there are well-known gender differences in relation to mental health (e.g. Currie et al., 2015). There are several potential reasons for this, including females being more prone to school-related stress (Currie et al., 2015) and the effects of social pressures regarding body image and appearance (e.g. Dion et al., 2016).

Participants' T1 GHQ-12 was controlled for in our analyses, thus illustrating the strength of the relationship between the other T1 variables and T2 GHQ-12. Unsurprisingly,

we found participants' T1 GHQ-12 positively predicted their T2 GHQ-12: there is a well-documented high recurrence rate for mental ill-health, with those who have suffered from psychological problems at a greatly increased risk of suffering from them again at later stages (e.g., Cruwys et al., 2013).

Differences Between T1 and T2

When considering the differences between T1 and T2, several points are noteworthy. First, participants had fewer high group identifications at T2 than T1. This is consistent with Benish-Weisman et al.'s (2015) finding that numbers of social identifications tend to decrease as children age. They suggested this may be due to children's developing cognitive abilities, which could lead them to question their group memberships. However, it is also worth considering the alternative explanation: that this decrease in high identifications could be due to the specific nature of the groups in question. It is possible that had different groups been examined (e.g., those based on peer groups), this decrease would not have been found. Nonetheless, this decrease is concerning, given that high group identifications can help protect against mental ill-health. Further exploration would thus be worthwhile.

The increase in GHQ-12 (indicating worsening psychological wellbeing) between T1 and T2 is also noteworthy. While it may have been expected, given that mental health tends to worsen throughout adolescence (e.g. Nielsen, Ringgaard, Broholm, Sindballe, & Olsen, 2002; Viner et al., 2006), it is still a matter for concern, and needs to be addressed.

Limitations and Future Directions

Our study is not without limitations. One potential limitation is the use of questionnaires, which may have the potential to elicit socially desirable responses. However, given the number of participants involved in the present study, other methods of data collection would be impractical. Moreover, we believe our policy of anonymity encouraged truthful responses.

Given the difference between the current findings and those of Benish-Weisman and colleagues (2015), future research should consider the impact of identification with different types of groups on different psychological outcomes. In particular, it may be useful to allow young people to choose the groups with which they wish to indicate their identification. This would allow us to explore which groups they consider to be important, but also whether these groups differ in relation to their impact on later mental health outcomes.

Regarding the generalisability of our findings, clearly our sample was self-selected, since it only consisted of schools that were able and willing to take part in the survey. Furthermore, the schools were from only one Scottish local authority. However, we would argue that our sample was still largely representative of other public secondary schools within the country. While we were not able to obtain the participants' postcodes for ethical reasons, discussion with school management revealed that all schools enrolled pupils from a variety of catchment areas to ensure that pupils from all socio-economic backgrounds were able to attend each school. As a result, the pupils at each school provided a representative sample of children from the local authority. Thus, while we acknowledge that Scottish high school children may not be representative of all high school children, we believe that our results could legitimately be generalized to other public secondary school children in the country.

However, building upon the previous point, it would be worthwhile to replicate this work in different countries and cultures to see if the current findings were replicated, and if any discrepancies between the current findings and those of Benish-Weisman et al. (2015) were due to cultural factors or differences regarding the role and nature of education in different parts of the world.

Implications and Applications

Our findings have important implications. First, that we should encourage adolescents to identify with as many different social groups as possible. Although identification is

subjective, it could be encouraged by suggesting that they join groups that are compatible with their interests, values, attitudes, or goals.

Second, that it is important for us to bear in mind that not only does group identification predict mental illness, mental illness also predicts group identification. Thinking about the relationship between group identifications and mental health as a one-way process thus provides an incomplete picture. Instead, we need to think of this relationship as cyclical, with variables influencing each other. We also must take this into account when designing interventions.

For example, one of the most fruitful ways to apply these findings would be to turn this 'vicious cycle' into a 'virtuous cycle' by using a programmes such as Groups4Health (Haslam, Cruwys, Haslam, Dingle, & Chang, 2016). Adapting such an initiative for adolescents would enable professionals to educate young people about the importance of social groups for health, as well as helping adolescents to enhance their social worlds at a time which is known to be critical for defining the rest of the life-course (Birchwood & Singh, 2013; Kessler et al., 1997; Kessler et al., 1998).

In conclusion, the results from the present study highlight the important role that group identification plays in the mental health of adolescents. Just as numerous studies have reinforced the importance of group connection for adults' health, our work shows that adolescents also benefit from living in a rich and supportive social world. The importance of these findings for educational policy cannot be underestimated: by encouraging adolescents to become more socially connected today, we increase their chances of having happier tomorrows.

References

Allen, K. A., & Bowles, T. (2012). Belonging as a guiding principle in the education of

adolescents. *Australian Journal of Educational and Developmental Psychology, 12,* 108-119.

ISSN: ISSN-1446-5442.

Arbuckle, J. L. (2011). *Amos 20 User's Guide*. Chicago, IL.

Baksheev, G.N., Robinson, J., Cosgrave, E.M., Baker, K., & Yung, A.R., (2011). Validity of the

12-item General Health Questionnaire (GHQ-12) in detecting depressive and anxiety

disorders among high school students. *Psychiatry Research, 187*, 291-296. doi:

10.1016/j.psychres.2010.10.010.

Benish-Weisman, M., Daniel, E., Schiefer, D., Möllering, A., & Knafo-Noam, A. (2015).

Multiple social identifications and adolescent's self-esteem. *Journal of Adolescence, 44,*

21-31. doi: 10.1016/j.adolescence.2015.06.008.

Birchwood, M., & Singh, S.P., (2013). Mental health services for young people: Matching the

service to the need. *The British Journal of Psychiatry 54*, 1-2. doi:

10.1192/bjp.bp.112.119149.

Catalano, R. F., Fagan, A. A., Gavin, L. E., Greenberg, M. T., Irwin, C. E., Ross, D. A., & Shek,

D. T.L. (2012). Worldwide application of prevention science in adolescent health. *Lancet,*

37. doi: 10.1016/S0140-6736(12)60238-4.

Cruwys, T., Dingle, G.A., Haslam, C., Haslam, S.A., Jetten, J., & Morton, T.A., (2013). Social

group memberships protect against future depression, alleviate depression symptoms and

prevent depression relapse. *Social Science and Medicine 98*, 179-186. doi:

10.1016/j.socscimed.2013.09.013.

Cruwys, T., & Gunaseelan, S. (2016). "Depression is who I am": Mental illness identity, stigma and wellbeing. *Journal of Affective Disorders*, *189*, 36-42. doi: 10.1016/j.jad.2015.09.012.

Currie C, Van der Sluijs, W., Whitehead, R., Currie, D., Rhodes, G., Neville, F., & Inchley, J. (2015). HBSC 2014 Survey in Scotland National Report. Child and Adolescent Health Research Unit (CAHRU), University of St Andrews.

Ding, N., Berry, H. L., & O'Brien, L. V. (2015). One-year reciprocal relationship between community participation and mental wellbeing in Australia: A panel analysis. *Social Science & Medicine, 128*, 246-254. doi: 10.1016/j.socscimed.2015.01.022.

Dingle, G. A., Stark, C., Cruwys, T., & Best, D. (2014). Breaking good: Breaking ties with social groups may be good for recovery from substance misuse. *British Journal of Social Psychology, 54,* 236-254. doi: 10.1111/bjso.12081.

Dion, J., Hains, J., Vachon, P., Plouffe, J., Laberge, L., Perron, M. … Leone, M. (2016). Correlates of body dissatisfaction in children. *The Journal of Pediatrics, 171,* 202-207. doi:10.1016/j.jpeds.2015.12.045.

Doosje, E.J., Ellemers, N, & Spears, R., (1995). Perceived variability as a function of group status and identification. *Journal of Experimental Social Psychology 31*, 410-436. doi: 10.1006/jesp.1995.1018.

Erikson, E.H. (1995). *Identity, youth and crisis*. New York: W. W. Norton.

Goldberg, D.P., (1972). *The detection of psychiatric illness by questionnaire*. London: Oxford University Press.

Goldberg, D., & Williams, P., (1988). *A user's guide to the General Health Questionnaire.* Windsor U.K.: NFER-Nelson.

Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G., & Chang, M. X. L. (2016). Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group

membership improves mental health. *Journal of Affective Disorders, 194*, 188-195. doi: 10.1016/j.jad.2016.01.010.

Haslam, C., Haslam, S. A., Jetten, J., Bevins, A., Ravenscroft, S., & Tonks, J. (2010). The social treatment: the benefits of group interventions in residential care settings. *Psychology and Aging*, *25*, 157-167. doi: 10.1037/a0018256.

Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and well-being: An emerging agenda for applied psychology. *Applied Psychology, 58*, 1-23. doi: 10.1111/j.1464-0597.2008.00379.x.

Haslam, S.A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S., (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology, 44¸* 355-370. doi: 10.1348/014466605X37468.

Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jetten, J., & Williams, W. H. (2008). Maintaining group memberships: Social identity continuity predicts well-being after stroke. *Neuropsychological Rehabilitation, 18* (56), 671-691. doi: 10.1080/09602010701643449.

Hirschfeld, R. M. A., Montgomery, S. A., Keller, M. B., Kasper, S., Schatzberg, A. F., Möller, H. J., . . .Bourgeois, M. (2000). Social functioning in depression: A review. *Journal of Clinical Psychiatry*, *61*, 268-275. doi:10.4088/JCP.v61n0405.

Hogg, M. A., Siegel, J. T., & Hohman, Z. P. (2011). Groups can jeopardize your health: Identifying with unhealthy groups to reduce self-uncertainty. *Self and Identity, 10* , 326-335. doi: 10.1080/15298868.2011.558762.

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., & Haslam, S.A., (2009). The more (and the more compatible) the merrier: Multiple group memberships and identity compatibility as

predictors of adjustment after life transitions. *British Journal of Social Psychology, 48*, 707-733. doi: 10.1348/014466608X397628.

Jetten, J., Haslam, C., & Haslam, S.A., (2012). *The social cure: Identity, health and well-being*. New York: Psychology Press.

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., & Jones, J. M. (2014). How groups affect our health and well-being: the path from theory to policy. *Social Issues and Policy Review*, *8*, 103-130. doi: 10.1111/sipr.12003.

Jones, J. M., Haslam, S. A., Jetten, J., Williams, W. H., Morris, R., & Saroyan, S. (2011). That which doesn't kill us can make us stronger (and more satisfied with life): The contribution of personal and social changes to well-being after acquired brain injury. *Psychology & Health, 26*, 353-369. doi: 10.1080/08870440903440699.

Jones, J.M., & Jetten, J., (2011). Recovering from strain and enduring pain: Multiple group memberships promote resilience in the face of physical challenges. *Social Psychological & Personality Science, 2*, 239-244. doi: 10.1177/1948550610386806.

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2014). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486-507. doi: 10.1177/0049124114543236.

Kessler, R.C., Berglund, P.A., Foster, C.L., Saunders, W.B., Stang, P.E., & Walters, E.E., (1997). Social consequences of psychiatric disorders, II: Teenage parenthood. *American Journal of Psychiatry, 154*, 1405-1411. doi: 10.1176/ajp.154.10.1405.

Kessler, R.C., Walters, E.E., & Forthofer, M.S., (1998). The social consequences of psychiatric disorders, III: Probability of marital stability. *The American Journal of Psychiatry, 155*, 1092-1096. doi: 10.1176/ajp.155.8.1092.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford.

Kroger, J. (2004) *Identity in Adolescence. The balance between self and other*. London: Routledge.

McGorry, P., (2013). Prevention, innovation and implementation science in mental health: The next wave of reform. *British Journal of Psychiatry, 202*, 3-4. doi: 10.1192/bjp.bp.112.119222.

Miller, K., Wakefield, J. R. H., & Sani, F. (2016a). Greater number of group identifications is associated with healthier behaviour in adolescents. *British Journal of Developmental Psychology*, *34*, 291-305. doi: 10.1111/bjdp.12141.

Miller, K., Wakefield, J. R. H., & Sani, F. (2016b). Group identification and addictive health behaviours in adolescents. In: S. A. Buckingham & D. Best (Eds.). *Addiction, behavioral change and social identity: The path to resilience and recovery* (pp. 71-86). Oxon: Routledge.

Miller, K., Wakefield, J. R. H., & Sani, F. (2015). Identification with social groups is associated with mental health in adolescents: Evidence from a Scottish community sample. *Psychiatry Research*, *228*, 340-346. doi: 10.1016/j.psychres.2015.05.088.

Mueller R.O., & Hancock, G. R. (2008). Best practices in structural equation modeling. In: Osborne J, (Ed.). *Best practices in quantitative methods*, (pp. 488-508). Sage; Thousand Oaks, CA.

Nielsen, G. A., Ringgaard, L., Broholm, K., Sindballe, A., & Olsen, S. F. (2002). *Unges livsstil og daligdag 2000: Forbrug af tobak, alkohol, og stoffer* [Young people's lifestyle and daily life 2000: Use of tobacco, alcohol and drugs]. Copenhagen, Denmark: Danish Cancer Society and National Board of Health.

Office of National Statistics, (2004). *Child and Adolescent Mental Health Survey*. Retrieved from Health and Social Care Information Centre:

http://www.hscic.gov.uk/catalogue/PUB06116/ment-heal-chil-youn-peop-gb-2004-rep2.pdf.

Patton, G.C., Coffey, C., Cappa, C., Currie, D. Riley, L. Gore, F., … Ferguson, J. (2012). Health of the world's adolescents: A synthesis of internationally comparable data. *Lancet, 379,* 1665-1675. doi: 10.1016/S0140-6736(12)60203-7.

Praharso, N. F., Tear, M. J., & Cruwys, T. (2016). Stressful life transitions and health: A comparison of the stress buffering hypothesis and the social identity model of identity change. *Psychiatry Research*. doi: 10.1016/j.psychres.2016.11.039.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J.R.H., (2014). Greater number of group identifications is associated with healthier behaviour: Evidence from a Scottish community sample. *British Journal of Health Psychology, 20*, 466-481. doi: 10.1111/bjhp.12119.

Sani, F., Magrin, M. E., Scrignaro, M., & McCollum, R. (2010). Ingroup identification mediates the effects of subjective ingroup status on mental health. *British Journal of Social Psychology, 49*, 883-893. doi: 10.1348/014466610X517414.

Sani, F. (2012). Group identification, social relationships, and health. In J. Jetten, C. Haslam, & S. A. Haslam (Eds.). *The social cure: Identity, health and well-being* (pp. 21-37). New York: Psychology Press.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. H. (2015a). Greater number of group identifications is associated with healthier behaviour: evidence from a Scottish community sample. *British Journal of Health Psychology*, *20*, 466-481. doi:10.1111/bjhp.12119.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. H. (2015b). Greater number of group identifications is associated with lower odds of being depressed: evidence from a

Scottish community sample. *Social Psychiatry and Psychiatric Epidemiology*, *50*, 1389-1397. doi: 10.1007/s00127-015-1076-4.

Sawyer, M.D., Afifi, R.A., Bearinger, L.H., Blakemore, S., Dick, B., Ezeh, A.C., & Patton, G.C., (2012). Adolescence: A foundation for future health. *Lancet, 379* (9826), 1630-1640. doi: 10.1016/S0140-6736(12)60072-5.

Seymour-Smith, M., Cruwys, T., Haslam, S. A., & Brodribb, W. (2016). Loss of group memberships predicts depression in postpartum mothers. *Social Psychiatry and Epidemiology.* doi: 10.1007/s00127-016-1315-3.

Swartzman, S., Sani, F., & Munro, A. J. (2016). The role of social support, family identification, and family constraints in predicting post-traumatic stress after cancer. *Psycho-Oncology*. doi: 10.1002/pon.4304.

Tajfel, H. (1972). Experiments in a vacuum. In J. Israel & H. Tajfel (Eds.), *The context of social psychology: A critical assessment* (pp. 69–119). London: Academic Press.

Tomasello, M., (2014). The ultra-social animal. *European Journal of Social Psychology 44,* 187-194. doi: 10.1002/ejsp.2015.

Tuomela, R., (2007). *The philosophy of sociality: The shared point of view*. Oxford: University Press.

Turner, J.C., Hogg, M.A., Oakes, P., Reicher, S., & Wetherell, M., (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Basil-Blackwell.

Viner, R. M., Haines, M. M., Head, J. A., Bhui, K., Taylor, S., Stansfeld, S. A. …Booy, R. (2006). Variations in associations of 55 health risk behaviors among ethnic minority early adolescents. *Journal of Adolescent Health, 38*, 55. doi: 10.1016/j.jadohealth.2004.09.017.

Viner, R.M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A. & Currie, C. (2012). Adolescence and the social determinants of health. *Lancet, 379* (9826). 1641-1652. doi: http://dx.doi.org/10.1016/S0140-6736(12)60149-4.

Wade, T., & Kendler, K. S. (2000). The relationship between social support and major depression: Cross-sectional, longitudinal, and genetic perspectives. *The Journal of Nervous and Mental Disease*, *188*, 251-258. doi: 10.1097/00005053-200005000-00001.

Wakefield, J. R. H., Bickley, S., & Sani, F., (2013). The effects of identification with a support group on the mental health of people with multiple sclerosis. *Journal of Psychosomatic Research, 74*, 420-426. doi: 10.1016/j.jpsychores.2013.02.002.

Ysseldyk, R., Haslam, S. A., & Haslam, C. (2013). Abide with me: Religious group identification among older adults promotes health and well-being by maintaining multiple group memberships. *Aging Mental Health, 17*, 869-879. doi: 10.1080/13607863.2013.799120.

Yu, G., Sessions, J. G., Fu, Y., & Wall, M. (2015). A multilevel cross-lagged structural equation analysis for reciprocal relationship between social capital and health. *Social Science & Medicine, 142*, 1-8. doi: 10.1016/j.socscimed.2015.08.004.

Table 1.

Means, standard deviations, tests of differences, and correlations between T1 and T2 variables

Variable	1	2	3	4	5
1.T1 GHQ-12 Score (0-12) (*M* = 2.77; *SD* = 3.15)	-				
2. T2 GHQ-12 Score (0-12) (*M* = 3.52; *SD* = 3.55)	.65***	-			
3. T1 No. of High Group Identifications (0-3) (*M* = 2.26; *SD* = 0.93)	-.49***	-.40***	-		
4. T2 No. of High Group Identifications (0-3) (*M* = 2.14; *SD* = 0.94)	-.40***	-.45***	.53***	-	
5. Gender (Female = 0, Male = 1)	-.28***	-.33***	.15**	.13*	-
6. T1 Age (*M* = 14.73; *SD* = 1.05)	.00	-.05	-.05	-.04	.00

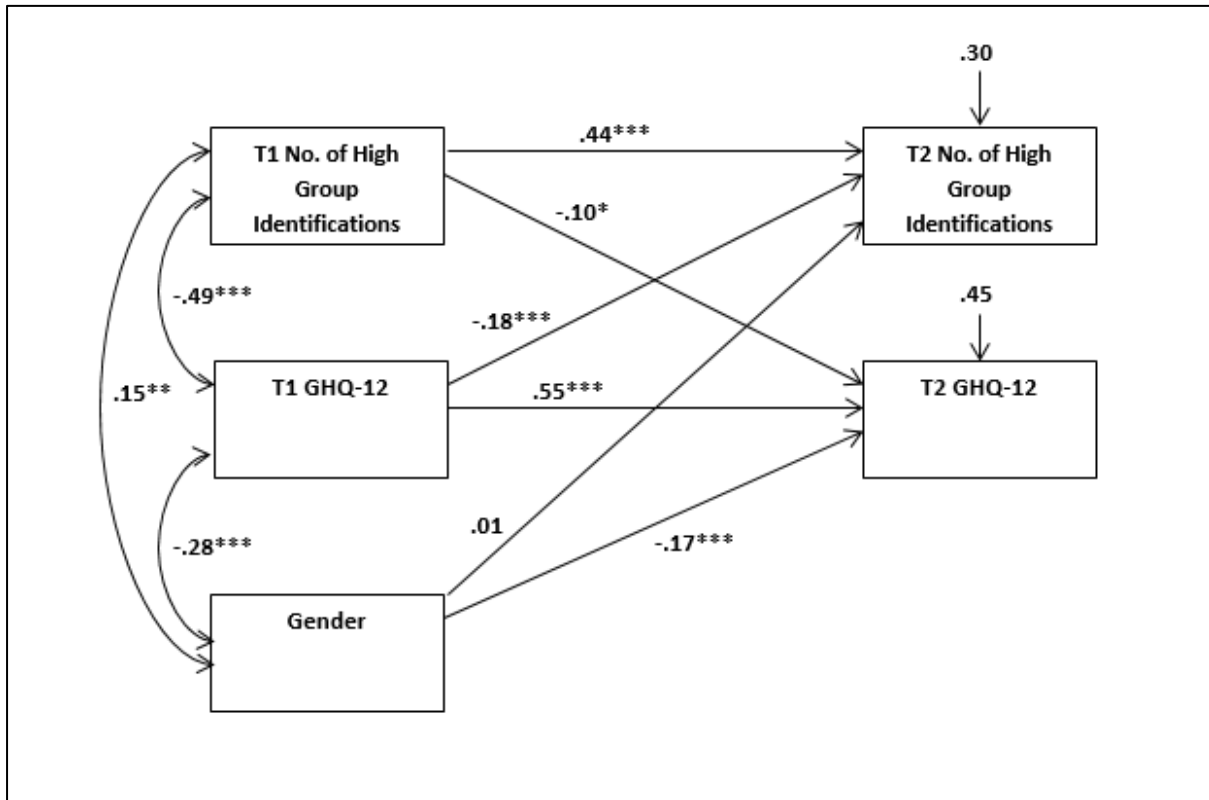Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 1. Cross-lagged model testing the relationship between number of high group identifications T1 and T2, GHQ-12 score T1 and T2, and gender (female = 0, male = 1).

Note: *$p < .05$, **$p < .01$, ***$p < .001$.