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Comparing social group identifications and socioeconomic deprivation as predictors of psychological distress: Evidence from a Scottish primary care sample

Abstract

Social group identification and socioeconomic deprivation have both been linked to self-reported depressive symptomology in general population samples; however no study to date has explored the strength of the joint predictive value of these factors within a mental health population. The current study explores the impact of social group identifications and socioeconomic deprivation, together with important clinical and demographic variables, on psychological distress in a Scottish mental health sample. Participants ($N = 976$) were recruited from referrals to a computerised Cognitive Behavioural Therapy (cCBT) programme in Scotland, 'Beating the Blues' (BtB) over a 25-month period. Participants completed the Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM) as a measure of psychological distress and three versions of the group identifications scale (GIS), one for each of three groups: family, community, and a social group of choice. Demographic and clinical information were collected on commencing BtB. Higher numbers of group identifications were significantly associated with lower psychological distress. Additionally, increased socioeconomic

deprivation was significantly associated with more severe psychological distress, however interestingly the association was not as strong as that of group identifications. Identifying with fewer social groups predicts more severe psychological symptom presentations, even more so than living in a greater state of socioeconomic deprivation.

Keywords: Social Group Identifications, Socioeconomic Deprivation, Psychological Symptom Severity, Psychological Distress

Introduction

The literature widely suggests that psychosocial factors may play a role in the etiology of psychological distress. Two particularly important predictors of psychological distress appear to be the extent to which one feels psychologically connected to social groups (group identification) (Sani, Madhok, Norbury, Dugard, & Wakefield, 2015a) and one's level of socioeconomic deprivation (Stirling, Wilson, & McConnachie, 2001; Lorant et al., 2007). However, no study to date has compared the joint predictive value of these two factors in a large clinical sample. This is the aim of the current study. We believe that comparing the effects of group identifications and socioeconomic deprivation on levels of psychological distress is important, if only because these two

social predictors are likely to be associated with one another, and therefore the effects of one of them might be largely accounted for by the other.

The following sections offer a brief overview of the relationship between social identity, health, and wellbeing, before reviewing the literature concerning the link between social group identifications and psychological distress, and between socioeconomic deprivation and psychological distress, highlighting the limitations of such literature, and finally describing the current study, emphasising the ways in which it overcomes limitations of existing literature.

Social Identity, Health, and Wellbeing

Social identity theory stipulates that a person's sense of identity is based on the group(s) of which they are a member. Tajfel and Turner (1979) suggest that the specific groups (for example a family group, a sports team, or a religious group etc.) to which people belong are a crucial part of building social identity, self-esteem, and a sense of belonging. In relation to health and wellbeing, social identity has been found to be important across various health- and wellbeing-related concerns. For example, a recent meta-analysis by Steffens, Haslam, Schuh, Jetten, and van Dick (2016) revealed that social identification has an important impact on stress and wellbeing within the work-place

in that those who identify with a work-group are less likely to experience mal-effects on health such as stress and burn-out. There is evidence that these effects of work-group identification on stress are mediated by social support and collective efficacy, in that those who identify with a work-group are more likely to receive social support and in turn are more likely to gain a sense of collective efficacy, and are therefore less likely to experience burnout (Avanzi, Schuh, Faccaroli, & van Dick, 2015). More broadly, Greenaway, Cruwys, Haslam, and Jetten (2015) argue that the relationship between group identification and stress can be explained by the notion that having social identities satisfies a number of basic psychological needs; specifically a need for control, for self-esteem, for a meaningful existence, and a need to belong. Identifying with social groups, rather than mere social contact or engaging in group activities, is characterised by feelings of belonging, connectedness, and affiliation with specific groups, or by a sense of commonality drawn from shared views, values, goals, or sentiments with fellow in-group members (Sani et al., 2015a). This concept emphasises the importance of the subjective experience of group membership, over and above the mere volume of social contact that membership with social groups may provide. Indeed, when social contact and group identification were compared as predictors of self-reported depressive symptomology as measured by the Beck Depression

Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) within a general population sample, group membership was found to be a superior predictor than mere social contact (Sani, Herrera, Wakefield, Boroch, & Gulyas, 2012). This suggests that any effect of social contact may, in part, be explained by group identification.

Therefore it can be seen that social group identification is an important factor with regards to general health, psychological wellbeing and self-rated depressive symptomology.

Group Identification and Psychological Distress

In terms of the link between psychological distress and specific social group identifications, it has been found that identifying with the family (Sani et al., 2012), a support group (Wakefield, Bickley, & Sani, 2013), the school (Bizmuck, Reynolds, Turner, Bromhead, & Subasic, 2009), and a profession group (Sani et al., 2012) all predict lower levels of self-reported depressive symptoms within general population samples. Cruwys et al. (2014) further investigated the link between group identification and self-reported depression within clinical samples by conducting two intervention studies. The first study examined the impact of joining a community-based group on reductions in depressive symptoms in those at-risk of developing depression ($N = 52$, 51.9% of which had received a

clinical mental health diagnosis). The second study investigated the impact of identifying with a therapy-group on depressive symptom improvement in individuals ($N = 92$) with a diagnosis of depression. The studies showed that a stronger degree of identification with a single group, be it a community-based group for those at-risk of developing depression or a therapy group for those with a diagnosis of depression, predicted greater declines in depressive symptomology as determined by scores on Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995). These findings suggest that identifying with a single group can have a positive influence on psychological health, specifically in reducing symptoms of depression, in both those at-risk of developing depression and those with a diagnosis of depression.

Similarly, Haslam, Cruwys, Haslam, Dingle and Chang (2016) investigated the efficacy of a psychotherapy intervention ('Groups 4 Health' (G4H), aimed at providing individuals with the necessary knowledge and skills to develop and maintain social group identifications) in reducing self-reported symptoms of depression in two sample groups of young adults. The first group ($N = 81$, $M_{\text{age}} = 20.20$) largely consisted of university students who experienced at least mild symptoms of depression or anxiety as determined by DASS scores. The second group ($N = 75$, $M_{\text{age}} = 20.95$) consisted of university

students who matched the first group in terms of age, gender, treatment history and self-reported symptoms of depression and anxiety. In addition to investigating the impact of G4H on psychological wellbeing within this population, Haslam et al. also investigated the mechanisms underlying changes in psychological wellbeing by testing whether clinical improvements were predicted by the strength of connectedness to the G4H group or by the strength of connectedness with multiple groups as measured by a 4-item scale. The scale included items such as “I get practical help from lots of different social groups” with 5-point rating scales (1 = do not agree at all, 5 = agree completely). Mean scores across the 4 items were generated to indicate the strength of connectedness with more than one social group, rather than measuring the cumulative number of social groups participants identified with. They found that the G4H intervention significantly reduced self-reported symptoms of anxiety and depression, and that improvements in such symptoms were independently predicted by the strength of connectedness with both the G4H group and multiple groups respectively. This provides evidence that (a) a group-identification-centered intervention and (b) a greater degree of connectedness with multiple groups are both beneficial in improving mental health and wellbeing in young adults experiencing symptoms of anxiety and depression.

With regards to the cumulative number of group identifications, Cruwys et al. (2013) found a significant negative correlation between the number of groups a person identifies with and depressive symptomology within a general population sample, indicating that the more groups an individual identifies with, the less depressed an individual is likely to feel. It has been suggested that the reason why the number of groups a person belongs to is important with regards to symptoms of depression can be explained by the 'Social Identity Model of Identity Change' (Haslam et al., 2008; Iyer, Jetten, Tsivrikos, Postmes, & Haslam, 2009; Haslam et al. 2016). The social identity model of identity change postulates that throughout life one can experience changes to or losses of one's social identities. Such changes or losses can coincide with life transitions; for example moving to a new city, changing careers, becoming a parent or entering retirement, and this can have a negative impact on psychological wellbeing (Iyer et al., 2009). For those experiencing depression, social identity losses or changes can be particularly prevalent as numerous pieces of research suggest that withdrawal from social groups and engagements may come as a consequence of depressive symptoms, and social withdrawal can worsen symptoms of depression (House, Landis, & Umberson, 1988; Kawachi & Berkman, 2001). Iyer et al. (2009) suggest that having a strong set of multiple social group identifications can help individuals cope with the

negative effects of identity change, and can even help to form new positive social identities, as those with multiple group identifications are more likely to have greater sources of both material and psychological support during challenging times.

All studies described above clearly demonstrate the benefits of social group identification for those experiencing symptoms of depression; however research into social group identification is not without limitations. Firstly, in terms of the number of group identifications explored and nature of the samples used, all previous research investigating the predictive value of *multiple* group identifications on self-reported depressive symptomology has done so within general population samples (Sani et al., 2015a; Sani et al., 2012; Wakefield et al., 2013; Bizmuck et al., 2013; Cruwys et al., 2013), rather than within mental health populations consisting of individuals who are recognised by a healthcare professional as suffering from a clinical mental health problem. While Haslam et al. (2016) acknowledged the importance of identifying with multiple social groups on psychological wellbeing in young adults experiencing mental health symptoms, they investigated the *strength* of identification with multiple groups as opposed to the *cumulative number* of social groups participants identified with. Secondly, some studies have determined the presence of group identification by simply asking participants whether they

considered themselves a member of a given group (Cruwys et al., 2013), rather than by using a multi-item measure exploring the various aspects of subjective group identification. Thirdly, some general population studies have used self-reported Major Depressive Inventory (MDI) (Bech et al., 2001) scores to create a categorical variable ('yes' or 'no') for the presence of 'depression', or have checked medical records for antidepressant prescribing as an indicator of the presence of 'depression' (Sani et al., 2015a). Such methods are limited in that those experiencing 'borderline/subclinical' symptoms are simply categorised as 'not depressed'. We feel that measuring self-reported symptoms on a scale, as opposed to dichotomously, and then sub-categorising the scores into 'mild', 'moderate', and 'severe' presentations is a more inclusive method of assessing symptomology. Finally, the current group identification literature is limited by the lack of a satisfactory measure of socioeconomic deprivation as a potentially crucial covariate in psychological distress.

Socioeconomic Deprivation and Psychological Distress

Socioeconomic deprivation has been found to have an important detrimental effect on health and wellbeing in both communicable and non-communicable diseases worldwide (Marmot, 2005). Marmot draws attention to the 'social health gradient', indicating that those with the poorest socioeconomic

status experience the poorest health. This is a worldwide public health concern, and Marmot (2005) stresses the need to address gross inequalities in health by reducing poverty as a matter of social justice. Indeed, the direction of the social health gradient observed globally does not differ in Scotland. Recent data published in the 'National Clinical Strategy for Scotland' (Scottish Government, 2016b) reveal that there are considerable variations in life expectancies at birth across Scotland, specifically showing a discrepancy of 20 years between men living in the most and least socioeconomically deprived areas.

Furthermore, the socioeconomic inequalities that underlie detriments to general health are not different to those that underlie mental health, as outlined by the World Health Organisation (WHO) (2003). WHO report that mental health problems occur in persons of all ages, genders, and social backgrounds; however those who are poor, homeless, unemployed, or have low education are at greater risk of experiencing a mental disorder. When examined cross-nationally, WHO (2000) found that the highest prevalence of mental disorders was present in groups with the lowest level of educational attainment in six of the seven countries examined, and with the lowest income in three of the four countries examined. The relationship between socioeconomic deprivation

and poor mental health is reflected in recent findings published in the ‘Scottish National Health Survey’ (Scottish Government, 2015), indicating that of those diagnosed with a mental disorder, 15% live in the most socioeconomically deprived quintile, compared to 6% in the least deprived quintile. These findings have been highlighted in the recent ‘Mental Health Strategy for Scotland’ (Scottish Government, 2017) and recognised as a priority to address.

With regards to specific psychiatric risk factors associated with low socioeconomic status, Turner and Lloyd (2009) found that poorer availability of coping resources, ongoing adverse life-events, exposure to stress, and weaker forms of social support were all more prevalent in groups with lower socioeconomic status. Indeed, an association between socioeconomic status and severity of psychiatric illness has been found, as measured by longer lengths of psychiatric hospital admission (Abas, Vanderpyl, Robinson, Le Prou, & Crampton, 2006), higher rates of suicide and parasuicide (Gunnell, Peters, Kammerling, & Brooks, 1995), and higher prevalence and persistence of depressive symptomology (Ostler et al., 2001) amongst those who are more socioeconomically deprived.

Only the latter study has examined the link between socioeconomic deprivation and self-reported depression. The

study used Jarman Under-Privileged Area scores (UPA) (Jarman, 1983) to predict depressive symptom prevalence and outcome, as measured by the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983), within a large general population sample. The study found that belonging to a GP practice with a high UPA score significantly predicted persistence of depressive symptoms at both 6-weeks and 6-months. However, it is important to note that UPA scores were designed to measure variation in socioeconomic deprivation across small areas in the UK so that healthcare providers can identify underprivileged areas where there are increased pressures on primary care services. UPA calculations are based on the volume of patients in the area, the typical patient needs, and 13 social factors and 8 service factors which are thought to be associated with demands on the service. This construct is therefore qualitatively different from other measures of socioeconomic deprivation such as the Carstairs Index (Carstairs & Morris, 1991) or the Townsend Index (Townsend, Phillimore, & Beattie, 1988), and given that UPA scores of the GP practice to which each participant belonged were used irrespective of the participant's home postal code, it is only possible to determine whether or not the participant receives primary care in a socioeconomically deprived area, rather than how socioeconomically deprived each participant is.

Wakefield, Sani, Madhok, Norbury and Dugard (2015) employed a more robust measure of socioeconomic deprivation, the Scottish Index of Multiple Deprivation (SIMD) (Scottish Government, 2016a). However, similarly the SIMD category of the participant's GP practice, rather than of the participant's home, was used to determine socioeconomic deprivation within the sample. Other studies are limited by a lack of a robust measure of socioeconomic deprivation. For example, some have used deciles of annual reported income as proxy for socioeconomic status (Cruwys et al., 2015), while others have measured subjective socioeconomic deprivation (as opposed to actual socioeconomic deprivation) by using self-report likert scales in which the participant indicates where they believe they are placed in terms of socioeconomic status compared to others (Wakefield et al., 2015; Sani, Magrin, Scignaro, & McCollum, 2010). However, there are two excellent examples of how robust socioeconomic deprivation measures can be used within mental health populations. One study used the Townsend Index to examine the effect of socioeconomic deprivation on attrition in primary care psychological therapies services (Self, Oates, Pinnock-Hamilton, & Leach, 2005), and another study used the SIMD to investigate the effect of socioeconomic deprivation on opt-in, drop-out, and completion rates in primary care when offered

Cognitive Behavioural Therapy (CBT) as a treatment for depression (Grant et al., 2012).

The Current Study

The current study aims to address a gap in the literature by assessing and comparing the effects that multiple group identifications and socioeconomic deprivation may have on psychological distress within a mental health population. To address the limitations of the relevant previous studies discussed above, the current study adopted the following strategies. Concerning the measurement of group identifications, we employed a valid multi-item scale to assess identification with three distinct social groups. Concerning socioeconomic deprivation, we used robust SIMD deciles derived from participants' home postal codes. Concerning the assessment of psychological distress, we used an instrument that allows the classification of participants' severity of distress on three different levels (mild, moderate to severe, and severe). Finally, with regards to the sample, we assessed a clinical sample consisting of individuals recognised by a healthcare professional as suffering from a mental health problem, and requiring an intervention to treat said problem.

The current study also considered a number of demographic and clinical factors identified by the literature as being

potentially important in relation to psychological distress. First, we assessed participants' age as previous studies (WHO, 2003; Kessler et al., 2003) found differences in depressive symptomology across different age-groups. Second, we assessed gender as it has been widely reported that females are more likely to suffer from depression than males (Piccinelli & Wilkinson, 2000; Cheng & Furnham, 2003) and the presentation of symptoms differ between genders across age (Kessler, Foster, Webster, & House, 1992). Third, we measured educational attainment because low educational attainment has been found to significantly predict more severe depressive symptom presentations (WHO, 2000; Kessler et al., 2003). Fourth, we assessed the use of antidepressant medication (ADM) because ADM use may, as intended, reduce the severity of depressive symptoms (American Psychiatric Association, 2000; Fournier et al., 2010), and this may therefore account for some of the variance seen in psychological distress. Finally, we measured problem duration as longer lengths of depressive episodes have been linked with increased distress (Spijker et al., 2002; Melartin et al., 2004).

Method

Participants and Procedure

The current study used data collected from four NHS Scotland health-boards (Grampian, Fife, Shetland and Lanarkshire) over

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a 25-month period between September 2014 and October 2016. Participants consisted of individuals referred by a clinician to receive computerised cognitive behavioural therapy (cCBT) via the 'Beating the Blues' (BtB) programme. Referrals to the service came from GPs ($n = 756$, 77.5%), psychology services ($n = 141$, 14.5%), psychiatry services ($n = 31$, 3.1%), and other health services e.g. speech and language therapy and occupational health services ($n = 48$, 4.9%). The referral criteria for the BtB service include a suspected diagnosis of mild to moderate depression (as determined by the referring clinician), >16 years of age, must not have other significant psychological morbidity, and must not be actively suicidal. Of the patients referred to BtB during the inclusion period ($N = 8610$), 1191 (13.8%) completed the measure of group identifications, of which 975 (11.3% of referred patients) completed the measure of psychological distress. Only data from participants who completed both measures of psychological distress and group identification were included, with one patient having commenced BtB twice during the inclusion period. This patient completed the required measures, however dropped out of the programme before completing the second session. The patient was then re-referred to the service 7 months later and subsequently completed 6 sessions. Data from each time this patient completed the measures are included and treated as two separate cases. Therefore the total sample size of

the current study is $N = 976$, 310 (31.8%) males, 666 (68.2%) females, $M_{\text{age}} = 39.85$ years, $SD = 14.50$, range 17-83 years.

Group Identifications Measure

Identification with three distinct groups (family, community, and a third group chosen by the participant from a list including groups such as a sports team, a friendship group, or a hobby group) was assessed using a self-report questionnaire, the Group Identification Scale (GIS) (Sani et al., 2012). The GIS is a global scale based on four items tapping one's general sense of belonging and connectedness to the group (e.g., "I have a sense of belonging to [my group]") together with one's sense of commonality with in-group members (e.g., "I have a lot in common with the members of [my group]"). Participants specify their disagreement or agreement with each item using a seven-point scale (1 = "strongly disagree", 7 = "strongly agree"). Previous research has shown that the GIS has good reliability, with alpha values ranging from the high .80s to the low .90s, regardless of the specific group to which it is adapted (e.g., family, friends) (Sani, Madhok, Norbury, Dugard, & Wakefield, 2015b).

In line with previous research (Sani et al., 2015a), the presence of identification with each social group was determined by the mean score across the four items. If the mean score was more

than 5, a '1' was allocated to a binary variable, indicating identification with the group. A '0' score was allocated to the binary variable if the mean score per group was less than 5, indicating no group identification present. We then calculated the number of group identifications for each participant by summing the three binary variables to create scores ranging from 0 (no group identifications present) to 3 (identification with all three groups). Missing items were assigned a mean value based on scores on other items within the particular social group to which the questions are aimed.

Socioeconomic Deprivation Measure

Participant postal codes were collected from medical records and were categorised according to the SIMD as a measure of socioeconomic deprivation. The SIMD uses information taken from the most recent Census and Small Area Population Estimates (SAPEs) to determine a deprivation rank per datazone. Scotland is divided into 6505 small geographical areas called 'datazones', each consisting of approximately 350 households and a mean of 800 people. Datazone socioeconomic deprivation ranks range from 1 (most deprived) to 6505 (least deprived). The level of socioeconomic deprivation is determined by seven aspects of deprivation to form one index. These include employment, income, health, education (skills and training), geographic access to services,

crime, and housing. The SIMD is the official tool used by the Scottish Government to identify areas of socioeconomic deprivation in Scotland. The current study uses deciles of SIMD ranks to indicate socioeconomic deprivation; however the scores are reversed so that 1 indicates the least deprived and 10 indicates the most deprived areas.

Psychological Distress Measure

The Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM) (Barkham et al., 1998) was used to measure participants' global psychological distress. The CORE-OM is a pan-diagnostic measure with four subscales; 'wellbeing' (4 items), 'problem severity' (12 items), 'functioning' (12 items), and 'risk' (6 items) which draw upon the opinions of clinicians regarding the most important elements of psychological wellbeing and health to measure (Mellor-Clark, Barkham, Connell, & Evans, 1999). Participants indicate a score between 0 and 4 per item, resulting in a total possible score range of 0 to 136. In a clinical population, mean scores between 1 and 1.4999 indicate a 'mild', 1.5 and 1.9999 indicate 'moderate', 2 and 2.4999 indicate 'moderate to severe', and scores >2.5 indicate a 'severe' range (Connell et al., 2007). The current study categorises mean score ranges of 0 to 1.4999 as 'mild' psychological distress, 1.5 to 2.4999 as

‘moderate to severe’, and scores >2.5 as ‘severe’, creating a binary variable for each distress severity category.

The CORE-OM is widely accepted and used in routine practice (Gray & Mellor-Clark, 2007). Internal reliability across all subscales has been reported to show alpha levels between .75 and .95, with an alpha level of .94 for all items in a clinical sample (Evans et al., 2002). Test-retest reliability of subscales has also been reported as high (between .87 and .91), with the exception of the risk subscale (.64) (Evans et al., 2002). Both individual domain and overall scores show excellent convergent validity against other self-report measures of symptom severity within clinical populations (CI ranges between .63 and .88 for all items) (Connell et al., 2007).

Demographic Measures

Age and gender were recorded from medical records on referral to the BtB programme. Educational attainment was recorded by BtB coordinators using the following single-item self-report question: ‘What is the highest level of education you have completed?’ to which participants could respond ‘primary’, ‘secondary’, ‘higher / and or university’, or ‘other’.

ADM Use and Problem Duration Measures

ADM use and problem duration were measured using single-item self-report questions delivered by BtB coordinators. The first question asked: ‘How long have you used antidepressant medication?’ Response options included ‘less than 1 month’, ‘less than 2 months’, ‘more than 2 months’, or ‘I do not take antidepressant medication’. The second question asked: ‘How long have you had this problem?’, to which participants could respond ‘Less than 6 months’, ‘6 months to 1 year’, ‘1 to 3 years’, ‘3 to 5 years’, ‘5 to 10 years’, ‘10 to 20 years’, ‘20 to 40 years’, or ‘More than 40 years’. ADM use answers were dichotomised to represent those taking and those not taking ADM for the purpose of the main analysis.

Statistical

Analyses

All analyses were conducted using Statistical Package for Social Science (SPSS) software version 22. Firstly we calculated the frequencies for each variable and the mean and standard deviation scores for socioeconomic deprivation. Subsequently, we conducted a cross-tabular analysis investigating the frequency of participants with each level of psychological distress (mild, moderate to severe, and severe) as a function of number of group identifications (0, 1, 2, and 3). The statistical significance of this analysis was calculated using Pearson chi square. This was followed by post-hoc comparisons to further explore the nature of the differences. At

this point we explored the association between socioeconomic deprivation and psychological distress, as well as the association between group identifications and socioeconomic deprivation, by calculating the point-biserial correlations coefficient. We then performed a multinomial logistic regression (MLR) analysis to assess the effects of both number of group identifications and socioeconomic deprivation on psychological distress, while controlling for age, gender, education level, ADM use, and problem duration. Finally, in order to further confirm the results of the MLR, we performed a standard multiple regression to assess the impact of our two predictors and all our covariates on psychological distress, this time using the continuous version of the psychological distress variable (i.e., scores on CORE-OM ranging from 0 to 4). The results of this analysis can be found in the supplementary materials.

Results

Descriptive Statistics

Of the 976 participants, 364 (37.3%) did not identify with any group, 293 (30.0%) identified with one group, 233 (23.9%) identified with two groups, and only 86 (8.8%) identified with three groups. Participant postal codes demonstrated the full range of socioeconomic deprivation rank deciles (1-10), $M = 4.94$, $SD = 2.61$. With regards to psychological distress,

participant CORE-OM scores ranged between .15 and 3.56, $M = 1.92$, $SD = .63$. Of the participants, 230 (23.6%) had mild, 550 (56.4%) had moderate to severe, and 196 (20.1%) had severe psychological distress.

Concerning participants' highest level of education, 33 (3.4%) completed primary school, 251 (25.7%) completed secondary school, 438 (44.9%) completed higher and / or university level education, and 215 (22.0%) completed an 'other' form of education (4.0% did not specify). Concerning ADM use, 615 (62.9%) participants reported that they were taking ADM, while 336 (34.4%) indicated that they were not taking ADM; 2.6% did not specify. Regarding problem duration, the majority of participants had experienced their problems for 1 to 3 years ($n = 205$, 21.0%), while almost 1 participant in 4 had experienced their problems for more than 10 years. For more detailed descriptive analyses of ADM use and problem duration see Tables 1 and 2 respectively in the supplementary materials.

Cross-Tabular Analysis

We performed a cross-tabular analysis to explore levels of psychological distress as a function of number of group identifications (see Table 1 for details). We found that the percentage of participants with severe distress increased as the number of group identifications decreased, and that the

percentage of participants with mild distress increased as the number of group identifications decreased. For instance, among the 364 participants with no group identifications, only 9.3% experienced mild levels of psychological distress, while 34.9% experienced severe distress. On the other hand, among the 86 participants with three group identifications, 47.7% had mild distress while only 1.2% had severe distress. This pattern of association was statistically significant, $\chi^2(6, N = 976) = 140.9$; $p < .0001$.

At this point we conducted three post-hoc comparisons to further explore the nature of the found association between number of group identifications and levels of psychological distress. Specifically, we compared participants having 0 group identifications with participants having ≥ 1 group identifications, participants having 1 group identification with participants having ≥ 2 group identifications, and participants having 2 group identifications with participants having 3 group identifications. We found that moving up in terms of number of group identifications (i.e. moving either from 0 to ≥ 1 , or from 1 to ≥ 2 , or from 2 to 3) always led to a statistically significant increase of participants with mild psychological distress, and decrease of participants with severe psychological distress. For instance, moving from 0 group identifications to ≥ 1 group identifications implied a change from 9.3% to 32.0% in terms

of participants with mild distress, and a change from 39.9% to 11.3% in terms of participants with severe distress. The greater effects were found when comparing 0 and ≥ 1 group identifications (Cramer's Phi =.34). See Table 2 for details of the results.

Point-biserial correlations

Point-biserial correlation analyses revealed a positive and statistically significant association between socioeconomic deprivation and levels of psychological distress, $r_{pb}=.14$; $p < .01$, as well a rather small, but statistically significant, negative association between number of group identifications and socioeconomic deprivation, $r_{pb}=-.08$; $p < .05$.

Despite it being a rather small association, we decided to conduct a mediation analysis to examine whether the effects of socioeconomic deprivation on psychological distress are mediated by multiple group memberships. The analysis revealed statistically significant mediation effects of group identification on the effects of socioeconomic deprivation on psychological distress, $\beta = .008$, $p < .0001$, CI= Lower: .002 and Upper: .015, meaning that some of the variance in psychological distress accounted for by socioeconomic deprivation can be explained by the number of groups a person identifies with. We also conducted a moderation analysis to test

for any interaction between socioeconomic deprivation and group identification, which revealed no interaction. The results of this analysis can be found in the supplementary materials.

Multinomial Logistic Regression Analysis

The MLR analysis shows that the regression model fits the data significantly better than a model based on the intercept only, as demonstrated by the non-significant Pearson chi square test, $(158, n = 164.71) = 1908.71; p = .34$. Also, the pseudo R square values suggest that the model explains a substantial amount of variability in levels of psychological distress, possibly between 21% and 25% (Cox & Snell =.21; Nagelkerke =.25). Concerning the independent effects of our predictors, we found both group identifications, $\chi^2 (6) = 131.83, p < .0001$, and socioeconomic deprivation, $\chi^2 (2) = 12.08, p < .01$, to have a statistically significant influence on levels of psychological distress. Concerning our covariates, we found statistically significant effects on levels of psychological distress exerted by problem duration $\chi^2 (2) = 17.36; p < .0001$, ADM $\chi^2 (4) = 11.84; p < .05$, and age $\chi^2 (2) = 43.88; p < .0001$. Gender and level of education did not have statistically significant effects on severity of psychological distress. A summary of these results are reported in table 3.

Discussion

The current study demonstrates that greater numbers of group identifications and lower levels of socioeconomic deprivation significantly predict lower levels of psychological distress, even after controlling for common predictors of psychological distress including age, gender, education, problem duration and ADM use. This finding is similar to Sani et al.'s (2015a) finding in that group identification appears beneficial to mental health, however by employing robust measures of socioeconomic deprivation and group identification, and by controlling for the above listed factors in the context of a clinical sample, the current study represents a valuable enhancement of the existing literature.

Our finding that at least some of the variance in psychological distress accounted for by socioeconomic deprivation can be explained by the number of groups a person identifies with raises an interesting topic of discussion. Jetten, Haslam and Barlow (2013) suggest that those living in a greater state of socioeconomic deprivation have less access to social groups, whereas those who are better off have increased means through which to form and maintain social group memberships. Our results might indeed represent support for this idea, sparking an argument that social group identification should be encouraged within areas of increased socioeconomic deprivation as a way to reduce inequalities as a matter of social justice.

Other significant predictors of psychological distress included ADM use, problem duration, and age. With regards to ADM use, those who were currently taking ADM reported greater psychological distress. ADM use may therefore act as an indicator of increased symptom severity, in that a medical professional has recognised a need to prescribe a pharmacological treatment for the depressive symptoms present (Sani et al., 2015a). Also, by measuring ADM use as opposed to recording ADM prescriptions as previous research has (Sani et al., 2015a), it was possible to gain an understanding of current use rather than of past prescriptions. This is important because it is possible that not all of those who are prescribed ADM go on to take them (Dwight-Johnson, Sherbourne, Liao, & Wells, 2000). In relation to problem duration, the longer the symptoms are present, the significantly more severe the psychological distress. This is important because no study before has controlled for problem chronicity when investigating the amount of variance in psychological distress accounted for by group identification and socioeconomic deprivation, and yet the finding proved significant. Finally, as age increased psychological distress also significantly increased, proving consistent with previous literature on the relationship between age and depressive symptomology (WHO, 2003; Kessler et al., 2003). Interestingly, educational attainment and gender were

found not to significantly predict distress levels, proving inconsistent with previous literature (WHO, 2000; Kessler et al., 2003; Kessler et al., 1992; Piccinelli & Wilkinson, 2000; Cheng & Furnham, 2003).

In contrast to general population sample studies, the current study found that within a clinical sample participants most commonly identify with no social groups, whereas identifying with three groups was rare. This observation is the direct reverse of what is typically found in general population samples, whereby the majority identifies with three groups and the minority identifies with no groups (Sani et al., 2015a). Moreover, as number of group identifications decrease, the levels of psychological distress increase and vice versa. This is similar to Sani et al.'s (2015a) finding that in the general population, a person who identifies with fewer groups is more likely to score higher on self-rated depression scales, and to have been prescribed ADM. These findings may therefore support the notion of social prescribing (Scottish Government, 2007; NHS Health Scotland, 2015) in that group connectedness is clearly an important factor within clinical populations, and therefore health services should work to encourage social integration in those presenting with symptoms of depression to maximise treatment outcomes (Wakefield et al., 2013).

Limitations and Future Directions

The cross-sectional nature of the current study means that it is not possible to make inferences regarding causal relationships between either social group identification or socioeconomic deprivation and psychological distress. Therefore we cannot determine whether people identify with fewer groups because they have more severe symptoms of depression, or because they have more severe symptoms they identify with fewer groups. Future studies could seek to rectify this by examining the predictive value of group identification and socioeconomic deprivation across time, over the period of a treatment for example, by conducting a longitudinal study.

Secondly, the current study uses self-reported CORE-OM scores as the outcome measure of psychological distress. This is a limitation in that self-reported measures have been found to raise questions regarding validity (Austin, Gibson, Deary, McGregor, & Dent, 1998). However, the current study recruited individuals who were referred by clinicians to receive an intervention to treat depression via the BtB service, thus clinical judgement was used to determine that the patient was suffering from mild to moderate depression, and required an intervention to alleviate the symptoms. This provides a layer of certainty that the sample were experiencing a mental health problem. Additionally, measuring symptom severity on a

continuum rather than on the basis of a ‘yes’ or ‘no’ dichotomy of self-rated depression scores allows for a less restrictive way of exploring depression. This is because those experiencing lower-level symptom presentations are not dismissed as ‘not depressed’, but rather accounted for as experiencing ‘mild’ symptoms of depression.

Implications and Conclusions

Social group identifications are a strong predictor of psychological distress, even more so than socioeconomic deprivation, indicating that social connectedness may be a protective factor against more severe psychological symptom presentations. This may therefore support the notion of social prescribing within primary care in that healthcare professionals could offer those presenting with depression the option of joining a community-based social group, such as a reading or sports club (Sani et al., 2015a). Beyond this, our results support the notion of developing group interventions to encourage those experiencing depression to join and maintain social group memberships with the aim of fostering group identifications. Groups such as G4H (Haslam et al., 2016) are specifically designed to help people experiencing, or at risk of experiencing depression, to foster social group identities and as such have observed clinical benefits. Linking this to our finding that increased socioeconomic deprivation predicted more severe

psychological distress at pre-treatment assessment, and that some of the variance accounted for by socioeconomic deprivation can be explained by the number of groups a person identifies with, any group intervention offered should be done so at minimal financial costs to the participant, as done so by the 'ReLink' group which specifically engages with the most socioeconomically disadvantaged and socially isolated populations (Cruwys et al., 2014). On a related note, from Grant et al.'s (2012) finding that those who are more socioeconomically deprived are less likely to 'opt-in' to receive psychological therapies, it is clear that efforts must be made to ensure that this vulnerable population have access to the necessary and most appropriate psychological interventions.

Overall, the current study provides a clear illustration of the benefits of group identification for those experiencing symptoms of depression and therefore argues the importance of social group connectedness for mental health.

Ethical Statement

The current study acts in accordance with the ethical standards set by the 1964 Declaration of Helsinki and its later amendments.

Declaration of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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GROUP IDENTIFICATIONS AND PSYCHOLOGICAL DISTRESS

Table 1

Frequencies and percentages for three levels of psychological distress for each number of group identifications

No./ of Group Identifications	Psychological Distress		
	Mild	Moderate to Severe	Severe
0 (n = 364)	34 (9.3%)	203 (55.8%)	127 (34.9%)
1 (n = 293)	70 (23.9%)	179 (61.1%)	44 (15.0%)
2 (n = 233)	85 (36.5%)	124 (53.2%)	24 (10.3%)
3 (n = 86)	41 (47.7%)	44 (51.2%)	1 (1.2%)

$\chi^2 (6, N = 976) = 140.9; p < .0001$

Cramer's Phi = .38

GROUP IDENTIFICATIONS AND PSYCHOLOGICAL DISTRESS

Table 2

Post-hoc comparisons following results of Chi square analyses of level of frequencies of psychological distress levels as a function of number of group identifications

No. of Group Identifications	Psychological Distress		
	Mild	Moderate to Severe	Severe
0	34 (9.3%)	203 (55.8%)	127 (34.9%)
1, 2, or 3	196 (32.0%)	347 (56.7%)	69 (11.3%)
$\chi^2 (2, N = 976) = 113.27; p <.0001$ Cramer's Phi = .34			
1	70 (23.9%)	179 (61.1%)	44 (15.0%)
2 or 3	126 (39.5%)	168 (52.7%)	25 (7.8%)
$\chi^2 (2, N = 612) = 20.51; p <.0001$ Cramer's Phi = .18			

GROUP IDENTIFICATIONS AND PSYCHOLOGICAL DISTRESS

2	85 (36.5%)	124 (53.2%)	24 (10.3%)
3	41 (47.7%)	44 (51.2%)	1 (1.2%)

$\chi^2 (2, N = 319) = 8.74; p = .013$

Cramer's Phi = .17

GROUP IDENTIFICATIONS AND PSYCHOLOGICAL DISTRESS

Table 3

Summary of the MLR analysis for variables predicting psychological distress

Likelihood Ratio Tests			
<i>Variable</i>	Chi-Square	df	Sig.
Group Identifications	131.83	6	.000***
Socioeconomic Deprivation	12.08	2	.002**
Problem Duration	17.36	2	.000***
Antidepressant Medication (ADM)	11.84	4	.02*
Education	3.83	8	.87
Gender	.51	2	.77
Age	43.88	2	.000***

* $p < .05$

** $p < .001$

*** $p < .0001$