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Brief Report

Risk factors associated with repetition of self-harm in black and minority ethnic (BME) groups: A multi-centre cohort study

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ABSTRACT

Background: Little information is available to inform clinical assessments on risk of self-harm repetition in ethnic minority groups.
Methods: In a prospective cohort study, using data collected from six hospitals in England for self-harm presentations occurring between 2000 and 2007, we investigated risk factors for repeat self-harm in South Asian and Black people in comparison to Whites.
Results: During the study period, 751 South Asian, 468 Black and 15,705 White people presented with self-harm in the study centres. Repeat self-harm occurred in 4379 individuals, which included 229 suicides (with eight of these fatalities being in the ethnic minority groups). The risk ratios for repetition in the South Asian and Black groups compared to the White group were 0.6, 95% CI 0.5–0.7 and 0.7, 95% CI 0.5–0.8, respectively. Risk factors for repetition were similar across all three groups, although excess risk versus Whites was seen in Black people presenting with mental health symptoms, and South Asian people reporting alcohol use and not having a partner. Additional modelling of repeat self-harm count data showed that alcohol misuse was especially strongly linked with multiple repetitions in both BME groups.
Limitations: Ethnicity was not recorded in a third of cases which may introduce selection bias. Differences may exist due to cultural diversity within the broad ethnic groups.
Conclusion: Known social and psychological features that infer risk were present in South Asian and Black people who repeated self-harm. Clinical assessment in these ethnic groups should ensure recognition and treatment of mental illness and alcohol misuse.

1. Introduction

Rates and risk factors for self-harm and suicide vary amongst Black and Minority ethnic (BME) groups within the UK compared to White groups, including between different age and sex groups (Bhui et al., 2007; Cooper et al., 2010). Higher rates of self-harm have previously been reported in South Asian females compared to South Asian males or White females (Cooper et al., 2006; Bhui et al., 2007). In a more recent study based on the Multicentre Study of Self-harm in England we found that rates of self-harm were highest in young Black females (pooled rate ratio for Black females aged 16–34 years compared with White females 1.70, 95% CI 1.5–2.0) (Cooper et al., 2010). BME groups experience socioeconomic inequalities which have been linked to subsequent inequalities in health (Nazroo et al., 2007), and racial/ethnic discrimination has a strong association with common mental disorders. (Bhugra and Arya, 2005). Little is known about risk factors for repetition of self-harm in BME groups that can be used to facilitate appropriate clinical management and suicide prevention measures (Kapur et al., 2006). We aimed to identify risk factors for repeat self-harm in Black and South Asian people, the largest ethnic minority groups in the UK, following an index self-harm presentation to hospital emergency departments (EDs) in three centres in England.

2. Methods

A prospective cohort study was carried out using data collected from six hospitals in Manchester (3), Oxford (1) and Derby (2) for self-harm presentations occurring between 2000 and 2007. An established monitoring system in each centre was used to

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retrieve data, as described in detail previously (Cooper et al., 2010; Bergen et al., 2010a). Self-harm attendances were identified via detailed examination of computerised emergency department records and defined consistently across all three centres as intentional self-poisoning or self-injury, irrespective of motivation and degree of suicidal intent. Most participants received a psychosocial assessment, and clinicians recorded a wide range of sociodemographic and clinical information using research assessment forms. For participants who were not assessed, basic information was collected by research clerks from medical records. Ethnicity was ascribed by the treating clinician at time of admission according to standard UK national 2001 census categories, or later attributed using information from ED patient record systems. For analysis purposes, we were interested in three broad groups: Black people, (Black African-Caribbean and Black Other), South Asian people (Indian, Pakistani and Bangladeshi origin) and White people as a reference group. A lower age limit of 16 years was applied as service provision for under 16-year-olds differs from that in over 16-year-olds. We used a comprehensive data-linkage process (Murphy et al., 2012) to identify repeat self-harm and subsequent suicides. The Medical Research Information Service identified deaths that occurred in the UK by suicide (ICD-10 codes X60 to X84) and undetermined cause (ICD-10 codes Y10 to Y34 excluding Y33.9) up to December 2009. These were included in the 'repeater' group.

2.1. Ethical considerations

Oxford and Derby both have approval from local National Health Service (NHS) research ethics committees to collect data on self-harm for local monitoring and multicentre projects. The monitoring of self-harm in Manchester is part of a clinical audit system and has been ratified as such by local research ethics committees. Thus, formal ethics committee approval was not required for that centre. All centres are fully compliant with the UK Data Protection Act 1998, and have support under section 251 of the NHS Act 2006 regarding the use of patient-identifiable information.

3. Analysis

All analyses were performed using STATA v10 (Statacorp, 2007). We calculated risk ratios for first episode repetition in the South Asian and Black groups compared to Whites using log-binomial regression models, adjusted for age, sex, method of harm and drugs used in self-poisoning (paracetamol/antidepressants/benzodiazepines) as potential confounders. We used Cox proportional hazard models to determine hazard ratios and their confidence intervals for repetition, for Black, South Asian and White individuals combined. Before taking any additional confounders into consideration, we fitted a 3-category 'centre' variable as a potential confounder in all of our regression models to account, as far as possible, for between-centre differences. Interaction terms were fitted to examine heterogeneity of factors associated with risk in the Black and South Asian groups verses Whites, and the significance of these terms were formally tested using Wald tests. Stratified analyses were carried out to obtain ethnic group-specific hazard ratios. Aggregated data were used in Poisson regression models to generate incidence rate ratios (IRRs) to examine variables associated with multiple episodes of repeated self-harm. A substantial proportion of these models showed over-dispersion (using the alpha=0 test as assessed in equivalent negative binomial regression models) (Gardner et al., 1995), so we generated IRRs based on negative binomial regression. We included up to ten repeat episodes within the study period for each individual, as in our previous research (Steeg et al., 2012).

4. Results

Between 2000 and 2007, ethnicity was known in 17,324/25,328 (68.4%) individuals presenting to the participating EDs. Of these, 1619 (9.3%) were identified as being from an ethnic minority background: 751 from South Asian and 468 from a Black ethnic group. The remaining 400 individuals were from other ethnic groups and were not included because of small numbers in individual subgroups (including mixed, Chinese and other Asian origin). There were 15,705 Whites. Of the 4379 individuals in the study cohort who repeated self-harm, there were 8 suicides in the BME groups (Black: 2 males, 1 female; South Asian: 3 males, 2 females), and 213 suicides in the White group of which 65% were males. The risk ratios for repetition in the South Asian and Black groups compared to the White group separately, adjusting for baseline characteristics, were 0.6, 95% CI 0.5–0.7 and 0.7, 95% CI 0.5–0.8, respectively. The mean number of days to the first repeat ED presentation following an index self-harm episode was 293 for South Asian people (interquartile range 16–459; median=92) and 366 for Black people (interquartile range 43–551; median 173) and 339 days for White people (interquartile range 30–476; median 152). Due to the skewed distributions we formally compared these median values: there was no significant difference between South Asian and White people ($p=0.21$) or between Black and White people ($p=0.73$).

Six factors were identified as having a significant effect in South Asians versus Whites (Table 1): not having a partner, problems with alcohol as a precipitant to the act, use of alcohol at the time of self-harm, self-harm in the past year, receiving psychiatric treatment at the time of the act and using cutting or stabbing as the method of self-harm. These variables all showed larger effect sizes in the South Asian group. There was one factor that emerged as having a different effect in the Black group versus Whites: problems with mental health as a direct precipitant to the self-harm which were more common in Black individuals who repeated. A sensitivity analysis was conducted to see if the results were altered by including the category 'other' ethnic group in the reference group, with the results remaining essentially unchanged. When we examined heterogeneity using negative binomial regression to take multiple repetitions into account, we found that problem use of alcohol as a precipitant to self-harm and alcohol use at the time of the act showed a much stronger effect in both BME groups than in the Cox proportional hazard models. Additionally, in South Asians, not having a partner and having self-harmed in the past year were found to be more strongly linked with multiple repetition than was the case for Whites Table 2.

5. Discussion

To our knowledge this is the first study to examine risk factors for repetition of self-harm in South Asian and Black groups in the UK. The risk of repetition was significantly lower in the ethnic minority groups compared to the White group. We found that those who repeated in the South Asian and Black groups had social and clinical characteristics similar to patients who repeated in general (Kapur et al., 2006). This is in contrast to the varied profile of BME groups at their index episode of self-harm (Cooper et al., 2010). However there was some differentiation of risk factors for repetition between the groups. Increased risk of repetition compared to the White group was found in South Asians who did not have a partner, had problems with alcohol as a precipitant to the act, used alcohol at the time of self-harm, had previously self-harmed in the past year, were receiving psychiatric treatment at the time of the index episode and used cutting or stabbing as a method of self-harm. In the Black group, problems