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Parasuicide in Camberwell—ethnic differences

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Abstract Over a 6-month period, this study compared referral rates amongst different ethnic groups to an inner city deliberate self-harm (DSH) team, using native British (in the remainder of this paper referred to as whites) as standard and age-standardized referral ratios as the measure of effect. Indian female rates were 2.6 times those of whites. Amongst United Kingdom born Indian females, (crude) rates were 7.8 times those of United Kingdom born white females. Unemployment was associated with a 9 times increased referral rate amongst whites and a 3 times increased referral rate amongst ethnic minorities, suggesting that ethnicity modifies the association between unemployment and DSH rates. This study suggested that ethnic minority and white DSH differ in important respects; DSH teams serving multicultural communities may need to develop special expertise to meet the needs of minority ethnic groups.

There has been recent concern about high suicide rates amongst young Indian women (Soni Raleigh et al. 1990) and about rising deliberate self-harm (DSH) and suicide rates amongst Caribbean immigrants (Lockhart and Baron 1987; Soni Raleigh and Balarajan 1992). It has been suggested that rates of severe mental illness are higher amongst second-generation, British-born than first-generation immigrants (Harrison et al. 1988), but this issue has not yet been examined in connection with suicidal behaviour.

We undertook the present investigation to establish whether, in Camberwell, an inner London health district

with high ethnic diversity, ethnic minority membership is a risk factor for DSH and how this relates to country of birth. As ethnic minority membership is not reliably recorded for casualty department attenders, we examined a sample of DSH patients who, over a period of 6 months, had attended the only casualty department in the district and who were subsequently seen by the district's only DSH team. As only about 48% of DSH casualty attenders are in fact seen by the DSH team, this strategy introduced the possibility of an ethnic referral bias. We therefore cross-checked our findings using an audit of all consecutive DSH casualty attenders over a subsequent 6-month period whose ethnic origin we assigned on the basis of name.

Methods**Setting**

King's College Hospital is the only general hospital serving the population of Camberwell ($n = 214850$ according to the 1991 census) and is in the centre of its catchment area. According to a 6-month audit in 1991, 237 patients attended the King's College Hospital casualty department following intentional overdoses (i.e. excluding self-inflicted injury, unintentional overdoses amongst opiate users and self-harm by other means). Of these, 45% ($n = 107$) were admitted to least overnight to one of the medical wards, and of those admitted, 88% ($n = 95$) were assessed by the DSH team. Forty-three per cent ($n = 103$) of total attendances were discharged from casualty, and of those so discharged, 17% ($n = 18$) had been, or were later, assessed by the DSH team. Eleven per cent of total attendances ($n = 25$) were admitted to psychiatric wards without intervention from the DSH team. One non-catchment area case (0.4%) was referred directly from casualty to the adjoining catchment area's DSH service. Overall, the DSH team assessed 48% (113/237) of attenders. The DSH team consists of three nurses, a duty junior psychiatrist and a supervising consultant psychotherapist.

Sample

A survey was undertaken of the case notes of all referrals to the DSH team over a 6-month period in 1990. Information was recorded on

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demographic variables (including region of birth and ethnicity) and clinical diagnosis as made by the first team member assessing the patient. Over this period, 117 patients were assessed (one patient appeared twice over the 6-month period and was counted only once). Nine patients were not from the catchment area; the addresses of two patients could not be traced, and one patient, although referred to the DSH team, had not in fact attempted suicide. Hence, the study sample comprised 105 patients. Ethnicity was classified according to the Office of Population Censuses and Surveys (OPCS) system used in the 1991 census (white, black Caribbean, black African, black other, Indian, Pakistani, Bangladeshi, Chinese, Asian, other).

The 1991 census data

The demographic data concerning the population of Camberwell were supplied by the OPCS. The category "other blacks" in the 1991 census, which includes a sizeable group of Afro-Caribbeans, was collapsed together with the category "Afro-Caribbeans". Thus, Afro-Caribbeans comprised 15.6%, Africans, 7.3% and Asians, 4.9% of the total population of Camberwell.

Results

The mean age of the sample was 33 years [95% confidence interval (CI) 30.4–35.6]. Ethnic minority subjects were younger (mean age 28 years) than whites (mean age 35 years; 95% CI of age difference: 1–13 years), and this difference was mainly attributable to the young age of Asian subjects. Overall, 44 cases were male (42%; 95% CI 33%–51%; see Table 1).

Standardized "referral rate ratios" by ethnic group

Using the age- and sex-specific referral rates for DSH amongst white males and females as a standard, the (indirectly) standardized "referral" ratios (SRR; calculated as a standardized morbidity ratio) for DSH amongst Asians and Afro-Caribbeans were computed and are shown in Table 2. The 95% confidence intervals for SRRs were computed, using exact methods, according to Breslow and Day (1988).

Table 2 Age-standardized referral rate ratios for deliberate self-harm (DSH) by ethnic group and sex (*n.a.* not applicable)

Standardized referral rate ratio (95% CI)	Males	Females	All
Afro-Caribbean	0.56 (0.16–1.43)	0.61 (0.24–1.26)	0.61 (0.30–1.09)
Asian ^a	0.39 (0.01–2.17)	1.68 (0.61–3.66)	1.15 (0.46–2.37)
Indian	0	2.60 (0.53–7.60)	<i>n.a.</i>
All ethnic minorities	0.45 (0.17–0.98)	0.78 (0.45–1.27)	0.65 (0.41–0.99)

^aIncluding Indian

Referral rate ratios by ethnic group – United Kingdom born

According to the 1991 census, 86% of the white population, 61% of the Afro-Caribbean population and 31% of the Asian population were born in the United Kingdom. The census does not provide an age breakdown for these "second-generation immigrants", so that age-standardized referral rate ratios could not be calculated for them. Table 3 gives the crude referral rate ratios (unadjusted for age), comparing United Kingdom born Asians and Afro-Caribbeans with United Kingdom born whites, broken down by sex.

Unemployment

Higher proportions of white DSH patients than ethnic minority DSH patients were unemployed; 39 out of 83 (47%; 95% CI 36%–58%) whites versus 6 out of 22 (27%; 95% CI 8%–46%) ethnic minority patients. Poisson regression indicated that ethnicity modified the association between unemployment and DSH rates (likelihood ratio test $X^2 = 4.18$; $df = 1$; $P = 0.04$). Amongst whites, unemployment was associated with a 9.14 (95% CI 5.02–16.62) times increased DSH rate, whilst amongst ethnic minorities, unemployment was associated with a 2.97 (95% CI 1.16–7.60) times increased DSH rate.

Table 1 Ethnic groups in sample ($n = 105$)

	White	Afro-Caribbean	African	Asian ^a
<i>n</i>	83 (79%)	11 (11%)	4 (4%)	7 (6%)
Mean age* (SD)	35 (14)	28 (11)	31 (13)	26 (5)
(range)	(17–79)	(17–58)	(19–43)	(17–33)
Female (%)	46 (55%)	7 (64%)	3 (75%)	6 (86%)
Born in UK	78 (94%)	4 (36%)	2 (50%)	5 (71%)

* $P = 0.03$, $df = 103$, $F = 2.01$, whites versus ethnic minorities

^aIncludes three Indian females (3%) two Arab females (1.5%) and one Chinese male and one Chinese female

Table 3 Crude (unadjusted for age) referral rate ratios for DSH by ethnicity and sex, 1991-UK Born only

Crude referral rate ratio (95% CI)	Males	Females	All
Afro-Caribbean	0.19 (0.0–1.05)	0.41 (0.08–1.20)	0.32 (0.09–0.82)
Asian ^a	1.20 (0.03–6.68)	3.53 (0.96–9.03)	2.55 (0.83–5.95)
Indian	0	7.76 (1.60–22.66)	n.a.

^aIncluding Indian

Repetition, clinical diagnosis and main precipitants

There were no differences apparent between the white and ethnic minority DSH patients with regards to previous history of DSH and the presence or absence of clinically diagnosed mental disorder (including “personality disorder”) at the time of the DSH (see Table 4). However, a history of substance abuse (alcohol and/or illicit drugs) was more frequently noted in white than in ethnic minority patients.

Cross-validation

Given the (remote) possibility that the ethnic differences in referral rates to the DSH team (Tables 2 and 3) were due to referral bias and did not reflect ethnic differences in attendance for DSH at casualty, audit data of all consecutive casualty attendances for overdoses over a 6-month period in 1991 were analysed according to ethnicity. As ethnic origin and country of birth are not recorded on casualty cards, ethnicity was assigned on the basis of name. This was felt to be feasible only in the case of Indian names and it has to be assumed that this method provides, at best, an underestimate of the numbers of Indian attenders. Using this method, of the consecutive sample of 237, 126 were identified as white females (mean age 35.0 years,

SD 14.1), 91 as white males (mean age 34.9 years, SD 14.7), 4 as Indian males (mean age 28.5 years, SD 15.4) and 9 as Indian females (mean age 24.7 years, SD 8.9). Using indirect standardization and exact methods for the calculation of confidence intervals, the standardized attendance ratio for Indian males was 1.92 (95% CI 0.52–10.24) and for Indian females 3.07 (95% CI 1.4–5.8).

Discussion

Our results suggested that ethnic origin is an important variable in the epidemiology of DSH. However, the study has a number of limitations that must be borne in mind when interpreting the results. The numbers in the referred sample were small, which is reflected in wide 95% confidence intervals for the referral ratios. There is a possibility that some catchment area patients may have attended other casualty departments. We have no means of excluding this, but as the hospital is in the centre of its catchment area any bias introduced by this is likely to be small. The overrepresentation of Indian females in our study sample is in line with previous research that has suggested that this group is at increased risk of DSH (Merrill and Owens, 1986) and suicide (Soni Raleigh and Balarajan 1992). The underrepresentation of Afro-Caribbean males and females also supports previous reports of low (but increasing) rates of suicidal behaviour in this group (Lockhart and Baron 1987; Soni Raleigh and Balarajan 1992).

As it is known that uptake of and referral rates to hospital-based health care differ according to ethnicity (Balarajan et al. 1991), it was necessary to check as much as possible whether ethnic referral biases could explain the ethnic differences observed in the study sample. The analysis of casualty records confirmed the high rates of Indian compared to white females.

Little is known about factors affecting the decision to seek medical help (from casualty) following DSH. It has been estimated that only 25% of all DSH cases within

Table 4 Clinical aspects-repetition, mental disorder and precipitants

Proportions of	Whites (n = 83)	Ethnic minorities (n = 22)
Repeat DSH	69% (58%–78%)	50% (28%–72%)
Clinical diagnosis of mental disorder ^a	77% (67%–86%)	77% (55%–92%)
<i>Main precipitant considered as:</i>		
Psychosocial crisis	35% (25%–46%)	59% (36%–79%)
Physical illness	5% (1%–11%)	0% (0%–15%)
Substance abuse	22% (13%–32%)	5% (0%–23%) ^b

^aIncluding personality disorder

^bDifference = 18% (95% CI 4%–30%)

a given community come to medical attention of whatever sort (Diekstra and Van Loo 1978). Even though the ratios of referral to the DSH team (Tables 2 and 3) appeared to reflect patterns of casualty attendance for DSH, it was not clear whether the decision to attend casualty following DSH is unaffected by ethnic origin. It is possible that Indian DSH patients are reluctant to seek help of whatever nature because of the stigma attached to suicidal behaviour in Indian culture (Venkoba Rao 1983). As a result of such factors, the referral ratio (Indian female/white female) found in this study may well underestimate the magnitude of the Indian female excess of DSH at community level. Although it is possible that the reduced DSH rates amongst Afro-Caribbeans that have been quoted in the literature (Merrill and Owens 1987) and that were also apparent in this sample are due to similar factors (Weissman 1974), it has been shown that at community level black American DSH rates are lower than white American ones (Petronis et al. 1990).

The (crude) referral ratios amongst United Kingdom born Asians and Indians suggested that second-generation immigrants are at an even higher risk than first-generation immigrants. The Indian population in the United Kingdom contains relatively many young children and adolescents (Haskey 1990); hence, the problem of Indian suicide and parasuicide may be set to increase in years to come.

The finding that DSH (referral) rates were 9.14 times higher amongst unemployed whites compared with employed whites is in line with previous reports suggesting that unemployment is an important risk factor for DSH (Platt 1986). Unemployment was a much weaker risk factor amongst ethnic minorities. It may be that members of ethnic minorities tend to be employed in less rewarding jobs than whites and that as a result unemployment is a less stressful option for them. Urgent further research is needed to clarify this.

Previous reports (Merrill and Owens 1986, 1987) have noted in both Asian and Afro-Caribbean clients an absence of risk factors such as psychiatric illness, substance abuse or a previous history of DSH. Marital conflict has been reported as an important risk factor for DSH and suicide in Asian immigrant women in the United Kingdom and India (Soni Raleigh et al. 1990; Venkoba Rao 1983). Given that our results suggested that the size of the DSH problem in this group is likely to increase in years to come, parasuicide teams may have to develop special expertise in "network interventions" (House et al. 1992) with Indian DSH patients.

In conclusion, DSH remains a major public health problem. Future studies of DSH need to take ethnic origin into account as an important risk/protective factor. It is hoped that health services will implement

the recommendations regarding the collection of information on ethnicity of patients published by the National Health Service (NHS) Management Executive (1993). Within the constraints of its methodological limitations, the present study indicated that DSH is a particular problem in Indian women that is likely to increase in years to come. As the epidemiology of ethnic minority DSH appears so different from the epidemiology of white DSH, DSH services operating in catchment areas with high proportions of minority ethnic groups may have to develop specially targeted interventions for these groups.

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References

- Balarajan R, Soni Raleigh V, Yuen P (1991) Hospital care among ethnic minorities in Britain. *Health Trends* 23: 90-93
- Breslow NE, Day NE (1988) *Statistical models in cancer research, vol 2; the design and analysis of cohort studies*. Oxford University Press, Oxford
- Diekstra RFW, Van De Loo KJM (1978) Attitudes toward suicide and the incidence of suicidal behaviour in a general population. In: Winnik HZ, Miller L (eds) *Aspects of suicide in modern civilization*. Jerusalem Academic Press, Jerusalem,
- Haskey J (1990) The ethnic minority populations of Great Britain: estimates by ethnic group and country of birth. *Popul Trends* 60: 35-38
- House A, Owens D, Storer D (1992) Psycho-social intervention following attempted suicide; is there a case for better services. *Int Rev Psychiatry* 4: 15-22
- Lockhart S, Baron JH (1987) Changing ethnic and social characteristics of patients admitted for self-poisoning in West London during 1971/2 and 1983/4. *J R Soc Med* 80: 145-148
- Merrill J, Owens J, (1986) Ethnic differences in self-poisoning; a comparison of Asian and white groups. *Br J Psychiatry* 148: 708-712
- Merrill J, Owens J (1987) Ethnic differences in self-poisoning; a comparison of West-Indian and White groups. *Br. J Psychiatry* 150: 765-768
- National Health Service Management Executive (1993) *Collecting information about the ethnic group of patients*. Author Leeds
- Petronis KR, Samuels JF, Moscicki EK, Anthony JC (1990) An epidemiologic investigation of potential risk factors for suicide attempts. *Soc Psychiatry Psychiatr Epidemiol* 25: 193-199
- Platt S (1986) Parasuicide and unemployment. *Br J Psychiatry* 149: 401-405
- Soni Raleigh V, Bulusu L, Balarajan R (1990) Suicides among immigrants from the Indian subcontinent. *Br J Psychiatry* 156: 46-50
- Soni Raleigh V, Balarajan R (1992) Suicide levels among immigrants in England and Wales. *Health Trends* 24: 91-94
- Venkoba Rao A (1983) India. In: Headley LA (ed) *Suicide in Asia and the Near East*. University of California Press, Los Angeles,
- Weissman MM (1974) The epidemiology of suicide attempts. *Arch Gen Psychiatry* 30: 737-746