

ORIGINAL PAPER

Martin Webber · Peter Huxley

Social exclusion and risk of emergency compulsory admission. A case-control study

Accepted: 28 May 2004

Abstract *Background* Emergency detentions under section 4 of the Mental Health Act 1983 are more frequent in socially deprived areas of England and Wales. However, it is not clear whether individual socio-economic disadvantage increases likelihood of emergency detention. Therefore, this study tests the hypothesis that a higher proportion of people who are socially excluded will be admitted to hospital under section 4 than those who are not. *Methods* A total of 300 mental health act assessments in two London boroughs with different rates of section 4 admissions were studied by retrospective case note review in a case-control design. An index of social exclusion was created and piloted for this study. *Results* The logistic regression analysis discovered four risk factors for section 4 admissions: presenting with a risk to self or others at the mental health act assessment, bi-polar affective disorder, non-White British ethnicity and low social support. There were no significant differences between the two boroughs on these variables. Risk factors for any compulsory admission were: presenting with a risk, psychosis and non-White British ethnicity. *Conclusion* This study found low social support to be the only social exclusion indicator that increases likelihood of admission under section 4. While individual-level variables explain some of the variation in section 4 rates, it is likely that, as indicated by other studies, different configurations of mental health services affect rates to a greater degree.

Key words social exclusion – mental health act – emergency detentions – approved social workers

Introduction

The UK is not alone in Europe in having a provision for emergency detentions in its mental health legislation. For example, in Germany, a clerk of the city council [1], or the deputy of the *Procureur Des Konings* in Belgium [2], both lay people, can enforce hospitalisation in an emergency upon the recommendation of one doctor. In France, only one medical certificate is required in the case of emergencies instead of the usual two for a *Hospitalisation sur demande d'un tiers* [3]. Danish law requires people to be admitted immediately by the police if a medical assessment determines that they fulfil the 'danger criterion' [4]. Norway, in contrast, appears to be in the minority in not having an emergency procedure [5].

However, the UK is the only European country that gives social workers a prominent role in compulsory admissions [6]. In England and Wales, two medical recommendations are required to support an application for compulsory detention, usually made by a social worker approved in accordance with section 114 of the Mental Health Act 1983 (MHA). One of the doctors must be approved under section 12 "as having special experience in the diagnosis or treatment of mental disorder" (section 12 MHA). In cases of emergencies, where an individual's urgent need for treatment outweighs the desirability of waiting for a medical examination by a second doctor, only one medical recommendation is required. In these circumstances, section 4 is used and the person could be detained for up to 72 h to allow time for a second doctor to complete their assessment. A section 4 could be converted to a section 2 (admission for assessment) by the second doctor's recommendation or the individual could be re-assessed for a section 3 (admission for treatment). Alternatively, the person may accept an informal admission or may require no further treatment and be discharged.

M. Webber MSc (✉) · P. Huxley PhD
Institute of Psychiatry
Kings College London
London, UK

M. Webber
Social Work & Social Care Section
PO 32, Health Services Research Dept.
Institute of Psychiatry
de Crespigny Park
London, SE5 8AF, UK
Tel.: +44-20/7848-5096
Fax: +44-20/7848-0530
E-Mail: m.webber@iop.kcl.ac.uk

Government guidance insists that people should not be admitted under section 4 rather than section 2 simply because it is more convenient for the second doctor to examine him or her in, rather than outside, hospital [7]. The Mental Health Act Commission, which oversees its operation, is also concerned to keep the use of section 4 to a minimum. Section 4 has greater implications for civil liberties than other sections of the MHA as the doctor providing the medical recommendation does not have to be section 12 approved. People using the MHA and those affected by it fear that it could be used inappropriately [8].

Section 4 is consequently used comparatively little in England and Wales. In 1999, section 4 admissions comprised less than 1% of the total number of psychiatric admissions [9] and just over 8% of all civil compulsory admissions in 2001–2 [10]. By contrast, in Scotland, the majority of compulsory admissions are under emergency orders [11]. This may reflect the relative ease of the process in contrast to the legislative requirements south of the border. In Scotland, only a GP or a psychiatrist is required to effect an emergency detention. Although they must try to consult a mental health officer, broadly equivalent to an approved social worker (ASW) who is trained to undertake this role in England and Wales, this is not an obligation if it is not practical. Up to one in five emergency detentions proceed without consultation with a mental health officer [12]. GPs are less likely than psychiatrists to obtain the consent of a mental health officer and Stevenson [13] suggests that the latter's involvement may reduce the number of emergency detentions.

High rates of section 4 admissions in England and Wales have been found in areas of social deprivation [14, 15]. A similar pattern exists for rates of all compulsory admissions under the MHA [16, 17]. This pattern may be explained by a concentration of mental disorder in more deprived areas. Alternatively, as Huxley and Kerfoot [15] suggest, a shortage of resources or poorly co-ordinated mental health services in socially deprived areas may cause services to respond on a crisis-basis more often than in areas that are less deprived and better resourced. Some evidence to support this view can be found in two Scandinavian studies, which discovered that some of the variation in rates of compulsory admissions were accounted for by differences in the mental health services [18, 19]. Further, two local authorities in London which had unusually low rates of referral for section 4 had either a clear policy that it would be used for extreme circumstances only or a crisis intervention team to assess emergency referrals [20]. A recent qualitative study provides further evidence that variations in resources, local operational norms and ward environments could explain some variation in detention rates between different areas [21].

An alternative theory about variation in section 4 rates is an inverse correlation with action taken under section 136 of the MHA. Section 136 allows police officers to remove to a place of safety a person found in a

public place who appears to be suffering from a mental disorder and to be in immediate need of care and attention. Puri and Bermingham [22] suggest that an increase in section 4 admissions is balanced by a low use of section 136 in low-density urban populations and areas with low proportions of ethnic minorities as well as good social worker support. A study in Cambridge, a university city with a small ethnic minority population, found that 30% of compulsory admissions used section 4, whereas only 1% used section 136, in contrast to national figures of 18% and 10%, respectively [23]. Webster et al. [24] found a similar proportion in Manchester.

Early studies of the MHA indicate that section 4 referrals were more likely to occur out of hours and to involve people who were previously unknown to the services and were less likely to have mental health problems [25–27]. A high proportion of these referrals were considered preventable by the use of alternative forms of care. For example, Puri et al. [23] found that 46% of section 4 admissions were not re-graded to another compulsory order. Mortimer [28] raised similar concerns and highlighted the role of the ASW in insisting on the presence of a second doctor wherever possible. However, other studies indicate it is used more appropriately. For example, Hatfield et al. [14] found that 90% of section 4 requests led to detention. In particular, there has been an increase over time in conversions to section 3 for treatment rather than to section 2 for further assessment. This may indicate that section 4 is being restricted to more severe cases, where there is greater clinical certainty that the individual will require a longer admission [29].

There is little firm evidence of the role of individual-level variables in section 4 admissions [9]. One study found a higher proportion of men detained under section 4 than women [30]. Also, it appears to be used more frequently among younger adults [31] and people of African-Caribbean ethnicity [20].

People with mental health problems are more likely to be unemployed than the general population [32–34], face discrimination in services [35–37] and experience poverty and social exclusion [38–40]. Further, the incidence of neurotic disorders is positively associated with social deprivation [41] and the incidence of psychotic disorders increases in areas with above-average social deprivation [42]. However, no studies have investigated if individual socio-economic disadvantage increases the likelihood of emergency compulsory admission. This study tests the hypothesis that a greater proportion of people who are socially excluded will be admitted to hospital under section 4 MHA than those who are not socially excluded.

Subjects and methods

■ Setting

We used a case-control design to analyse records of MHA assessments from January 1998 to December 2000 in two London local authorities

with different rates of section 4 admissions. One was an outer-London borough, characterised by suburban housing with some small pockets of social deprivation, known hereafter as 'suburban'. The other was an inner-London borough, with greater social deprivation and more local authority housing, known hereafter as 'urban'.

The urban borough was larger, with 1.77 times the population of the suburban borough [43]. It was also more socially deprived, ranking 165 out of a total of 354 districts on the index of multiple deprivation [44] in contrast to 301 for the suburban borough. The urban borough also had above the national average level of need for mental health services. Using data from 1996, it scored 113.3 on the Mental Illness Needs Index [45] in contrast to 97.3 for the suburban borough, where 100 was the average for England.

Between 1998 and 2000 the average annual rate of MHA assessments per 100,000 adult population was almost three times as high in the urban borough than the suburban borough, at 381 and 131, respectively. Similarly, section 4 was used more frequently in the urban borough than the suburban borough with a six-fold difference in average annual rates per 100,000 adult population of 37 and 6, respectively. Of all assessments, 4.4% resulted in a section 4 in the suburban borough, whereas the figure was 9.7% in the urban borough. The difference of 5.3% (95%CI = 1.4%–9.2%) is statistically significant ($z = 2.64, p < 0.01$).

■ Sample

Cases were defined as people admitted to hospital under section 4 MHA. Controls were those who were assessed under the MHA, but were not admitted under section 4. The controls were separated into four groups according to assessment outcome, i.e. informal admission, formal admission under section 2 or 3, or no admission. Assessments of hospital in-patients were excluded, as doctors or nurses could use holding powers under section 5 rather than section 4 in the case of emergencies.

Two registers in each site formed the sampling frame for the study. The first was a record of every formal admission, maintained by an MHA administrator. The second was a record of social reports completed by the ASW following each assessment. A local authority social services manager was responsible for maintaining this.

A preliminary investigation revealed that the two registers in the study areas accurately recorded all the formal admissions. However, a hand search of case files found that a small number of assessments which did not result in a formal admission were not included on the local authority register of ASW social reports. This under-reporting was likely to be because social reports were not completed for a small number of assessments where a formal admission was clearly inappropriate or the person did not have a mental health problem. From the hand search, we estimated that approximately 5% of assessments that did not result in a formal admission in the suburban borough, and 8% in the urban borough, were not included on the register of social reports. Allowing for under-reporting, we estimated that there were 265 potential cases and 2,727 potential controls in the two boroughs.

A sample size of 300 was used. We used stratified random sampling by borough and the five outcomes of the MHA assessment to ensure that there were good numbers from both boroughs and in all control groups. This left us with a ratio in the sample of cases to controls of 1:4.

We chose a 1:4 ratio of participants from the suburban borough and the urban borough respectively on the basis of population size. Therefore, for each of the five assessment outcomes, 12 cases were selected from the suburban borough and 48 from the urban borough. This gave us a 90% power of detecting a population odds ratio of 2.67 ($p < 0.05$) if the proportion of socially excluded in the case group is 60%.

The cases and controls for the study were selected at random by the MHA administrator in the urban borough and Mental Health Development Officer in the suburban borough from the two registers and the additional list of assessments not recorded elsewhere produced from the hand search of case files.

We studied the ASW social reports and medical recommendations of each assessment as the primary source of information. These

were corroborated with the contemporaneous nursing and medical records and those of the community mental health team, if they were involved at the time. This process enabled us to check inconsistencies and errors in the records to ensure that the data we collected were as accurate as possible.

Assessment outcome was concealed as far as possible to avoid researcher bias. This was achievable in some cases, but was unavoidable when the outcome of the assessment was immediately apparent upon opening the records.

■ Measurement of social exclusion

Social exclusion is a multi-dimensional concept that is not easily measurable. Pierson [46] defines it as "... a process that deprives individuals and families, groups and neighbourhoods of the resources required for participation in the social, economic and political activity of society as a whole" (p. 7). It involves many dimensions of human experience, in contrast to static measures of poverty [47]. However, there are no validated measures of an individual's social exclusion.

This study takes housing, education, income, employment, social support and neighbourhood deprivation as indicators of social exclusion. Housing status acknowledges the role that stable and decent accommodation plays in contributing towards social inclusion. This is particularly important for people with mental health problems [48]. The next three are all related to inclusion in the labour market, which underlines the importance of paid work to social inclusion [49]. Isolation was a key element in the early development of the concept of social exclusion [50] and is included in the form of social support to recognise its importance to both mental health and social inclusion [51]. The final indicator is used as a weighting variable to account for the contribution of living in a deprived neighbourhood to social exclusion [52, 53]. Neighbourhood deprivation was measured using ward level data from the 2000 index of multiple deprivation [44]. An index of social exclusion (ISE) was constructed to capture these six domains (Table 1).

Prior to data collection, the exclusion index was piloted on a small number of cases ($n = 10$). Data were available for the housing, education, employment and social support indicators from case files. However, income data were not routinely recorded and were rated for the purpose of this study on the basis of employment. For example, unskilled manual labourers were rated as earning 'less than £10,000', skilled labourers and administrative staff as 'between £10,000 and £20,000' and professionals as 'greater than £20,000'. Although the absolute accuracy of this score is clearly low, the broad income bands provided adequate discrimination. Data on welfare benefits for people not in paid employment were available in the case notes. Post-codes were used to generate ward index of multiple deprivation scores, but these were not available for homeless people.

The indicators of social exclusion each represent different constructs and cannot easily be combined to form a coherent scale [54]. The poor internal consistency of the six items brought together in our scale ($\alpha = 0.49$ [55]) demonstrated this. Therefore, to produce summary scores of multiple exclusion, we calculated on how many indicators each individual scored above the mean. The average for the sample was three. Those who scored above the mean on four or more indicators ($n = 112$) were classified as the most excluded in the sample.

Potential measurement errors with the indicators of social exclusion were overcome by dichotomising responses for analysis. The cut-off point was as unambiguous as possible; for example, lack of permanent accommodation, no apparent support or no paid employment.

Data were also collected from case notes on gender, age, ethnicity, diagnosis, documented risk history and risks apparent to those present at the assessment. Risk was a difficult variable to measure. In particular, different professional groups rate difficulties associated with mental health problems with varying priorities [56] and ASWs do not always agree with psychiatrists on the risks posed by people assessed under the MHA [57]. To overcome this difficulty, risks were categorised as: serious risk of suicide, life-threatening self-neglect, physical aggression towards family and physical aggression towards others. A risk was defined as being present if at least one professional

Table 1 Index of social exclusion (ISE)

Domain/Score	0	1	2	3	4	5
Housing status	Owner-occupier	Private tenant	Council tenant	Temporary accommodation	No fixed abode	Street homeless
Education	Post-graduate	Graduate	A-Levels	Vocational training	GCSEs (or equivalent)	No qualifications
Income	Income greater than £20,000	Income between £10,000 and £20,000	Income less than £10,000	Full benefits	Income-related benefits	None
Employment	Full-time and secure	Full-time and insecure	Part-time	Therapeutic work	Unemployed less than 2 years	Unemployed more than 2 years
Social Support	Lives with supportive people	Lives alone with some close support	Lives alone with support at a distance	Lives with un-supportive people	Lives alone with little contact with others	None
Neighbourhood deprivation (IoD 2000 ward score)	< 6.0	6–11.9	12–17.9	18–23.9	24–29.9	> 30.0

involved in the assessment identified at least one of these risks as being an issue.

■ Data analysis

The analysis was completed using SPSS for Windows v. 11 [58]. Comparisons of the section 4 group with the other outcomes were made using a χ^2 or *t*-test for independent samples to examine significant differences for each potential risk factor. Then a multivariate logistic regression procedure was performed using the variables with at least borderline significance ($p \leq 0.07$). The association between risk factors and admission under section 4 was expressed as an odds ratio with a 95% confidence interval. The analysis was repeated to explore possible risk factors for compulsory admission, comparing those admitted under sections 2, 3 or 4 with those who were either admitted informally or not at all. Finally, an inter-borough comparison of the risk factors associated with section 4 admissions was made to explore potential reasons for the higher rate in the urban borough.

Ethical approval for the study was obtained from the local research ethics committees in the two boroughs.

Results

■ Sample characteristics

Women were marginally under-represented in the sample in comparison with the population of the two boroughs (48.7% vs. 52%) [43]. However, they were significantly older than the men in the sample by an average of 6.8 years (95% CI = 3.7–10.0), a difference highly unlikely to have been caused by chance ($t = 4.26$, $df = 270$, $p < 0.0001$). In comparison with the local population, people of non-White British ethnicity were over-represented in both the urban borough sample (42.1% vs. 22%) and the suburban borough sample (21.7% vs. 15.5%) [43]. The largest ethnic minority groups were Black Caribbean and Black African (15.3% and 11.7% of the sample, respectively).

Age and gender did not appear to be significant risk factors for section 4 admissions (Table 2). However, people of non-White British ethnicity had a marginally raised likelihood of admission under this section. Also, it appeared that having a diagnosis of bi-polar affective disorder or presenting with an apparent risk during the

MHA assessment significantly increased the risk of admission under section 4.

■ Social exclusion

Table 3 shows that the only social exclusion indicator to have a significant association with section 4 admissions is having low support at the time of the MHA assessment. There were no significant differences between the two groups on the ISE indicators of housing, education, income, employment, neighbourhood deprivation and multiple exclusion.

In the logistic regression analysis, the potential risk factors were all significantly associated with section 4 admissions (Table 4). The odds of people presenting with an apparent risk (OR = 3.20) and those who had a diagnosis of bi-polar affective disorder (OR = 2.95) being admitted under section 4 were approximately three times more than others. People with a diagnosis of bi-polar affective disorder were no more likely to present with risks at an MHA assessment than people with other diagnoses (57.7% vs. 59.3%, $\chi^2 = 0.04$, $df = 1$, $p = 0.83$). However, they were significantly more likely to present a risk of aggression towards people outside their immediate family [44.2% vs. 22.6%, $\chi^2 = 10.39$, $df = 1$, $p = 0.001$, OR = 2.72 (95% CI = 1.46–5.07)].

The odds of people who had little social support (OR = 2.04) or were from a non-White British ethnic group (OR = 1.86) being admitted under section 4 were approximately twice as high as others. Ethnic minority groups were brought together to ensure statistical power in this analysis at the expense of possible within-group differences.

The ASW has to state on the section 4 application form why a second doctor could not be obtained. In 90% of the cases ($n = 54$), there was no time to find a second doctor due to the nature of the risks presented. It is likely that in a number of these cases the individual being assessed was not willing to wait for the second doctor to arrive, but this was not routinely recorded in the case notes. In the other cases, the second doctor was delayed

Table 2 Variation in section 4 outcomes by sample characteristics

Variable	Section 4 (n = 60)	Other outcomes (n = 240)	χ^2 or t	p	OR (95 %CI)
Gender					
Female	24 (40.0)*	122 (50.8)*			
Male	36 (60.0)*	118 (49.2)*	2.26	ns	
Age					
Mean (s. d.)	39.1 (12.8)	39.6 (14.5)	t = 0.25	ns	
Ethnicity					
White British	31 (51.7)*	155 (64.6)*			
Non-White British	29 (48.3)*	85 (35.4)*	3.40	0.07	1.71 (0.96–3.02)
Diagnosis					
Psychosis	27 (45.0)*	112 (46.7)*			
Bi-polar	18 (30.0)*	34 (14.2)*	8.40	0.004	2.60 (1.34–5.02)
Other	15 (25.0)*	94 (39.2)*			
Risk					
History	35 (58.3)*	146 (60.8)*	0.13	ns	
Present	47 (78.3)*	130 (54.2)*	11.59	0.001	3.06 (1.57–5.95)

* Percentages

Table 3 Variation in section 4 outcomes by index of social exclusion indicators

Variable	Section 4 (n = 60)	Other outcomes (n = 240)	χ^2 or t	p	OR (95 %CI)
Housing					
Insecure housing (ISE score ≥ 3)	24 (40.0)*	91 (37.9)*	0.09	ns	
Education					
No formal qualifications (ISE score = 5)	22 (36.7)*	87 (36.3)*	0.004	ns	
Income					
Income < £10,000 (ISE score ≥ 2)	55 (91.7)*	217 (90.4)*	0.09	ns	
Employment					
Not in paid work (ISE score ≥ 3)	48 (80.0)*	212 (88.3)*	2.89	ns	
Social support					
Little social support (ISE score ≥ 3)	32 (53.3)*	83 (34.6)*	7.14	0.01	2.16 (1.22–3.83)
Neighbourhood deprivation					
Mean ward score (s. d.)	21.0 (8.5)	21.8 (9.9)	t = 0.53	ns	
Multiple exclusion					
> Mean on >3 ISE indicators	24 (40.0)*	88 (36.7)*	0.48	ns	

* Percentages

Table 4 Logistic regression model for section 4 admissions

Variable	B	OR (95 % CI)		p
		Exp B	lower-upper	
Non-White British ethnicity	0.62	1.86	1.01–3.41	0.046
Bi-polar affective disorder	1.08	2.95	1.46–5.97	0.003
Present risk	1.16	3.20	1.61–6.36	0.001
Little social support	0.71	2.04	1.12–3.71	0.020

($n = 1$) or there was no doctor approved under section 12 available to complete a planned section 2 or 3 application ($n = 5$). This suggests that, in the majority of cases, section 4 is probably not being used for 'administrative convenience' [7].

■ Inter-borough comparison

To investigate whether the risk factors for section 4 admissions explained the higher rate in the urban borough, we compared their prevalence in the two boroughs. Non-White British ethnicity was the only risk factor more prevalent in the urban borough (Table 5). However, none of the differences were significant due to the small sample sizes.

■ Compulsory admissions

To explore whether the risk factors for section 4 admissions were unique from those for any compulsory admission, we repeated the analysis comparing people admitted under sections 2, 3 or 4 of the MHA with those who were either admitted informally or not at all. The results are presented in Table 6. In common with section 4 outcomes, risk factors for compulsory admissions

were a non-White British ethnicity and presenting a risk at the MHA assessment. In addition, having a diagnosis of psychosis, living in insecure housing and being multiply excluded (by our definition) increased the risk of compulsory admission (Table 6).

The logistic regression confirmed that the strongest risk factor for a compulsory admission was the presence of a risk at the time of an MHA assessment (OR = 11.14) (Table 7). The odds of people with a diagnosis of psychosis (OR = 2.22) or from a non-White British ethnicity (OR = 2.16) being compulsorily admitted were approximately twice as high as others. However, the social exclusion risk factors became non-significant.

Table 5 Inter-borough comparison of risk factors for section 4 admissions

	Urban borough (n = 48)	Suburban borough (n = 12)	χ^2	p
Non-White British ethnicity	24 (50.0)*	5 (41.7)*	0.27	ns
Bi-polar affective disorder	12 (25.0)*	6 (50.0)*	2.86	ns
Current risk	36 (75.0)*	11 (91.7)*	1.57	ns
Low social support	24 (50.0)*	8 (66.7)*	1.07	ns

* Percentages

Table 6 Variation in compulsory admission outcomes by all potential risk factors

Variable	Sections 2, 3 and 4 (n = 180)	Informal admission or no admission (n = 120)	χ^2 or t	p	OR (95%CI)
Gender					
Female	88 (48.9)*	58 (48.3)*			
Male	92 (51.1)*	62 (51.7)*	0.009	ns	
Age					
Mean (s. d.)	38.7 (13.8)	40.8 (14.7)	t = 1.26	ns	
Ethnicity					
White British	98 (54.4)*	88 (73.3)*			
Non-White British	82 (45.6)*	32 (26.7)*	10.90	0.001	2.30 (1.40–3.79)
Diagnosis					
Psychosis	96 (54.4)*	43 (35.8)*	10.78	0.001	2.23 (1.38–3.61)
Bi-polar	32 (17.8)*	20 (16.7)*			
Other	52 (28.9)*	57 (47.5)*			
Risk					
History	112 (62.2)*	69 (57.5)*	0.67	ns	
Present	143 (79.4)*	34 (28.3)*	77.76	<0.0001	9.78 (5.71–16.73)
Housing					
Insecure housing (ISE \geq 3)	78 (43.3)*	37 (30.8)*	4.76	0.029	1.72 (1.05–2.79)
Education					
No formal qualifications (ISE = 5)	63 (35.0)*	46 (38.3)*	0.35	ns	
Income					
Income < £10,000 (ISE \geq 2)	167 (92.8)*	105 (87.5)*	2.37	ns	
Employment					
Not in paid work (ISE \geq 3)	159 (88.3)*	101 (84.2)*	1.08	ns	
Social support					
Little social support (ISE \geq 3)	76 (42.2)*	39 (32.5)*	2.88	ns	
Neighbourhood deprivation					
Mean ward score (s. d.)	21.3 (9.5)	22.1 (9.8)	t = 0.73	ns	
Multiple exclusion					
> Mean on > 3 ISE indicators	78 (43.3)*	34 (28.3)*	7.69	0.006	2.01 (1.22–3.31)

* Percentages

Discussion

Principal findings

The sample is not dissimilar from previous studies of people assessed under the MHA. Younger men and older women predominate with more men than women being detained under section 4 [30, 59, 60]. People from ethnic minorities [61] and people with psychotic diagnoses [62, 63] are also over-represented in the sample.

The sample is more socially excluded than the general population. For example, in the suburban borough, 71.5% of the population owned their own home [43], whereas only 25% of the sample did. Barnes et al. [25] produced a similar finding. Further, people not in paid employment are over-represented in the sample. In the urban borough, only 12.5% of the sample were in paid work in contrast to 69.5% of the local population [43]. A high number of people not in paid employment has been found amongst those detained in a number of studies [30, 64–67].

In spite of the relative social exclusion of the sample, the only social exclusion indicator that is significantly

Table 7 Logistic regression model for compulsory admissions

Variable	B	OR (95% CI)		P
		Exp B	lower-upper	
Non-White British ethnicity	0.77	2.16	1.16–4.02	0.016
Psychosis	0.80	2.22	1.21–4.07	0.010
Present risk	2.41	11.14	6.18–20.09	<0.001
Insecure housing	0.41	1.51	0.82–2.76	ns
Multiple social exclusion	0.46	1.59	0.87–2.91	ns

associated with an outcome of section 4 is low social support. This largely disproves our hypothesis tested in this study. It is possible that available social support may reduce the risk of emergency admission under certain circumstances, i. e. when not outweighed by the other important determinants. An alternative explanation may lie in the circumstances of the assessments themselves.

The majority of section 4 admissions occurred out of hours, in A&E Departments of general hospitals or in psychiatric out-patient clinics. In the case of the latter, it appeared that consultant psychiatrists would ask an ASW to attend their clinic to give an opinion on whether their patient could be admitted under the MHA or not. These appointments often became unplanned MHA assessments resulting in a section 4 admission as the risks were judged to be too great to wait for a second doctor to attend. In these situations, the individual may appear unsupported, as he/she is not with his/her social or family network. Alternatively, the ASW may not have had an adequate opportunity to explore potential available support outside the clinic, if he/she did not previously know the individual.

A further possible explanation for this association, which is not present when compulsory admissions are compared to less restrictive outcomes (Table 6), is that applications made under sections 2 or 3 by the nearest relative may be more common in people with social support. However, as no nearest relatives made any applications in this sample, this can be ruled out.

This study found that a diagnosis of bi-polar affective disorder increases likelihood of admission under section 4 and that psychosis increases likelihood of a compulsory admission in general. Previous studies have found that diagnoses associated with lack of insight, poor self-care and threats of violence to others are more likely to lead to a formal admission [68–70]. The strong association of bi-polar affective disorder with a risk of aggression towards other people in this study may explain this pattern. The risk-averse culture of UK mental health services following the homicide inquiries of the early 1990s [e. g. 71, 72] means that such risks are increasingly less likely to be managed within a community setting. It is, therefore, not unexpected that presenting with a risk at an MHA assessment increases the likelihood of detention more than any other variable.

Also, people with a bi-polar affective disorder typi-

cally present to services in an unexpected way. The clinicians involved in emergency mental health act assessments may be concerned that patients will leave the clinic before a second medical opinion can be obtained. It was not possible to measure this ‘risk of disappearance’ using our case note analysis methodology, but this phenomenon may be associated with assessment outcome.

This study found a raised likelihood of admission under section 4 in particular, or under any civil section in general, for people of a non-White British ethnicity. However, this finding cannot be generalised to all non-White British ethnic groups due to the predominance of people of Black Caribbean and Black African origin in the sample. People from Black ethnic groups are up to six times more likely to be detained than their White counterparts [62–64, 73, 74]. This may reflect high rates of diagnosed severe mental illness, particularly schizophrenia, among African-Caribbean people in Britain [75–77] or institutional racism [78, 79]. Mental health professionals consistently perceive Black people as more dangerous than White people [80, 81] and the stereotyping of this group as violent possibly influences the decision-making process in MHA assessments [63]. It is also known that people from a Black or ethnic minority are less likely to have contact with services, leading to a later presentation at a more severe stage of their illness [82, 83].

Failure to prove our hypothesis suggests that unmeasured variables account for the variations in rates between the two London boroughs. Firstly, urban boroughs have a more geographically mobile population than suburban boroughs [84]. It is possible that more frequent unexpected presentations to mental health services in the former cause clinicians to have less information about the people they are assessing, leading to a higher rate of emergency detentions. Secondly, it is possible that social deprivation operates at a borough-level and influences the response services make to mental health crises, though it is beyond our data to test this. Thirdly, the numbers and availability of section 12 approved doctors in the two boroughs may also influence MHA assessment outcomes. Finally, it is possible that the suburban borough, with a longer history of integrated community mental health services, is better able to plan MHA assessments and avoid emergency responses to requests. However, further research is required to test these hypotheses.

■ Study limitations

A retrospective case file analysis can be fraught with difficulties. Professionals may have recorded information inaccurately, omitted relevant facts or included false information alongside that which is genuine. It is not as reliable as data collected prospectively or direct from the people being assessed. However, the quality of the records kept by the professionals involved during and

after the MHA assessments was generally very good. The records of other professionals frequently corroborated information provided in the ASW social reports and medical recommendations, lending it a high degree of reliability. There was also a very small number of missing data, indicating some thorough record-keeping.

The study could be improved by using a prospective design with a systematic method of data collection by ASWs during each assessment they undertake. Further, interviews with the people being assessed could have been compared with the professionals' accounts for a true triangulation of data collection. This was not possible here due to feasibility and funding constraints.

The index of social exclusion was limited by its omissions. For example, it did not include an indicator of stigma and discrimination. Although this is an important contributory factor to the social exclusion of people with mental health problems [37, 85], it is difficult to measure without interviewing all the participants. There are also no indicators of participation in community activity or access to goods and services, which are commonly cited as important components of social exclusion [86]. It is static and does not capture the full dynamics of the concept [87]. Further, the 0–5 scale is rather crude and does not account for variation within or between categories. For example, some owner-occupiers may have paid off their mortgage, while others may be under threat of re-possession due to arrears.

Socio-economic status and marital status are potential confounders that were not measured. However, elements of these constructs are captured in the indicators of social exclusion. Further, it was not possible to reliably infer from case notes whether people assessed under the MHA were known to the clinicians involved, as this may have a significant bearing on assessment outcomes.

Conclusion

This study has found that low social support is the only social exclusion indicator that increased the likelihood of admission under section 4 following an MHA assessment. It appears that individual-level variables are insufficient for explaining the variation in section 4 rates between the two boroughs. Further research is required to measure the association of other individual and ecological variables not studied here with rates of emergency detentions. An in-depth qualitative study of how the MHA is used in the two boroughs and prospective quantitative studies of the use of the MHA may provide more evidence about this.

■ **Acknowledgements** The first author received a grant from the Association of Directors of Social Services Research Group in 2001 to undertake this study. We wish to acknowledge the help and support of the late Julie Barton, Tony West, Jenny Scudamore, Antoni Korris, Peter Schofield and the staff of the medical records departments and the CMHTs in the two London boroughs studied.

References

- Röttgers HR, Lepping P (1999) Treatment of the mentally ill in the Federal Republic of Germany. Sectioning practice, legal framework, medical practice and key differences between Germany and the UK. *Psychiatr Bull* 23:601–603
- van Lysebetten T, Igodt P (2000) Compulsory psychiatric admission. A comparison of English and Belgian legislation. *Psychiatr Bull* 24:66–68
- Laffont I, Priest RG (1992) A comparison of French and British mental health legislation. *Psychol Med* 22:843–850
- Sestoft D, Engberg M (2000) Law and Mental Health in Denmark. *Int J Law Psychiatr* 23:533–540
- Hatling T, Krogen T, Ulleberg P (2002) Compulsory admissions to psychiatric hospitals in Norway. International comparisons and regional variations. *J Mental Health* 11:623–634
- Ramon S (1996) *Mental health in Europe. Ends, beginnings and rediscoveries.* Macmillan Press, London
- Department of Health and Welsh Office (1999) *Mental Health Act 1983 Code of Practice.* Stationary Office, London
- Marriott S, Audini B, Lelliott P, Webb Y, Duffett R (2001) Research into the Mental Health Act: A qualitative study of the views of those using or affected by it. *J Mental Health* 10:33–39
- Wall S, Churchill R, Hotopf M, Buchanan A, Wessely S (1999) A systematic review of research relating to the Mental Health Act (1983). Department of Health, London
- Department of Health (2003) *Inpatients formally detained in hospitals under the Mental Health Act 1983 and other legislation. NHS trusts, high security psychiatric hospitals and private facilities. 2001–2002.* Department of Health, London
- Mental Welfare Commission for Scotland (2002) *Annual Report 2001–2002.* The Stationary Office, Edinburgh
- Humphreys MS (1994) Junior psychiatrists and emergency compulsory detention in Scotland. *Int J Soc Psychiatr* 17:421–429
- Stevenson GS (2003) Emergency psychiatric detentions in a Scottish health region. The use of Sections 24 and 25 of the Mental Health (Scotland) Act 1984. *Int J Law Psychiatr* 26:257–267
- Hatfield B, Mohamad H, Huxley P (1992) The 1983 Mental Health Act in five local authorities: A study of the practice of Approved Social Workers. *Int J Soc Psychiatr* 38:189–207
- Huxley P, Kerfoot M (1993) Variation in requests to social services departments for assessment for compulsory psychiatric admission. *Soc Psychiatry Psychiatr Epidemiol* 28:71–76
- Audit Commission (1994) *Finding a place: A review of mental health services for adults.* Stationary Office, London
- Bindman J, Tighe J, Thornicroft G, Leese M (2002) Poverty, poor services, and compulsory psychiatric admission in England. *Soc Psychiatry Psychiatr Epidemiol* 37:341–345
- Hansson L, Muus S, Saarento O, Vinding HR, Göstas G, Sandlund M, Zandren T, Öiesvold T (1999) The Nordic comparative study on sectorized psychiatry. Rates of compulsory care and use of compulsory admissions during a 1-year follow-up. *Soc Psychiatry Psychiatr Epidemiol* 34:99–104
- Kjellin L (1997) Compulsory psychiatric care in Sweden 1979–93. Prevalence of committed patients, discharge rates and area variations. *Soc Psychiatry Psychiatr Epidemiol* 32:90–96
- Barnes M (1990) Assessing for compulsory detention: applying the social perspective? *Research, Policy and Planning* 8:14–19
- Quirk A, Lelliott P, Audini B, Buston K (2003) Non-clinical and extra-legal influences on decisions about compulsory admission to psychiatric hospital. *J Mental Health* 12:119–130
- Puri B, Bermingham D (1990) High rate of section 4 admissions. Clinical implications and possible explanation. *Psychiatr Bull* 14:21–22
- Puri B, Rose G, Bermingham D (1992) Emergency admissions under section 4 of the Mental Health Act 1983. Reasons for a high rate. *Health Trends* 24:85–88
- Webster L, Dean C, Kessel N (1987) Effect of the 1983 Mental Health Act on the management of psychiatric patients. *Br Med J* 295:1529–1532

25. Barnes M, Bowl R, Fisher M (1986) The Mental Health Act 1983 and social services. *Research, Policy and Planning* 4:1–7
26. Bowl R, Barnes M, Fisher M (1987) A real alternative. *Community Care* 667:26–28
27. Fisher M, Barnes M, Bowl R (1987) Monitoring the Mental Health Act 1983. Implications for policy and practice. *Research, Policy and Planning* 5:1–13
28. Mortimer A (1990) Changes in the use of the Mental Health Act 1983 four years from its inception in Leeds Eastern Health Authority. *Med Sci Law* 30:309–312
29. Hotopf M, Wall S, Buchanan A, Wessely S, Churchill R (2000) Changing patterns in the use of the Mental Health Act 1983, 1984–1996. *Br J Psychiatry* 176:479–484
30. Hatfield B, Mohamad H (1994) Women, men and the Mental Health Act (1983). *Research, Policy and Planning* 12:6–10
31. Srikumar S, Orrell M (1995) Age and compulsory admission. *Int J Geriatr Psychiatry* 10:611–615
32. Thornicroft G, Strathdee G, Phelan M, Holloway F, Wykes T, Dunn G, McCrone P, Leese M, Johnson S, Szmukler G (1998) Rationale and design. PRISM Psychosis Study I *Br J Psychiatry* 173:363–370
33. Hatfield B, Huxley P, Mohamad H (1992) Accommodation and employment – a survey into the circumstances and expressed needs of users of mental health services in a northern town. *Br J Soc Work* 22:61–73
34. Office for National Statistics (2002) Labour Force Survey 2002. Stationery Office, London
35. Repper J, Sayce L, Strong S (1997) Tall stories from the back yard. A survey of 'Nimby' opposition to community mental health facilities experienced by key service providers in England and Wales. Mind Publications, London
36. Read J, Baker S (1996) Not just sticks and stones. A survey of the stigma, taboos and discrimination experienced by people with mental health problems. Mind publications, London
37. Sayce L (2000) From psychiatric patient to citizen. Overcoming discrimination and social exclusion. Macmillan, London
38. Cullen L, Edwards S, Marks S, Phelps L, Sandbach J (2004) CAB evidence on mental health and social exclusion. Citizens Advice, London
39. Cobb A (1993) Balancing the payments? Social security and community care for people who use mental health services. Mind Publications, London
40. Huxley P, Thornicroft G (2003) Social inclusion, social quality and mental illness. *Br J Psychiatry* 182:289–290
41. Henderson C, Thornicroft G, Glover G (1998) Inequalities in mental health. *Br J Psychiatry* 173:105–109
42. Croudace TJ, Kayne R, Jones PB, Harrison GL (2000) Non-linear relationship between an index of social deprivation, psychiatric admission prevalence and the incidence of psychosis. *Psychol Med* 30:177–185
43. Office for National Statistics (2003) Census 2001: National report for England and Wales. The Stationary Office, London
44. Department of the Environment Transport and the Regions (2000) Indices of Deprivation 2000. Stationary Office, London
45. Glover GR, Robin E, Emmam J, Arabscheibani GR (1998) A needs index for mental health care. *Soc Psychiatry Psychiatr Epidemiol* 33:89–96
46. Pierson J (2002) Tackling social exclusion. Routledge, London
47. Berghman J (1995) Social exclusion in Europe. Policy context and analytical framework. In: Room G, (ed) *Beyond the threshold. The measurement and analysis of social exclusion*. Policy Press, Bristol, pp 10–28
48. Spiers FE (ed) (1999) *Housing and social exclusion*. Jessica Kingsley, London
49. Atkinson A, Hills J (eds) (1998) *Exclusion, employment and opportunity*. CASEpaper 4. Centre for Analysis of Social Exclusion, London School of Economics, London
50. Evans M (1998) Behind the rhetoric. The institutional basis of social exclusion and poverty. *IDS Bull-Inst Dev Stud* 29:42–49
51. Cattell V (2001) Poor people, poor places, and poor health. The mediating role of social networks and social capital. *Soc Sci Med* 52:1501–1516
52. Kleinman M (1998) Include me out? The new politics of place and poverty. CASEpaper 11. Centre for Analysis of Social Exclusion, London School of Economics, London
53. Glennerster H, Lupton R, Noden P, Power A (1999) Poverty, social exclusion and neighbourhood: studying the area bases of social exclusion. CASEpaper 22. Centre for Analysis of Social Exclusion, London School of Economics, London
54. Burchardt T, Le Grand J, Piachaud D (1999) Social exclusion in Britain 1991–1995. *Soc Policy Adm* 33:227–244
55. Cronbach LJ (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16:297–334
56. Wing J, Beevor A, Curtis R, Park S, Hadden S, Burns A (1998) Health of the Nation Outcome Scales (HoNOS). Research and development. *Br J Psychiatry* 172:11–18
57. Sammut RG, Sergeant H (1993) Disagreements between psychiatrists and social workers over compulsory admissions under the 1983 Mental Health Act. *Psychiatr Bull* 17:462–465
58. SPSS Inc. (2001) SPSS for Windows v. 11. SPSS Inc., Chicago
59. Barnes M, Bowl R, Fisher M (1990) *Sectioned. Social services and the 1983 Mental Health Act*. Routledge, London
60. McDonald A, Taylor M (1995) The Mental Health Act 1983 – the application of the act. Admission to hospital and emergency intervention. *Elders* 4:27–35
61. Watson A (2001) Detained. SSI inspection of compulsory mental health admissions. Department of Health, London
62. Bebbington PE, Feeney ST, Flannigan CB, Glover GR, Lewis SW, Wing JK (1994) Inner London collaborative audit of admissions in two health districts. II: Ethnicity and the use of the Mental Health Act. *Br J Psychiatry* 165:743–749
63. Singh S, Croudace T, Beck A, Harrison G (1998) Perceived ethnicity and the risk of compulsory admission. *Soc Psychiatry Psychiatr Epidemiol* 33:39–44
64. Davies S, Thornicroft G, Leese M, Higgingbotham A, Phelan M (1996) Ethnic differences in risk of compulsory psychiatric admission among representative cases of psychosis in London. *Br Med J* 312:533–537
65. Hatfield B, Huxley P, Mohamad H (1997) Social factors and compulsory detention of psychiatric patients in the UK. The role of the Approved Social Worker in the 1983 Mental Health Act. *Int J Law Psychiatr* 20:389–397
66. Dean C, Webster L (1991) The Mental Health Act 1983. Characteristics of detained patients. *J Forensic Psychiatry* 2:185–192
67. Szmukler G, Bird A, Button E (1981) Compulsory admissions in a London Borough. 1: Social and clinical features and a follow-up. *Psychol Med* 11:617–636
68. Gilmore C, Wood G, Rigby J (1994) Elderly patients and the Mental Health Act 1983. *Int J Geriatr Psychiatr* 9:809–818
69. Powell G, Caan W, Crowe M (1994) What events precede violent incidents in psychiatric hospitals? *Br J Psychiatry* 165:107–112
70. van Os J, Fahy T, Jones P, Harvey I, Sham P, Lewis SW, Bebbington PE, Toone B, Williams M, Murray R (1994) Psychopathological syndromes in the functional psychoses. Associations with course and outcome. *Psychol Med* 26:161–176
71. Ritchie JH, Dick D, Lingham R (1994) The report of the inquiry into the care and treatment of Christopher Clunis. HMSO, London
72. Blom-Cooper L, Hally H, Murphy E (1995) *The falling shadow: one patient's mental health care 1978–1993*. Duckworth, London
73. Audini B, Lelliott P (2002) Age, gender and ethnicity of those detained under Part II of the Mental Health Act 1983. *Br J Psychiatry* 180:222–226
74. Bhui K, Stansfeld S, Hull S, Priebe S, Mole F, Feder G (2003) Ethnic variations in pathways to and use of specialist mental health services in the UK: Systematic review. *Br J Psychiatry* 182: 105–116
75. Harrison G, Owens D, Holton A, Neilson D, Boot D (1988) A prospective study of severe mental disorder in Afro-Caribbean patients. *Psychol Med* 18:643–657
76. Wessely S, Castle D, Der G, Murray R (1991) Schizophrenia and Afro-Caribbeans. A case-control study. *Br J Psychiatry* 159: 795–801

77. King M, Coker E, Leavey G, Hoare A, Johnson-Sabine E (1994) Incidence of psychotic illness in London. Comparison of ethnic groups. *Br Med J* 307:1536–1539
78. Fernando S (2001) *Mental health, race and culture*. Palgrave Macmillan, Basingstoke
79. Littlewood R, Lipsedge M (1997) *Aliens and alienists. Ethnic minorities and psychiatry*. Brunner-Routledge, Hove
80. Rogers A (1990) Policing mental disorder. Controversies, myths and realities. *Soc Policy Adm* 24:226–236
81. Browne D (1995) *An element of compulsion*. Commission for Racial Equality, London
82. Thomas C, Stone K, Osborn M, Thomas P, Fisher M (1993) Psychiatric morbidity and compulsory admission among UK-born Europeans, Afro-Caribbeans and Asians in central Manchester. *Br J Psychiatry* 163:91–99
83. Ineichen B (1991) Schizophrenia in British Afro-Caribbeans. Two debates confused? *Int J Soc Psychiatr* 37:227–232
84. Lamont A, Ukoumunne OC, Tyrer P, Thornicroft G, Patel R, Slaughter J (2000) The geographical mobility of severely mentally ill residents in London. *Soc Psychiatry Psychiatr Epidemiol* 35:164–169
85. Sayce L (2001) Stigma, discrimination and social exclusion. What's in a word? *J Mental Health* 7:331–343
86. Barry B (1998) *Social exclusion and the distribution of income*. CASEpaper 12. Centre for Analysis of Social Exclusion, London School of Economics, London
87. Walker R (1995) The dynamics of poverty and social exclusion. In: Room G (ed) *Beyond the threshold. The measurement of poverty and social exclusion*. The Policy Press, Bristol, pp 102–128