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Ethnic differences in women's use of mental health services: do social networks play a role? Findings from a national survey

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ABSTRACT

Objectives: The reasons for ethnic differences in women's mental health service use in England remain unclear. The aims of this study were to ascertain: ethnic differences in women's usage of mental health services, if social networks are independently associated with service use, and if the association between women's social networks and service use varies between ethnic groups.

Design: Logistic regression modelling of nationally representative data from the Ethnic Minority Psychiatric Illness Rates in the Community (EMPIRIC) survey conducted in England. The analytic sample (2260 women, aged 16–74 years) was drawn from the representative subsample of 2340 women in EMPIRIC for whom data on mental health services, and social networks were available.

Results: Pakistani and Bangladeshi women were less likely than White women to have used mental health services (Pakistani OR = 0.23, CI = 0.08–0.65, $p = .005$; Bangladeshi OR = 0.25, CI = 0.07–0.86, $p = .027$). Frequent contact with relatives reduced mental health service use (OR = 0.45, CI = 0.23–0.89, $p = .023$). An increase in perceived inadequate support in women's close networks was associated with increased odds of using mental health services (OR = 1.91, CI = 1.11–3.27, $p = .019$). The influence of social networks on mental health service use did not differ between ethnic groups.

Conclusions: The differential treatment of women from Pakistani and Bangladeshi ethnic groups in primary care settings could be a possible reason for the observed differences in mental health service use.

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Ethnicity; mental health services; social networks; social support; mental illness

Introduction

In the UK, ethnic differences in women's use of mental health services are well documented. Black Caribbean women are more likely to use inpatient services than the White majority, as are White Irish women (Care Quality Commission & National Mental Health Development Unit 2010; Care Quality Commission & National Mental Health

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Development Unit 2011). Black Caribbean women are also more likely to use services such as Crisis Resolution Home Treatment and Early Intervention Services (Glover and Evison 2009). South Asian (Pakistani, Indian, and Bangladeshi) women are one group for whom there are low rates of usage of outpatient mental health services (Cooper et al. 2010; Cooper et al. 2013). Within this group, Pakistani women may be particularly disadvantaged, due to high levels of mental illness, (Gater et al. 2009; Chaudhry et al. 2012) but low levels of service use (Lloyd and Fuller 2002; Glover and Evison 2009; Kapadia et al. 2015). However, there is little robust evidence; typically the rates of usage for Pakistani women have been inferred from those for South Asian women as a whole. It is not appropriate to do this, as there are indications that Pakistani women have higher mental illness rates than Indian and Bangladeshi women (Weich et al. 2004) but lower usage of mental health services than Indian women (Care Quality Commission & National Mental Health Development Unit 2010; Care Quality Commission & National Mental Health Development Unit 2011). A range of potential explanations for these lower rates of service use have been explored. There is some evidence that Pakistani women are less likely to be referred to specialist mental health services, (Burman, Chantler, and Batsleer 2002) that NHS services may be inadequate in addressing religious, cultural and language needs, (Bowl 2007; Chew-Graham et al. 2002) and that Pakistani women may be fearful that confidentiality may not be maintained (Gilbert, Gilbert, and Sanghera 2004). These findings reflect the tendency of research on mental health service use to focus on how individuals (patients) in conjunction with systems (NHS) drive the outcomes of mental health care pathways. The social aspect of help-seeking; the way in which decisions and actions are influenced by the people closest to us, are important (Pescosolido 1992, 2011) but rarely focused on. Social networks may be particularly important for groups that are alienated from mental health service systems, both in terms of their content (the people in them – friends, family) and their function (provision of support, exchange of information about illness and services). Social support within social networks may be protective, by reducing the propensity to develop mental illness, and social networks may act as a substitute for services for people who have developed mental illness (Gourash 1978; Kogstad, Mönness, and Sörensen 2013). Certainly, research in the United States, and Puerto Rico has shown that people were less likely to use mental health services if high levels of support were being provided within networks (Pescosolido et al. 1998; Maulik, Eaton, and Bradshaw 2009). Further there is a lack of research evidence on how social networks may operate differently across ethnic groups, although studies in the United States have shown a greater reliance on informal family support networks for some ethnic minority groups, such as Mexican Americans (Almeida et al. 2011), which may in turn influence decisions to seek formal mental health services. In the UK very little attention has been paid to the influence of the content and function of social networks on the usage of mental health services, and their differential operation amongst ethnic groups. This is an important omission, as research from other countries suggests that the explanations for low rates of mental health service use could be more adequate with reference to social network characteristics.

The objectives of the present study were to investigate (a) the association between ethnic group and mental health service usage for women in England, (b) the association between social networks and mental health service usage and (c) whether the latter association varies between women of different ethnic groups.

Methods

Study design and sample

Data from Ethnic Minority Psychiatric Illness Rates in the Community (EMPIRIC) were used (National Centre for Social Research and University College London. Department of Epidemiology and Public Health 2003). EMPIRIC is a representative cross-sectional survey of adults (aged 16–74 years) conducted in England in 2000. The aim of the survey was to report the level of mental illness in five ethnic minority groups (White Irish, Black Caribbean, Bangladeshi, Indian and Pakistani) compared with the majority White population, as well as collecting information on access to mental health services, social support and socioeconomic characteristics. The survey followed up White participants (who agreed to be re-contacted) from The Health Survey for England (HSE) 1998, (Erens and Primatesta 1999) and ethnic minority participants (who agreed to be re-contacted) from the HSE 1999 (Erens, Primatesta, and Prior 2000), of whom 92% agreed to be interviewed. Overall, 7009 individuals who took part in the original surveys were contacted and 6271 were eligible for re-interview. Of these 4281 took part in the survey (response rate = 68.2%) (Sproston and Nazroo 2002). The EMPIRIC data set that is provided by the UK Data Service contains survey weights that account for both the design of the HSE and associated non-response, and the non-response to the EMPIRIC survey. For ethnic minority respondents sampled from the HSE 1999, the provided survey weights were used for the current analysis. For White respondents sampled from the HSE 1998, weighting was not applied at the HSE stage as the achieved sample is thought to have been successfully drawn as an equal probability sample, making weighting unnecessary (Erens et al. 2001; Sproston and Nazroo 2002).

The survey was carried out by trained interviewers using Computer Assisted Personal Interviewing. Most interviews were conducted in English (83%). For participants who were not able to complete an interview in English, professional interpreters were provided. Study materials were translated into six languages for use with these participants: Hindi, Gujarati, Punjabi, Urdu, Bengali, and Sylheti (Sproston and Nazroo 2002). For the current analysis, only women were selected ($n = 2340$). During the analysis 80 women (3.4%) were dropped due to missing data on one or more covariates.

Data and variables

The outcome variable was usage of mental health services. Within the data set, there were three measures of mental health service use in the past six months: visited a doctor for an emotional or stress-related problem ($n = 182$), visited a counsellor or psychologist ($n = 52$) and saw a Community Psychiatric Nurse (CPN) ($n = 25$). In the UK, a CPN is typically provided by community mental health outpatient services to people suffering moderate to severe mental distress. The three measures were not mutually exclusive. A binary variable was created to indicate if a person had used any of these mental health services.

Ethnic group

Ethnic group was self-defined by participants using the 1991 Census categories, apart from White Irish participants who were classified as White Irish if they were born in Ireland or

had a parent born in Ireland (National Centre for Social Research & University College London 2003). The six ethnic groups sampled for EMPIRIC were: White, White Irish, Black Caribbean, Bangladeshi, Indian and Pakistani. Ethnic group was used as a categorical variable with the White ethnic group used as the reference category.

Mental illness

Mental illness was measured using the Clinical Interview Schedule Revised (CIS-R) (Lewis et al. 1992). This was used as a binary variable, whereby those who scored 12 or greater were regarded as having a mental illness that warranted clinical intervention (Lewis et al. 1992). Women who scored between 0 and 11 were coded as 0, and those who scored between 12 and 44 were coded as 1. Excluding women who did not display symptoms of mental illness (CIS-R score < 12) from the analysis was considered, as it may be thought that those without mental illness were not in need of mental health services. However, the data show that 6% (unweighted) of women scoring below 12 on the CIS-R used mental health services. Although this figure was much less than those women who scored 12 or more (24%), it was high enough to warrant inclusion of all women in the analysis, regardless of CIS-R score.

Social network characteristics

Network support (what network members were perceived to do for the participant) was measured using the Close Persons Questionnaire (CPQ) (Stansfeld and Marmot 1992), for the two closest persons. A factor analysis was conducted on 12 of the 15 items to produce two factors: positive aspects of social support and inadequate support (see Supplementary File 1 for a full description). These were used as continuous variables. Network contact was defined as frequent face to face contact with relatives (living outside the household) or friends. This was measured with two questions: 'How often do you regularly visit or are visited by [these] (1) relatives/ (2) friends?' Both of these variables had three categories (0: no frequent contact, 1: frequent contact, 2: no relatives outside of the household/ no friends), where frequent face to face contact was defined as seeing a relative or friend once a week or more often. Network content was defined as the relationship type of the two closest people from the Close Persons Questionnaire. This was measured with the questions 'Who have you felt closest to in the last 12 months?' and 'Who have you felt next closest to in the last 12 months?' Participants chose from 16 categories for these relationships, 12 of which were family relationships, 3 friendships and 1 other type of relationship. For the analysis, a variable with 6 categories was created, which gave an overall summary of the nature of the two closest people; other relationships ($n = 13$) were recoded into the 'friends' category. The categories were: spouse and relative, spouse and friend, friend and relative, relatives, friends, and only one or no close people. The size of the network was measured by the question 'How many people do you feel close to?' resulting in responses from 0 to 58 (median = 5). From this a three category variable was created that represented small (0–2 people), medium (3–7 people) and large networks (8 or more people).

Control variables

A range of additional control variables were included to deal with factors that were considered to potentially influence the relationship between ethnicity and usage of mental health services, and social networks and usage of mental health services: age (3 category variable: 16–34 years, 35–54 and 55–74); English proficiency based on speaking English at the interview (binary variable); foreign born status (binary variable to demarcate those who were born in the UK from those who were not); marital status (three category variable: married, separated or widowed or divorced and single); annual equivalised household income (based on McClements household score (McClements 1977) to produce quintiles, where quintile 1 represented the lowest income and 5 the highest, and a separate category for participants for whom data on income was missing (16% of women)); employment status (a 5 category variable: employed, unemployed, retired, looking after home or family, and other economically inactive). Highest level of educational qualifications was considered as a control variable, as previous studies have shown that this is a predictor of mental health service use (Ojeda and Bergstresser 2008; Sosulski and Woodward 2013). However level of educational qualifications (four category variable: degree or higher, A-Levels, foreign qualifications, no qualifications) was correlated with household equivalised income (polychoric correlation coefficient (to be used with categorical data) = −0.30, $p < .001$). Income was chosen over educational qualifications, due to its ability to provide a more fine grained analysis (six categories of income compared with four categories of qualifications).

Statistical analysis

Descriptive analysis (weighted) was undertaken to assess the proportion of women in each ethnic minority group that had used mental health services in the past six months, and the distribution of explanatory variables and network characteristics by ethnic group. The outcome variable (usage of mental health services) was operationalised as a binary variable, hence logistic regression modelling (weighted) was used to investigate the relationship between ethnic group, social networks and usage of mental health services. It was decided a priori to add interaction terms of statistically significant social network variables and ethnic group in order to test if the association between social network characteristics and mental health service use operated differently across ethnic groups. Analysis was undertaken with Stata 13 (StataCorp 2013), using the 'pweight' command to take into account sample design and non-response. Odds ratios (ORs) and 95% confidence intervals are provided for parameters in the models. ORs were deemed to be statistically significant if their probability values were less than 0.05.

Results

Descriptive analysis is presented in Table 1. Out of all women, White Irish (13%), Black Caribbean (11%) and White (11%) women were the most likely to have used mental health services in the last month, and Pakistani (7%) and Bangladeshi (5%) women were the least likely to have used them. Pakistani women were the most likely to show symptoms of mental illness (a score of 12 or greater on the CIS-R, 26%) and Bangladeshi women the

Table 1. Distribution of usage of mental health services, mental illness (CIS-R score) and control variables by ethnic group.

Variables	White ($n = 438$)	White Irish ($n = 394$)	Black Caribbean ($n = 397$)	Bangladeshi ($n = 335$)	Indian ($n = 320$)	Pakistani ($n = 376$)
Used mental health services in last 6 months	10.6 (0.02)	13.4 (0.02)	10.7 (0.02)	5.4 (0.01)	10.2 (0.02)	7.1 (0.01)
CIS-R Score						
0–11	81.9 (0.02)	81.2 (0.02)	80.6 (0.02)	88.2 (0.02)	76.3 (0.03)	74.0 (0.02)
12–44	18.1 (0.02)	18.9 (0.02)	19.4 (0.02)	11.8 (0.02)	23.7 (0.03)	26.0 (0.02)
Age in years						
16 to 34	28.9 (0.02)	31.3 (0.03)	36.0 (0.03)	63.2 (0.03)	40.0 (0.03)	60.4 (0.03)
35 to 54	43.2 (0.03)	46.4 (0.03)	41.8 (0.03)	27.4 (0.03)	42.8 (0.03)	31.1 (0.03)
55 to 74	27.9 (0.02)	22.4 (0.02)	22.2 (0.02)	9.4 (0.02)	17.2 (0.02)	8.5 (0.01)
English proficiency						
Proficient	100 (0)	100 (0)	100 (0)	35.9 (0.03)	81.5 (0.03)	70.6 (0.02)
Not proficient	0 (0)	0 (0)	0 (0)	64.2 (0.03)	18.5 (0.03)	29.4 (0.03)
Foreign born status						
Born in the UK	99.1 (0.005)	76.8 (0.02)	51.6 (0.03)	15.2 (0.02)	27.6 (0.03)	38.6 (0.03)
Foreign born	0.01 (0.005)	23.2 (0.02)	48.4 (0.03)	84.8 (0.02)	72.4 (0.03)	61.4 (0.03)
Marital status						
Married	61.7 (0.03)	61.0 (0.03)	35.4 (0.03)	69.9 (0.03)	72.3 (0.03)	69.4 (0.03)
Separated/Divorced/Widowed	16.9 (0.02)	17.0 (0.02)	17.9 (0.02)	12.7 (0.02)	9.6 (0.02)	8.4 (0.02)
Single	21.4 (0.02)	22.0 (0.03)	46.7 (0.03)	17.5 (0.02)	18.1 (0.03)	22.2 (0.02)
Household Equivalised Income						
Quintile 1 (Lowest)	18.9 (0.02)	18.9 (0.02)	32.9 (0.03)	66.3 (0.03)	31.8 (0.03)	47.0 (0.03)
2	19.7 (0.02)	21.9 (0.02)	19.4 (0.02)	3.2 (0.01)	16.1 (0.02)	13.1 (0.02)
3	18.0 (0.02)	14.9 (0.02)	17.5 (0.02)	0.9 (0.01)	13.8 (0.02)	8.2 (0.02)
4	17.8 (0.02)	19.5 (0.02)	8.4 (0.01)	1.7 (0.01)	5.4 (0.01)	1.9 (0.01)
Quintile 5 (Highest)	14.4 (0.02)	14.0 (0.02)	8.3 (0.01)	1.0 (0.01)	8.9 (0.02)	3.7 (0.01)
Missing	11.3 (0.02)	10.8 (0.02)	13.5 (0.02)	26.9 (0.03)	23.9 (0.03)	26.1 (0.03)
Employment Status						
Employed	61.1 (0.02)	65.4 (0.03)	56.1 (0.03)	9.3 (0.02)	54.9 (0.03)	22.3 (0.02)
Unemployed	0.8 (0.01)	1.5 (0.01)	6.9 (0.02)	4.2 (0.01)	5.4 (0.02)	3.7 (0.01)
Retired	17.3 (0.02)	14.3 (0.02)	11.6 (0.02)	0.9 (0.01)	5.7 (0.01)	3.4 (0.01)
Looking after home or family	14.6 (0.02)	13.7 (0.02)	13.2 (0.02)	73.1 (0.03)	25.2 (0.03)	53.1 (0.03)
Other economically inactive	6.1 (0.01)	5.2 (0.01)	12.2 (0.02)	12.5 (0.02)	8.9 (0.02)	17.6 (0.02)

Note: Values are weighted percentages (standard errors) ($n = 2260$).

least likely (12%). Pakistani and Bangladeshi women were most likely out of all women to be in the lowest household income quintile. There were large proportions of women in the Bangladeshi (73%) and Pakistani groups (53%) that were looking after the home or family.

Table 2 shows the distribution of social network characteristics (unweighted) in women of each ethnic group. There was little difference between most ethnic groups in the amount of perceived positive support from the two closest people; White Irish women had a slightly higher score than other ethnic groups indicating more support (mean = 4.23, SE = 0.04). Bangladeshi and Pakistani women were the most likely to perceive that there was inadequate support with mean network support scores of 2.8 (SE = 0.05) and 2.6 (SE = 0.04), respectively. Bangladeshi and White women were the most likely to see their relatives frequently (62% and 57%, respectively), and Indian women were the least likely to see relatives frequently (43%). Pakistani and Indian women were the most likely to report that they did not have any relatives outside the household (13%). White (65%) and Bangladeshi (62%) women were the most likely to see friends frequently and Indian women were the least likely to see friends frequently (45%). Pakistani and Indian women were the most likely to report that they did not have any friends, and also the most likely to report small networks (0–2 people).

Table 2. Distribution of network characteristics by ethnic group.

Variables	White ($n = 438$)	White Irish ($n = 394$)	Black Caribbean ($n = 397$)	Bangladeshi ($n = 335$)	Indian ($n = 320$)	Pakistani ($n = 376$)
Network support [Mean (SE)]						
Positive aspects of support	4.07 (0.04)	4.23 (0.04)	3.99 (0.04)	3.96 (0.05)	4.00 (0.05)	4.03 (0.05)
Inadequate Support	2.18 (0.04)	2.31 (0.04)	2.30 (0.05)	2.84 (0.05)	2.42 (0.05)	2.59 (0.04)
Contact with relatives						
Frequent face to face contact	56.7 (0.03)	50.4 (0.03)	48.2 (0.03)	61.5 (0.03)	43.4 (0.03)	52.0 (0.03)
No frequent face to face contact	36.5 (0.02)	44.5 (0.03)	43.1 (0.03)	28.0 (0.03)	44.8 (0.03)	35.1 (0.03)
No relatives outside the household	6.8 (0.01)	5.1 (0.01)	8.7 (0.02)	10.5 (0.02)	11.8 (0.02)	13.0 (0.02)
Contact with friends						
Frequent face to face contact	65.4 (0.02)	60.0 (0.03)	58.2 (0.03)	62.2 (0.03)	44.9 (0.03)	48.3 (0.03)
No frequent face to face contact	29.5 (0.02)	33.4 (0.03)	35.2 (0.03)	24.9 (0.03)	35.9 (0.03)	30.6 (0.03)
No friends	5.1 (0.01)	6.6 (0.01)	6.6 (0.01)	12.9 (0.02)	19.3 (0.03)	21.1 (0.02)
Network content						
Spouse & relative	47.1 (0.03)	48.0 (0.03)	26.1 (0.02)	48.4 (0.03)	42.8 (0.03)	46.8 (0.02)
Spouse & friend	7.4 (0.01)	10.1 (0.02)	5.8 (0.01)	7.5 (0.02)	4.2 (0.01)	7.4 (0.01)
Friend & relative	14.5 (0.02)	14.6 (0.02)	23.0 (0.02)	10.7 (0.02)	14.9 (0.02)	14.5 (0.02)
Relatives	18.0 (0.02)	19.0 (0.02)	34.3 (0.03)	21.3 (0.02)	21.5 (0.03)	18.4 (0.02)
Friends	3.0 (0.01)	4.1 (0.01)	4.9 (0.01)	2.1 (0.01)	1.4 (0.01)	3.1 (0.01)
0 or 1 close person	10.1 (0.02)	4.3 (0.01)	5.9 (0.01)	10.1 (0.02)	15.2 (0.02)	9.9 (0.01)
Network size						
0–2 people	19.2 (0.02)	15.3 (0.02)	18.9 (0.02)	20.5 (0.03)	32.7 (0.03)	26.8 (0.02)
3–7 people	57.7 (0.03)	57.4 (0.03)	57.2 (0.03)	34.2 (0.03)	48.4 (0.03)	54.9 (0.03)
8 or more people	23.1 (0.02)	27.3 (0.03)	23.9 (0.02)	45.3 (0.03)	18.9 (0.02)	18.3 (0.02)

Note: Values are percentages (standard errors) unless otherwise stated. ($n = 2260$).

Usage of mental health services

Table 3 shows the results of stepwise logistic regression modelling to investigate the relationship between ethnic group, social networks and usage of mental health services. In the model adjusted for age (M1), Bangladeshi women were less likely to have used mental health services than White women (OR = 0.48, CI = 0.24–0.97, $p < .05$). When CIS-R score was added to the model (M2) Pakistani women were less likely to have used mental health services (OR = 0.50, CI = 0.27–0.93, $p < .05$). Women with a CIS-R score that met clinical cut off for mental illness (>=12) were more than six times as likely to use services as women who did not have mental illness (OR = 6.70, CI = 3.44–13.03, $p < .001$). When additional explanatory variables (marital status, household equivalised income and employment status) were added to the model (M3), the ORs for Pakistani (OR = 0.28, CI = 0.12–0.70, $p < .05$) and Bangladeshi women decreased (OR = 0.30, CI = 0.10–0.86, $p < .05$). The effect of CIS-R score remained about the same (OR = 6.66, CI = 3.40–13.04, $p < .001$) and in addition, there was an effect of being in the other economically inactive category, with women in this group being more likely to use mental health services (OR = 3.75, CI = 1.36–10.34, $p < .001$). This group was mainly comprised of women who were going to school or college ($n = 141/219$, 64%) and those who were permanently unable to work due to sickness ($n = 68/219$, 31%). A further model (not shown, available from author) was fitted to the data that utilised a six category employment status variable to differentiate between those in full time education and those not working due to sickness. This model showed that there was no statistically significant difference in mental health service use between employed women and those in full time education (OR = 2.94, CI = 0.64–13.6, $p = .17$), but women who were not working due

Table 3. Results of logistic regression modelling investigating the association between ethnic group, social networks and usage of mental health services.

	M1: Adjusted for age	M2:Adjusted for age and mental illness	M3:Adjusted for age, mental illness and control variables	M4: Fully adjusted
Ethnic group				
White (ref.)[a]	1.00	1.00	1.00	1.00
White Irish	1.26 (0.77–2.08)	1.30 (0.76–2.19)	1.38 (0.80–2.39)	1.28 (0.71–2.29)
Black Caribbean	0.99 (0.62–1.61)	0.96 (0.58–1.59)	0.83 (0.46–1.48)	0.76 (0.41–1.42)
Bangladeshi	0.48 (0.24–0.97)*	0.55 (0.26–1.18)	0.30 (0.10–0.86)*	0.25 (0.07–0.86)*
Indian	0.92 (0.54–1.58)	0.82 (0.46–1.45)	0.64 (0.32–1.26)	0.62 (0.29–1.35)
Pakistani	0.63 (0.35–1.12)	0.50 (0.27–0.93)*	0.28 (0.12–0.70)*	0.23 (0.08–0.65)*
Age in years				
16–34 (ref.)	1.00	1.00	1.00	1.00
35–54	1.36 (0.65–2.88)	1.19 (0.54–2.62)	1.18 (0.47–2.97)	0.95 (0.36–2.48)
55–74	0.67 (0.27–1.62)	0.80 (0.32–2.03)	0.91 (0.21–3.98)	0.60 (0.12–2.96)
CIS-R Score				
0–11 (ref.)		1.00	1.00	1.00
12–44		6.70 (3.44–13.0) **	6.66 (3.40–13.0) **	5.84 (2.77–12.3)**
Marital status				
Married (ref.)			1.00	1.00
Separated/divorced/ widowed			0.82 (0.34–1.96)	0.93 (0.26–3.41)
Single			0.90 (0.33–2.46)	0.71 (0.17–2.96)
Household equivalised income				
Quintile 1 (Lowest) (ref.)			1.00	1.00
2			0.46 (0.16–1.34)	0.59 (0.19–1.83)
3			1.11 (0.40–3.05)	1.46 (0.52–4.09)
4			0.65 (0.24–1.79)	0.74 (0.25–2.16)
Quintile 5 (Highest)			0.28 (0.06–1.29)	0.26 (0.05–1.32)
Missing			1.29 (0.42–3.97)	1.34 (0.35–5.13)
Employment status				
Employed (ref.)			1.00	1.00
Unemployed			0.65 (0.21–1.97)	0.56 (0.17—1.84)
Retired			0.83 (0.17–4.08)	1.01 (0.19–5.30)
Looking after home or family			1.40 (0.57–3.40)	1.48 (0.60–3.64)
Other economically inactive			3.75 (1.36–10.3)*	4.68 (1.57–13.9) **
Network support				
Positive aspects of support				0.94 (0.61–1.45)
Inadequate support				1.91 (1.11–3.27)*
Contact with relatives				
No frequent contact (ref.)				1.00
Frequent contact				0.45 (0.23–0.89)*
No relatives outside household				0.18 (0.03–1.26)
Contact with friends				
No frequent contact (ref.)				1.00
Frequent contact				0.85 (0.40–1.78)
No friends				0.28 (0.03–2.27)
Network size				
0–2 (ref.)				1.00
3–7				1.83 (0.59–5.61)
8 or more				0.83 (0.22–3.11)
Network content				
Spouse and relative (ref.)				1.00
Spouse and friend				0.45 (0.15–1.39)
Friend and relative				0.79 (0.18–3.38)
Relatives				1.62 (0.39–6.81)
Friends				1.38 (0.12–15.3)
0 or 1 close person				0.72 (0.15–3.38)

Note: Values are ORs (95% confidence intervals).
[a]Reference category, *$p < .05$.
**$p < .001$

to sickness were more likely to have used mental health services compared with employed women (OR = 4.41, CI = 1.27–15.3, $p = .02$).

In the fully adjusted model (M4), which also included social network characteristics, Pakistani (OR = 0.23, CI = 0.08–0.65, $p < .05$) and Bangladeshi women (OR = 0.25, CI = 0.07–0.86, $p < .05$) remained much less likely than White British women to have used mental health services. There was an association with frequent face to face contact with relatives, with women who had seen relatives frequently less likely to have used mental health services (OR = 0.45, CI = 0.23–0.89, $p < .05$). There was also an association with inadequate support (perceiving not enough support from the two closest people), with women who perceived higher levels of inadequate support more likely to have used mental health services (OR = 1.91, CI = 1.11–3.27, $p < .05$).

Network size and network composition did not have a statistically significant effect on mental health service use. In order to test if the effects of statistically significant social network variables were the same across ethnic groups, an interaction term between ethnic group and contact with relatives was added to the fully adjusted model. None of the interaction terms were statistically significant at the 5% level (not shown). Similarly when the interaction term between ethnic group and inadequate support was added to the model, the coefficients for the interaction terms were not statistically significant (not shown).

English proficiency and foreign born status were thought to be important factors influencing service use. However, there was collinearity between these variables and ethnic group; hence they were not added to the models presented here. Instead, models stratified by ethnic group were used to ascertain the effect of these variables. Models were fitted to the data for Bangladeshi, Indian and Pakistani women (the three ethnic groups that contained women who did not speak English); these models contained the same variables as the fully adjusted model (M4 in Table 3) with the exception of ethnic group and the addition of English proficiency (binary variable). In each of these models, there was statistically no difference in mental health service use between women who spoke English and those who did not, although there was a suggestion of a possible association. For women who did not speak English, the ORs were: Bangladeshi OR = 0.53, CI = 0.13–2.18, $p = .382$; Indian OR = 0.30, CI = 0.06–1.58, $p = .157$; Pakistani OR = 0.50, CI = 0.14–1.79, $p = .286$ (models not shown, available from author). The same strategy was followed to ascertain the effect of being born outside of the UK (binary variable). Five models were fitted for each ethnic minority group; a model was not fitted for White women due to the small percentage (1%) of women born outside the UK. Foreign born status did not influence mental health service use for White Irish, Black Caribbean, Indian and Bangladeshi women. There was evidence to suggest that Pakistani foreign born women were less likely to have used mental health services compared with women who were born in the UK (OR = 0.25, CI = 0.07–0.95, $p = .042$, model not shown, available from author).

Discussion

Statement of principal findings

This study investigated associations between ethnic group, social networks and mental health service usage, using a representative sample in England. Our findings show an independent association between ethnic group and usage of mental health services, in

fully adjusted models. In comparison to White women, Pakistani and Bangladeshi women were less likely to have used mental health services and this was not a result of any of the explanatory factors in the models, including levels of mental illness, socio-economic factors, demographic factors and social network structure and content. In the fully adjusted models, two aspects of social networks showed an association with mental health service usage: frequent face to face contact with relatives was found to reduce the odds of using mental health services, and women who perceived higher levels of inadequate support were more likely to use services. This association did not vary between women of different ethnic groups. Not shown in the analysis is that network contacts that were not face-to-face had no relationship with the use of mental health services. Mental illness was the main driver of mental health service usage, with women with mental illness over six times as likely to use services as those without mental illness. Women who were 'other economically inactive' were more likely to have used services compared to those that were employed. Further analysis showed that within this group, it was women who were not working due to sickness or disability that were more likely to have used mental health services (OR = 4.41, CI = 1.27–15.3, $p = .02$).

Comparison with other studies

The results from this study corroborate findings from other UK observational studies, which show that usage of mental health services for Pakistani women is lower than White women (Lloyd and Fuller 2002; Glover and Evison 2009). It also contributes novel findings (in the England context) of the negative association between contact with relatives and usage of mental health services and adds to the evidence from the United States where Maulik, Eaton, and Bradshaw (2009) and Sherbourne (1988) have shown that frequent contact with relatives is associated with decreased use of mental health services. It is possible that relatives may provide just enough support for some mental health problems, thereby circumventing the need for mental health services. However, the current analysis does not rule out an alternative explanation; relatives may hold negative views about mental illness, and mental health services, deterring women from contacting services. This explanation could not be tested in the current study, as EMPIRIC did not collect data about relatives' attitudes to mental health services. Previous studies have highlighted the reluctance of Pakistani women to contact and use mental health services due to the fear of lack of confidentiality and the stigma surrounding mental health problems (Chew-Graham et al. 2002).

The present study also found a statistically significant association between higher levels of inadequate support and usage of mental health services. Other studies in the Netherlands (Ten Have et al. 2002), US (Golding and Wells 2001) and Puerto Rico (Pescosolido et al. 1998), have found the same effect. This suggests that women who perceive their close networks to be lacking in support are more likely to turn to statutory services for help with mental health problems. The present study did not find an association between network size and usage of mental health services, which is in contrast to Pescosolido et al. (1998) and Sherbourne (1988), who both found that larger networks decrease usage of services.

Strengths and weaknesses of the study

This is the first study in England to look at variation in mental health service use between women of different ethnic groups, and the association with social networks. The study's main strength is the use of a nationally representative data set with ethnic minority boost sampling, allowing findings to be generalised to the population of England. It also provides separate results for Pakistani, Indian and Bangladeshi women, in contrast to previous observational survey studies that have not disaggregated the South Asian category, thereby reducing the accuracy of findings or have used surveys which have very small numbers of ethnic minority participants (e.g. Cooper et al. (2013) used the Adult Psychiatric Morbidity Surveys).

One of the study's limitations is that the data are from 2000, which makes the findings less generaliseable to the current context. There are more services available from the NHS now than were available in 2000, most notably services provided under the umbrella of Improving Access to Psychological Services (IAPT). Hence, service use may have increased and may have become more equitable amongst different groups. Although the data could be considered to be out of date, the association that has been found between social networks and service use is one that has been found in other countries (Sherbourne 1988; Ten Have et al. 2002; Maulik, Eaton, and Bradshaw 2009). The outcome variable does not cover all types of mental health services, that is, inpatient services and those that may be accessed through the voluntary sector, as well as other types of outpatient services. Although measures of social support were included in the analysis, this was only in relation to what was perceived from the two closest people; we were not able to assess the nature of support from wider social networks and sources other than partners, friends and relatives. Hence it is possible that the amount of support from networks may have been underestimated. As the study is cross-sectional, reverse causality in relation to service use and social networks cannot be ruled out. It is possible that women who have used services may be less likely to see their relatives and perceive an inadequacy of support from their networks. It was not possible to ascertain the levels of mental health stigma by ethnic group, nor was it possible to include attitudes of networks members' towards mental health. Both of these may have affected the usage of mental health services. Finally, the study does not include measures of prejudice or discrimination from health professionals, which may have been one factor in the level of variation.

Implications

This study showed that ethnic differences between women in the use of mental health services remained after taking into account the contribution of a number of explanatory factors. It is possible that women from Pakistani and Bangladeshi ethnic groups may not know where to seek help for mental health problems, although this is unlikely as population surveys have shown that these groups are more likely to visit a GP for physical health problems (Nazroo et al. 2009). However, even if we assume that Pakistani and Bangladeshi women know where to seek help, they may not wish to due to the stigma associated with having mental health problems. Previous qualitative studies suggest that there are high levels of stigma amongst Pakistani women (Cinnirella and Loewenthal 1999;

Chew-Graham et al. 2002) and there is some evidence to suggest that stigma may be higher in some ethnic minority groups compared to the majority White population (Pescosolido et al. 2013).

Levels of English language do not explain Pakistani and Bangladeshi women's likelihood of using mental health services. This is often cited as a reason for under-utilisation by women from South Asian groups, and whilst this study cannot comment on the quality of mental health services provided in non-English languages, we can say that lack of English proficiency was not an explanation for the findings reported. Policymakers who wish to ensure that those in need of mental health services receive them, may need to take into consideration the practice of clinicians. Evidence from the most recent IAPT figures show that rates of referral to these new services are lower for Pakistani, Bangladeshi and Indian women compared with White women (Community and Mental Health Team: Health and Social Care Information Centre 2014). One possible explanation is that health professionals such as GPs may hold cultural stereotypes which may lead to under-referral of some South Asian groups to mental health services (Burr 2002; Cooper et al. 2006). This, together with the high rate of consultation in primary care among these groups, has implications for the identification and management of mental health problems in primary care practice.

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On behalf of all authors, the corresponding author states that there are no conflicts of interest.

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