Household Typology and Family Social Capital Among White British and Pakistani Women in Bradford, England

Baltica Cabieses[1,2,*], Lesley Fairley[2], Eleonora Uphoff[3], Gillian Santorelli[2], Emily Petherick[2], Stephanie Prady[3], Tim Croudace[3] and Jane West[2]

[1]*Faculty of Medicine Universidad del Desarrollo Chile;* [2]*Bradford Institute for Health Research, Bradford Royal Infirmary, NHS, England;* [3]*Department of Health Sciences University of York, England*

Abstract: *Objectives*: International evidence suggests positive close relationships with household members (family social capital) can improve wellbeing; however, mixed effects for associations between the number of household members and generational status (household typology) have been found. Further, it is unclear how family social capital and household typology might vary between families of different ethnic origins.

Design: Cross-sectional study.

Setting: The Born in Bradford cohort study.

Participants: We used data from that including Pakistani (n=1772) and White British (n=1859) women.

Main Outcome Measures: Household typologies and four measures of family social capital (I wish there was more warmth/affection; I feel closely attached to my family; My family takes notice of me; I feel excluded in my family; all binary variables).

Results: We found that household typology was largely not significantly associated with family social capital measures, with some exceptions (women living with child only, women living with child and parents only, p<0.05). Pakistani women were more likely to report low family social capital (OR between 1.72 and 3.32, p<0.05) and this was significantly associated with financial insecurity and living in extended families.

Conclusion: This study suggests the relationship between household typology and family social capital is complex and varies across ethnic and socioeconomic groups. Pakistani women were more likely to report low family social capital while living in the UK compared to the White British.

Keywords: Ethnic minority, household typology, social capital, socioeconomic status, women, UK.

INTRODUCTION

Household composition has been recognised as a relevant determinant of families' socioeconomic status, [1, 2] health and wellbeing [3, 4]. Variations in morbidity across ethnic communities have also been observed in the past, [5, 6] but evidence on the relationship between household typology and health outcomes remains controversial. On the one hand, it has been suggested that extended family living, the traditional norm in many immigrant communities like those of South Asian origin, where three or more generations of a family live in the same household, may be associated with good mental health and developmental adjustment in children [7, 8] and positive mental health in grandparents [9]. When living in socioeconomic deprivation, extended families might be more likely to share the burden of financial restrictions and provide an emotional supporting nest to cope with poverty [2, 10].

On the other hand, living in extended families could also have negative effects [11, 12]. Higher anxiety and depression levels have been observed in mothers (middle generation) living in extended families, particularly in immigrant families. They have reported to experience disruptive relationships with their mothers or mothers in law [13, 14].

Acculturation among South Asian mothers for example, can create discrepancies in lifestyle and child-rearing attitudes between them and their parents or in-laws, which in turn increases the risk of conflict between them, particularly when living in the same household [13, 15]. Socioeconomic deprivation could restrict extended family living and also isolate families, with potential negative implications for mental wellbeing and general health for all family generations [16, 17].

The link between household typology and health might be mediated by family social capital [18, 19]. Depending on the applied definition, social capital has been measured in different ways in social and health research [20, 21]. Notably, Islam [22] adapted a framework to guide research on social capital and health based on the work of McKenzie [23] and Aldridge [24]. The framework distinguishes a horizontal and a vertical (linking) dimension of social capital, with the horizontal dimension being further divided in a bonding and bridging component. Bridging social capital refers to relationships between people that are more loosely connected, such as neighbours, members of a tennis club or colleagues. Bonding social capital refers to close

*Address correspondence to this author at the Bradford Institute for Health Research (BIHR), Temple Bank House, Bradford Royal Infirmary, Duckworth Lane, Bradford BD9 6RJ, UK; Tel: 44 01274 364474;
E-mail: borninbradford@bthft.nhs.uk

relationships between family members or good friends, often measured by indicators such as social support or the number of close friends. The bonding type of social capital highlights the relevance of close relationships within a household (i.e. family social capital in this study).

There are some studies looking at the relationship between household social capital and health-related behaviours, health and healthcare in different ethnic groups, but most focus on how households link to neighbourhood-level social capital [25, 26] instead of focusing on family social capital. Li and Delva [27] found that the relationship between social capital and smoking among Asian American men varied according to specific dimensions of household social capital and was ethnicity specific. Beaudoin [28] found a protective effect of bonding social capital on health problems in the US, but also found great variations in this relationship between Black, Asian and Latinos. Stiffman [12] found that being part of a supportive family is a critical factor in assisting young refugee immigrants in the US to achieve wellbeing. As social capital is closely associated with population health, [29] more needs to be understood about its association household typologies. The main aims of this study were to describe and characterise the household typology of pregnant women of White British and Pakistani origin living in Bradford, UK and to analyse the relationship between family social capital and household typology, crude and adjusted by demographic and socioeconomic factors.

METHODS

Study Design

This study was nested within the BiB cohort study. This is a longitudinal multi-ethnic birth cohort study aiming to examine the impact of environmental, psychological and genetic factors on maternal and child health and wellbeing [30]. Bradford is a city in the North of England with high levels of socio-economic deprivation and ethnic diversity. Around 50 per cent of the 6000 babies born annually in the maternity unit of the city's hospital have mothers of South Asian background, with the majority being of Pakistani origin.

Women were recruited at the Bradford Royal Infirmary at 26-28 weeks gestation. Those who consented completed a baseline structured questionnaire. The full BiB cohort recruited 12,453 women comprising 13,776 pregnancies between 2007 and 2010 and the cohort has been found to be broadly characteristic of the city's maternal population [31]. Ethical approval for the data collection was granted by Bradford Research Ethics Committee (Ref 07/H1302/112).

Sample

Three different phases of the questionnaire were administered over the duration of the recruitment stage of the cohort study. This study relates to data from women recruited between August 2008 and December 2010 (phase 3 of the questionnaire). The questionnaire included a subset of questions on household composition and family social capital which were used for this analysis (n=4322). Women reporting "Other" ethnicity were excluded from analysis as

this was a very heterogeneous group (n=691). The final sample size considered for analysis was 3631 pregnant women (1772 White British and 1859 Pakistani).

Household Typologies

A single multiple answer question on relationships between the members of the household was asked to the women in this study. They could respond to the question "who do you live with?" Women reported up to 12 types of relationships that were then grouped into five large groups: partner, children, parents, grandparents, and other non-relative adults. All possible combinations from these five groups were generated (32 possible combinations of household typologies in total) and reduced into nine categories. Decisions on how to collapse these 32 combinations were made based on the following criteria: (i) similarities in the household composition between groups (similar typologies were grouped together) and (ii) sample size (typologies were grouped together if they had below 50 cases).

The final nine categories of household typology were:

(1) With partner (and/or other adult).

(2) With partner and child (same).

(3) With partner and parents (same).

(4) With partner and child and parents (same).

(5) Single with child only.

(6) Single with parents (same).

(7) Single with child and parents (same).

(8) Other typologies.

(9) Did not respond to this question. The last two groups were excluded from analysis due to small sample sizes and consequent difficulty of interpretation of results.

Dependent Variables

Four variables measuring family social capital were included in this study based on questions used in the Millennium Cohort Study [32] and the Growing up in Australia cohort study (Longitudinal Study of Australian Children 2009). All variables were scored on a Likert scale from 1 "strongly agree" to 5 "strongly disagree" and were recoded into binary responses in order to identify *low* levels of family social capital:

1. I wish there was more warmth and affection between us: 1 equals "agree" [original 1, 2, and 3 values] and 0 equals "disagree" [original 4 and 5 values].

2. I feel closely attached to my family (1 equals "disagree" [original 4 and 5 values] and 0 equals "agree" [original 1, 2, and 3 values]).

3. My family takes notice of my opinions: (1 equals "disagree" [original 4 and 5 values] and 0 equals "agree" [original 1, 2, and 3 values]).

4. Sometimes I feel excluded in my own family: (1 equals "agree" [original 1, 2, and 3 values] and 0 equals "disagree" [original 4 and 5 values]).

Explanatory Variables

Questions relating to ethnicity were based on those used in the UK´s 2001 census and comprised one question about which ethnic group the mothers considered themselves as belonging to. This was followed by a further question, based on their response, about cultural background. For example if a woman selected "Asian or Asian British" as her ethnic group she then selected her cultural background from the following choices; Indian, Pakistani, Bangladeshi, Indian Caribbean, African Indian or other. We classified two groups: women of Pakistani origin and women of White British origin, as they were the two largest ethnic groups in our sample.

Control Variables

We considered age and four variables measuring different dimensions of the woman's socioeconomic status. The highest educational qualification obtained by the woman was recorded along with the country it was obtained in. We equivalised all qualifications into one of five groups; less than 5 GCSE equivalent (5 GCSE is a minimum requirement for leaving school), 5 GCSE equivalent, A level equivalent, Higher than A level, other qualifications. The women were also asked three questions about their finances: if they are able to pay the bills (yes/no), if their financial situation was worse than a year ago (yes/no), and whether they receive means-tested benefit (yes/no), that is income support,

Table 1.   Description of study variables (n=3631). Values are frequency (percent), except for age (mean(SD)).

	Total Sample	White British (n=1772)	Pakistani (n=1859)
HOUSEHOLD TYPOLOGY			
Women lives with:			
With partner *	725 (20.0)	492 (27.8)	233 (12.5)
With partner and child(ren) *	1453 (40.0)	613 (34.6)	840 (45.1)
With partner and parents *	256 (7.0)	53 (3.0)	203 (10.9)
With partner and child(ren) and parents *	389 (10.7)	18 (1.0)	371 (19.9)
Single (no partner) with child(ren)	232 (6.3)	188 (10.6)	44 (2.3)
Single with parents *	260 (7.1)	215 (12.1)	45 (2.4)
Single with child(ren) and parents *	63 (1.7)	43 (2.4)	20 (1.0)
FAMILY SOCIAL CAPITAL MEASURES			
I wish there was more warmth and attention between us (agree)	571 (15.7)	166 (9.3)	405 (21.8)
I feel closely attached to my family (disagree)	184 (5.0)	105 (5.9)	79 (4.2)
My family takes notice of my opinions (disagree)	214 (5.9)	121 (6.8)	93 (5.0)
Sometimes I feel excluded (agree)	466 (12.8)	210 (11.8)	256 (13.7)
CONTROL VARIABLES			
Mean Age (years)	27.9 (5.6)	27.2 (6.0)	28.7 (5.1)
Mother' equivalent educational level:			
Less than 5 GCSE	785 (21.6)	349 (19.7)	436 (23.4)
5 GCSE	1137 (31.3)	593 (33.4)	544 (29.2)
A level	644 (17.7)	376 (21.2)	268 (14.4)
Higher than A level	859 (23.6)	318 (17.9)	541 (29.1)
Ability to pay the bills (no)	333 (9.2)	206 (11.6)	127 (6.8)
Financially worse than a year ago (yes)	814 (22.4)	512 (28.9)	302 (16.2)
Receiving means-tested benefit (yes)	1644 (45.3)	736 (41.5)	908 (48.8)

*and/or other adult

Table 2.   **Household social capital measures by household typologies (n=3631). Values are frequency(percent) and unadjusted Odds Ratio (OR) with its 95% confidence interval (95%CI) of reporting *low* social capital.**

HOUSEHOLD TYPOLOGY	SOCIAL CAPITAL MEASURES							
	I wish there was more warmth and attention between us (agree) Frequency(%) OR(95%CI)		I feel closely attached to my family (disagree) Frequency(%) OR(95%CI)		My family takes notice of my opinions (disagree) Frequency(%) OR(95%CI)		Sometimes I feel excluded (agree) Frequency(%) OR(95%CI)	
Women lives with:								
With partner	90 (15.7)	1.00	39 (21.2)	1.00	42 (19.6)	1.00	87 (18.6)	1.00
With partner and children	226 (39.6)	**1.38 (1.06-1.79)***	65 (35.3)	0.86 (0.57-1.30)	68 (31.8)	0.84 (0.56-1.24)	185 (39.7)	1.66 (0.10-2.48)
With partner and parents	58 (10.1)	**2.22 (1.53-3.21)*****	10 (5.4)	0.75 (0.36-1.52)	18 (8.4)	1.29 (0.72-2.29)	32 (6.8)	0.68 (0.41-1.11)
With partner, children and parents	94 (16.4)	**2.57 (1.86-3.56)*****	13 (7.1)	0.67 (0.35-1.27)	18 (8.4)	0.87 (0.49-1.54)	45 (9.6)	1.10 (0.71-1.70)
Single with children	26 (4.5)	**1.68 (1.04-2.73)***	23 (12.5)	**1.96 (1.14-3.37)***	22 (10.3)	**1.73 (1.00-2.96)***	42 (9.0)	0.95 (0.42-2.17)
Single with parents	22 (3.8)	0.89 (0.54-1.47)	16 (8.7)	1.16 (0.63-2.12)	16 (7.5)	1.07 (0.59-1.95)	22 (4.7)	1.13 (0.86-1.48)
Single with children and parents	12 (2.1)	**2.64 (1.30-5.32)***	3 (1.6)	0.91 (0.27-3.05)	5 (2.3)	1.46 (0.55-3.85)	7 (1.5)	1.07 (0.73-1.57)

*p-value<0.05
**p-value<0.01
***p-value<0.001

income tested job seekers allowance, working families' tax credit or housing benefit.

Statistical Analysis

Descriptive statistics for variables under study were reported as means for continuous variables and proportions for categorical variables. Differences in family social capital by ethnicity, household typology and control variables were also explored. Logistic regression were used to model the association between each of the four social capital measures and household typology. In the adjusted analyses all models were adjusted for age, education and the three measures of financial situation. Further subgroup logistic regression analysis among Pakistani women was conducted, in order to investigate differences in social family capital between "nuclear" (2 generations only: categories (1) With partner (and/or other adult), (2) With partner and child (and/or other adults) and (5) Single with child only) and "extended" household typologies (3 or more generations: other four categories).

RESULTS

The three most reported household typologies were living with a partner and child(ren) (40%), with a partner (but no child(ren)) (20%), and with partner, child(ren) and parent (10%). White British mothers showed a similar pattern, but living alone with parents was reported third most frequently

(12%) after living with a partner and child(ren) (35%), and living with a partner (28%). Measures of family social capital were similar between both ethnic groups, except for the family social capital dimension of: "I wish there was more warmth and attention between us in the family", which was endorsed by 21% of Pakistani mothers compared to only 9% of White British mothers (Table **1**).

The highest proportion of women reporting poor household social capital was found in the category of women living with a partner and a child. Between 32% and 39% of pregnant women in this group reported low social capital for the different measures. Single women living with child(ren) and parents reported the lowest proportions of poor household social capital, around 2%, although these were the smallest groups overall. The other typologies showed the largest variations across social capital measures: single with child (range 4-12%), single with parents (range 3-8%), with partner and parent (range 5-10%), with partner, child and parents (range 7-16%) (Table **2**).

Adjusted logistic regression models indicated that mothers from a Pakistani ethnic background were more likely to report low family social capital compared to the White British and this was consistent across the four measures (OR between 1.72 and 3.32, p<0.05) (Table **3**). When the household typology variable was added to the regression models, the significant association between ethnicity and social capital was not affected and remained

Table 3.   **Adjusted Odds Ratios (OR) and 95% Confidence Intervals (95%CI) of reporting *low* family social capital by different household typologies, Born in Bradford study (n=3631), results adjusted for ethnicity.**

	SOCIAL CAPITAL MEASURES			
COVARIATES	**I wish there was more warmth/ attention between us (agree)**	**I feel closely attached to my family (disagree)**	**My family takes notice of my opinions (disagree)**	**Sometimes I feel excluded (agree)**
	OR (95%CI)	**OR (95%CI)**	**OR (95%CI)**	**OR (95%CI)**
ETHNICITY				
Ethnicity (being Pakistani)[a]	**3.32 (2.37-4.64)*** **	**2.42 (1.39-4.20)*** **	**2.04 (1.22-3.39)*** **	**1.72 (1.25-2.36)*** **
HOUSEHOLD TYPOLOGY				
Women lives with:				
With partner	1.0	1.0	1.0	1.0
With partner and children	1.02 (0.77-1.35)	0.81 (0.52-1.24)	0.87 (0.57-1.33)	0.97 (0.73-1.29)
With partner and parents	1.47 (1.01-2.17)*	0.74 (0.35-1.53)	1.28 (0.70-2.33)	0.90 (0.57-1.40)
With partner and children and parents	1.37 (0.97-1.95)	0.66 (0.33-1.33)	0.94 (0.55-1.75)	0.78 (0.51-1.18)
Single with children	1.42 (0.84-2.40)	1.00 (0.59-1.80)	1.04 (0.58-1.87)	1.24 (0.80-1.92)
Single with parents	0.85 (0.50-1.43)	0.76 (0.41-1.43)	0.63 (0.33-1.20)	0.57 (0.34-0.95)**
Single with children and parents	2.28 (1.10-4.72)***	0.59 (0.17-2.03)	1.05 (0.39-2.83)	0.74 (0.32-1.70)

[a]White British as the reference category for comparison
*p-value<0.05
**p-value<0.01
***p-value<0.001

Table 4.   **Adjusted Odds Ratios (OR) and 95% Confidence Intervals (95%CI) of reporting *low* family social capital among nuclear versus extended Pakistani women (n=1859).**

	SOCIAL CAPITAL MEASURES			
Nuclear versus extended families among Pakistani women	**I wish there was more warmth/ attention between us (agree)**	**I feel closely attached to my family (disagree)**	**My family takes notice of my opinions (disagree)**	**Sometimes I feel excluded (agree)**
	OR (95%CI)	**OR (95%CI)**	**OR (95%CI)**	**OR (95%CI)**
Women lives with:				
Nuclear (With partner, with partner and child, or single with child)	1.0	1.0	1.0	1.0
Extended (four other categories)	0.75 (0.55-1.02)	**0.44 (0.25-0.76)** **	**0.56 (0.33-0.94)***	0.72 (0.51-1.01)

*p-value<0.05
**p-value<0.01
***p-value<0.001

significant after controlling for household typology. Also, financial constraints did affect women's perception of family social capital and remained significant in the adjusted analysis.

All four measures of family social capital were negatively associated with living in extended households, although only two of them were statistically significant at the 95% confidence level (do not feel closely attached to my family OR 0.44 and my family does not take notice of my

opinion OR 0.56). These findings indicate that pregnant Pakistani women living in extended households perceive themselves at having lower family social capital than pregnant Pakistani women living in smaller nuclear households.

DISCUSSION

Pakistani women tended to live with a larger number of household members, but that this does not correlate with

significantly higher levels of household social capital. Instead, we found higher levels of low self-perceived family social capital among Pakistani mothers compared to the White British, even after adjustment for several control variables. Household typology, as a whole, was significantly associated with low social capital in the measure "I wish there was more warmth and affection between us", in which case mothers living with child(ren) and parents were more likely to report poor social capital. In this study, being an ethnic minority and having financial difficulties remained independently and significantly associated with almost all measures of lower social capital. Pakistani women living in extended households were more likely to report low family social capital that Pakistani women living in nuclear families.

At least four mechanisms have been articulated in the past on the association between social capital and health: (i) social capital enables the development of knowledge; (ii) it serves as a mechanism for the maintenance of behavioural norms; (iii) it allows for the promotion of access to services and amenities; and (iv) it serves as a conduit for psychosocial processes like social support and mutual respect [28, 33]. In our study the last mechanism is the most plausible one observed and it could be explained *via* the social networks' role in how self-esteem and morale influence wellbeing [34]. Also, we found a significant effect of financial constraints in reporting lower levels of social capital among Pakistani mothers, which undermines the existence of a buffer mechanism for this particular setting. A strong relationship between financial situation and psychological distress among pregnant women in Bradford has also been recently reported in the literature [35].

In our study, household composition as a whole did not consistently explain lower levels of bonding social capital measures, whereas ethnicity and recent financial constraint were found to be relevant predictors. Pakistani women living in extended families also reported significantly lower levels of social capital than Pakistani women living in nuclear families. Thus, the relationship between household composition and family social capital is complex and might significantly vary across socioeconomic and minority ethnic groups. Studies outside the UK have indicated that pregnant immigrant women can experience social capital as both a blessing and a burden and that this perception varies based on multiple fluctuating factors [36]. Our study is in line with such findings, particularly by highlighting the association between household typology, ethnicity, family social capital and socioeconomic status in two large and prevalent ethnic groups in the UK.

This study used a large sample from a contemporary multi-ethnic birth cohort in a UK city with high levels of immigration and socio-economic deprivation. Our analyses focused on two large ethnic groups living in Bradford, the White British and the Pakistani. It used detailed information around household typology and family social capital, and had the ability to include important markers for socioeconomic status. It showed the strong dependency between social and economic/financial capital within the household, and how changes in one of these dimensions might affect the others. Besides, the pragmatic approach to household typology showed a real reflection of how families in Bradford live, instead of using predefined categories of household typologies that might not be appropriate for this sample.

Limitations of this study include some missing covariable data, but patterns of missing data were similar between both ethnic groups and we kept non respondent cases as a separate category within our analyses. We cannot assume a causal relationship between these variables, due to its cross-sectional nature, and we cannot be certain that our results will be generalizable to other South Asian groups or to Pakistani families living in similar cities outside the UK. Nevertheless, measures used in this analysis for family social capital and socioeconomic status could be included in a wide range of researches on ethnicity worldwide.

This study brings a new insight to current knowledge and raises new hypotheses to be tested. Relationship dynamics between members of the household and how they affect the perception of family social capital and potentially the health status of pregnant women and their children could be further explored. The correlation between different measures of family social capital and their association with different health outcomes could also be considered. Besides, additional measures of socioeconomic status could be included in order to expand our understanding, such as measures of broader neighbourhood social capital measures and indicators of absolute poverty and area deprivation.

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