

Ethnic differences in psychological well-being in adolescence in the context of time spent in family activities

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Abstract

Background In Britain and elsewhere there is ethnic variation in mental health in adulthood but less is known about adolescence. Few studies examining the role of family life in adolescent mental well-being have been based on a multi-ethnic UK sample. We explored whether family activities explain ethnic differences in mental health among adolescents in London, UK.

Method These analyses are based on 4,349 Black Caribbean, Black African, Indian, Pakistani and Bangladeshi and White UK boys and girls aged 11–13, in 51 schools. Psychological well-being was measured as the total difficulties score from Goodman's strengths and difficulties questionnaire (increasing score represents increasing difficulties).

Results Participation in family activities varied by ethnicity. Compared with the White UK group, all minority groups were more likely to visit friends and relatives and go other places as a family. Black Caribbeans and Nigerian/Ghanaians were less likely and South Asian groups more likely to eat a meal together as a family. In multivariate analyses all minority groups had better well-being scores compared to Whites, independent of family type and socio-economic status (SES). Although adjusting for family activities slightly attenuated the association for South Asians, the minority ethnic advantage in psychological well-being remained [regression coefficients for Black Caribbeans = -0.66 (95% CI = $-1.13, -0.20$); Nigerian/Ghanaians = -1.27 ($-1.81, -0.74$); Other Africans = -1.43 ($-2.00, -0.86$); Indians = -1.15 ($-1.73, -0.58$);

Pakistani/Bangladeshis = -0.66 ($-1.20, -0.12$)]. In analyses based on the whole group, all activity variables were independent correlates of psychological well-being. Multivariate models, stratified by ethnicity, showed that \leq weekly compared to daily family meals was associated with poorer mental health for all groups, except Black Caribbeans, independent of family type and SES.

Conclusion Despite ethnic patterning of the frequency of family activities, adjusting for differences in these variables did not account for the better psychological well-being of minorities. Family activities were, however, important independent correlates of psychological well-being for all groups in this sample.

Keywords Ethnic groups · Adolescence · Mental health · Families

Introduction

Although the picture is complex, service use data [7] and population studies [28] suggest that in Britain there are important variations in adult mental health across ethnic groups. Less is known about adolescent mental health but existing evidence suggests that Black African [23], Indian [16, 25] and Bangladeshi origin adolescents [35] have better psychological well-being scores compared to their White counterparts. International migration is a significant driving force in population change in the UK [8]; multi-cultural communities comprise both new arrivals and well established groups whose adolescents were born to first and second generation migrants. Unprecedented global migration means that understanding ethnic differences in young peoples mental health is increasingly important in a number of countries [36].

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The family has a role in moderating the effect of risk factors for poor child development [33], potentially enhancing resilience (good psychological outcomes despite experience of risk [22]). Few studies examining the role of family life and child health have been based on a diverse, multi-ethnic UK sample [16, 25]. Children from lone parent households appear to have worse mental health and other adverse health outcomes than those in two-parent households [4, 11, 14, 16, 23–25, 32, 34, 39]. The extent to which such associations between family type and young people's health are explained by socioeconomic factors such as household size and income is unclear [34], possibly confounded by the context of family life [39]. Examination of internal family dynamics in relation to a range of adolescent health outcomes has included the exploration of family cohesion, conflict, parenting styles and parental monitoring [6, 12, 26, 31]. Time spent in joint family activities, potentially reflecting family cohesion, involved parenting and parental monitoring, has been inversely associated with health related and problem behaviours and negative life chances (e.g. poor educational attainment and low labour market position) in a White UK cohort [39]. We measured frequency of participation in a variety of family activities and explored the hypothesis that variation in the extent of participation contributes to ethnic differences in psychological well-being in adolescence.

Methods

The determinants of adolescent social well-being and health study

The sample was recruited from 51 schools in 10 London boroughs (Brent, Croydon, Hackney, Hammersmith & Fulham, Haringey, Lambeth, Newham, Southwark, Waltham Forest and Wandsworth) with the highest proportion and number of people from the main ethnic minority groups. Sampling frames for setting up cohort studies of ethnic minorities are virtually non-existent so a pragmatic approach was taken of targeting schools, selected to enable representation within each borough at, above and below the national averages for academic performance based on reports from the Office for Standards in Education. Full details can be found elsewhere [19]. A total of 8,004 pupils were invited to join the study in 2003. They were in years 7 and 8 (aged 11–13 in first and second years of secondary school) and from randomly selected mixed ability classes. Approval was obtained from the Multi-centre Research Ethics Committee and Local Education Authorities. Parents were provided with information packs prior to the start of the study, via head teachers and an opt-out consent procedure employed. Active consent was required from

pupils. The pupil response rate was 83%. Of these respondents 80% are from minority ethnic groups. Further details of the study can be found at <http://www.sphsu.mrc.ac.uk/study-sites/dash/>.

Family activities

Each pupil self-completed a questionnaire on their health and social circumstances. Questionnaires were completed in the classroom under exam conditions with researchers available to assist students with comprehension of the questions. The family activity items of the determinants of adolescent social well-being and health (DASH) questionnaire were based on those used in the MRC West of Scotland 11–16 study [37, 38] which had been adapted from measures designed for the British 1958 and 1970 birth cohort studies [10, 30]. Participants reported on the frequency of engaging, together with other family members, in six activities: 'watch TV or videos', 'play indoor games', 'eat a meal', 'go for a walk or play sports', 'visit friends or relatives', 'go other places'. Response categories were 'every day', 'most days', 'weekly', 'less than weekly' and 'never'.

Ethnicity and potential confounders

The questionnaire also covered information on ethnicity, household composition and standard of living items. Age was determined from reported date of birth. Ethnicity was identified by combining self-reported ethnicity, having at least one parent with the same ethnicity, and having at least three grandparents who were born in home countries. A socio-economic status (SES) score was created from 17 standard of living items. Family type is defined as two-parent (living with both biological parents), reconstructed (living with one biological parent and one other in the parental role, e.g. step-parent), lone parent (living with one parent only) and 'other' (no parent in the family home, e.g. living with other relatives, foster parents, etc.).

Outcome measurement

Psychological well-being was measured with the 25-item strengths and difficulties questionnaire (SDQ), a validated behavioural screening tool providing coverage of children's behaviour, emotions and peer relations [15]. It comprises five scales of five items each rated on a three-point scale. The scales are emotional symptoms, conduct problems, hyperactivity, peer problems and pro-social behaviour. A total difficulties score (TDS) ranging from 0 to 40, representing increasing difficulties, is derived by summing scores on the first four of these sub-scales (<http://www.sdqinfo.com>).

Statistical methods

The analysis is based on some of the main ethnic minority groups in the UK: 929 Black Caribbean, 612 Nigerian and Ghanaian, 468 Other African (mostly Somalis and Eritreans), 492 Indian, 402 Pakistani, 219 Bangladeshi and 1,227 White UK boys and girls who completed the SDQ. The Bangladeshi group was too small to examine separately and was combined with the Pakistanis. Both of these groups are distinctly different from Indians, being more deprived and with a worse health profile in adulthood [17, 29]. Being almost exclusively Muslim, there is also the suggestion that an increase in ‘Islamophobia’ has contributed to health disparities for the Bangladeshi and Pakistani groups [21]. The remaining DASH participants of other ethnicities (Mixed, White Other, etc.) are not included in these analyses as they are not of sufficient sample size. The distribution of the family activity variables within each ethnic group was examined. The distribution of TDS approximated to normality. In models formally comparing ethnic groups, SES, family type and then activities were added stepwise to these models as potential mediators of the association between ethnicity and psychological difficulties score. Linear regression was used to explore the association between each of the age- and sex-adjusted family activities and mean TDS further adjusting for the effects of ethnicity, SES and family type. Regression models were stratified by ethnicity to examine the effect of the family activity variables on mean total difficulties within each group. Random intercept models were used to adjust regression analyses for clustering within schools. First and second order interaction tests were carried out to examine possible interactions between activities, ethnicity, gender, family type and SES in their relationships with psychological well-being. The phrase ‘Black African origin’ refers to Black Caribbeans, Nigerians, Ghanaians and Other Africans.

Results

Sample characteristics and ethnic variation in family activities

Table 1 shows the characteristics of the sample and the frequency of family activities by ethnic group. Compared with White UK pupils, Black Caribbeans and Other Africans were more likely and Indians and Pakistanis/Bangladeshis less likely to come from lone parent families. Black African origin groups and Pakistani/Bangladeshis were over-represented in the least advantaged tertile of the SES score. Compared with the White UK group, Black Caribbeans, Other Africans and Pakistani/Bangladeshis

were more likely to play indoor games with their families; Black Caribbeans and Nigerian/Ghanaians were less likely and Indians and Pakistani/Bangladeshis more likely to eat a meal together as a family. Pakistani/Bangladeshis and Other Africans were more likely to go for a walk with their family members daily and all minority groups were significantly more likely to visit friends and go other places as a family. There were a few instances where the proportion ‘not stated’ was greater for minority groups compared to Whites which may influence these ethnic differences. TDS was similar to Whites for Black Caribbeans and significantly lower (i.e. better mental health) for all other ethnic groups.

Differences in well-being between ethnic groups controlling for family activity variables

Figure 1 shows that minority ethnicity and TDS associations became stronger for the African origin groups (such that the association became statistically significant for Black Caribbeans) and slightly attenuated for the South Asian groups after controlling for social variables. Adjusting for participation in family activities, explained more of the association between South Asian ethnicity and TDS, however, TDS remained significantly lower for all minority ethnic groups compared to Whites [Black Caribbeans -0.66 (1.13, -0.20); Nigerian/Ghanaians -1.27 (-1.81 , -0.74); Other Africans -1.43 (-2.00 , -0.86); Indians -1.15 (-1.73 , -0.58); Pakistani/Bangladeshis -0.66 (-1.20 , -0.12)]. This was also the pattern seen when separately adjusting for each of the activity variables.

Family activities and psychological well-being

Table 2 shows associations between family activity variables and psychological well-being adjusted for age and sex (models 1a–6a). Infrequent participation in all activity variables was associated with increasing TDS (i.e. increasing difficulty). Going for a walk and visiting friends weekly compared to daily was associated with a significant decrease in TDS. The effect of eating a meal infrequently with the family was larger than for watching TV or visiting friends infrequently. This pattern remained after further adjustment for ethnicity, family type and SES in each model (models 1b–6b). Most associations were slightly attenuated but those of the lower score for weekly going for a walk and visiting were slightly strengthened. The relationship was not linear for most variables.

Family activities and psychological well-being within each ethnic group

Associations between family activities and psychological well-being within each ethnic group adjusting for age, sex

Table 1 Characteristics of the sample and distribution of family activity variables

	White UK	Black Caribbean	Nigerian/Ghanaian	Other African	Indian	Pakistani/Bangladeshi
<i>N</i>						
Boys	643	482	250	243	274	401
Girls	584	447	362	225	218	220
% sample	18.8	14.3	9.4	7.2	7.6	9.5
% in lone parent households	22.7	39.4	25.6	30.6	5.1	10.5
% most advantaged (first tertile)	39.0	26.4	18.9	16.9	34.0	23.3
% least advantaged (third tertile)	35.6	40.8	49.0	46.4	30.0	44.0
Family activities % (95% CI) ^a						
Watch TV or videos						
Every day	30.7 (28.2, 33.4)	28.0 (25.2, 31.0)	30.9 (27.3, 34.7)	31.4 (27.4, 35.8)	29.3 (25.5, 33.5)	34.0 (30.3, 37.8)
≤weekly/never	31.9 (29.3, 34.5)	31.2 (28.4, 34.4)	28.3 (24.8, 32.0)	24.1 (20.5, 28.2)*	30.0 (26.1, 34.1)	29.0 (25.5, 32.7)
Not stated	2.0 (1.4, 3.0)	6.1 (4.8, 7.9)*	4.2 (2.9, 6.2)	5.8 (4.0, 8.3)*	2.6 (1.5, 4.5)	2.4 (1.5, 4.0)
Play indoor games						
Every/most days	25.5 (23.1, 28.0)	32.4 (29.5, 35.5)*	31.4 (27.8, 35.2)	35.5 (31.3, 40.0)*	27.9 (24.1, 32.1)	38.3 (34.6, 42.2)*
Never	21.3 (19.1, 23.7)	19.9 (17.5, 22.6)	23.7 (20.5, 27.2)	24.8 (21.1, 28.9)	19.0 (15.8, 22.7)	20.3 (17.3, 23.6)
Not stated	2.3 (1.6, 3.3)	6.2 (4.9, 8.0)*	4.9 (3.4, 6.9)*	6.8 (4.9, 9.5)*	3.0 (1.8, 5.0)	2.4 (1.5, 4.0)
Eat a meal						
Every day	58.0 (55.2, 60.8)	51.2 (48.0, 54.4)*	49.5 (45.6, 53.5)*	52.1 (47.6, 56.6)	67.2 (62.9, 71.2)*	70.7 (67.0, 74.1)*
≤weekly/never	16.1 (14.1, 18.2)	17.0 (14.7, 19.6)	19.8 (16.8, 23.1)	16.9 (13.7, 20.6)	11.3 (8.8, 14.4)	9.7 (7.6, 12.2)*
Not stated	2.6 (1.8, 3.7)	7.0 (5.5, 8.8)*	4.7 (3.3, 6.7)	7.0 (5.0, 9.8)*	3.8 (2.5, 5.9)	2.4 (1.5, 4.0)
Go for a walk						
Every/most days	25.0 (22.7, 27.5)	26.0 (23.3, 29.0)	24.0 (20.8, 27.6)	32.7 (28.6, 37.1)*	28.1 (24.3, 32.3)	37.2 (33.5, 41.1)*
Never	18.4 (16.3, 20.7)	20.4 (18.0, 23.1)	27.6 (24.2, 31.3)*	23.1 (19.5, 27.1)	15.2 (12.3, 18.6)	17.4 (14.6, 20.6)
Not stated	2.3 (1.6, 3.3)	7.3 (5.8, 9.2)*	6.2 (4.5, 8.4)*	6.8 (4.9, 9.5)*	3.0 (1.8, 5.0)	2.9 (1.8, 4.5)
Visit friends or relatives						
Every/most days	28.9 (26.5, 31.5)	42.9 (39.8, 46.2)*	45.6 (41.7, 49.6)*	46.1 (41.7, 50.7)*	41.5 (37.2, 45.9)*	50.2 (46.3, 54.2)*
<weekly/never	38.7 (36.0, 41.5)	24.9 (22.2, 27.7)*	22.7 (19.6, 26.2)*	23.3 (19.7, 27.3)*	24.3 (20.7, 28.3)*	17.9 (15.0, 21.1)*
Not stated	2.4 (1.7, 3.5)	6.9 (5.4, 8.7)*	4.4 (3.0, 6.4)	6.8 (4.9, 9.5)*	3.2 (2.0, 5.2)	2.9 (1.8, 4.5)
Go other places						
Every/most days	38.3 (35.6, 41.1)	49.3 (46.1, 52.5)*	51.0 (47.0, 54.9)*	50.6 (46.1, 55.2)*	47.2 (42.8, 51.6)*	44.9 (41.1, 48.9)*
<weekly/never	25.2 (22.8, 27.7)	21.3 (18.8, 24.1)	18.5 (15.6, 21.7)*	23.1 (19.5, 27.12)*	19.6 (16.4, 23.4)	22.9 (19.7, 26.3)
Not stated	2.4 (1.6, 3.4)	6.3 (4.9, 8.1)*	4.2 (2.9, 6.2)	6.8 (4.9, 9.5)*	3.0 (1.8, 5.0)	2.7 (1.7, 4.4)
Age and sex-adjusted mean TDS (95% CI)	11.55 (11.26, 11.84)	11.30 (10.96, 11.63)	10.48 (10.07, 10.89)*	10.57 (10.10, 11.04)*	9.89 (9.43, 10.35)*	10.71 (10.30, 11.12)*

* Significantly different than White UK $P < 0.05$ ^a Percentages do not add up to 100 as not all categories are shown

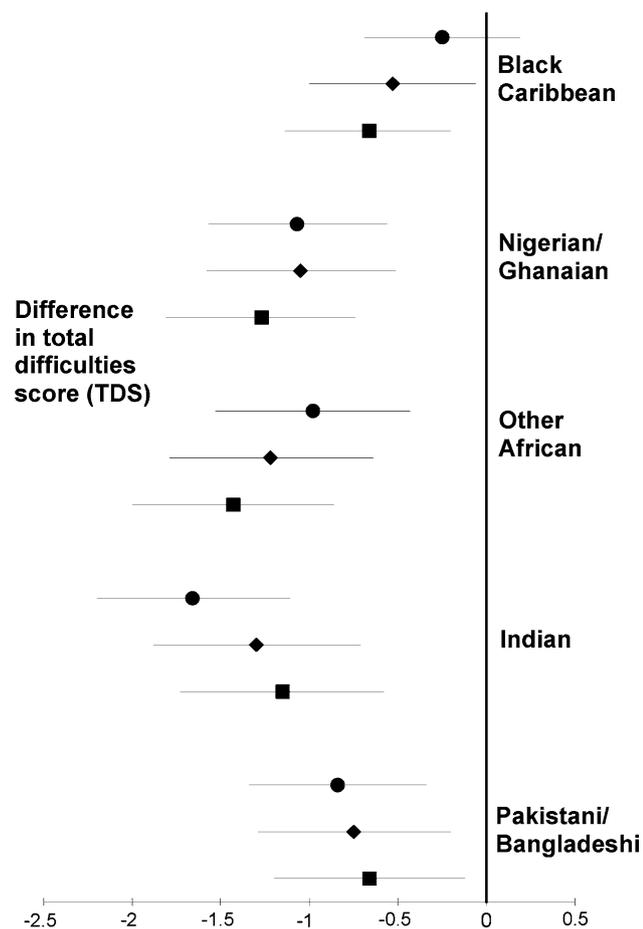


Fig. 1 Differences in mean total difficulties scores (minority groups compared to White UK). Coefficients (95% confidence interval), adjusted for *circle* age and sex; *diamond* age, sex, family type and SES; *square* age, sex, family type, SES and family activities

and social variables (family type and SES) are shown in Table 3. The most consistent association was the increase in TDS with low frequency of eating a meal together for all ethnic groups, with the exception of the Black Caribbeans where there was no clear association. Minority groups were more likely to do many of these activities (as shown in Table 1) but the effect of infrequent engagement on TDS varied across the groups. Non-participation was associated with increasing TDS for play indoor games among White UK, Black Caribbeans, Nigerian/Ghanaians and Pakistani/Bangladeshis, going for a walk for White UK, Other Africans and Pakistani/Bangladeshis and going other places for Whites and Nigerians/Ghanaians. It is interesting to note that for activities that Black Caribbeans were more likely to engage in on a daily basis (play indoor games, visit friends or relatives, go other places) weekly participation was associated with better mental health than daily participation. There was no association between watch TV and TDS for any of the ethnic groups (not shown in Table).

Adjusting for all family activities simultaneously

In models containing all family activity variables, age, sex, SES and ethnicity independent effects were seen for having a meal together most days [0.95 (0.56, 1.33)] and weekly or less [1.30 (0.84, 1.76)], going for a walk weekly [−0.78 (−1.23, −0.32)] and never [0.69 (0.16, 1.21)] and weekly visiting friends and family [−0.77 (−1.18, −0.36)] compared with the baseline. Family type remained a significant independent correlate for psychological well-being.

Discussion

This is the first study to examine the role of family activities in the psychological well-being of adolescents in a large multi-ethnic UK sample. As previously reported for the Black African groups [23] we found that South Asian ethnicity was associated with lower TDS compared to their White UK counterparts. Family activity variables explained some of the association between mental health and South Asian ethnicity. Contrary to our hypothesis, however, scores for all minority groups remained lower than Whites after adjusting for heterogeneity in family activities frequency, independent of family type and SES. All activity variables were associated with TDS.

Other measures of family process may be important. Supportive family networks buffer against the effects of stress and there may be ethnic differences in this and wider aspects of social support such as peer and community relations. In another multi-ethnic school-based study, controlling for differences in social support [measured with the multidimensional scale of social support (MPSS)] did not alter the pattern of ethnic variation in mental health [20]. The quality of family interactions (feeling helped and supported by the family) may be more important in facilitating resilience than just being together per se. We will use data collected on both quality of parenting and social support to examine these questions in the DASH study. Further understanding of ethnic differences and resilience to poor social circumstances is required and policies which support positive parenting skills are likely to improve psychological well-being in adolescence, regardless of ethnicity.

Low family socio-economic position has been shown to be associated with poor mental health outcomes [2]. Findings from a multi-centre European dataset examining family type and family activities show reconstructed and lone parent family types negatively associated and family affluence positively associated with family activity [42]. In our analyses there was no consistent association between family type or SES and frequency of activities within each ethnic group. The exception was for the Black African

Table 2 Family activity and psychological well-being

Family activities	Adjusted for age and sex	Adjusted for age, sex, ethnicity, family type and SES
Models 1a and b: watch TV		
Every day [reference, mean TDS (CI)]	10.66 (10.38, 10.94)	10.70 (10.37, 11.02)
Most days	0.14 (−0.24, 0.52)	0.13 (−0.24, 0.51)
Weekly/<weekly/never ^a	0.61 (0.21, 1.01)*	0.56 (0.17, 0.96)*
Models 2a and b: play indoor games		
Every day/most days ^a (reference)	10.65 (10.38, 10.93)	10.72 (10.40, 11.04)
Weekly	−0.34 (−0.81, 0.12)	−0.37 (−0.83, 0.09)
<Weekly	−0.002 (−0.41, 0.41)	−0.09 (−0.50, 0.32)
Never	1.40 (0.96, 1.83)*	1.28 (0.85, 1.71)*
Models 3a and b: eat a meal		
Every day (reference)	10.39 (10.18, 10.59)	10.42 (10.15, 10.69)
Most days	1.03 (0.64, 1.41)*	1.02 (0.64, 1.40)*
Weekly/<weekly/never ^a	1.70 (1.25, 2.14)*	1.67 (1.23, 2.11)*
Models 4a and b: go for a walk		
Every day/most days ^a (reference)	10.77 (10.48, 11.06)	10.85 (10.51, 11.18)
Weekly	−0.78 (−1.23, −0.34)*	−0.86 (−1.30, −0.41)*
<Weekly	−0.01 (−0.43, 0.40)	−0.11 (−0.52, 0.31)
Never	1.43 (0.98, 1.88)*	1.31 (0.86, 1.76)*
Models 5a and b: visit friends/relatives		
Every day/most days ^a (reference)	10.92 (10.68, 11.17)	11.00 (10.71, 11.29)
Weekly	−0.65 (−1.03, −0.27)*	−0.69 (−1.07, −0.32)*
<Weekly/never ^a	0.61 (0.23, 0.99)*	0.42 (0.03, 0.81)*
Models 6a and b: go other places		
Every day/most days ^a (reference)	10.77 (10.54, 11.00)	10.80 (10.52, 11.08)
Weekly	−0.29 (−0.66, 0.08)	−0.32 (−0.69, 0.05)
<Weekly/never ^a	0.98 (0.58, 1.38)*	0.91 (0.51, 1.31)*

Coefficients (95% confidence interval), adjusted for age, sex and social variables

* Significantly different than the reference category $P < 0.05$

^a Categories collapsed due to small numbers

groups where visiting friends was significantly less frequent among the most disadvantaged compared to the least (though still significantly greater than for the Whites). Around 70% of South Asians from two-parent families compared to 60% of Whites ate a meal together daily and more of the most disadvantaged in all Black ethnic and Pakistani/Bangladeshis groups visited friends frequently compared to Whites in the same SES category. As previously reported for the Black ethnic groups [23], mean TDS in each family type was lower among the South Asians compared to Whites (lowest of all for the Indians). The exception was for the Pakistani/Bangladeshis where the score for those from lone parent families was equal to that of the Whites. In addition, African and South Asian groups generally had lower mean TDS scores in reference categories of activity. These issues combined contribute but do not fully elucidate the ‘protective’ effect of minority ethnicity on mental health.

Eating a meal together is an important aspect of socialization within the family as it involves repeated rituals which forge togetherness and belonging, reinforcing tradition and structure [38, 41]. Concern about the demise

of the family meal in Britain is not new but has little empirical evidence to support it [27]. Not eating a meal together had the most consistent negative association with mental health scores across ethnic groups with the exception of the Black Caribbeans. The limited evidence on the benefits to child mental health of frequent family meals comes from US-based studies. These have found an inverse relationship between meal frequency and psychological or psychosocial outcomes [9, 13]. Eating together may be a proxy measure for existing family cohesion, however, Eisenberg and colleagues [9] report that increasing frequency of family meals was inversely associated with substance use, depressive symptoms and suicide attempts independent of family connectedness. It is possible that, of all the activity variables, eating a meal together is the easiest for adolescents to conceptualise in terms of frequency although differences in interpretation within the groups is possible. For example, children with access to a dining table may have related more easily to the concept of family meals than those without a dining table but whose family members have their meals together in the same room. This could have diluted the effect on psychological well-being if

Table 3 The effect of family activity on psychological well-being within each ethnic group

	White UK	Black Caribbean	Nigerian/Ghanaian	Other African	Indian	Pakistani/Bangladeshi
<i>N</i> (% of total DASH sample)	1227 (18.8)	929 (14.3)	612 (9.4)	468 (7.2)	492 (7.6)	621 (9.5)
Play indoor games						
Every day/most days [ref mean TDS (CI)]	10.79 (10.14, 11.45)	11.41 (10.79, 12.02)	10.50 (9.68, 11.31)	10.75 (9.99, 11.50)	10.07 (9.14, 10.99)	10.12 (9.47, 10.79)
Weekly	0.72 (-0.17, 1.61)	-1.19 (-2.15, -0.22)*	-0.23 (-1.50, 1.04)	-1.57 (-2.94, -0.19)*	-0.72 (-2.08, 0.65)	0.04 (-1.11, 1.19)
Never	2.01 (1.17, 2.85)*	1.36 (0.42, 2.30)*	1.11 (0.03, 2.19)*	0.87 (-0.30, 2.04)	0.65 (-0.75, 2.05)	1.15 (0.04, 2.25)*
Eat a meal						
Every day (ref TDS)	10.99 (10.48, 11.51)	11.16 (10.65, 11.67)	10.14 (9.46, 10.82)	9.95 (9.32, 10.57)	9.31 (8.68, 9.95)†	9.97 (9.49, 10.44)†
Most days	0.92 (0.21, 1.63)*	0.54 (-0.26, 1.35)	0.59 (-0.37, 1.54)	0.98 (-0.11, 2.06)	1.99 (0.76, 3.21)*	1.96 (0.90, 3.02)*
Weekly<weekly/never	1.82 (1.01, 2.63)*	0.47 (-0.45, 1.39)	1.69 (0.64, 2.74)*	2.35 (1.10, 3.59)*	2.38 (0.90, 3.86)*	2.38 (1.01, 3.75)*
Go for a walk						
Every day/most days (ref TDS)	11.20 (10.55, 11.85)	11.55 (10.87, 12.24)	10.65 (9.74, 11.55)	10.38 (9.60, 11.16)	10.14 (9.20, 11.08)	10.34 (9.69, 11.00)
Weekly	-0.74 (-1.55, 0.07)	-0.93 (-1.94, 0.09)	-1.21 (-2.46, 0.03)	-0.94 (-2.27, 0.38)	-0.67 (-2.00, 0.66)	-0.81 (-1.87, 0.25)
Never	1.90 (1.02, 2.78)*	0.86 (-0.12, 1.85)	0.69 (-0.41, 1.80)	1.49 (0.26, 2.71)*	1.43 (-0.07, 2.92)	1.46 (0.30, 2.63)*
Visit friends or relatives						
Every day/most days (ref TDS)	11.44 (10.81, 12.08)	11.73 (11.17, 12.28)	10.73 (10.03, 11.44)	10.68 (10.02, 11.35)	9.82 (9.10, 10.53)†	10.42 (9.85, 10.98)
Weekly	-0.44 (-1.20, 0.31)	-1.54 (-2.36, -0.72)*	-0.32 (-1.29, 0.66)	-0.40 (-1.54, 0.73)	-0.51 (-1.61, 0.59)	-0.21 (-1.15, 0.73)
<Weekly/never	0.45 (-0.27, 1.17)	0.41 (-0.42, 1.24)	0.14 (-0.89, 1.17)	0.38 (-0.78, 1.53)	0.88 (-0.32, 2.08)	1.01 (-0.10, 2.12)
Go other places						
Every day/most days (ref TDS)	11.27 (10.70, 11.84)	11.62 (11.11, 12.14)	10.40 (9.72, 11.09)	10.40 (9.77, 11.03)	9.66 (8.92, 10.39)†	10.47 (9.86, 11.07)
Weekly	-0.16 (-0.84, 0.52)	-1.18 (-2.01, -0.35)*	-0.19 (-1.14, 0.76)	0.58 (-0.61, 1.77)	0.17 (-0.91, 1.24)	-0.46 (-1.42, 0.51)
<Weekly/never	1.13 (0.38, 1.87)*	0.47 (-0.38, 1.33)	1.27 (0.19, 2.34)*	0.32 (-0.81, 1.46)	1.21 (-0.04, 2.46)	0.94 (-0.10, 1.97)

Coefficients (95% confidence interval), adjusted for age, sex, family type and SES

* Significantly different from reference category within ethnic group $P < 0.05$

† Significantly different from White UK in fully adjusted models (age, sex, family type, SES)

we assume that interaction between family members is similar. It is interesting to note that ethnic differences in eating a meal together correspond with those we have reported for skipping breakfast, which was a correlate for obesity [18]. These findings indicate broader issues related to the impact of healthy family life styles on child health. There is also the potential issue of reverse causation—that mental well-being may influence the frequency of family activity. This issue will be explored in the analysis of follow-up data currently in preparation.

In addition to those already mentioned, a limitation of these analyses is that information on both family life and psychological well-being comes from the same source. Different members of the family may have different perceptions of family life and of young peoples behavioural and emotional problems. This presents issues of validity. Nonetheless, there can be a genuine lack of correlation between reports from parents and adolescents, for example, and information from these two sources can be seen as discrete, independent sets of data [37]. Furthermore, the extent of the discrepancy may be culturally influenced [40].

Minority ethnic family life is complex and needs to be understood in the context of migration, ethnicity, socio-economic circumstances, multiculturalism and racism [3]. While some studies report the continued importance of grandparents and other extended family, transcending even geographical boundaries [5], others suggest the non-availability of extended family members is an important concern for some minority ethnic groups [3]. The heterogeneity and definitions of extended families, particularly, are poorly understood [1] and it is possible that our characterisation of the family in the different ethnic contexts may not have been adequate to fully capture this diversity.

Conclusion

Few existing studies examining the role of family life in adolescent mental health have been based on a multi-ethnic UK sample. Despite ethnic heterogeneity in the frequency of family activities these variables did not fully account for better psychological well-being of minorities. Family activities are, however, important independent correlates of psychological well-being for all ethnic groups in this sample. Policies which support positive parenting skills are likely to improve psychological well-being in adolescence, regardless of ethnicity.

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References

- Ahmad WIU (1996) Family obligations and social change among Asian communities. In: Ahmad WIU, Atkin K (eds) Race and community health. Open University Press, Buckingham
- Amone-P'Olak K, Burger H, Ormel J, Huisman M, Verhulst F, Oldehinkel A (2009) Socioeconomic position and mental health problems in pre- and early-adolescents. *Soc Psychiatry Psychiatr Epidemiol* 44:231–238
- Barn R, Ladino C, Rogers B (2006) Parenting in multi-racial Britain. National Children's Bureau, London
- Buchanan A, Ten Brinke J, Flouri E (2000) Parental background, social disadvantage, public 'care', and psychological problems in adolescence and adulthood. *J Am Acad Child Adolesc Psychiatry* 39:1415–1423
- Chamberlain M (2003) Rethinking Caribbean families: extending the links. *Community Work Fam* 6:63–76
- Chan W, Law CK, Liu KY, Wong P, Law Y, Yip P (2008) Suicidality in Chinese adolescents in Hong Kong: the role of family and cultural influences. *Soc Psychiatry Psychiatr Epidemiol*. doi:10.1007/s00127-008-0434-x
- Commission for Healthcare Audit and Inspection (2005) Count me in. Results of a national census of inpatients in mental health hospitals and facilities in England and Wales. http://www.healthcarecommission.org.uk/_db/_documents/04021830.pdf
- Dobson J, Koser K, McLaughlan G, Salt J (2001) International migration and the United Kingdom, recent patterns and trends. Final report to the Home Office, December 2001. RDS occasional paper No. 75. Home Office, London. <http://www.homeoffice.gov.uk/rds/pdfs/occ75.pdf>
- Eisenberg M, Olson R, Neumark-Sztainer D, Story M, Bearinger L (2004) Correlations between family meals and psychosocial well-being among adolescents. *Arch Pediatr Adolesc Med* 158:792–796
- Elliott J, Shepherd P (2006) Cohort Profile: 1970 British Birth Cohort (BCS70). *Int J Epidemiol* 35:836–843
- Ely M, West P, Sweeting H, Richards M (2000) Teenage family life, life chances, lifestyles and health: a comparison of two contemporary cohorts. *Int J Law Policy Fam* 14:1–30
- Farrell M, Barnes G, Banerjee S (1995) Family cohesion as a buffer against the effects of problem-drinking fathers on psychological distress, deviant behavior, and heavy drinking in adolescents. *J Health Soc Behav* 36:377–385
- Fulkerson J, Story M, Mellin A, Leffert N, Neumark-Sztainer D, French S (2006) Family dinner meal frequency and adolescent development: relationships with developmental assets and high risk behaviours. *J Adolesc Health* 39:337–345
- Garnefski N, Diekstra R (1997) Adolescents from one parent, stepparent and intact families: emotional problems and suicide attempts. *J Adolesc* 20:201–208

15. Goodman R (1997) The strengths and difficulties questionnaire: a research note. *J Child Psychol Psychiatry* 38:581–586
16. Green H, McGinnity A, Meltzer H, Ford T, Goodman R (2005) Mental health of children and young people in Great Britain, 2004. Palgrave MacMillan, Basingstoke
17. Harding S, Balarajan R (2001) Longitudinal study of socio-economic differences in mortality among South Asian and West Indian migrants. *Ethn Dis* 6:121–128
18. Harding S, Teyhan A, Maynard M, Cruickshank J (2008) Ethnic differences in overweight and obesity in early adolescence: the role of adolescent and parental lifestyle. *Int J Epidemiol* 37:162–172
19. Harding S, Whitrow M, Maynard MJ, Teyhan A (2007) Cohort profile. The DASH (Determinants of adolescent social well-being and health) study: an ethnically diverse cohort. *Int J Epidemiol* 36:512–517
20. Klineberg E, Clark C, Bhui K, Haines M, Viner R, Head J, Woodley-Jones D, Stansfeld S (2006) Social support, ethnicity and mental health in adolescents. *Soc Psychiatry Psychiatr Epidemiol* 41:755–760
21. Laird L, Amer M, Barnett E, Barnes L (2007) Muslim patients and health disparities in the UK and US. *Arch Dis Child* 92:922–926
22. Luthar S, Cicchetti D, Becker B (2000) The construct of resilience: a critical evaluation and guidelines for future work. *Child Dev* 71:543–562
23. Maynard M, Harding S, Minnis H (2007) Psychological well-being in Black Caribbean, Black African, and White adolescents in the UK MRC DASH Study. *Soc Psychiatry Psychiatr Epidemiol* 42:759–769
24. McMunn AM, Nazroo JY, Marmot MG, Boreham R, Goodman R (2001) Children's emotional and behavioural well-being and the family environment: findings from the health survey for England. *Soc Sci Med* 53:423–440
25. Meltzer H, Gatward R, Goodman R, Ford T (2000) Mental health of children and adolescents in Great Britain. The Stationery Office, London
26. Moore J, Harre N (2007) Eating and activity: the importance of family and environment. *Health Promot J Aust* 18:143–148
27. Murcott A (2000) Understanding lifestyle and food use: contributions from the social sciences. *Br Med Bull* 56:121–132
28. Nazroo J (1997) Ethnicity and mental health: findings from a national community survey. Policy Studies Institute, London
29. Nazroo J (1997) The Health of Britain's minorities. Policy Studies Institute, London
30. Power C, Elliott J (2006) Cohort profile: 1958 British birth cohort (National Child Development Study). *Int J Epidemiol* 35:34–41
31. Repetti R, Taylor S, Seeman T (2002) Risky families: family social environments and the mental and physical health of offspring. *Psychol Bull* 128:330–366
32. Ringback Weitoft G, Hjern A, Haglund B, Rosen M (2003) Mortality, severe morbidity, and injury in children living with single parents in Sweden: a population-based study. *Lancet* 361:289–295
33. Rutter M (2006) The promotion of resilience in the face of adversity. In: Clarke-Stewart A, Dunn J (eds) *Families count: effects on child and adolescent development*. Cambridge University Press, Cambridge, pp 26–52
34. Spencer N (2005) Does material disadvantage explain the increased risk of adverse health, educational, and behavioural outcomes among children in lone parent households in Britain? A cross sectional study. *J Epidemiol Community Health* 59:152–157
35. Stansfeld S, Haines M, Head J, Bhui K, Viner R, Taylor SJC, Hillier S, Klineberg E, Booy R (2004) Ethnicity, social deprivation and psychological distress in adolescents. School based epidemiological study in east London. *Br J Psychiatry* 185:233–238
36. Stevens G, Vollebergh W (2008) Mental health in migrant children. *J Child Psychol Psychiatry* 49:276–294
37. Sweeting H (2001) Our family, whose perspective? An investigation of children's family life and health. *J Adolesc* 24:229–250
38. Sweeting H, West P (2005) Dietary habits and children's family lives. *J Hum Nutr Diet* 18:93–97
39. Sweeting H, West P, Richards M (1998) Teenage family life, lifestyles and life chances: associations with family structure, conflict with parents and joint family activity. *Int J Law Policy Fam* 12:15–46
40. Vassi I, Veltsista A, Lagona E, Gika A, Kavadias G, Bakoula C (2008) The generation gap in numbers: parent-child disagreement on youth's emotional and behavioural problems. *Soc Psychiatry Psychiatr Epidemiol* 43:1008–1013
41. Viere G (2001) Examining family rituals. *Fam J* 9:285–288
42. Zaborskis A, Zemaitiene N, Borup I, Kuntsche E, Moreno C (2007) Family joint activities in a cross-national perspective. *BMC Public Health* 7. doi:10.1186/1471-2458-1187-1194