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Father involvement, family poverty and adversity, and young children's behaviour in stable resident two-parent families

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Abstract

Using data from the first two data collection points (age 9 months and 3 years, respectively) of the UK's Millennium Cohort Study (MCS), we explored the association between father involvement and young children's emotional and behavioural adjustment in stable resident two-parent families (N = 9,498). We also investigated the role of father involvement at age 9 months in moderating the association between contextual risk (family-level adverse life events and family-level socio-economic disadvantage) and young children's adjustment at age 3 years. We found that early father involvement was negatively associated with later emotional symptoms, but no other problem behaviour, and dampened the association of socio-economic disadvantage, but not adverse life events, with emotional symptoms. Our findings highlighted the importance of considering specificity at the level of both child outcome and contextual risk when modelling father involvement effects.

Keywords: child behaviour; cross-lags; fathers; MCS; parenting; temperament

Introduction

The research on the association between father involvement in parenting and child behaviour has grown substantially in recent years (Barber, Stolz and Olsen 2005; Davidov and Grusec 2006; Enns, Cox and Clara 2002; Denham et al 2000; Galambos, Barker and Almeida 2003). This research usually follows the standard family environment model (Burt et al 2008, for a recent review), which assumes that the type and the quality of the parent-child interaction affect child outcomes, even after taking into account the role of children's characteristics and behaviours in influencing family processes (Coley, Votruba-Drzal and Schindler 2008; Jaffee et al 2004). Most of this research is based on USA samples, and explores associations between father involvement and school age children's outcomes. We carried out this study, using longitudinal data from the first two sweeps (age 9 months and 3 years, respectively) of the UK's Millennium Cohort Study (MCS), to investigate the association between fathers' involvement and young children's emotional and behavioural adjustment. We also sought to establish if father involvement moderates the effect of family contextual risk (family-level adverse life events and family socio-economic disadvantage) on young children's emotional and behavioural adjustment. Both these types of contextual risk are strongly associated with child outcomes in the short as well as the long-term (Amone-P'Olak et al 2009; Flouri, Tzavidis and Kallis 2010; Schoon et al 2002; Tiet et al 1998). Although there is evidence for the role of high father involvement in buffering the effect of psychological risk on young children's emotional and behavioural adjustment (Chang, Halpern and Kaufman 2007), its role as a factor promoting better than expected emotional and behavioural outcomes in young children exposed to high levels

of contextual risk is not well-established. Previous work with MCS (Malmberg and Flouri 2011) has shown that, among preschool children, the effect of socio-economic disadvantage on the emotional ('internalizing') and behavioural ('externalizing' or 'acting out') problems of children was not moderated by the quality of the father-child relationship, a correlate of father involvement. Although the quality of the mother-child rather than the father-child relationship moderated the effect of socio-economic disadvantage (although only on emotional problems), neither moderated the effect of family adversity on acting out behaviour. However, despite being closely inter-related, father's involvement (usually measured as father's time spent in direct caregiving activities) and quality of the father-child relationship are distinct constructs (Pleck 2007), with studies suggesting that the former usually predicts the latter, especially in toddlerhood (Kwon, Jeon, Lewsader and Elicker 2012). Because father involvement and its 'effects' on children may vary in stable and changing families (Carlson 2006), in this study we focused on young children in stable resident two-parent families, that is, two-parent families in which both parents were co-resident with the child at both MCS sweeps.

Analytic approach

We solved the selection problem that moderation by family structure would cause if we were to simultaneously model changes in family structure and father involvement, by limiting our analysis to stable resident two-parent families where both partners responded to Sweep 2 (MCS2). We fitted a series of structural equation models (SEMs) to meet our research objectives. In our SEMs we allowed the involvement of the father and the adjustment of the child at MCS2 to be predicted by their respective Sweep 1 (MCS1) prodromes, that is, MCS1 father involvement and MCS1 temperament, respectively. We also allowed cross-lagged effects between father involvement and child behaviour (i.e. temperament at MCS1 and adjustment at MCS2), and we adjusted for known covariates of both child behaviour and father involvement (Cabrera et al 2000). In particular, we controlled for quality of the inter-parental relationship (Sturge-Apple, Davies and Cummings 2006), maternal parenting (Feldman and Klein 2003), father's and mother's depressed mood (Klein et al 2005) and ethnicity (Deater-Deckard, Atzaba-Poria and Pike 2004), father's social class (Coley and Hernandez 2006) and father's biological relation to the child (Hofferth and Anderson 2003), as well as child's age (Tamis-LeMonda, Kahana-Kalman and Yoshikawa 2009) and sex (Lytton and Romney 1991). As both parenting and child behaviour are related to both family adversity (Dunn et al 2000; Grant et al 2006) and family-level socio-economic disadvantage (McLoyd 1998), each of these two types of contextual risk was modelled to predict both father's parenting and child behaviour. Good fit for our SEMs was indicated by values below .05 on the Root Mean Square Error of Approximation (RMSEA) and the Standardised Root Mean Square Residual (SRMR), and above .95 on the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI). Although chi-square is sensitive to sample size and model complexity (Browne and Cudeck 1993), we also report chi-square values.

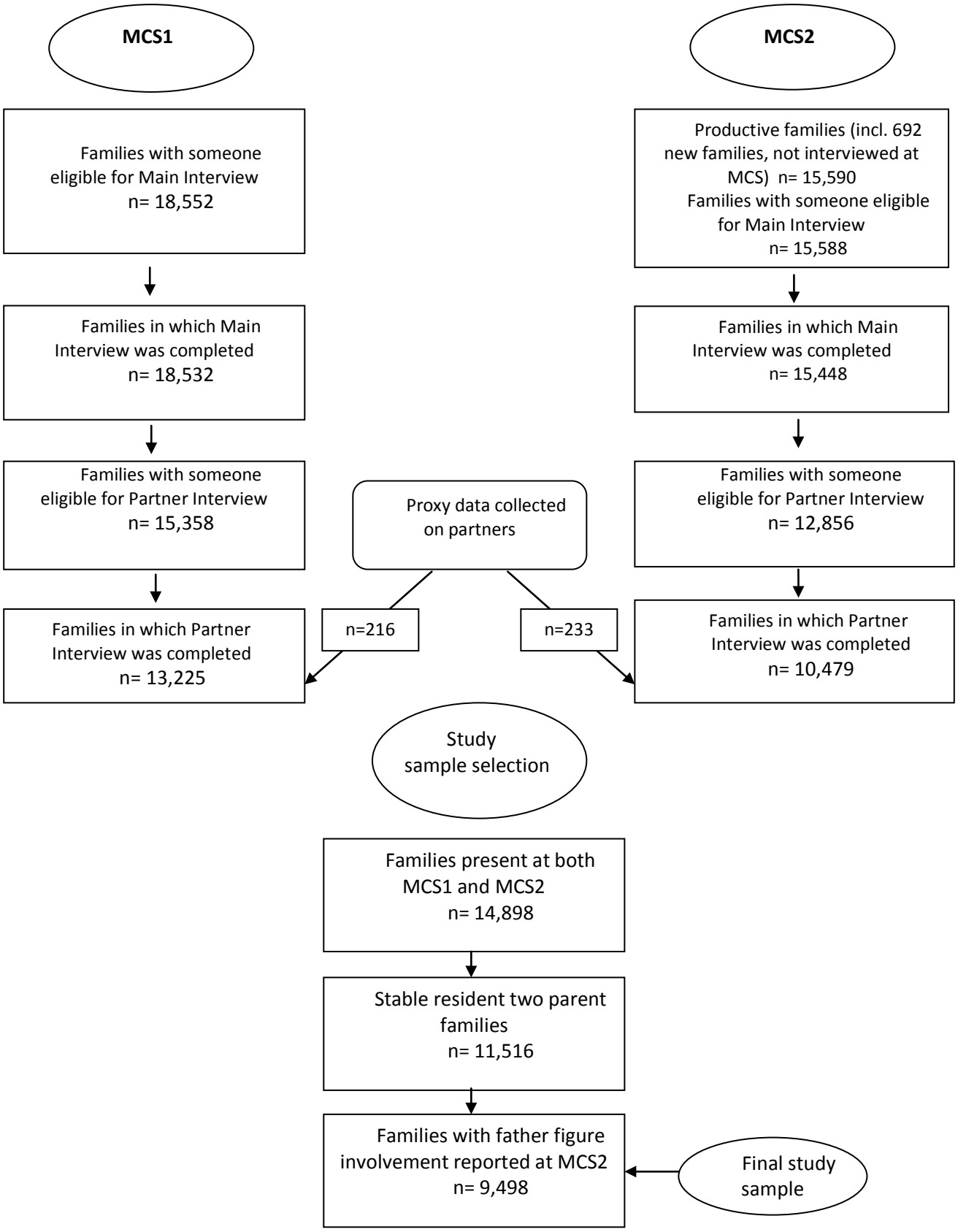
Method

Participants and procedure

We used data from the first two sweeps of MCS, a longitudinal survey drawing its sample population from all live births in the UK over 12 months, beginning on 1 September 2000 in England and Wales. The sample was drawn three months later in Scotland and Northern Ireland (Plewis 2007). MCS1 took place when the children were aged 9 months, and MCS2 took place when the children were 3 years of age. The MCS sample was selected from a random sample of electoral wards, disproportionately stratified to ensure adequate representation of all four UK countries, deprived areas and areas in England with high concentrations of ethnic minority families. In all, there were nine strata, i.e. England-advantaged, England-disadvantaged, England-ethnic, Wales-advantaged, Wales-disadvantaged, Scotland-advantaged, Scotland-disadvantaged, Northern Ireland-advantaged, and Northern Ireland-disadvantaged.

Unlike many child development studies, MCS interviewed fathers/mother's partners if they were resident in the child's household. In general, any parents (including step, foster and adoptive) of cohort members and partners (including same-sex partners) of parents were eligible for interview. If there were no parents in the household, the main carer of the cohort member (and their partner) was selected for interview. The flowchart in Figure 1 shows how the final study sample was achieved. It

Figure 1. Sample selection



gives the number, in each sweep, of main and partner interviews. The vast majority of the main respondents were female. At MCS1 there were 28 male main respondents, all natural fathers, 18 of whom were lone fathers. At MCS2 the main respondents were again overwhelmingly female, but the number of them who were not natural mothers increased from 9 at MCS1 to 55. The number of male main respondents also increased from 28 at MCS1 to 187 (two of whom were not natural fathers). Part of this change was an increase of lone-father informants (to 62), but it was mostly due to a rise in the number of two-parent families in which the main response at MCS2 was collected from the father (Hansen 2010). Our initial study sample was all families that were present at both MCS1 and MCS2 (N = 14,898). If MCS children were twins or triplets, the child coded as cohort member ''a'' was included in our sample. Of these 14,898 families, 11,516 were stable resident two-parent families. This number includes same sex partnerships (2 families in total). We further reduced this study sample to those families about whom father figure (henceforth 'father') involvement was reported in the Partner Interview module at MCS2 (N = 9,498, our final study sample).

Measures

The majority of our measures were based on the data provided by the main respondent (who was, as explained above, usually the mother). All father-related variables (i.e. involvement, depressed mood, social class, ethnicity) were father-reported for resident fathers in MCS. For one measure, adverse life events, we used a combination of responses, and we describe this measure in detail below.

Children's emotional and behavioural adjustment was measured at MCS2 with the Strengths and Difficulties Questionnaire (SDQ; Goodman 1997). The SDQ measures four difficulties, i.e. hyperactivity, emotional symptoms, conduct problems, and peer problems (www.sdqinfo.org). Each difficulty is measured with 5 items on 3-point scales (0 = not true, 1 = somewhat true, and 2 = certainly true). Sample items are: 'Often complains of headaches, stomach-aches or sickness' (emotional symptoms), 'Often has temper tantrums or hot tempers' (conduct problems), 'Rather solitary, tends to play alone' (peer problems), and 'Constantly fidgeting or squirming' (hyperactivity). Cronbach's alpha was $\alpha = .56$, $\alpha = .67$, $\alpha = .48$, and $\alpha = .71$, respectively.

Temperament was assessed at MCS1 with fourteen items from the Carey Infant Temperament Scale (Carey and McDevitt 1978). The items included in MCS index three dimensions of the baby's temperament, namely mood (measured with five items such as 'is pleasant'), adaptability (measured with five items such as 'is rarely or almost never wary of strangers') and regularity or rhythmicity (measured with four items such as 'gets sleepy at about the same time'). Cronbach's alpha was $\alpha = .55$, $\alpha = .68$, and $\alpha = .72$, respectively.

Father involvement was measured at MCS1 and MCS2. Father involvement at MCS1 was measured by items asking fathers how often they look after the baby on their own, change nappies, feed the baby, and get up at night. At MCS2 the variables assessing father involvement were: frequency of looking after the child on own, reading to the child, playing with the child, and putting the child to bed. All items were measured on six-point scales (1 = never to 6 = more than once a day).

Family-level adverse life events ('family adversity') between the child's birth and MCS1 was measured, as in Flouri et al (2010), with eight events from Tiet et al's (1998) Adverse Life Events Scale (ALES). The ALES is composed of 25 possible events over which children had little or no control, and is a modification of the Life Events Checklist (Coddington 1972), a psychometrically sound (Gray et al 2004) measure of exposure to potentially traumatic events. The ALES measures exposure to adverse life events at both family and child levels. In view of this study's research aims, the eight events used measured only family-level risk, were developmentally appropriate, and could be reconstructed from the MCS data. These items were: 'family member died' (0.0% of study sample N = 9,498), 'family member was seriously injured' (7.3%), 'negative change in parent's financial situation' (76.2%), 'family member had mental/emotional problem' (41.9%), 'family moved' (9.3%), 'got a new brother or sister' (0.04%), 'one of the parents went to jail' (0.01%) and 'parents separated' (0.02%) . Six of these eight items were based on maternal reports. One ('family member had mental/emotional problem') used responses from both mother and father, and one ('one of the parents went to jail') was recorded

as 'yes' (= 1) if a proxy interview had to be carried out with a parent because the other one was in jail.

Family socio-economic disadvantage at MCS1 was measured with a 5-item summative index of overcrowding, lack of home ownership, receipt of income support, income poverty (below the poverty line) and lack of access to a car or van (Malmberg and Flouri 2011).

The *child-level covariates*, were age and sex, measured at MCS1. *The family-level covariates* were biological relation of the child to the father, maternal parenting, maternal and paternal depressed mood and ethnicity, and paternal social class - also all measured at Sweep 1. In view of the evidence for the strong association between father's involvement and concurrent quality of the marital/partner relationship, partner relationship quality as reported by both mothers and fathers was measured at both sweeps. All family-level covariates were assessed with well-validated measures. Mother's parenting was measured with four 5-point scales (with higher scores indicating attitudes reflecting poor quality child caretaking), originally derived by the European Longitudinal Study of Pregnancy and Childhood, and used in other UK longitudinal studies (such as the Avon Longitudinal Study of Parents and Children). Mothers were asked to indicate to what extent they agreed with statements such as 'it is important to develop a regular pattern of feeding and sleeping with a baby'. Maternal and paternal depressed mood was assessed in MCS1 with nine items from the 24-item Malaise Inventory (Rutter, Tizard and Whitmore 1970), a reliable and valid measure (Rodgers et al 1999) of psychological distress. The Malaise symptoms are positive responses to items such as 'feel miserable and depressed' and 'get annoyed by people'. Paternal social class was measured using the 7-point National Statistics Socio-economic Classification[i], which ranges from 'routine' to 'high managerial'/'professional'. Partner relationship quality was measured at both sweeps with seven items from the Golombok Rust Inventory of Marital State (Rust et al 1990).

Results

We first tested whether stable resident two-parent families with fathers present but not reporting father involvement at MCS2 were different (at $p < .001$) in any way to those in the final study sample (N = 9,498) on our covariates. Non-response for father involvement at MCS2 was systematic[ii]. In particular, lower social class and ethnic minority fathers/partners were more likely to miss data on father involvement at MCS2, as were fathers/partners reporting lower levels of father involvement at MCS1. Main respondents in the families in which there were no father involvement data at MCS2 tended to also be ethnic minority, have lower qualifications, report lower partner relationship quality at both sweeps , and endorse attitudes reflecting poor quality child caretaking. These families tended to also score higher on our index of family socio-economic disadvantage (results available from the authors). As regards any differences in the emotional and behavioural adjustment in the children of these two groups of families, there were none in emotional symptoms, peer problems, conduct problems, or hyperactivity (ps > .05). However, children in stable resident two-parent families with data on father involvement at MCS2 tended ($p = .05$) to score lower on total difficulties (i.e. the sum of the scores on the four SDQ difficulties) than children in stable resident two-parent families with no data on father involvement at MCS2 (i.e. in essence, as we explained, children in stable resident two-parent families with fathers present but not responding to the second MCS sweep). They also scored higher on adaptability and regularity (ps < .001), although not on mood ($p > .05$).

Missingness on the study variables in the final study sample of 9,498 families was negligible (4.7%), although it ranged from 0 to 27.9% across variables. Therefore, we generated five multiple imputed datasets in SPSS 18 using the Markov Chain Monte Carlo (MCMC) procedure, which gave a relative efficiency of around 98% (Little and Rubin 2002). In the imputation we included all the child, family and area study variables as predictor and predicted variables in a fully inclusive model (Collins, Schafer and Kam 2001). Thereafter, we fitted SEMs in Mplus (Muthén and Muthén 2009) which pooled the results from the models fitted in each imputed dataset. In all SEMs we included MCS sampling stratum as covariate. The inherent assumption in this approach is that conditioning on the design variables the sampling mechanism is ignorable. We accepted $p < .01$ significance for effects given the number and complexity of the models fitted.

Confirmatory Factor Analysis (CFA) and SEMs

We carried out a confirmatory factor analysis (CFA) of the MCS items assessing father involvement to decide on the variables for the constructs. As can be seen in Table 1 which presents the CFA results, all the MCS1 father involvement items loaded on a single factor. The items were: frequency of looking after the baby on own, of changing nappies, of feeding the baby, and of getting up at night. At MCS2, the items loading on the father involvement construct were: frequency of reading to the child, of playing with the child, and of putting the child to bed. As Table 1 shows, fathers tended to report high levels of involvement at both sweeps, especially in some activities (e.g. playing with and reading to the child at MCS2).

Our first SEM modelled the nine main latent constructs (i.e. father involvement at MCS1 and MCS2, emotional, peer, conduct and hyperactivity problems at MCS2, and mood, adaptability and regularity at MCS1). We modelled each indicator to load on its respective construct, and we parcelled items when there were more than three indicators per construct. Parcelling decreases error variances, reduces non - normalities, and increases common variance and model parsimony (Little et al 2002), under the assumption that the factor to be parcelled is uni-dimensional (Bandalos 2002). In this first SEM we allowed each of the five main latent constructs at MCS2 to be regressed on each of the four main latent constructs at MCS1. The model fitted data well ($\chi^2_{[314]}$ = 2319.40; p < .001, RMSEA = .025; SRMR = .022; CFI = .952. TLI = .943). In the next model we added covariate effects as well as socio-economic disadvantage and family adversity effects on all the main latent constructs. This was the final main effects model. The model fitted data well, although the TLI was somewhat low ($\chi^2_{[759]}$ = 4545.06; p < .001, RMSEA = .023; SRMR = .022; CFI = .922; TLI = .895). Tables 2 and 3 show the model results. As can be seen in Table 2, even after adjusting for father involvement and temperament at MCS1, paternal depressed mood at MCS1 was associated negatively with father involvement and positively with child problem behaviour at MCS2. Father involvement was also positively associated with concurrent maternal depression and with concurrent father-reported quality of the partner relationship. Although socio-economic disadvantage was associated negatively with father involvement at MCS2, and positively with all child problem behaviours at MCS2, family adversity was associated only with hyperactivity and conduct problems at MCS2. As can be seen in Table 3, correlation among the various dimensions of child behaviour (i.e. the three temperament dimensions and the four emotional and behavioural adjustment measures) was low to moderate, and so it did not constrict the variance available for statistical analysis. The latent correlation between MCS1 and MCS2 father involvement was, as expected, also of moderate size. Indeed, the SEM model presented evidence (not shown in the Tables) for continuity of father involvement between sweeps (β = .54, p < .001). It also showed some evidence for cross-lagged effects. In particular, mood was negatively associated with father involvement at MCS2 (β = -.05, p < .01), and father involvement at MCS1 was negatively associated with emotional symptoms at MCS2 (β = -.06, p < .01). As expected, there were also associations between temperament and problem behaviour. In particular, more positive mood predicted fewer emotional (β = -.06; p < .001), conduct (β = -.11; p < .001), and hyperactivity (β = -.08; p < .001) symptoms. Higher adaptability predicted fewer emotional (β = -.17; p < .001), conduct (β = -.05; p < .01), and peer (β = -.13; p < .001) problems. Higher regularity predicted fewer emotional (β = -.08; p < .001), conduct (β = -.07; p < .01), and peer (β = -.10; p < .001) problems.

Table 1. Confirmatory Factor Analysis (CFA) of father involvement at Sweeps 1 and 2, and descriptive statistics (raw data)

									Father involvement (CFA in imputed data set [a])		
	N	**Min**	**Max**	**M**	**SD**	**Ske**	**Kur**	**α**	**MCS1**	**MCS2**	**R^2**
Looks after baby on own, MCS1	8754	1	6	3.95	1.36	-0.05	-0.79		0.44		0.20
Changes nappy, MCS1	8756	1	6	4.56	1.54	-0.91	-0.16		0.77		0.59
Feeds baby, MCS1	8756	1	6	4.54	1.28	-0.81	0.27		0.78		0.61
Gets up at night, MCS1	8754	1	6	3.95	1.36	-0.05	-0.79		0.36		0.13
Father involvement, MCS1	8756	1	6	4.25	1.09	-0.36	-0.25	0.80			
Reads to child, MCS2	9498	1	6	4.32	1.37	-0.75	0.08			0.47	0.22
Plays with child, MCS2	9498	1	6	5.17	0.90	-1.02	0.80			0.35	0.13
Puts child to bed, MCS2	9498	1	6	3.77	1.07	-0.86	0.57			0.60	0.36
Father involvement, MCS2	9498	1	6	4.42	0.78	-0.69	0.42	0.45			

Note. *[a] = Model fit: $\chi^2_{[13]} = 264.65$; $p < .001$, RMSEA = .045; SRMR = .022; CFI = .970. Correlation between latent constructs was $\rho = .59$.*

Table 2. Standardized regression coefficients of child, father and mother covariates on main constructs (MCS1 and 2 father involvement, and MCS1 temperament and MCS2 emotional and behavioural adjustment); all covariates at MCS1 unless otherwise specified; MCS1 stratum effects adjusted but not presented)

	MCS1 main variables				MCS2 main variables				
	Father involvement	**Mood**	**Adaptability**	**Regularity**	**Father involvement**	**Emotional symptoms**	**Conduct problems**	**Hyperactivity**	**Peer problems**
Age	0.02 *	-0.02	0.00	-0.04 **	0.00	-0.01	-0.01	-0.01	-0.02
Girl	-0.03 *	0.02	-0.06 ***	-0.01	-0.01	0.00	-0.07 ***	-0.14 ***	-0.10 ***
Mother is non-white	-0.14 ***	-0.03	-0.15 ***	-0.10 ***	0.04	0.08 **	-0.02	0.05	0.10 ***
Mother's depressed mood	0.07 ***	-0.10 ***	-0.11 ***	-0.07 ***	0.01	0.13 ***	0.13 ***	0.10 ***	0.08 ***
Mother-reported partner relationship quality (MCS1)	0.14 ***	0.16 ***	0.09 ***	0.04 **	0.04 *	0.01	0.01	-0.01	-0.04 *
Mother's parenting	-0.02	-0.05 **	-0.08 ***	-0.23 ***	-0.06 ***	0.04 *	0.05 ***	0.04 ***	0.07 ***
Mother-reported partner relationship quality (MCS2)					0.09 ***	-0.07 ***	-0.15 ***	-0.10 ***	-0.12 ***
Father is non-white	-0.13 ***	-0.01	-0.05	0.03 ***	-0.03	0.01	-0.05	-0.03	0.06
Father's social class	0.00	-0.06 ***	0.00	0.02	0.13 ***	-0.05 ***	-0.08 ***	-0.12 ***	-0.10 ***
Father is biological	0.02	-0.02	0.01	0.03 *	-0.02	0.01	-0.01	0.02	0.01
Father's depressed mood	-0.06 ***	-0.04 *	-0.01	-0.01	-0.05 **	0.01	0.04 **	0.01	-0.02
Father-reported partner relationship quality (MCS1)	-0.01	-0.03	-0.01	-0.01	0.00	0.03	0.00	0.01	0.03
Father-reported partner relationship quality (MCS2)					0.06 **	-0.05 **	-0.02	-0.02	-0.05 **
Socio-economic disadvantage	-0.04 **	0.00	-0.10 ***	-0.14 ***	-0.09 ***	0.12 ***	0.15 ***	0.08 ***	0.08 ***
Family adversity	0.03 **	-0.03 *	0.04 **	-0.01	0.02	0.02	0.04 **	0.05 ***	0.02

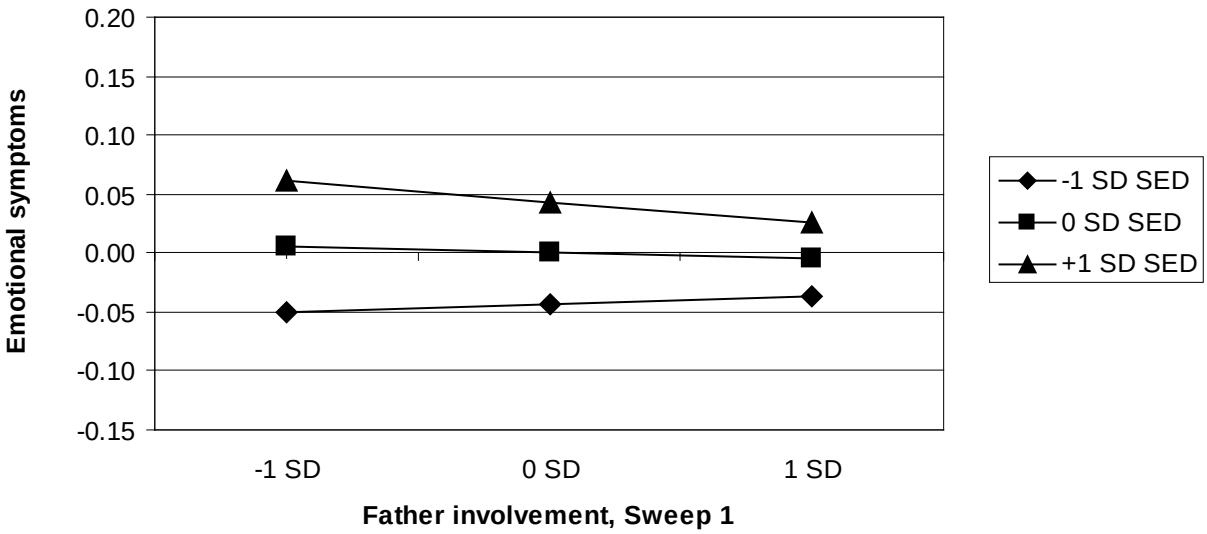
**p < .05; **p < .01; ***p < .001.*

Table 3. Latent correlations of main variables (model presented in Table 2)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Father involvement, MCS1								
2. Mood	0.03							
3. Adaptability	0.18	0.18						
4. Regularity	0.10	0.18	0.11					
5. Father involvement, MCS2	0.60	0.00	0.16	0.17				
6. Emotional symptoms	-0.17	-0.16	-0.30	-0.23	-0.20			
7. Conduct problems	-0.06	-0.18	-0.15	-0.20	-0.17	0.47		
8. Hyperactivity	-0.05	-0.13	-0.11	-0.17	-0.13	0.36	0.63	
9. Peer problems	-0.14	-0.12	-0.25	-0.27	-0.23	0.64	0.46	0.39

We fitted another two models to investigate the effect of the interaction of early father involvement by adverse life events and the effect of the interaction of early father involvement by family socio-economic disadvantage on all five main latent constructs at MCS2. The first of these models added to the final main effects model the interaction term between early father involvement and adverse life events on the five MCS2 latent constructs, and the second added to the final main effects model the interaction term between early father involvement and family socio-economic disadvantage on the five MCS2 latent constructs. Of the interaction effects tested, one - that of socio-economic disadvantage by father involvement on emotional symptoms - was significant (b = -.02; se = .01, p < .01). As shown in Figure 2, the association between socio-economic disadvantage and emotional symptoms was dampened at higher levels of father involvement.

Figure 2. The interaction between father involvement and socio-economic disadvantage (SED) at MCS1 on emotional symptoms at MCS2



***Note**: Latent interaction effects were estimated in Mplus using the XWITH command (Muthén and Muthén 2009). Latent variances of all constructs were derived from the measurement model. The variance for SED was the average variance across the five imputed datasets.*

Discussion

This longitudinal study of almost 10,000 stable resident two-parent families in the UK explored the role of early father involvement in predicting young children's emotional and behavioural adjustment, and in dampening the effect of early family contextual risk on young children's emotional and behavioural adjustment. Corroborating findings from research with school age children (Coley et al 2008), it found evidence for father involvement effects. Father involvement at 9 months was negatively associated with internalizing symptoms at 3 years, even after adjusting for father involvement at age 3 and for a wide range of family, area and child influences on children's problem behaviour. It also highlighted the importance of considering specificity at the level of both child outcome and contextual risk when modelling father involvement effects. Father involvement was negatively associated with later emotional symptoms, but no other problem behaviour, and dampened the effect of family socio-economic disadvantage, but not family adversity, on emotional symptoms.

These are important findings. The role of fathers' parenting in young children's internalizing problems is a relatively unexplored but very promising area (Bögels and Phares 2008). In this study, we found a negative correlation between children's internalizing problems and fathers' scores on our composite measure of paternal play and caregiving. This finding is in line with Bögels and Phares' (2008) suggestion that direct father

involvement (such as father-child play) promotes an active, competitive, autonomous, and curious attitude in children, which, in turn, promotes cognitive and social development, and buffers avoidance and anxiety. On the other hand, our finding that the association between family socio-economic disadvantage and children's internalizing problems was dampened at high levels of father involvement is an important contribution to the research of risk and resilience in children, as it suggests that father involvement can moderate the effect of not only psycho-social (Chang et al 2007) but also socio-economic risk on young children's behaviour.

However, a suggestion that this study showed evidence for the importance of high father involvement in dampening the effect of contextual risk on child adjustment cannot easily explain why father involvement did not moderate the effect of either type of contextual risk considered here on young children's externalizing problems. Previous work with MCS has similarly shown that, among pre-school children, the effect of socio-economic disadvantage on externalizing problems was not moderated by the quality of the father-child relationship (Malmberg and Flouri 2011). Although the quality of the mother-child rather than the father-child relationship moderated the effect of socio-economic disadvantage (although also only on internalizing problems), neither moderated the effect of family adversity on acting out behaviour. At first glance these findings, taken together, may seem to simply suggest that specific parent-level protective factors may be related to specific child outcomes in the presence of only specific contextual risks. However, on closer inspection they also suggest that different aspects of maternal and paternal parenting can buffer the effect of family poverty on young children's emotional symptoms.

Our findings also extend previous research on the antecedents of father involvement, and on the role of paternal inputs in child outcomes. For example, corroborating previous research, we found that paternal depressed mood was associated negatively with father involvement and positively with child problem behaviour (Ramchandani et al 2005). In line with previous findings that a father's relationship with his child is contingent on his relationship with the child's mother (McBride et al 2004; Paley et al 2005; Schacht, Cummnings and Davies 2009), we showed that a father's involvement with his child was associated positively with his satisfaction with the partner relationship. Contrary to our expectations and previous findings (Paulson, Dauber and Leiferman 2006), we found that a father's involvement with his infant was associated positively, not negatively, with a mother's concurrent depressed mood.

Conclusions

Extending findings from studies showing resident father involvement effects on school age children's outcomes, our study showed evidence for an inverse correlation between father involvement and young children's internalizing behaviour in stable resident two-parent families. It also suggested that father involvement may function as both a resource and a protective factor for children in these families. Fathers were more involved with their children when children were more 'difficult' and when mothers were at risk of depression, whereas the positive association between socio-economic disadvantage and children's emotional symptoms was weaker when fathers' involvement was higher. It is necessary to reiterate that our sample of stable resident two-parent families was of low socio-economic risk, and included families in which mothers were happy with their relationship with their partners, and fathers were not only present but also involved with their infants. Children with an experience of lone motherhood were not covered in this sample which was conditional on father being present. Therefore, it remains to be seen whether children with no or unstable resident fathers fare better or worse than those whose father was present but with low levels of involvement. It also remains to be seen, in analyses of future sweeps of MCS, if our pattern of results changes later in childhood, when children are more exposed to outside influences such as schools, peers, and neighbourhoods.

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Endnotes

[i] I.e. not applicable to the 'never employed'.

[ii] Note that although our attrition analysis was carried out to test for patterns of non-response to father involvement at MCS2, it also points to patterns of fathers' non-response to MCS2, as the overwhelming majority of fathers missing data on father involvement at MCS2 tended to miss data on all our MCS2 father-reported measures. For example, of the 11,516 fathers eligible for inclusion in our study sample, only 4 fathers missing data on father involvement at MCS2 did not also miss data on father-reported partner relationship quality at MCS2.