

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Father involvement in early child-rearing and behavioural outcomes in their pre-adolescent children: evidence from the ALSPAC UK birth cohort
AUTHORS	Opondo, Charles; Redshaw, Maggie; Savage-McGlynn, Emily; Quigley, Maria

VERSION 1 - REVIEW

REVIEWER	Luca Cerniglia International Telematic University Uninettuno, Rome, Italy
REVIEW RETURNED	18-Apr-2016

GENERAL COMMENTS	<p>The Authors address an interesting topic and the findings are worth publication.</p> <p>I have some minor indications that could add to the manuscript. I suggest changing the title into "Fathers' involvement in early child-rearing and behavioral outcomes in their pre-adolescent offspring". Besides, being aware of the word limit, i suggest adding some brief senteces in the text and some revisions.</p> <p>Abstract</p> <ul style="list-style-type: none"> - in the objective section, add reference to theoretical framework - in the result section, add a brief hypothesis about the reason Factor 2 was not associated with the outcome. <p>Strengths and limitations</p> <ul style="list-style-type: none"> - use an impersonal form - add a bullet on the role of fathers (which is relatively scarcely addressed in literature) <p>Introduction</p> <ul style="list-style-type: none"> - at line 21, add a sentence on pre-adolescence as a developmental stage (with a reference) - at line 29 add a reference at the end of the sentence - at line 48 add brief hypotheses <p>Method</p> <p>Data</p> <ul style="list-style-type: none"> - at line 7 add information about children being firstborn or not (if the information is available) <p>Outcome, exposure and potential confounder variables</p> <ul style="list-style-type: none"> - at line 11 add examples of items for all tools - at line 31 add information about the reasons those specific data were considered among the many that are included in the AVON study <p>Analysis</p> <ul style="list-style-type: none"> - at line 48, attachment is cited, which is good, but no reference was made in the introduction section. Either avoid the reference here or include in the introduction section - the same applies for the reference to maternal scores at line 18, page 7.
-------------------------	---

	<p>Result</p> <ul style="list-style-type: none"> - at line 5, page 8, add information on EPDS cut-offs - in table 2, double saturations are displayed. Add explanation in the text and make some hypotheses about the possible reasons <p>Discussion</p> <ul style="list-style-type: none"> - at line 24 7500 subjects are indicated in the text. This number does not fit with the other previously presented in the manuscript. Either revise here or in the previous sections - at line 16, page 12 the authors write "we were not able to distinguish between different levels of fathers' financial contributions. However [...] income level of both parents. It is not clear how Authors treat the Factor 2 variable. - the effect of maternal variables should be more broadly discussed. Add reference to: Early maternal relational traumatic experiences and psychopathological symptoms: A longitudinal study on mother-infant and father-infant interactions, Scientific Reports, 5, 13984. And to Mother-child and father-child interaction with their 24-month-old children during feeding, considering paternal involvement and the child's temperament in a community sample, Infant Mental Health Journal, 35 (5), pp. 473-481. - a limitation paragraph would be useful, in which i suggest including reference to the fact that the sample has been recruited several years ago. This could limit the possibility of generalizing results, mostly because the assumption is that paternal roles have recently changed (which is certainly true even in the last 10 years, not only for the reasons the authors correctly describe, but also due to the worldwide financial crisis).
--	---

REVIEWER	Evan Choi Winona State University, Minnesota, USA
REVIEW RETURNED	07-May-2016

GENERAL COMMENTS	<p>With using a longitudinal cohort dataset, the study examined the long-term effects of paternal involvement in infancy on later behavioral outcomes of children at age 9 and 11. Results found three factors: fathers' emotional response to the child, fathers' engagement in domestic and child care, and fathers security as a parent and partner. Fathers' emotional response and security were significantly associated with child outcomes. Unexpectedly, the effects of fathers' engagement on child outcomes were not significant. This is a timely and important research topic to the journal. A number of strengths in this study have been found. However, I would also raise several issues pertaining to ways in which it could be improved.</p> <ol style="list-style-type: none"> 1. Paternal involvement should be clearly defined in this study. The authors cited the definition of paternal involvement as fathers' accessibility, engagement, and responsibility in page 4. Those are fathers' activities for, attitudes towards, and interaction with the child, not the mother. However, many out of the 45 items that the authors tested are not exactly seen as paternal involvement. In particular, paternal engagement is how fathers engage in child care (e.g., read books, sing songs, play with the child, etc.) not how fathers share their domestic chores (e.g., shopping, cooking, etc.). What theories explain those help related to child behaviors? Please justify this. 2. The authors should clarify how they have developed this scale of paternal involvement. How were these 45 items included? Based on
-------------------------	---

	<p>what? Are these items drawn from some existing scales? Overall, the authors should conceptualize paternal involvement and sort out the items that are conceptually relevant before conducting factor analyses. Please correct me if I am wrong.</p> <p>3. I think some items can be conceptually categorized to mother-father relationship or inter-parental support. The authors may want to separate them from the scale.</p> <p>4. The study was not able to rule out the most powerful factors to determine child behaviors such as the primary caregivers' parenting, parenting stress, and the quality of child care. Without considering these variables, it would be hard to suggest that paternal involvement in infancy is significantly associated with children's later behaviors at age 9 and 11.</p>
--	---

VERSION 1 – AUTHOR RESPONSE

Reviewer 1

Section	Reviewer's comment	Response
General comments	The Authors address an interesting topic and the findings are worth publication. I have some minor indications that could add to the manuscript.	Thank you for this positive comment. We have responded to your suggestions below.
Title	I suggest changing the title into "Fathers' involvement in early child-rearing and behavioural outcomes in their pre-adolescent offspring."	We have amended the title to: " <i>Father involvement in early child-rearing and behavioural outcomes in their pre-adolescent children.</i> " We have used the word 'children' rather than the suggested 'offspring' for accuracy, acknowledging that some children in the sample were not the biological offspring of the said fathers.
Abstract: Objective	In the objective section, add reference to theoretical framework.	We have included the words ' <i>adopting a social developmental perspective</i> ' in reference to this theoretical framework.
Abstract: Results	In the result section, add a brief hypothesis about the reason Factor 2 was not associated with the outcome.	We do not feel that the abstract is an appropriate place to discuss the results and have instead included this in the main text in the first paragraph of the Discussion.
Strengths and limitations	Use an impersonal form.	We have edited the second bullet point of 'Strengths' to express it in an impersonal form.
Strengths and limitations	Add a bullet on the role of fathers (which is relatively scarcely addressed in literature).	We have added a third bullet point to 'Strengths' to mention that the study highlights the role of fathers which is relatively under-researched.
Introduction	At line 21, add a sentence on pre-adolescence as a developmental stage (with a reference).	We have added a sentence and a reference to the pre-adolescence developmental stage as suggested.
Introduction	At line 29 add a reference at the end of the sentence.	We have added two references at the end of the sentence as suggested.
Introduction	At line 48 add brief hypotheses.	We have added a hypothesis at the end of this paragraph as suggested.
Methods: Data	At line 7 add information about children	This information is already included in

Section	Reviewer's comment	Response
	being firstborn or not (if the information is available).	the first paragraph and Table 1, where we indicate that most mothers had on average 1 child prior to the one included in this analysis.
Methods: Outcome, exposure and potential confounder variables	At line 11 add examples of items for all tools.	We have added examples of items from the SDQ and listed the items used to measure paternal involvement in Table 2.
Methods: Outcome, exposure and potential confounder variables	At line 31 add information about the reasons those specific data were considered among the many that are included in the [ALSPAC study].	We have clarified that the selection of items was based on associations documented in the literature and included references highlighting this.
Methods: Analysis	At line 48, attachment is cited, which is good, but no reference was made in the introduction section. Either avoid the reference here or include in the introduction section.	The wording has been changed to remove any reference to attachment.
Methods: Analysis	The same [above] applies for the reference to maternal scores at line 18, page 7.	There is no reference to maternal scores in the paragraph mentioned – rather, it describes the adjustment for paternal, maternal and child <i>covariates</i> in the association between the paternal involvement factor scores and SDQ total difficulty scores.
Results	At line 5, page 8, add information on EPDS cut-offs.	We have not categorised EPDS scores in any of the analyses and thus do not refer to cut-offs.
Results	In table 2, double saturations are displayed. Add explanation in the text and make some hypotheses about the possible reasons.	We assume the term 'double saturations' refers to the cross-loadings in Table 2. Cross-loading in exploratory factor analysis is anticipated, however, as such items poorly discriminate between factors, we have excluded them from the confirmatory factor analysis and clarified this point in the third paragraph of the Results.
Discussion	At line 24 7500 subjects are indicated in the text. This number does not fit with the other previously presented in the manuscript. Either revise here or in the previous sections.	The text has been edited to read 'over 6,000 children' to represent the overall sample more accurately.
Discussion	At line 16, page 12 the authors write "we were not able to distinguish between different levels of fathers' financial contributions. However [...] income level of both parents. It is not clear how Authors treat the Factor 2 variable.	We have edited this section for clarification and improved our discussion of Factor 2.
Discussion	The effect of maternal variables should be more broadly discussed. Add reference to: Early maternal relational traumatic experiences and psychopathological symptoms: A longitudinal study on mother-infant and	We have referred to the role of both parents; however, we are reluctant to increase the length of the paper by discussing the effect of maternal variables beyond the specific context in which we have explored them,

Section	Reviewer's comment	Response
	father-infant interactions, Scientific Reports, 5, 13984. And to Mother-child and father-child interaction with their 24-month-old children during feeding, considering paternal involvement and the child's temperament in a community sample, Infant Mental Health Journal, 35 (5), pp. 473-481.	namely, as potential confounders in the association between paternal involvement and behavioural outcomes. We therefore feel that further discussion of these effects, beyond what is presented, is not warranted.
Discussion	A limitation paragraph would be useful, in which I suggest including reference to the fact that the sample has been recruited several years ago. This could limit the possibility of generalizing results, mostly because the assumption is that paternal roles have recently changed (which is certainly true even in the last 10 years, not only for the reasons the authors correctly describe, but also due to the worldwide financial crisis).	We agree that this is a very important point and have re-worded the limitations paragraph to more explicitly list the study's limitations as suggested.

Reviewer 2

Section	Reviewer's comment	Response
General comments	Using a longitudinal cohort dataset, the study examined the long-term effects of paternal involvement in infancy on later behavioural outcomes of children at age 9 and 11. Results found three factors: fathers' emotional response to the child, fathers' engagement in domestic and child care, and fathers security as a parent and partner. Fathers' emotional response and security were significantly associated with child outcomes. Unexpectedly, the effects of fathers' engagement on child outcomes were not significant. This is a timely and important research topic to the journal. A number of strengths in this study have been found. However, I would also raise several issues pertaining to ways in which it could be improved.	Thank you for this positive comment. We have responded to your suggestions below.
Introduction	Paternal involvement should be clearly defined in this study. The authors cited the definition of paternal involvement as fathers' accessibility, engagement, and responsibility in page 4. Those are fathers' activities for, attitudes towards, and interaction with the child, not the mother. However, many out of the 45 items that the authors tested are not exactly seen as paternal involvement. In particular, paternal engagement is how fathers engage in child care (e.g., read books, sing songs, play with the child, etc.) not how fathers share their domestic chores (e.g., shopping,	We agree with the reviewer and have clarified in the introduction that paternal involvement is multifaceted and that the items utilised reflect contact, direct engagement, home and childcare responsibilities and attitudes to their own role as father and parent.

Section	Reviewer's comment	Response
	cooking, etc.). What theories explain those help related to child behaviours? Please justify this.	
Methods: Outcome, exposure and potential confounder variables	The authors should clarify how they have developed this scale of paternal involvement. How were these 45 items included? Based on what? Are these items drawn from some existing scales? Overall, the authors should conceptualize paternal involvement and sort out the items that are conceptually relevant before conducting factor analyses. Please correct me if I am wrong.	We have clarified that the items were not drawn from an existing scale. The selection was based on associations documented in developmental literature as referenced. The items used were those asked of fathers' on aspects of early parenting as described in the Methods section.
Methods: Outcome, exposure and potential confounder variables	I think some items can be conceptually categorized to mother-father relationship or inter-parental support. The authors may want to separate them from the scale.	As indicated previously a scale was not utilised. Rather, as emphasised in the analysis section, factor analytic techniques were used to identify potentially key factors in paternal involvement in early parenting.
Discussion	The study was not able to rule out the most powerful factors to determine child behaviours such as the primary caregivers' parenting, parenting stress, and the quality of child care. Without considering these variables, it would be hard to suggest that paternal involvement in infancy is significantly associated with children's later behaviours at age 9 and 11.	We have highlighted study limitations in the Discussion, where we also acknowledge the possibility of residual/unmeasured confounding by other factors not explored in this study.