Author's response to reviews

Title: Psychosocial factors associated with becoming a young father in Finland: a nationwide longitudinal study

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Author's response to reviews: see over
Dear Editor,

We wish to thank the Editor for the possibility to revise the manuscript “Psychosocial factors associated with becoming a young father in Finland: a nationwide longitudinal study” and the referees for their valuable comments. We have done our best to answer the comments and to revise the manuscript accordingly. Changes to the revised manuscript are in bold font.

Yours sincerely,
Andre Sourander, the corresponding author

Response to the Editor

1. There is an unbalanced focus on psychiatric and otherwise deviance-related determinants of becoming a young father. This is potentially stigmatizing, particularly given that the authors themselves also acknowledge that "many boys who become fathers at a young age may be well prepared and have strong social support." (page 10). The message in the article becomes more balanced, when this issue is more explicitly addressed.

We agree with the Editor. Other than psychiatric factors have been emphasized more and an example of cultural factors has been given:

“The finding that sons of young fathers have an increased likelihood of becoming young fathers themselves has also been shown in previous studies [3, 29]. Very little is known about possible mechanisms. It has been suggested that the association between parent’s and child’s young age at the time of becoming a parent could be explained by socialization, which refers to attitudes and values which are favorable toward early childbearing, lack of social control in the family and family’s financial and/or marital instability, but most studies have focused on mothers and daughters [30]. In this study, the association became weaker when other family-related factors and childhood psychiatric symptoms were included in the analysis. This suggests that the association between being born to a young father and becoming a young father may be partly explained by adverse childhood environment or psychiatric problems. After all, it may be that in certain communities becoming a father at young age does not break prevailing norms and the intergenerational transmission is explained by cultural factors. An example in Finland is the Laestadian minority, a group of people who belong to a revivalist movement. They are generally opposed to contraception, have high value for family life, high fertility rates and young age at first birth [31].

Low maternal educational level was also associated with becoming a young father. It is known that associations between low socioeconomic status of a family affect children’s health and social outcomes through various family- and community level factors such as stressful life situations, poor access to services, health-compromising life style and adverse neighborhood characteristics [32]. It may be that these factors also increase the likelihood of behavior which leads to becoming a young father. Another possibility is that boys whose mother has a low education have later a low socioeconomic status themselves and are more willing to have a child than for example their peers with higher educational expectations.”

2. More balance and less potential for stigmatization is also needed, because the young age of the boys' parents and their mothers' low educational level are also independent determinants of becoming a young father. This sheds an alternative light on the pathways towards becoming a young father. This would be a pathway in which socioeconomic conditions reproduce across generations also in their effects on becoming a young father. The Discussion needs a more balanced report on all determinants, including the "sociological" ones and possibly also reflect upon how criminality and early life psychiatric conditions are (or are not) possibly secondary to the (inter-generational) socioeconomic conditions in which these problems tend to be partially rooted.
We thank the Editor for the suggestions. We hope that we discussed these points in the two new paragraphs mentioned above. In addition, other than psychiatric factors have also been addressed in the section on prevention:

“In a review on prevention programs of early pregnancy it was shown that girls from disadvantaged families who have participated childhood or youth interventions focusing for example on social and educational support, social skills training or community activities, are less likely to become pregnant in adolescence [39]. However, no statistically significant association has been shown between the participation of boys and their partners’ pregnancies [39].”

Minor comments

Page 7: why becoming a young father was defined differently in the boys (<22 years) and their parents (<23 years)?

The reason is technical. It was not possible to use the same cut-off, because we did not know parents’ exact date of birth. We chose the birth year 1959 as cut-off, because we wanted to include all 21-year-old fathers.

Page 7: provide example of minor offenses that are not included (but registered) and provide a couple of examples of included offenses.

Minor offenses referred to traffic offenses only. Examples are now provided:

“Minor traffic offenses such as mild speeding or not using seat belt are registered, but were not included in this study. All other offenses such as major traffic offenses, property offenses and personal offenses were included.”

Page 8: please clarify a bit further how the outcome measurement is related to underestimates or overestimates of the percent young fathers. Are young fathers who are co-habitating (but not married) included or not?

More information about the process has been provided in the Methods section:

“In other cases such as in cohabitating relationships the child welfare officer of the municipality establishes the paternity. The officer contacts the unmarried mother and collects information needed for the establishment. Free paternity testing can be proposed by the child welfare officer or required by the parents. The alleged father usually acknowledges his paternity. If he does not do it voluntarily, the officer can take the case to the district court for legal proceedings.”

An estimate of the number of registered fathers is included in the limitations:

“It is possible that the number of young fathers in the sample is underestimated, because not all of them may be registered in the Population Information System. However, this number is likely to be small. In a nationwide Finnish study on autism (FIPS-A, which includes around 5,000 autistic children and 20,000 controls) [40], 98.3% of the children born in 1987–2005 had a registered father.”

Page 10: second sentence: re-formulate as the “overpresentation” is certainly in relative terms only.

This has been changed to:

“Boys who had had psychosocial problems in childhood were more likely to become fathers than their peers.”

Page 10, second paragraph, second sentence: “confound” is not the correct term here in strict methodological terms; criminality could be on the pathway as a mechanism between conduct
problems at younger age and becoming a young father. Perhaps use “mediate” or “intervene”.

“Confound” has been replaced by “mediate”.

Page 12: first sentence of Conclusions is unclear.

The sentence has been clarified:

“This study showed that childhood conduct problems and family-related factors as well as frequent adolescent criminal behavior have an independent association with becoming a young father.”

Table 1: provide more detail on how parent and teacher report of psychopathology was measured (in Measures Section). How was information combined? What cut-off scores?

A clarification has been provided:

“In this study, summed psychopathology scores from teacher and parent subscales were used. All variables were used as continuous variables.”

No cut-off scores were used. The variables were used as continuous.

Response to Referee 1

The main critique I have of the manuscript is that it does not utilize the longitudinal data in the richest way. The logistic regression analysis done helps shed light on independent associations between the childhood and adolescent factors and young fatherhood, but it seems that the data could be used to show trajectories given that different time points are represented in the data. The current analysis puts the child and adolescent time points together and doesn’t allow any inference about effects of time between these two points. The conclusion, for example, references the idea of “identification of different patterns of early parenting.” I wonder why this study did not consider using analytic techniques to study trajectories of the participants, given the longitudinal data, which might actually empirically suggest the “different patterns of early parenting.” Such an analysis would better utilize the data source and provide an even more significant contribution to the existing literature.

We thank the Referee for this suggestion. It would be interesting to conduct a trajectory analysis, but we think that it is not possible with this data. First, there were only two points of time when the exposure was measured and the later one partly overlapped with the time of becoming a father. Second, measurements used at different time points are not fully comparable. Third, we believe that the number of young fathers may have been rather small for this kind of analysis.

Major Compulsory Revisions

1. An additional table should be included to demonstrate the distribution of predictor variables at baseline in the sample.

A table has been added as the Referee suggested. It includes the categorical variables both at baseline and in adolescence. A note about this has been added to the Results:

“The distribution of categorical variables is shown in Table 1.”

However, we are not sure if this adds much new information, because almost the same information is included in the second column of Table 2.
2. The methods section indicates that information about becoming a father was available for 92% of the baseline participants. An analysis should be done to determine how or if those participants who were not included in the follow up may have differed on baseline characteristics from those who were included in the follow-up. This information should be presented in the paper.

The personal identification numbers, which are given to every child born in Finland, were originally handwritten and later they were coded electronically. Some of them could not be identified or they were lost. We can assume that this 8% loss happened randomly.

3. The methods section also indicates that the sample was initially drawn from the total population of Finnish children and that the sample was nationally representative. The analysis, however, does not indicate that any weighting of analyses were done to account for sampling strategy. This lack of weighting may be appropriate since the manuscript does not seek to provide national estimates, however some additional explanation of the sampling strategy used for the initial study and reasons for not using sample weights should be provided.

This is a national sample, which has shown to be representative of the general population. We have now included more information about the sampling strategy.

“A representative sample of all communities was chosen from each university hospital district in Finland. They were selected according to their degree of urbanization: urban, sub-urban and rural. In small communities all children born in 1981 were selected. In larger cities, a representative subsample was drawn from all the school districts.”

“Sociodemographic characteristics of the participants were shown to correspond very closely to figures in national statistics.”

We do not think that we have information needed for weighting of analysis and we do not consider it as appropriate for this kind of sample.

4. The results section should include the univariable association found between the adolescent criminality variable and the outcome.

This information has been added:

“Table 2 also shows the single predictor analysis for the adolescent antisocial behavior, which was significantly (p<0.001) associated with becoming a young father. The association was strongest for the category more than five offenses. It was not significant for the category three to five offenses.”

Minor Essential Revisions

The manuscript outlines previous research and states an explicit research question. The choice of study design and analytic approach could be better explained by the inclusion of a conceptual model.

The baseline study was the first nationwide child psychiatric study in Finland. The design was cross-sectional. The aims were to study the prevalence of common psychiatric symptoms and to introduce empirical research into Finnish child psychiatry. The idea to conduct a longitudinal study on becoming a young father came much later. The selection of variables which were used for this particular follow-up study was based on previous literature. In that sense the nature of the study was rather exploratory.

Response to Referee 2
In the discussion, the authors raise the issue of prevention, and emphasize the postponing of being a father. This article is a first step to elucidate risk factors in this area of research. However, the article has shortcomings that are not discussed when trying to perform this task:

1. The time-span. Although the independent variable comes before the outcome in time, the time-span is very long. The role of possible intervening factors is not sufficiently discussed. An example is educational level of parents. This is assessed at the age of 8. However, adults go to school after having got children, so this is not precise information on putative a risk factor at the time of outcome.

We agree that the time from childhood to late adolescence is very long, but it can also be considered a strength. Early determinants are of interest especially in the field of prevention. It is very true that adults can go to school after having got children. However, the parental level of education was reported when the children were eight years old. If parents have not completed upper secondary school by that time, it is not very likely that they will do that later on. We have now added two paragraphs on possible intervening variables related to the association between family factors and becoming a young father:

“"The finding that sons of young fathers have an increased likelihood of becoming young fathers themselves has also been shown in previous studies [3, 29]. Very little is known about possible mechanisms. It has been suggested that the association between parent’s and child’s young age at the time of becoming a parent could be explained by socialization, which refers to attitudes and values which are favorable toward early childbearing, lack of social control in the family and family’s financial and/or marital instability, but most studies have focused on mothers and daughters [30]. In this study, the association became weaker when other family-related factors and childhood psychiatric symptoms were included in the analysis. This suggests that the association between being born to a young father and becoming a young father may be partly explained by adverse childhood environment or psychiatric problems. After all, it may be that in certain communities becoming a father at young age does not break prevailing norms and the intergenerational transmission is explained by cultural factors. An example in Finland is the Laestadian minority, a group of people who belong to a revivalist movement. They are generally opposed to contraception, have high value for family life, high fertility rates and young age at first birth [31].

Low maternal educational level was also associated with becoming a young father. It is known that associations between low socioeconomic status of a family affect children’s health and social outcomes through various family- and community level factors such as stressful life situations, poor access to services, health-compromising life style and adverse neighborhood characteristics [32]. It may be that these factors also increase the likelihood of behavior which leads to becoming a young father. Another possibility is that boys whose mother has a low education have later a low socioeconomic status themselves and are more willing to have a child than for example their peers with higher educational expectations.”

An exception is criminal offenses in adolescence. This variable is measured validly, and close in time to the time of becoming a father; however, becoming a father actually might come first in time, and criminal offense later. Becoming a father might be a particular stressful event, being a starting point for negative views on themselves and of negative behavior.

We acknowledge that this can complicate the interpretation of the results for those who became fathers by the age of 20. We agree that conclusions about causality cannot be drawn. A section about this has been added to the limitations:

“Information on criminal offenses should be interpreted with caution, because it is possible that some of the boys had become fathers before committing crimes and reverse causality cannot be ruled out. However, most boys (63%) became fathers after they had turned 20 years. In addition, it is likely that at least those who have committed more than five offenses have started committing them before becoming a father.”

2. Possible risk factors and outcome must be valid and reliably measured. In the article there is some confusion related to outcome, i.e. the exact number of young fathers. Since many young people today live together without being married; this number should be better clarified. Is the number underestimated? How much? How might this affect the results?
More information about the process has been provided in the Methods section:

“In other cases such as in cohabitating relationships the child welfare officer of the municipality establishes the paternity. The officer contacts the unmarried mother and collects information needed for the establishment. Free paternity testing can be proposed by the child welfare officer or required by the parents. The alleged father usually acknowledges his paternity. If he does not do it voluntarily, the officer can take the case to the district court for legal proceedings.”

An estimate of the number of registered fathers is included in the limitations:

“It is possible that the number of young fathers in the sample is underestimated, because not all of them may be registered in the Population Information System. However, this number is likely to be small. In a nationwide Finnish study on autism (FIPS-A, which includes around 5,000 autistic children and 20,000 controls)) [40], 98.3% of the children born in 1987–2005 had a registered father.”

3. Also, to state that a putative risk factor actually is a risk factor, one need experiments where a possible risk factor is manipulated and the outcome then evaluated. The authors jump over this necessary step only with a comment in the last sentence, and suggest sex health education programs to avoid risky sexual behavior tailored specifically to boys. Do the authors mean all boys? Or boys who had misconduct in childhood? How can the authors conclude with that? There are probably many explanations and one must take a range of these into account and actually test these by altering risk factors before implementing interventions in large groups.

We agree with the Referee that it cannot be concluded from this study what kind of interventions would be effective. The paragraph on preventive measures has therefore been modified. The sentence on including boys meant boys in general, because it has been shown that there is often more focus on girls’ needs. This has been clarified:

“When planning sexual health education programs, which aim at reducing adolescents’ risky sexual behavior and unintended pregnancies, it is important, first of all, to acknowledge that boys in general may have different needs than girls [33, 38].”

“Early prevention would be preferable, but not much is known about effective methods. In a review on prevention programs of early pregnancy it was shown that girls from disadvantaged families who have participated childhood or youth interventions focusing for example on social and educational support, social skills training or community activities, are less likely to become pregnant in adolescence [39]. However, no statistically significant association has been shown between the participation of boys and their partners’ pregnancies [39]. It is not either known if the prevention or early intervention of conduct problems would decrease the number of young fathers.”

Probably are a lot of these unwanted pregnancies are result of a “slip”, and often with simultaneous substance use. Possible, some can be attributed to a typical personality style of adolescents with criminal behavior, disregarding “rules” always to use contraceptives. To reach this group of impulsive, and sometimes antisocial, young men, one must very carefully adapt a group approach. Political measures should also be taken like making contraceptives for free and easy to access, etc. Such interventions require in depth knowledge of this population, and might also benefit from knowledge about groups having experienced other negative consequences of impulsive sex behavior, as HIV infected males.

Probable are these boys very difficult to reach. Maybe a wiser approach is to convince the girls to demand the boys to use contraceptives, and to take care of their own contraception.

We agree with the Referee. We think it is not possible to include all of it in the Discussion, but we have added a sentence based on the Referee’s suggestions:

“It should also be studied whether there are any barriers to use of contraception or sexual health services for boys with antisocial tendencies.”
The role of early child psychopathology

Self-reported depressive symptoms in childhood are seldom assessed and seldom in a longitudinal study with such a long span. Very few studies have addressed this in one way or another, and not with this specific outcome. The finding of the role of depressive symptoms possible last longing effect on early fatherhood is not sufficiently discussed. And could the lack of knowledge of the course of depressive symptoms in the present sample be compensated by using psychiatric comorbidity in this sample at 18 to 23 (at Follow-up), and by making comparisons over the groups?

The same problem pertains to the role of reported conduct problems at 8, although possible pathways are discussed on page 10.

A paragraph on depressive symptoms has been added:

“The association between self-report of depressive symptoms in childhood and becoming a father was significant before controlling for antisocial behavior in adolescence and close to significant after antisocial behavior was included. This is in contrast with previous studies, which, however, have assessed depressive symptoms in adolescence [8-10, 14, 18]. Previous studies, which have used the same sample have shown an association between boys’ self-report of depressive symptoms at age eight and low sense of coherence as well as smoking at age 18 [27, 28]. These factors may be associated with adolescent risk behavior, but more studies would be needed to confirm the hypothesis.”

Measuring psychiatric symptoms only once has been mentioned in the limitations.

MODERATION AND MEDIATION FACTORS

To focus further on certain subgroups, moderation analyses are necessary. Are there any possible additional moderation analyses that could be performed in the present sample?

We conducted two-way interactions between each psychopathology variable and each family variable. The power was insufficient to study interactions between school performance and family variables. The results have been added:

“When two-way interactions between childhood psychopathology variables and family variables were studied, it was found that there are statistically significant interactions between parent and teacher report of emotional problems and father’s educational level (p=0.032), parent and teacher report of emotional problems and mother’s age (p=0.016) and parent and teacher report of conduct problems and mother’s educational level (p=0.045). This indicates that the association between emotional problems and becoming a young father was stronger among boys with a low-educated father or young mother and the association between conduct problems and becoming a young father was stronger among boys with a low-educated mother.”

Mediating factors helps us to design wise and effective interventions, this is also mentioned by the authors. In the present study the analyses showed that the effect of depressive symptoms self-reported at the age of 8 disappeared when levels of criminal offences was introduced. The long-term effect of depressive symptoms thus possibly is mediated through adolescence criminal behavior. Here lacks a discussion.

This is an interesting idea. However, the change in the association between depressive symptoms and becoming a young father was extremely small. OR before adjusting for criminal offenses was 1.2 (95 % CI 1.004-1.4) and after adjustment 1.2 (0.99-1.4). Thus it seems that criminal behavior is not an important mediator.