Title: Social Support Among HIV-Positive and HIV-Negative Adolescents in Umlazi, South Africa: Changes in Family and Partner Relationships During Pregnancy and the Postpartum Period

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Author's response to reviews: see over
We thank the three reviewers for their careful review of our manuscript. We have responded to each point from the three reviewers. We have indicated in our responses below where in the text we have made edits to address the comments/suggestions from the reviewers.

**REVIEWER 1:**

1. **Reviewer 1 asked for more information as to why we included HIV positive and HIV negative women in both the pre and postnatal period.**
   **Response:** We purposively selected participants to represent both HIV-positive and HIV-negative women as we wanted to understand the extent to which support experiences varied by HIV status. We purposively selected women to capture both pre- and postnatal experiences to capture the long-term experience of women in ante- and postnatal. We have added additional explanation on our sampling in the Methods on page 7.

2. **Reviewer 1 suggested renaming the Results section as Findings.**
   **Response:** We adhered to the BMC author guidelines available online when formatting on this, which indicated that this section should be titles Results. We defer to the editors for the final decision on this heading.

3. **Reviewer 1 suggested that we include different sub-heading titles in the Findings section that more closely align with the themes presented and suggested adding participant demographics descriptors after each quote.**
   **Response:** The findings are organized descriptively rather than thematically; each sub-section corresponds to a time period or experience rather than a theme cutting across time and discrete experiences. We have included the participant demographic information to each quote, specifically their HIV status and their pre/post-partum status.

**REVIEWER 2:**

1. **Reviewer 2 suggested that in the Abstract we identify which analytic method we used.**
   **Response:** We conducted a descriptive qualitative analysis using an iterative process of coding and data reduction that is summarized in the methods section. We refer to the article cited below for a description of this method, and have added this explanation and reference to the Methods on page 9.


2. **Reviewer 2 felt it would be useful to identify each quote with either a participant ID number or a pseudonym.**
   **Response:** We have included the participant demographics information, specifically their HIV status and their pre/post-partum status.
3. Reviewer 2 suggested that we address the case in which the partner denied paternity of the baby and recommended an article by Nduna et al. which describes denied paternity in the South African context.  
Response: We have added discussion of the case of denied paternity in the Discussion (page 18) and we have incorporated the references as suggested by the reviewer. Thank you for suggesting this article to support points made in our findings.

4. Reviewer 2 indicated that on Line 74 ‘of’ should be ‘on’  
Response: Thank you for pointing out this typo. We have corrected this in the text.

5. Reviewer 2 we needed to remove the word ‘each’ in the first sentence of Line 121.  
Paragraph ‘Data Translation and Analysis’  
Response: Thank you for pointing out this typo. We have corrected this in the text.

REVIEWER 3:

ABSTRACT

1. Reviewer 3 suggested that we clarify in the abstract whether results apply for HIV-positive women, HIV-negative women, or both.  
Response: These results apply to both HIV-positive and HIV-negative women. We have clarified this in the Results section of the abstract.

2. Reviewer 3 asked for clarification about whether stress related to disclosure occurred for women prior to disclosure or in the post-disclosure period.  
Response: Here we refer to stress in anticipation and in the act of disclosing HIV-status. We have clarified this in the abstract and in more detail in the Results section that the stress women experienced was both prior to and during the act of disclosure.

BACKGROUND

3. Reviewer 3 asked us to define the term mistimed in the first paragraph of the Background.  
Response: Mistimed means that while the women may have desired a pregnancy during their lifetime, they did not desire the pregnancy at the time in their life that it occurred. We have added the following citation for the definition of mistimed in the text:


METHODS

4. Reviewer 3 asked what the average age of the children born to the mothers was.  
Response: The ages of children born to mothers ranged from 1-4 months, with an average of 3 months. This has been added to the participants section of Methods on page 8.
5. Reviewer 3 asked what proportion of women were in relationships.
Response: To be eligible for participation women had report being in a relationship. We have added this information to the Methods on page 8.

6. Reviewer 3 asked what proportion of women’s pregnancies were unplanned.
Response: Every woman described her pregnancy as unplanned during these interviews. This has been reported in Results on page 10.

7. Reviewer 3 requested further information about training of the interviewers.
Response: Interviewer training covered qualitative research basics, interview skills including, building rapport, posing open-ended questions, probing, and active listening, and comprehension of the study research questions and interview guide. We have added this information about training content to Methods on page 8.

8. Reviewer 3 asked how many interviewers there were.
Response: There were two interviewers. We have added this information to the data collection section of Methods on page 8.

9. Reviewer 3 requested information on the educational background and income level of the participants.
Response: The average participant had completed 10th grade (range 9th-12th grade), and half of the young women were currently attending school. This information has been added to the participant section of the Methods on page 8. We did not systematically collect information on participant income level.

10. Reviewer 3 asked us to describe the background of the interviewers.
Response: All interviews were fluent in Zulu and English. Both women were university graduates and between 20 and 30 years old. We have included this in the Methods on page 8.

11. Reviewer 3 asked us to provide the response rate.
Response: We did not systematically record refusals for these qualitative interviews as sampling was purposive.

12. Reviewer 3 asked us to describe the background of the staff.
Response: The two interviewers who conducted the interview were female university graduates who were fluent in both Zulu and English and trained in qualitative research methods. We have included this information to the data collection section of Methods on page 8.

13. Reviewer 3 requested that we explain how the interview guide was developed.
Response: The interview guide was developed by the study investigator. This research was being conducted to inform the development of an intervention to support adolescents in the context of clinical care. Investigators developed questions to capture the clinical and social experiences of these adolescents as it related to both their pregnancy and their HIV status. Questions were informed by prior research on the topic by this group, and review of literature. We have added details on the development of the interview guide to the Methods on page 8.
14. Reviewer 3 asked for more details on our qualitative data analysis process. **Response:** Though all authors were involved in the analysis process, only the first author was responsible for coding the interviews. The first author shared code summaries and quotes with the author team, and discussions among all authors informed the interpretation of the data. Differing interpretations of the data emerging from author discussions helped the first author to reflect on her own interpretation on the data. In cases where initial author interpretations conflicted, consensus interpretations are presented here. We have added details on the analysis process to the Methods on page 9.

15. Reviewer 3 suggested that we identify which analytic method we used. **Response:** We conducted a descriptive qualitative analysis using an iterative process of coding and data reduction that is summarized in the methods section. We refer to the article cited below for a description of this method, and have added this explanation and reference to the Methods on page 9.

16. Reviewer 3 asked us to comment on how we determined sample size. **Response:** We sampled until we reached data saturation in our key domains of interest. We have added this information to the Methods on page 8.

17. Reviewer 3 asked us to explain the rationale for performing only one stage of coding. **Response:** As the analysis here is largely descriptive and based on explicit interview topics and topical codes, the analysis process relied largely on data synthesis and reduction rather than interpretive coding. Latter stages of analysis relied on the use of matrices and re-reading of code reports to identify emerging ideas within each topic and to determine the core meaning of the data. We have added details on the analysis process to the Methods on page 9.

RESULTS

*HIV disclosure*

18. Reviewer 3 asked for more details about how women learned of their partner status. **Response:** There were no cases reported of partners testing after the women tested HIV-positive. Women found out about their partner’s status upon disclosure of their own status to their partners, some asking their partner outright if they suspected that it was their partner who had infected them. We have included this information on page 10 in the Results.

19. Reviewer 3 asked for additional details about how women responded to their partners’ disclosure of status. **Response:** Some of the women who learned of their partner’s status did describe their reaction. These women reported that they were sad and some felt they had been betrayed. Too few women described strong negative responses to make it a salient theme, thus we chose not to describe it in the Results.

20. Reviewer 3 asked for additional description of findings related to HIV status disclosure
Response: We chose not to focus further on the HIV disclosure section as we found the most important topic emerging from the interviews to be the discussion of support related to unintended pregnancy rather than HIV status.

Pregnancy disclosure
21. Reviewer 3 asked if all women both surprised and disappointed by their pregnancies. Response: All women described some amount of surprise and disappointment in discovering their unintended pregnancies. We have included this information in the Results on page 11.

22. Reviewer 3 asked us to explain why it is clear that an unplanned pregnancy causes surprise and disappointment. Response: We appreciate the reviewer’s point here that this link is not a forgone conclusion and thus we have revised the language on page 10 to remove this implied assumption.

23. Reviewer 3 suggested felt it would be useful to incorporate more direct quotes from participants. Response: Thank you for this suggestion. We have included additional direct quotes to support points in the Results on pages 11 and 12.

24. Reviewer 3 asked for further information on the number of women whose fears about disclosing their pregnancies to their parents were related to conversations that they had had with their parents. Response: The majority of women described being afraid of disclosing their pregnancy to their parents or guardians. Six women directly related this fear to conversations they had had with parents or guardians. We have changed the language in the Results on page 11 to reflect this frequency.

25. Reviewer 3 wanted more details on how often families responded with anger. Response: In more than half of families at least one parent or guardian responded with anger in response to the young woman’s unintended pregnancy. We have added this information to the Results on page 11.

26. Reviewer 3 asked how often women disclosed their pregnancies to sisters first. Response: Five women disclosed their pregnancies to their sisters first. We have changed the language in the Results on page 12 to reflect this frequency.

27. Reviewer 3 pointed out that quotes included often contain factual descriptions of events. Response: We chose the most illustrative quotes we could to represent the data, and though factual the quotes we feel the quotes represent women’s expression of their experience of the phenomenon.

28. Reviewer 3 observed that we needed more examples of to support points made in Pregnancy Disclosure. Response: Thank you for this feedback. We have added additional examples to this section (pages 11-12).
29. Reviewer 3 suggested avoiding causal statements in our presentation of findings.  
**Response:** With regard to the assertion that delay of pregnancy disclosure led to delayed initiation of antenatal, we have changed our language to less specifically suggest a causal connection (Results page 12).

*Relationships during Pregnancy and Postpartum Relationships*

30. Reviewer 3 indicated a need for more information on the extent to which quotes presented were representative of the entire sample.  
**Response:** Stylistically we have chosen to use quotes for illustrative purposes rather as evidence of the narrative. Through our analysis procedure we ensured that the narrative presented here is grounded in the data.

**DISCUSSION**

31. Reviewer 3 observed over-interpretation of the findings in the discussion.  
**Response:** We made every attempt to relate the findings and our interpretations of them to findings from other published studies. We have carefully reviewed the discussion to ensure that we have not over attribute meaning to any of our findings, and find that our interpretations are appropriately highlight what the reader might concretely take away from reading this article.

32. Reviewer 3 suggested including additional discussion of limitations with regard to data quality, particularly related to the criteria of credibility, transferability, dependability, and confirmability.  
**Response:** Thank you for this suggestion. Among these criteria we find that the limitations most important to discuss relate to dependability and transferability. The fact that only one person, the first author, coded the data could have limited triangulation of coding decisions. As codes used were topical rather than interpretive, there was less room for subjectivity than there would have been had the codes been more interpretive. Further, given that all women were recruited from one clinic, it is difficult to assess the extent to which our findings are transferable to other populations and settings. The women interviewed come from a large and important population of pregnant and parenting adolescents in urban and peri-urban greater Durban. Also, our findings related to family and partner support are echoed in other studies from South Africa, suggesting that our findings are transferable to other populations of adolescent mothers in South African Townships [1, 2]. We have added these limitations to the Discussion on pages 19-20.

33. These limitations undermine the study as a whole.  
**Response:** We find that despite these limitations, our findings have value to researchers and practitioners interested in the topic at hand. The goal of qualitative research is not to be representative of a hypothetical population or generalizable to other populations, but rather to faithfully present the experiences of participants. The limitations of this study are common to most qualitative research studies conducted in global contexts.
REVIEWER 4:

BACKGROUND

1) Reviewer 4 suggested that we provide specific estimates for terms in the Background such as “majority” and “greater proportion.”
   **Response:** Thank you for this suggestion. We have added specific estimates to the Background.

2) Reviewer 4 asked that we clarify Options B/B+ for readers who are unfamiliar with these guidelines.
   **Response:** The key points of Options B and B+ are summarized in the text on page 5. We have added additional information indicating these as WHO PMTCT guideline early on in the paragraph (Background page 5) for readers who are unfamiliar with these terms.

3) Reviewer 4 suggested that we reduce the focus on social support and ART adherence in the Background and instead focus on social support and HIV, as well as social support and HIV status disclosure.
   **Response:** Thank you for this suggestion. We have reduced the section of the Background discussing ART. We have left this as a significant portion of the Background as it relates to a major implication of the results. The purpose of discussing social support and ART adherence in the advent of Options B/B+ was to indicate why we should be concerned about social support in this population. The edits we have made on page 5 help to bring the focus back to HIV and social support in general rather than lingering on adherence specifically. We chose not to add to the discussion of the HIV status disclosure as this event was not related to the major findings of the study.

4) Reviewer 4 indication that we should change “of” to “on” on line 74.
   **Response:** Thank you for pointing out this typo. We have corrected this in the text.

METHODS

5) Reviewer 4 asked that we clarify the statement “After translation, the transcripts were reread for accuracy.”
   **Response:** This means that the interviewers read the English versions while listening to the Zulu recordings to ensure accuracy of translation. We have clarified this in the Methods on page 9.

RESULTS

6) Reviewer 4 asked that we specify what we mean by “someone” in the statement “All four pregnant HIV-positive women had disclosed their status to someone.”
   **Response:** Someone includes family members and partners. We have clarified this in the Results on page 10.

7) Reviewer 4 asked that we clarify whether the 6 HIV-positive women mentioned on page 10 were interviewed pre- or postpartum.
Response: The HIV-positive women referred to here include both those interview pre- and postpartum. We have clarified this in the text in the Results on page 10.

8) Reviewer 4 asked us to clarify if all women disclosed their pregnancies to their partners. 
Response: Yes, all women eventually disclosed their pregnancies to their partners. We have clarified this in the text on page 12.

9) Reviewer 4 asked us to state the age range of women’s partners. 
Response: Thank you for this suggestion. Partner ages ranged from 18 to 26. We have added this information to the Methods on page 8.

10) Reviewer 4 suggest that we add an additional example to the Results a sister helping a young woman obtain the material things she required for her baby and herself when her parents were unwilling (rather than unable) to do so. 
Response: After reviewing the quotes of women whose parents were unwilling to provide material support, we find that they conceptually overlap with the quote already provided from a woman whose parents were unable to provide material support. Because a second quote would provide no additional understanding of the data, we have chosen to leave the single quote.

11) Reviewer 4 suggested that we add a quote illustrating the experiences of women with close, supportive relationships with their partners after pregnancy. 
Response: Thank you for this suggestion. We have added a quote portraying this statement to the last paragraph of the Results on page 18.

DISCUSSION

12) Reviewer 4 indicated that we spoke of studies in the plural when we only referenced one study. 
Response: Thank you for pointing this out. We have changed this in the text on page 18.

13) Reviewer 4 suggested that we cite examples of programs aiming to encourage dialogues between young women and parents around pregnancy. 
Response: We were not able to find specific examples of interventions that encouraged dialogue between parents and adolescents about pregnancy, but we have referenced programs that have encouraged communication regarding sexual risk on page 19.

14) Reviewer 4 suggested that we include examples of programs engaging sisters as sources of support for young mothers. 
Response: We were not able to find specific examples of interventions that engage sisters as sources of support in the literature.

15) Reviewer 4 asked us to clarify why we suggest that engaging family members but do not discuss engaging partners. 
Response: A major finding of this study that we present is that fact that families provide a more reliable source of support for many women than partners do. Many social support programs targeting adult women focus on engaging partners, thus we feel that it is particularly important to
indicate families as perhaps the most important source of support for adolescent mothers, and suggest that programs might capitalize on this existing source of support by attempting to enhance the support received.

16) Reviewer 4 suggested that address the issue of women who discovering their partner’s HIV status upon disclosing their own status in the Discussion.
Response: As a major finding of this article was that concerns related to pregnancy disclosure and motherhood were much more pressing concerns in the minds of these women than HIV-related concerns, we chose not to highlight themes related to HIV disclosure in the discussion.

17) Reviewer 4 asked that we include an explanation of why most women did not continue to have close relationships with their partners postpartum.
Response: It is unclear from the data specifically why relationships seemed to be worse among the postpartum women. We do find in the literature, however, that declines in relationship satisfaction are very common postpartum, and this decline in satisfaction can be worse for couples with unplanned pregnancies. We have added this information to the Results on page 18.

CONCLUSION

18) Reviewer 4 suggested that we specify what type of programs we mention in the Conclusion.
Response: Thank you for this suggestion. We have amended this in the text on page 21.