Title: Mental health related determinants of parenting stress among urban mothers of young children - results from a birth-cohort study in Ghana and Cote d'Ivoire

Authors:

Nan Guo (nguo@jhsph.edu)
Carola Bindt (bindt@uke.de)
Marguerite Te Bonle (mdiawartb@yahoo.fr)
John Appiah-Poku (jappiahpoku1@yahoo.com)
Cecilia Tomori (ctomori@jhsph.edu)
Rebecca Hinz (hinz@bni-hamburg.de)
Dana Barthel (barthel@bni-hamburg.de)
Stefanie Schoppen (schoppenst@yahoo.de)
Torsten Feldt (ToFeldt@web.de)
Claus Barkmann (barkmann@uke.de)
Mathurin Koffi (m9koffi@yahoo.fr)
Wibke Loag (loag@bni-hamburg.de)
Samuel Blay Nguah (sbnguah@gmail.com)
Kirsten A Eberhardt (kirsten.eberhardt@gmail.com)
Harry Tagbor (Harry.Tagbor@lshtm.ac.uk)
Judith K Bass (jbass@jhsph.edu)
Eliezer N&##8217;Goran (eliezerngoran@yahoo.fr)
Stephan Ehrhardt (sehrhard@jhsph.edu)

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Author's response to reviews: see over
Reviewer's report
Title: Mental health related determinants of parenting stress among urban mothers of young children - results from a birth-cohort study in Ghana and Cote d'Ivoire
Version: 1
Date: 24 February 2014
Reviewer: Philipp Kuwert

Reviewer's report:
This is an important and extremely well written and balanced paper concerning a clinically and scientifically highly relevant topic. I have no major comments on it. Minor comments: 1. in the discussion, just studies with exactly the same age range of the child should be compared with the study results. Of course parental stress is a lot higher in very small children (and adolescents, as the reviewer knows ;-).

Reply: We agree. A comparison with studies with exact the same range of the children would be perfect; however there is lack of comparable studies. We also mention that PS was highest at 3 months and decline rapidly in the first year, as the reviewer has pointed out.

2: also discussion: as far as further studies are concerned: To my impression, qualitative studies which focus on the special circumstances of this population which lead to PS should be conducted.

Reply: We agree completely and added this in the discussion (Page 21).

Reviewer's report
Title: Mental health related determinants of parenting stress among urban mothers of young children - results from a birth-cohort study in Ghana and Cote d'Ivoire
Version: 1
Date: 28 April 2014
Reviewer: Heide Glaesmer

Reviewer's report:
There are major critical points in the methods and results ... and in its consequence in the discussion. These points need to be addressed in a possible revision.
1. Introduction, 1st para.: What is about mental health and attachment in the children with mothers reporting PS?

Reply: We agree this would be interesting. We built a lot of capacities in the study sites. Yet, in these very low-income countries, we are facing many limitations. We did neither have the capacities not the adapted instruments to measure attachment or mental health in these very young infants. That is a challenge even in some high income countries.

2. Introduction: 2nd page, middle: please compare the findings with prevalence rates from western countries (source 22-25).
3. Introduction, last para.: Did you assess perinatal depression and anxiety???

Reply: Yes, perinatal depression and anxiety were both assessed, and they were independent variables. Both depression and anxiety were assessed at baseline (3rd trimester pregnancy), 3 month, 12 month and 24 month postpartum. These were described in the Methods section (Page 10/11).

4. The internal consistencies of PHQ-9 and the GAD-7 are not very high. Please compare it with the findings in the original English version. This could be based on several problems with translation or cultural issues. Please have a closer look at the psychometric properties (unidimensionality? Which item does not fit well?). Include a more precise discussion of this problem …

Reply: This is a relevant point but a whole new topic. We address this in subsequent publications. We have submitted papers on the psychometric validation (CTT and IRT) of GAD-7 and PHQ-9 (both under review; we therefore cannot present these data here). We added a sentence to provide some context (without giving details away) in the limitations section on page 20/21. In short, almost all of the studies on psychometric properties of GAD-7 focused on high-income western countries. Both confirmatory factor analysis and explanatory factor analysis demonstrated unidimensionality. All seven items loaded well on one factor. However, only a small amount of variance was explained by this factor. There may be several reasons for the sub-optimal internal consistency. People from sub-Saharan countries might comprehend the meaning of the item content differently. In order to have a closer look on this possibility it might be promising to investigate item wordings applying qualitative methods. The results for the PHQ-9 were somewhat similar.

5. Did you assess the sick child visits via self-report of the mothers or from charts?

Reply: We assessed sick child visits prospectively and actively in the study clinics. Every child was seen by a study pediatrician. Please refer to our published methodologies and findings (references 32 and 38).

6. Statistical analysis: Which cut-off-score did you use for the PHQ-9?

Reply: A PHQ-9 score of $\geq 10$ was used (Page 10, first paragraph).

7. Results:
   a. Figure 1: second box right “.. exclusion criteria”

Reply: This has been changed.

b. Figure 1 and text: please include response rates (%) at the different
assessments and some more information about those participants lost to follow up (you can make some analysis with the baseline characteristics)

Reply: We revised figure 1 and included information on the number of participants at each time point and the number of participants who have completed PS assessment. Table 1 compares the baseline characteristics of the participants who were lost to follow up and the participants who were remained in the cohort.

c. Table 1: please discuss the inclusion and exclusion criteria … the table does not fit with figure 1 .. you have a baseline (t0) N of 1030 and later at t1 of 719, but only 659 were really assessed at t1 … please revise table 1 and figure 1 respectively .. and give comprehensive information (e.g. in a footnote) about exclusion criteria …Discuss the differences between included an excluded women.

Reply: At baseline (t0), 1030 women completed baseline depression and anxiety questionnaire. At t1, 719 of them gave birth in study sites. Among the 719 subjects, 60 did not come back for any follow up visits and thus were excluded from the analysis (the 60 subjects did not have PS data). Table 1 compared the baseline characteristics of the 60 subjects who were lost to follow up and the 659 remained. We added a footnote in Table 1, and revised Figure 1 to make this less confusing. We also added a description in the results section, paragraph 1 (page 13).

d. Table 2. Please include N's and give information about the used cut-off-scores in a footnote

Reply: The information was added to Table 2.

e. MAJOR: .. There are no information about the stability of the mental disorders assessed in the study .. We do not know if these are chronic conditions across the time points or if there are remissions and new cases. Please analyse the trajectories of depression and anxiety and include these information in table 2.

Reply: We added this information in Results, 1st paragraph (page 14). Please also see our reply to the next point.

f. Table 3 a and b: The mothers are devided into depressed vs. non-depressend etc. … is this based on the t0-assessment??? What is about the assessments of t1, t2 and t3??? It would be of interest to get more information about that! Please don’t use the term “total score” # entire sample would be nice ..; please highlight the significant findings.

Reply: The comparison in the GEE model was done for each time point. For example, the comparison of 3 month PS is between depressed vs. non-depressed mothers based on 3-month depression status. We also performed the same comparison based on
baseline depression and anxiety. Reasonably, the results were quite similar. We edited the tables for clarity.

g. Table 4: The mothers are divided into depressed vs. non-depressed etc. … is this based on the t0-assessment?

Reply: Please see reply to previous comment. The comparison in the GEE model was done for each time point.

h. Table 5. Please provide the N's for the both samples. Give comprehensive information about the different variables in the analysis (Cut-off scores for depression, anxiety; what means postnatal depression # t1?; what is about t2 and t3??, age of mother; what means time?? Which assessment of parenting stress is the one used in this analysis (T1 .. or t3??; Why? )

Reply: Postnatal depression does not refer to a particular visit, but collectively to all visits postpartum. In the GEE model, the depression status of the participants at all visits (3, 12 and 24 month) was identified by a variable “postnatal depression” and a time variable. The analysis is truly longitudinal (one participant has multiple observations at different time points). For example, for participant 1, the depression status was 0, 1, 1 at 3, 12, and 24 month. Then variable “postnatal depression” and “time” were both fit in the model, and the coefficient of “postnatal depression” represents an estimate of the population-averaged associations between women’s depression/anxiety and PS. The GEE model was chosen because it accounts for the correlation between repeated measures in the same participant.

i. Discussion: 1st para.: what means “healthy infant”?; 2nd para: please compare the findings with data from western countries ..

Reply: We meant infants without a major disability or severe disease. We emphasized this point because most of the previous research on PS has been conducted in at-risk populations, such as parents of disabled or very premature children. We compared the PS score in our sample to the PS scores in samples from Canada, the USA and Australia (Page 16).

j. Page 17: “According to our longitudinal data …” # this seems to be the major problem of the paper .. it’s a longitudinal study .. this is great!! But (as far as I understand) you made no analyses about trajectories .. for depression, anxiety or parenting stress!!!! This is very important to make these analyses, otherwise we don’t know if the problems are stable and the same mothers are burdened across the 24month or not!

Reply: We present the proportions of major depression, anxiety, clinical parenting stress and mean PSI score at 3, 12, and 24 month in tables 2-4. The data were longitudinally analyzed using a linear GEE model.
k. Please discuss the number of participants lost to follow up and the psychometric “problems”

Reply: These are discussed in the Limitations n (Page 20/21). The drop out of the 60 high risk mothers likely resulted in an underestimation of the PS. The relatively low reliability of PHQ-9 and GAD-7 impairs the precision of the measurements. We added this in the limitations section.