Author's response to reviews

Title: Quality of Prenatal Care Questionnaire: Instrument development and testing

Authors:

Maureen I Heaman (maureen.heaman@umanitoba.ca)
Wendy A Sword (sword@mcmaster.ca)
Noori Akhtar-Danesh (daneshn@mcmaster.ca)
Amanda Bradford (bradfor@mcmaster.ca)
Suzanne Tough (suzanne.tough@albertahealthservices.ca)
Patricia A Janssen (patti.janssen@ubc.ca)
David C Young (david.young@iwk.nshealth.ca)
Dawn A Kingston (dawn.kingston@ualberta.ca)
Eileen K Hutton (huttone@mcmaster.ca)
Michael E Helewa (helewam@cc.umanitoba.ca)

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Author's response to reviews: see over
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Dr. Mechthild M. Gross, Section Editor  
*BMC Pregnancy and Childbirth*

Dear Dr. Gross:

On behalf of our research team, I am submitting a second revision of our manuscript entitled, *Quality of Prenatal Care Questionnaire: Instrument development and testing*, for consideration for publication in *BMC Pregnancy and Childbirth* journal as a research article. We would like to thank the reviewers for their additional comments and suggestions related to the manuscript. Our responses to the reviewers’ comments are described below.

**Reviewer 1: Katrien Beeckman**

Thank you for rating this manuscript as “An article of importance in its field.” We appreciated your feedback on our revised manuscript: “The authors provided a thorough review of their manuscript incorporating all advices of the reviewers. I have no further questions.” Therefore no further revisions are requested by this reviewer.

**Reviewer 2: Susanne Grylka-Baeschlin**

Thank you for rating this manuscript as “an article of outstanding merit and interest in its field.” We appreciated your feedback on our revised manuscript: “The authors improved the manuscript and respected most of the propositions.” Only one request for a discretionary revision was made by this reviewer: “Figure 1: the authors state that they have corrected the last line in the figure. It may be a minor detail; however, the last line of the box for phase 4 is still placed too much on the right side. There is no adjustment visible.”

Our response: In the figure, the last bullet point of the box for phase 4 was intended to be indented, not aligned with the other bullet points. However, to reduce any confusion, the last two bullet points in the box for phase 4 have been combined, and all bullet points are now aligned.

**Reviewer 3: Elisabeth Svensson**

We appreciate your acknowledgement that “The authors’ have made their choice of using parametric statistics and the psychometric approach to their comprehensive study. This choice is clearly stated both in the response and in the manuscript, and I do understand that they keep to their choice even with the knowledge of its consequences. However there is no reflection of their approach in the discussion regarding limitations.”

Our response: We have added the following paragraph in the Strengths and Limitations section to make readers aware of the debate regarding analysis of Likert scales, and to provide rationale for our decision to choose parametric statistics:

*Finally, we acknowledge there are competing views regarding use of non-parametric versus parametric statistics to analyze Likert scales [67, 68]. Although individual Likert items are ordinal in character, we support the position that Likert scales (collections of Likert items)*
produce interval data, and that it is appropriate to summarize the ratings generated from Likert scales using means and standard deviations, and to use parametric statistics to analyze the scales [68]. Health care providers may find it helpful to examine the rank order of (dis)agreement for individual items on the QPCQ to identify specific aspects of prenatal care in need of quality improvement. However, for research using the QPCQ, we agree with Carifiò and Perla’s view that treating the data from Likert scales as interval in character permits “more powerful and nuanced analyses” [68].

Two new references were added to support our viewpoint (67 and 68) and the previous reference 67 was re-numbered as 69.

Reviewer statement: “In table 4 the mean scores of the dimensions are given. Let’s take the dimension Anticipatory Guidance with 11 statements (Table 3). These statements are important to consider for the pregnant women and hopefully also for her prenatal care. Her assessments on these items will end up with a mean score of for example 2.4 – close to “disagree”. Is this mean score really helpful for the pregnant women and the staff? Does she disagree to all items?”

Our response: The QPCQ was primarily developed as a research instrument, and mean scores and other parametric statistics will be useful for research with large samples (e.g., to study the association between quality of care and maternal/infant health outcomes). However, we agree that health care providers (staff) may find it useful to examine the responses to individual Likert items (i.e., to identify the proportion of women who responded to each of the 5 Likert categories), and therefore added the following statement to the paragraph listed above: Health care providers may find it helpful to examine the rank order of (dis)agreement for individual items on the QPCQ to identify specific aspects of prenatal care in need of quality improvement.

Reviewer statement: “Table 4 shows the range of mean scores (I think) and the mean of each responder’s mean score and SD. The authors stated that these mean scores ranged from 3.84 to 4.35 (3.85 in the table 4) “indicating that women rated the quality of their prenatal care towards higher end of the continuum”. It must be noted that the women did not scored from a continuum, the used a five-point bipolar scale of (dis)agreement, even though the authors used a psychometric approach that assumes continuous normally distributed data with known magnitude and equidistance.”

Our response: We removed the range of mean scores from Table 4 to avoid any confusion about what was being reported, and because the information did not add much of value. Table 4 now only presents the mean score and SD for each of the QPCQ subscales and the total scale. We corrected the discrepancy in reported means between the table and the text (the mean of 3.84 as reported in the text was correct); thank you for picking up this discrepancy. Although women rated each individual item using 5 Likert categories, we explained above our rationale for treating Likert scales (collections of Likert items) as interval data and therefore using psychometric analyses.

Reviewer statement: “(Lines 530-) Irrespective of the choice of statistical approach, the results shown in Tables 6, 7, 8 regarding stability in test-retest assessments (Phase Five) must be based on paired data. The table describes the mean (SD) scored at each time point. The statistical method used is not found in the methods section.”
Our response: Thank you for noting that the statistical method used was not found in the methods section. We have revised the description in the methods section to read as follows: *At first, we used a randomized block design (RBD) analysis of variance to evaluate the differences between the three time points. RBD was used to adjust for the correlations between time points for the same individuals. However, because of an imbalance in the number of participants at different time points and to use the most information available in the data, we followed RBD with conducting a paired t-test between each two time points (i.e., Time 1 and Time 2, Time 1 and Time 3, Time 2 and Time 3).* We also added the phrase *using paired t-test* to the headings for Tables 6, 7, and 8.

Reviewer statement: “Line 526: Only 43% of the women completed the retest version. That is an important indicator to consider.”
Our response: We agree this should be noted and added the following statement to the limitations section: *In addition, the response rate for completion of the retest version of the QPCQ was relatively low (43%), although the number of respondents (n=182) exceeded the minimum sample size of 79 estimated as needed in the sample size calculation.*

Thank you for your consideration of this manuscript. We look forward to hearing the results of the review.

Sincerely,

Maureen Heaman, RN, PhD
Professor, College of Nursing, Faculty of Health Sciences
Associate Professor, Departments of Community Health Sciences and Obstetrics & Gynecology,
College of Medicine, Faculty of Health Sciences
Scientist, Manitoba Institute of Child Health
Research Scientist, Manitoba Centre for Health Policy
University of Manitoba