Reviewer's report

Title: Domestic water carrying and its implications for health in Limpopo Province, South Africa; a mixed methods pilot study

Version: 1 Date: 30 April 2010

Reviewer: andrea rother

Reviewer's report:

Major Compulsory Revisions:

1. Although the question posed is not new (see Dufault 1990; Page 1996), there are no recent and up-to-date research findings on this important issue and this paper does fill an important gap in the literature. However, this paper needs reworking before resubmitting for review.

2. The literature review is weak and should include more articles that touch on water carrying/fetching and health implications (a few listed below) and indicate more clearly how this study will fill the gaps in the literature that exists. That is, what is new about this research?


   There are other health benefits of increased access within the range implying physical collection, notably reduced potential for damage to the spine and for the early onset arthritic diseases and protection against hip damage (Dufault, 1988; Page, 1996)


   Sultana, Farhana(2009) 'Fluid lives: subjectivities, gender and water in rural Bangladesh', Gender, Place & Culture, 16: 4, 427 — 444

   To link to this Article: DOI: 10.1080/09663690903003942 – briefly mentions health implications from water carrying

3. The authors are strongly encouraged to have this paper edited for English grammar and sentence construction. A few examples:

   o Pg 4. Line 12: add “are” between ‘interventions’ and ‘not prioritized...’
Suggest removing many of the “may” in the text to make the paper stronger (e.g., pg 4, second to last line in first paragraph: “…which may have [instead state…which has] important health consequences for those who perform the task…).

Pg 5 line 1 and line 5: add “s” after ‘interview’

Pg 5, line 6: spell out contraction “don’t”

Pg 8, line 1: ‘Quantitative data were gathered from [not through] participants’...

Pg 12; lines 5-8: incomplete sentence – “Particularly at non-tap sources.....”

6. The methods section needs a fair amount of work to strengthen it. A lot more detail needs to be provided (suggestions mentioned below) in order for others to be able to evaluate the quality of the study, as well as to be able to reproduce it. In this paper there appears to be a bit of confusion between methods and methodology. Methods refer to specific techniques, whereas methodology refers to underlying principles of inquiry. Thus the statement “a phenomenological methodology was used” is referring to methods (i.e., approaches used) and not methodology (i.e., the theories and principles of phenomenology). This needs to be corrected. This may help to strengthen the presentation of the qualitative data which is currently weak.

Methods:

15. This section needs to be rewritten and re-organized. I found several of the questions I had in the beginning of the section were actually addressed much later in the section.

16. Explain phenomenological methodology and which approaches within this methodology the study used. Reference the main phenomenological principles, approaches and theorists used in this research. Remember that one should not try to convince the readers of the validity of one’s observations based on the power of a fieldwork approach; rather provision of sufficient details about how the data was obtained is key.

17. When was the study conducted? Mention the months and years.

18. Pg 5 line 7 under methods: explain “natural group meetings”.

Sampling Strategy, etc:

19. Briefly describe each village and the water service situations and environment in each to highlight why they were chosen.

20. Why was Limpopo province chosen over other provinces? Give a bit of information about Limpopo province that is relevant for this research.

21. What was the distance between each village study and where were they located within the province? A map would be beneficial.

22. Who sought permission from each headman?

23. Explain why each village was visited over a period of two or three consecutive days. What was the purpose? Observations only? Were there discussions? With whom? Etc.
24. Did every headman approach grant permission or did some refuse? Why? List how many headman were approached?

25. Pg 6, line 1: “Specific water source points were chosen…” where? In each village or one type per village? How many different types were selected?

26. Pg 6, line 5: “…were approached…”. Here is where they questions approached by whom and in what language should be answered.

27. What was the literacy level of the study participants? How many could read the writing consent sheets provided to them?

28. How was consent granted? Signed? Verbal?

29. How many people were approached in each village?

30. How many children and how many adults were observed?

31. Pg 6, lines 13-14: “Care was taken to monitor from children’s behaviour….” Who did the monitoring? Give an example of what was seen to be an adverse behaviour as a result of this study.

32. How many children were observed collecting water without an adult?

33. How did the researchers ensure that the parent or guardian approached for consent that their child was videoed, weighed, etc. was really their child and not just the child making it up?

34. Pg 7, line 3: of the 43 recruited, how many were children, adults, male and female?

35. How were the 29 people from the total 39 selected for the interviews? Where were the interviews conducted, by whom and in what language? How many from each village? Was each village adequately represented?

36. Inclusion criteria: how was residency of participants determined?

37. Exclusion criteria: how did you control for existing musculoskeletal conditions that were not related to water carrying? How did you handle pain related to other conditions?

Data Collection

38. Give examples of questions asked in the interviews.

39. Pg 8, line 3: give examples of “simple measurements”.

40. Pg 8, line 5: briefly describe in a few sentences the methods used from Green and Thorogood as surely there are many discussed by them and the reader should not be expected to go to the book to figure out which methods were used.

41. Pg 8, line 5: what “procedures” were piloted? Were these piloted with the study participants? In which village?

42. Pg 8, line 6: give an example of how feasibility was improved.

43. What instrument was used to measure the water and the person?

44. What was the reason for calculating weights from the mean value of three consecutive weighing scores? Explain.
45. Give examples of how pain related questions were asked.

Data Analysis:

46. Pg 9 – explain a bit more as to why and how the Borg scale was used to measure participants’ perception of the effort required for carrying water.

47. Pg 9, second paragraph: how was this data categorized/analysed within each subtask? Were these four subtasks for analysing body postures? What else?

48. Pg 9: “The video material was analysed……so that specific criteria…” What were these criteria?

49. Pg 9, paragraph 3: Table 1 presents the demographic data for all 39 participants, however, what are the age, gender, etc of the 29 interviewed?

50. Did you record how long participants had been carrying water for the duration of their life? At what age they started and how old they currently were? Surely this would have an influence on pain, posture and health effects.

51. Pg 10, lines 2-3: “There were insufficient numbers….using other methods of carrying water”. Such as? Give examples of other methods.

63. Include a paragraph on study limitations. Include large variation in N in, for example, Table 3.

Minor Essential Revisions:

Abstract:

8. In the results section add “(N= ?)” after women and after children

9. In the results section, line 3, how did you differentiate between the back pain that was part of the 69% spinal pain and the 38% back pain?

10. There are efforts to reduce head carrying (e.g., rolling water containers). Perhaps the preliminary findings of this study should be used to support such efforts, and therefore mentioned in the conclusion.

Background:

11. Pg 4, lines 9-11: This paper does not address “all health impacts….such as effects on hips

12. Need to include a paragraph discussing studies on musculoskeletal damage and pain.

13. The third research question on page 4 is not clear. What is meant by “in other settings”?

14. Pg 5, last research question: “How does musculoskeletal pain impact on the ability to carry water?” This question was not answered by the research findings. Instead how pain affected the individual was discussed.

Results:

52. Why is the quote on page 10 not in bold, but subsequent quotes are bolded?

53. Pg 10, last line: why does N=30? Should in not be 29?
54. Generally statistics cited in the text are rounded up (e.g., 20% not 20.2%) and statistics cited in brackets include one numeral after the decimal point.

55. In the abstract it was stated that the aim of the study was to 1) understand how domestic water carrying is performed, 2) identify potential health risk factors, and 3) gain insight into possible health effects of the task. One is covered in the results, but what is not clear is which headings currently listed in the results section answer questions 2 and 3. I suggest that this be clarified by adding a heading (e.g., Health Risk Factors) and then put the relevant headings as sub-headings (e.g., weight of water carried) – this can be done either in the results section or the discussion section, or both.

56. Pg 11, lines 2-3 under Weight of water carried: “...women typically carried one container.” Per day? Per time?

57. Pg 12, last 3 lines: this should be in the methods section – “Polynomial regression analysis....”

58. The qualitative data needs to be presented better. I suggest the authors read up on how to present qualitative data. As this section is weak and the authors no doubt have a lot of data, I suggest this is rewritten and more data is included.

Discussion:

59. Several sections of the discussion should be in the background section and this would strengthen the literature review. For example:

   o Pg 15, lines 6-10: “It may be relevant that women in....”
   o Pg 16 lines 1-9 and lines 11-13.

60. Pg 14, last line: was the prevalence of lower back pain to do with occupational exposures or what?

61. Last 4 lines on pg 15 should be put in the conclusion: “Future research should....”

62. Pg 16, second paragraph, lines 1-5: rewrite (sentence too long) and explain why. “Compression forces....”

65. Why are none of the findings discussed in relation to the phenomenological methodology used in this study?

Discretionary Revisions:

3. As this is a pilot study, it would help if the authors included their conceptual model for this research. See Buor 2004 article and conceptual model. This would also help with the flow of the article which at times jumps around.

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Water needs and women’s health in the Kumasi metropolitan area, Ghana

Daniel Buor

4. The title would be strengthened by adding the word “musculoskeletal” between ‘for’ and ‘health’.
7. The phenomenological methodology used should be discussed in relation to the findings in the discussion section.

64. Sub-section titles in this section (as mentioned above) would help to reinforce the findings and to discuss these in relation to the aims of the study.

66. Give a few brief examples of interventions that could reduce risk factors of musculoskeletal disorders identified in this study.

67. The conclusion would be strengthened by linking the study findings to boarder national and international initiatives to address water issues including water carrying (e.g., MDG’s).

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.