Author’s response to reviews

Title: Are parents and adolescents in agreement on reporting of recurrent non-specific low back pain in adolescents? A cross-sectional descriptive study

Authors:

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Author’s response to reviews: see over
BMC Paediatrics Cover letter

1. Indicate the study’s design with a commonly used term in the title or the abstract
Authors’ response: The study design has been included in the title. The title of the study read as “Are parents and adolescents in agreement on reporting of recurrent non-specific low back pain in adolescents? A cross-sectional descriptive study

2. Provide in the abstract an informative and balanced summary of what was done and what was found
Authors’ response: The abstract was written to provide a balanced and informative summary of the background, methods, results and conclusion.

3. Explain the scientific background and rationale for the investigation being reported
Authors’ response: The scientific background and the rationale of the study was explained in the background section of the manuscript.

4. Specific objectives, including any prespecified hypotheses
Authors’ response: The specific objective of the study was clearly stated at the end of the background section as “Therefore, the main objective of this study was to examine the level of agreement between adolescents’ and parental reports on recurrent non-specific low back pain”.

5. Present key elements of study design early in the paper
Authors’ response: The study design was provided early on in the methods section as a cross-sectional descriptive study design.

6. Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Authors’ response: The setting and location of the study was described as Harare, Zimbabwe government-administered high schools in the methods section of the manuscript. Relevant dates for the fieldwork from recruitment of participants to administration of the all the questionnaires was also mentioned in the manuscript as “Data collection was conducted between June 2012 and December 2012 in the classrooms during school-hours in the presence of the school teacher and the researcher (MC)”.

7. Give the eligibility criteria, and the sources and methods of selection of participants
Authors’ response: The eligibility criteria was mentioned in the manuscript so as the sources and methods of selection of participants in the methods in a paragraph that reads as “Schools and participants were recruited using a two-stage cluster sampling method. Secondary schools in Harare are classified by location into high-density suburbs schools (n=17) and low-density suburbs schools (n=38). Considering proportion between the clusters, one school was randomly selected from low density suburbs and two schools from the high density suburbs. In the second stage of sampling, one class was randomly selected at each level from Form One to Six from each participating school. All the students in the selected classes were
then eligible to participate. A total of 620 school-children were eligible. However, school-
children between 10 and 19 years and willing to participate in the study after being given
parental approvals and were present on the day of the survey were included in the study.
Students with parental reports of spinal pathologies or orthopaedic conditions, history of
trauma to the back, central or peripheral nervous system problem and any overt or covert
physical deformity including leg length discrepancy or scoliosis were excluded in the study”.

8. Clearly define all outcomes, exposures, predictors, potential confounders, and
effect modifiers. Give diagnostic criteria, if applicable

Authors’ response: All outcomes of importance in the manuscript were defined. The most
important outcome was recurrent non-specific low back pain. A statement to highlight the
definition of recurrent non-specific low back pain was added in the manuscript and reads as
“Participants with recurrent NSLBP had to report pain which had occurred at least two times
over the past year with each episode of lasting at least 24 hours, with pain intensity of greater
than two on the visual analogue scale (VAS) with at least a 30-day pain free period between
the episodes”. The definition of an adolescent was also provided as adopted from the World
Health Organisation regarding anyone between the ages of 10 and 19 years. A statement that
reads has been added to that effect “The World Health Organisation (WHO) definition of an
adolescent was adopted [18]”.

9. For each variable of interest, give sources of data and details of methods of
assessment (measurement). Describe comparability of assessment methods if
there is more than one group

Authors’ response: The variable of interest was recurrent non-specific low back pain. The
sources of data for that variable were the adolescent medical health questionnaire (see
additional file 1) and the adolescent low back pain questionnaire (see additional file 2).

10. Describe any efforts to address potential sources of bias

Authors’ response: Selection bias of participants was avoided by random selection of the
schools which participated in the study. A statement to that effect has been added “Schools
and participants were recruited using a two-stage cluster sampling method. Secondary
schools in Harare are classified by location into high-density suburbs schools (n=17) and
low-density suburbs schools (n=38). Considering proportion between the clusters, one school
was randomly selected from low density suburbs and two schools from the high density
suburbs. In the second stage of sampling, one class was randomly selected at each level from
Form One to Six from each participating school”. In addition, the study had a rigorous
eligibility criteria which made suitable participants to be recruited in the study. Recall bias
was minimised by limiting the recall period to 12 months. Interviewer bias was minimised by
providing standard information about the nature of the study and any other information to all
the participants.

11. Explain how the study size was arrived at

Authors’ response: Evidence for sample size calculation was provided in the manuscript and
reads as in the methods section “At the time of the study, there were 71 458 school-children
in the 55 government administered schools in Harare. As the primary outcome was
prevalence of recurrent NSLBP, minimum sample size of 495 was calculated using Epi Info
Stalcalc based on the following parameters: regional prevalence of 13.5% [19], a precision effect of 3%, a design effect of 1% and 95% confidence interval”.

12. (a) Describe all statistical methods, including those used to control for confounding
   (b) Describe any methods used to examine subgroups and interactions
   (c) Explain how missing data were addressed
   (d) If applicable, describe analytical methods taking account of sampling strategy
   (e) Describe any sensitivity analyses

Authors’ response: The following paragraph on statistical analysed has been added “Statistica version 11 was used to analyse data gathered. Parametric tests were used to describe the data largely because of the large sample size even though some of the variables were not normally distributed [22]. However, Kolmogorov-Smirnov and Lilliefors tests were used to confirm normality of continuous data. Means and standard deviations (SD) were used to describe continuous data. Frequencies were used for categorical data. Recurrent NSLBP was expressed as a percentage of the total population. Exact 95% confidence intervals (CI) were provided. Pearson’s chi-square test ($\chi^2$) was used to evaluate the effect of gender on recurrent NSLBP prevalence at $p \leq 0.05$. For analysis of agreement between the school-child and parent reports on recurrent NSLBP status, the kappa statistic (k) was used. The kappa statistic was interpreted based on a criteria provided by Landis and Koch [23]. A kappa statistic of 1 represents perfect agreement whereas 0 represents an agreement expected by chance [10]. Questionnaires with at least three variables missing were regarded as missing data and were discarded from the analysis”.

13. (a) Report numbers of individuals at each stage of the study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
   (b) Give reasons for non-participation at each stage
   (c) Consider use of a flow diagram

Authors’ response: A flow chart was included in the manuscript as Figure 1 showing number of parents’ initially eligible, parents who responded to the call to participate in the study including reasons for non-participation like failure to respond, returning parental documents with the adolescent medical health questionnaire not signed or returning the informed consent form not signed. The flow also shows the school-children eligible initially and the number who completely filled the questionnaires. The number of school-children excluded based on the study exclusion criteria was provided together with the number of school-children who refused to participate. Also provided on the flow chart is the number of questionnaires with missing data and were discarded in the analysis.

14. (a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders
   (b) Indicate number of participants with missing data for each variable of interest

Authors’ response: The demographic characteristics of the study participants was pointed to in the manuscript in a paragraph reading like “The demographic characteristics of the study
participants are presented in Table 1. The mean age of the sample was 16 years [SD=1.72, range 13-19 years]. Female students constituted 53.8% (n=286) of the total sample. However, male students were significantly older compared to the female students \(t (530) =2.34, p=0.02\).”

15. **Report numbers of outcome events or summary measures.**
   (b) **Report category boundaries when continuous variables were categorized**
   Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses

**Authors’ response:** The numbers of outcome measures were provided in a paragraph that reads “Parental responses to the question “In the past 12 months, has your child ever complained to you or any other family member at least twice of pain in the lower part of the back which lasted at least a day, not related to their menstrual cycles in females?” were analysed for agreement against adolescents reports of recurrent NSLBP. Parental reports agreed in 16.3% and 98.7% for the adolescents with and without recurrent NSLBP respectively (Table 2). The value of kappa was 0.20 [Standard Error, SE= 0.04; 95% CI, 0.125-0.272] with a prevalence index and bias index of -0.65 and 0.23 respectively. These results suggest that the strength of the agreement was poor. In spite of this slight agreement, parents were more likely to report that their child had recurrent NSLBP if the adolescent had reported sciatica \(\chi^2 (1) =4.33, p =0.04\) but not medical treatment for the recurrent symptoms of low back pain \(\chi^2 (1) = 1.29, p= 0.26\)”. All the other analyses done have been reported.

16. **Summarise key results with reference to study objectives**

**Authors’ response:** The key result with reference to the study objective was stated in the discussion section of the manuscript.

17. **Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias**

18. **Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence**

19. **Discuss the generalisability (external validity) of the study results**

**Authors’ response:** A paragraph on limitations has been added and reads as “This study had limitations which included reliance on self-reported data from parents and adolescents. It is possible for the participants to forget the exact nature and characteristics of the recurrent NSLBP considering the information was collected retrospectively. The accuracy of the responses from both participants could have been affected by recall bias thereby over or under-estimating the level of agreement especially considering the recall period of 12 months used in the study. On the other hand, it is possible that the parents and school-children could have discussed the study extensively between the time the school-children brought the parental documents home to the time they completed their own low back pain questionnaire at school few days later. This could have affected the level of percentage of agreement. In addition, the study sample for adolescents was not representative of all the adolescents in schools in Harare, Zimbabwe. Only three secondary schools were randomly selected from a list of government administered schools”. 
20. **Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based**

**Authors’ response:** The study had no funding. This was mentioned in the acknowledgement section of the manuscript as “Professor Jelsma, head of postgraduate programme from the University of Cape Town, Faculty of Health Sciences, Department of Health and Rehabilitation, Division of Physiotherapy for statistical assistance. The Ministry of Primary and Secondary Education, Harare Provincial Education Office and schools heads from the participating schools for the institutional approval. Additionally, the authors acknowledge the school-children, parents and school teachers for volunteering to participate in the study. This study had no formal funding”.