Reviewer’s report

Title: Health-related quality of life and pain in children and adolescents - a school survey

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Reviewer: Luisa Barros

Reviewer’s report:

Thank you for the opportunity of reading the article "Health-related quality of life and pain in children and adolescents - a school survey". This is a cross sectional study with 8-18 years old children from Norwegian schools, aiming at describing HRQoL and pain and analyze the relationships between HRQoL, pain, sex, and age. The study brings relevant data about an issue not yet much studied - pain in community samples of children and adolescents, and has the strength of using a large and mostly representative sample.

However there are several problems in the presentation and discussion of the study that limit its relevance.

The aim of the study is not completely focused and so it is difficult to understand precisely how this study adds to the existent literature. The introduction is poor, mostly descriptive and not directly connected with the aims and variables studied. If focus mostly pain prevalence, (which is OK), determinants and consequences, with several references to variables not studied (socioeconomic status, BMY, smoking) on pain in children and adolescents. However, the connection with HRQoL is poorly explored. The sentence "Health-related quality of life (HRQoL) is a way to assess children's subjective perspectives on pain experience and the impact it has on their lives" is not correct. The authors used a general HRQoL, so participants are assessing their quality of life globally and not only related to pain. The diminished HRQoL of some youth may be due to many other factors. The only sentence explaining the anticipated relation between pain and HRQoL is "Therefore, the measurement of health-related quality of life may be important and relevant in relation to pain", which is clearly insufficient.

It is important to understand what is the relevance of studying HRQoL and what are the hypothesized processes connecting pain with HRQoL in community samples. An hypothesis would help to understand this rational.

Methods are overall correct, but some information is repeated in more than one section of the study (elimination of HRQoL questionnaire missing more than 1 item per subscale) or between text and tables (sociodemographics).

On the other hand, information is missing: The measure of pain, central to this study is not enough described. It seems the authors only used 3 or 4 of the 13 questions. Why? What were these questions? What is the rational for using the mean of frequency, intensity and duration? Has this been done before? What evidence of validity is there? If one of the objectives was to
describe pain, why not use the full questionnaire, so that the different types of pain could be characterized?

Data Analysis: There is a reference to BMI, but this measure is not described and is not referred anywhere else(objectives, results). There is also a mysterious reference to class (socioeconomic class? school class?). There is a reference for not so good psychometric values in the HRQoL is this section, but this is not any further discussed. The sentence" Internal consistency reliability for multi-item scales was estimated using Cronbach's alpha with 0.70" needs some clarification.

Results:
I don't understand the sentence: pain prevalence across the 10 domains of KIDSCREEN-52. What is pain prevalence across HRQoL domains? Are you talking about differences in pain prevalence? There is a reference to absence from school, but this measure is not described in the instrument section. In Table 3, *unique contribution refers to what? There is no * in Table 3

Discussion : Again, this section is very broad and lacks some deeper discussion of the specific results, namely the specific HRQOL domains that have poorer results, or are more affected by age, sex or pain. How can you interpret the fact that the interaction between age and sex increasing the explained variance (in what sense?).

The added variance in HRQoL from pain is small. This should be more specifically discussed because the results are significant but of small magnitude. How can the authors explain this? Is this consistent with other similar studies. The specific description of what is assessed by each HRQoL subscale does not belong in the discussion, rather it should appear in the methods. And it does not substitute a more theoretically driven discussion of these specific results.

The discussion about absenteeism is somehow puzzling because, although this theme was mentioned in the introduction, this was not announced in the objective of the study or in the methods section and only a very general result is presented (children have been absent from school for how many days? Was there any control of the reason for this absence?).

The limitations are well described but should appear in a different paragraph and made clear that they are describing limitations. Clinical implications should be more grounded on the specific results of this study and not so global.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
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No

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