Author’s response to reviews

Title: The school environment and student health: a systematic review and meta-ethnography of qualitative research

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Author’s response to reviews: see over
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Author's response to reviews: see over
Referee 1: Judi Kidger

This is a well written paper on a question that is increasingly being asked in policy and research – what is the impact of the school on student health? Key strengths are the paper’s use and development of relevant theory, and also the very clear description of the synthesis process. I’d like to see two main issues addressed 1) the justification for this paper in the light of other research needs to be made clearer and 2) justification/explanation for why only certain health topics were included, and consideration of how this may have affected the particular meta-themes that emerged.

[The reviewer goes on to explain this in more depth:]

1. On page 4, could the authors give some examples of what they mean by ‘crude measures of the school environment’, and by ‘indirect evidence’? At the moment this whole paragraph, which critiques previous studies and forms the justification for this paper, is not really clear without going back to the referenced papers themselves.

2. A sentence on what qualitative research specifically brings to the comprehensive picture (e.g. its strengths in exploring context and process) is also needed here, by way of justifying the importance of this paper – this is done well in start of the discussion but should be briefly mentioned here.

We are grateful for the referee’s positive feedback on our manuscript. The two main issues raised above have been addressed in the revisions as follows:

1. Our discussion of ‘crude’ measures (pg. 4) has been revised to clarify these points. The expanded section now reads:

“....However, these MLM studies of ‘school effects’ on student health only provide relatively weak evidence in support of a theory of human functioning and school organisation for several reasons. First, they rely on quite a crude measure of the school social environment based on a school-level summary score of the extent to which the students in the school achieved higher academic attainment and lower rates of truancy after accounting for their socio-demographic profile [16]. Second, the statistical correlations observed between higher value-added scores and lower rates of risk behaviours do not equate to direct evidence that students were more committed to the instructional and regulatory orders at these schools, nor what organisational factors influenced this. None of the MLM studies examined causal pathways.

Furthermore, these quantitative studies only offer very limited guidance on how the school context enables or constraints students’ sense of identity, friendships and health behaviours, or how students’ family backgrounds relate to these processes. For these reasons, qualitative evidence was included as part of the larger project...”

2. We agree that this could be highlighted earlier in the paper. We’ve therefore added the following sentence in the background section: “Qualitative research is useful for exploring students’ lived experiences of schooling and how this may influence their health.”

The discussion section then reflects on the contribution of qualitative research in more detail in the context of the findings:
“Our qualitative synthesis suggests complex pathways via which the school environment may shape health harms at a young age. Qualitative research forms a useful complement to quantitative studies on the health effects of the school environment. It illuminate how the school environment is understood by students from different backgrounds, and explores both students’ accounts of their actions and how these are enabled and constrained by the immediate school environment, and how wider structural forces such as education policies and students’ family backgrounds are implicated in this. Qualitative research can thus unpick how agency and structure are mutually constitutive and underlie social processes operating within schools which shape school on effects on health.”

3. Greater clarity is needed about the extraction process in the section on page 6. Were specific questions used for data extraction? E.g. was table 1 based on an extraction sheet? Or could an example be given of the data that were extracted?

- We agree that our extraction method could be phrased more clearly (and requires explanation) and that Table 1 needs to be sign posted to readers in the section (as it is based on our extraction). We have re-written this paragraph entirely:

“We adopted an inclusive approach to data extraction [17] whereby reviewers extracted all relevant data presented in a study according to a standard proforma. Relevant data were: a) the study context (e.g. country, participant characteristics, sample size, research methods); and b) findings of the paper, highlighting themes or concepts which the study authors report and including author interpretation. Four reviewers extracted data, using the guidelines, on a randomly selected sample of two study reports to ensure thoroughness and consistency. All other reports were split between two reviewers and were checked by another reviewer and any disagreements were resolved by discussion. The data extracted provided a broad overview of the included studies, which is summarized in Table 1. Reviewers however returned to reading full-text papers during the synthesis process in order to immerse themselves in the data. This is common in qualitative reviews where authors move between reading primary studies, data extraction, synthesis and interpretation in several cycles [17].”

Added reference:


4. Under step 2 page 7, why these particular health topics? Was this based on what the studies were mostly about? It is stated in the discussion that no conceptually rich studies have looked at physical activity or mental health – if this is the reason for the focus on these health topics this should be stated here Otherwise it is not clear that the review has been comprehensive in terms of how health is being conceptualised.

- Yes, the health topics listed here reflect the health topics which our included primary studies reported. This was not clear in our draft. We’ve made this more explicit by amending this paragraph:

“Step 2: In order to determine how the studies were related they were grouped according to the health topics which the included studies were mostly concerned with (aggressive behaviours, substance use, diet, sexual health, and rules for going to the toilet) and the
key concepts from individual studies within each health topic were synthesised, which resulted in lists of overarching themes for each of the five health topics (see ‘Figure 2’).

5. Under limitations, the authors should consider the way in which the particular health topics may also have led to certain themes emerging, while others remained silent. The focus seemed biased towards risky health behaviour, rather than a wider conceptualisation of health, including for example consideration of mental health, or of positive health behaviours such as physical activity. These different issues may have led to consideration of how schools may enhance as well as endanger health.

• We agree with the reviewers point and have amended the limitations section accordingly:

“The themes emerging in our review inevitably reflect the range of health topics covered in the primary qualitative studies. Most qualitative researchers exploring and theorising school level influences have focused mainly on how schools might shape risk behaviours, particularly aggressive behaviours and substance use and thus this review may be less useful for understanding how schools can support positive health and well-being, which should be the focus of future research.”

The claim that there were no conceptually rich studies that have focused on for example mental health is a bold one; there are examples in the literature of qualitative studies that have looked at the ways in which the school environment impacts on mental health and have produced themes that are similar to those included in the meta-analysis here. A fuller justification is needed for omitting such studies.

• We agree that there may be examples of qualitative research related to mental health in schools. These studies did not however meet the inclusion criteria for our review. We have amended the manuscript to explain these criteria more carefully:

Limitations:

“The exclusion criteria were designed to identify those qualitative studies that were the most relevant to our review question and conceptually rich enough to facilitate a meta-ethnography approach which requires the presence and clarity of concepts for translation. Studies were excluded that did not examine how features of the school-environment (specifically, school type, physical environment, school management, teaching, support and discipline, student attitudes to school or relations with teachers) influences student health. We thus did not include a major body of work from sociology of education [44, 45, 46] including some studies that focused primarily on mental health. However, issues of self-esteem, anxiety and depression emerge prominently among the studies we’ve included in the context of substance use or aggressive behaviours for example, and this is in turn reflected in our synthesis.”

We have also amended our section on implications for future research to consider this matter:

Implications for future research:

“There have been few conceptually rich qualitative studies focused on how the school environment as defined in this review might influence student diet and sexual health and none have passed our exclusion criteria that focus specifically on physical activity and
mental health. While there is a body of research related to these topics, particularly from the field of sociology of education, further qualitative work oriented towards public health is needed.”

6. More detailed discussion on what could be done in schools is needed; after the detailed and careful analysis this concluding paragraph feels a bit vague – for example what sorts of interventions would address the spatial patterning of risk?

- We have provided more detail and clarity in this paragraph:

  “…First, schools may promote student safety and health by ensuring teachers spend more time with students outside the classroom and by giving students more ‘voice’ regarding how schools are run. Second, interventions such as enhanced supervision and monitoring of school spaces that are ‘hot spots’ for student risk behaviour might be the focus for intervention. Third, policies could be developed to improve the social aspects of school food environments and to ensure students feel safe eating in school dining places where healthy eating is being promoted, for example by creating aesthetically appealing food environments where teachers eat with students, and where students have sufficient time and space to eat, as well as take a break with friends. The design of these programmes should be co-produced with students themselves so as to ensure they are appropriate and acceptable. However such interventions should be examined in randomised controlled trials before being scaled up.”

Supplement 1

7. The authors should include the actual search terms they used in the strategy

- We have provided search terms and full list of bibliographic databases searched in Supplement 1. An example search strategy (PubMed) is provided in our protocol, already published in BMC Public Health. We have signposted readers to this document.

Minor Essential Revisions

8. In the Abstract, it would be useful to indicate what the actual search question was here as this is not clear without reading the paper. Relatedly, I suggest removing the reference to sense of identity and friendships from the second sentence as these are themes that emerged as relevant to health in the findings, they were not part of the initial search question.

- Done.

9. The same applies to the sentence referring to identity and friendships on page 4 – it is not clear why identity and friendship are specifically being picked out – did the authors have an a priori theory that these would prove to be important components of the process by which the environment affects health? If so this needs to be stated in the introduction more clearly. If not, this sentence should be reworded.

- Reference to identity and friendship in this section has been removed.


- Done.
11. Page 20, a line space is needed between references 15 and 16.
   • Done.

12. Page 7 behaviour is spelt in two different ways.
   • Corrected.

13. Table 1: It would be good to have a column indicating the health topic with which each paper was concerned.
   • Done.

**Level of interest:** An article of importance in its field
**Quality of written English:** Acceptable
**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
Referee 2: Lucy McLellan

This is a well written review of how school environments influence young people’s health. The methods are described very well and it is clear that the systematic review has been conducted with sufficient rigour. The use of meta-ethnography is interesting from a methodological point of view and has also added important detail to this exploration of a relevant and important topic.

No major compulsory revisions.

Minor essential revisions are as follows:

We thank the reviewer for their positive feedback. There were minor revisions requested, which we hope are sufficiently addressed in our amendments to the manuscript.

Background, paragraph 4: What is a ‘value-added’ school? – define please.

- We have re-worded this defining the term ‘value-added’ more clearly:

  “Subsequent empirical research has aimed to test this theory. Three English studies [11, 12,13] and one American study [14] found consistent evidence that schools with higher academic attainment and attendance than would be expected judging from the social profile of their students (which is an indirect measure termed ‘value-added’) had lower rates of substance use.”

There is incorrect use of the noun ‘constraints’ in two places (should be the verb ‘constrains’):

- We have made these grammatical changes.

Research question: ‘through what processes might school social and physical environment influences on student health outcomes occur?’ lacks some clarity, as it is phrased in a way that is difficult to understand. Could it be rephrased using a more straightforward sentence structure such as ‘how do school environments (social and physical) influence student health outcomes?’

- We have amended the wording to: “Through what processes does the school environment (social and physical) influence student health outcomes?”

Discussion: good discussion which addresses relevant literature and summarises the important issues. This section could be improved by adding a little more detail about the way forward. How should interventions be designed, implemented and evaluated? Does this need to be a collaborative effort? Who should lead the way?

- We have provided more detail in this section:

  “…First, schools may promote student safety and health by ensuring teachers spend more time with students outside the classroom and by giving students more ‘voice’ regarding how schools are run. Second, interventions such as enhanced supervision and monitoring of school spaces that are ‘hot spots’ for student risk behaviour might be the focus for intervention. Third, policies could be developed to improve the social aspects of school food environments and to ensure students feel safe eating in school dining places where healthy eating is being promoted, for example by creating aesthetically appealing
food environments where teachers eat with students, and where students have sufficient time and space to eat, as well as take a break with friends. *The design of these programmes should be co-produced with students themselves so as to ensure they are appropriate and acceptable. However such interventions should be examined in randomised controlled trials before being scaled up.*

**Discretionary revisions:**

*Background, paragraph 1:* “This was undertaken as part of a project mapping and synthesising theories and evidence from outcome and process evaluations and multi-level model (MLM) studies in order to build a comprehensive picture on how the school environment influences health.” – Complex sentence, difficult to understand. Consider rephrasing for clarity.

- We have re-phrased slightly:

  “This qualitative review was undertaken as part of a larger systematic review which also included theories and evidence from outcome and process evaluations and multi-level model (MLM) studies in order to build a comprehensive picture on how the school environment influences health[3].”

**Level of interest:** An article of importance in its field  
**Quality of written English:** Acceptable  
**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.
Referee 3: Robert Young

This is a useful paper which collates several strands of qualitative research. While I am not a qualitative researcher I am aware of the issues in school research from a quantitative perspective. Accordingly I do not address any of the more specifically qualitative aspects of the research. I have a few specific points or queries, which are outlined below.

- Minor Essential or discretionary Revisions

We are grateful to the reviewer for their positive feedback. We have addressed the minor discretionary revisions in the manuscript.

1: Several potentially ‘physical’ aspects of the school are omitted. I am unclear if this is due to pupils not reporting this as a concern or if they were not considered important by the authors.
   a) Reference to religion or denomination is omitted. In both qualitative and quantitative studies Catholic or other religious denominational schools tend to report different approaches to pastoral vs. educational goals when compared to non-denominational schools.
   b) Although not ‘rural’ several of the schools were classified as suburban. I would have expected to find detectable differences between relatively ‘suburban’ and relatively ‘Urban’ schools. Have the authors considered this aspect.
   c) The previous point might also be related to school size and the protective or specialist networks that are possible within smaller vs. larger schools.

- 1: We consider the physical aspects of the school in a section of our synthesis: The social importance of space at school: health impacts. In this section we discuss physical spaces that are ‘hot spots’ for violence, as well as discuss the physical features of the school dining experience and how this impacts on eating behaviours. Other physical aspects of the school (e.g. playgrounds, classrooms) were not reported in the studies we included.

   a) The studies we included did not report on religion or denomination of pupils or schools. Our recommendations (page 17) however suggest that future studies should look at different types of schools/settings and we’ve added religious schools as an example.

   b) The majority of studies were conducted in a (disadvantaged) urban context (n = 13), although some studies report findings from schools from a range of different urban, suburban and/rural locations. We found remarkable consistency in the findings of studies undertaken in different settings. Some of these differences in settings however may have been masked or insufficiently covered in our review in the process of translating themes across studies. We’ve therefore highlighted this in our limitations section:

   “The value of this meta-ethnographic approach is supported by the remarkable consistency in the findings of studies of variable quality undertaken in a wide range of settings, which differed by school system, deprivation level and ethnic make-up. However, some of these differences may have been masked in our review in the process of translating studies.”

   c) This is addressed in the point above.

2: Another peer related factor I thought may be detected was the influence of significant or important peer leaders (top or powerful girl/boys).
• Studies included in this review (see exclusion criteria page 6) were focused on how features of the school environment influenced student health (specifically, school type, physical environment, school management, teaching, support and discipline, student attitudes to school or relations with teachers). Studies whose primary aim was to examine peer influences (student-to-student) would have been excluded.

3: The study reviewed research from 2010. Have the authors checked for any important papers since 2010?

• As is conventional within systematic reviews, we have not checked for papers published since 2010, which is when our search period ended.

4: Do the authors distinguish between secondary and primary schools? Do the authors make any distinction between them in interpretation and recommendations?

• On page 8, we mention that “the majority of studies were conducted in high school/secondary school settings”. There are a few instances in the results section when reporting data we have highlighted the school type (e.g. secondary, high school) where it is relevant. As stated earlier, we found remarkable consistency in the findings of studies undertaken in different settings.

5: I am not sure I understand the type of intervention implied by the authors second recommendation - spatial patterning of risk. Could they clarify or expand on this by example?

• We have amended this for clarity:

“Second, interventions such as enhanced supervision and monitoring of school spaces that are ‘hot spots’ for risk should be the focus of evaluation.”

Level of interest: An article of importance in its field
Quality of written English: Acceptable
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