Reviewer's report

Title: Doctor retention and distribution in post-apartheid South Africa: Tracking medical graduates (2007–2011) from one university

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Reviewer: Ian Couper

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This is an important article because there is a scarcity of tracking data related to medical graduates in South Africa and deserves publication. However, there are number of issues that need to be addressed before is ready for publication.

Abstract

Correct "countries" (to "country's") in line 13.

"Black graduates represented 60.6% of those who worked in rural areas." Is this a percentage of the sample or what?

"Black graduates, who were preferentially selected in this graduate cohort, were disproportionately represented amongst the doctors practicing in rural areas." This wording makes sound negative instead of being positive.

Background

At line 41ff, it is stated that doctor migration is estimated by some studies to be about 30%, but no reference is given to this, unless the references at the end of the sentence apply, but that is not clear. One of the studies referred to is from 2003, which is hardly current data.

The next sentence refers to the perception of more South African doctors emigrating over the last couple of decades, but references an article (17) that is already a decade old.

At the top of page 5, there is discussion about interventions that have supposedly been introduced to retain medical graduates - on what basis are these considered to have been retention initiatives? Why the comparison to the UK? It is also not clear what references 19-21 at the end of the sentence about UK training are intended to relate to; if it is to 2-year internship and 1-year community service this is surely common knowledge and does not need three references.

It is stated that the top of page 6 that there is no data that addresses the impact of racially-based selection criteria, but what impact is being referred to? i.e. on what.
In relation to the issue of racially-based selection, terminology in the article needs to be explained. Given that the notion of "race" as a scientific concept has been discredited, the usage of these terms as a social construct in relation to the context and legislation in South Africa deserves clarity, at least in a footnote.

The final paragraph of the background section does not flow logically ands to be reviewed. It is also not clear why there is a reference provided (ref 12) for the objectives of the study.

Methods

While I do not have any particular objection to the use of CHERRIES, it should be noted that this is a tool developed by single author unlike similar tools on which it was based such as CONSORT, which are typically consensus-based. In addition, the reference to this is the original 2004 article, which was corrected in a 2012 version.

It is unusual to present the ethical clearance before the details of the methodology. Is their particular reason should not come at the end of the methods?

It is stated that this paper only reports on data from the first two sections of the questionnaire - does this mean the first 28 questions? Clarify.

Results

Why is there a reference for response rate? Be clear what is being referred to.

At the bottom of page 10, it is stated that "Level 1 or district hospitals offer the most basic care". This is an inaccurate description of district hospitals, implying the function at the level of clinics and health centres.

Under respondents not practising medicine, it is stated that two who left the profession moved into the public health sector. What does that mean?

At the top of page 12, the term "medical officers" should be explained or defined.

On the same page, given the small numbers, is the statement that rural doctors are disproportionately male, black and of rural origin statistically true? Justify this.

Here and on page 13, the definition of a rural area that was used should be provided.

Table 6 is critically important but is not well explained or highlighted.

Discussion
In the first part of the discussion, a best-case scenario argument appears to be made but is not entirely clear. There is also some repetition in this paragraph of the background section.

On page 15 it is stated," The 2015 Australian study by Greenhill, et al. [37] identified three components of resilience in medical students in longitudinal integrated clerkships: a student support network, sustained educator support and guidance, and promoting student development of strategies to cope with adversity." What is the relevance of this to the argument being made?

The subsequent paragraph on page 16 regarding community service is very important in terms of unpacking this data.

The issue of the high proportion of respondents in specialist training surely relates to the timing of the study, which is not discussed. It may be that people leave after specialisation.

In general there is limited theorisation about the findings in the discussion. Deeper theoretical analysis would significantly enhance the article.

Conclusions

It is stated that these graduates were among the first to graduate from a transformative curriculum - what is it about the curriculum that made it transformative? The statement needs to be justified.

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