Reviewer's report

Title: A national survey of the prevalence of schistosomiasis and soil transmitted helminths in Malawi

Version: 1 Date: 6 July 2004

Reviewer: Michael Pearce

Reviewer's report:

General

1. This paper presents results from a survey to determine the prevalence of schistosome, hookworm, roundworm and trichuris infection in year 3 school pupils in Malawi [ex Northern Region Lakeside]. It also examines the appropriateness of the red urine question for surveys of schistosome infection. It will provide useful information to health workers and public health officials in Malawi, and may be of interest to other health workers in Africa and developing countries elsewhere.

2. The paper is generally well written but fuller use of punctuation and consistent use of tense would make the script more lucid. The Methods section was well structured. However, the Results and Discussion sections were less well structured and it was not always clear whether material for schistosomes or soil transmitted helminths (STHs) was being presented. Partitioning of Results and Discussion into headed sections on schistosome infection, STH infection and the red urine question would overcome this. The description of statistical methods is insufficient.

3. The authors claim to have selected schools at random from six ecological regions. However, in the same paragraph, they describe a sampling plan in which, for each ecological region, they select a school randomly from each of five clusters (Traditional Authorities) which in turn were selected randomly from within each of the six ecological regions. Which is correct—and is the analysis, therefore, appropriate?

4. An account of the limitations of the study is given in the Discussion, but there is no discussion of the results of the survey in Northern Region Lakeside conducted by the Karonga Prevention Study, and the likely impact of omitting this region from their survey on the authors' results.

5. Suggest commas in large numbers e.g. ‘1662’ be rewritten as ‘1,662’.

6. References should be presented before tables and figures.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

METHODS

7. The authors should describe statistical techniques used to:
   • assess co-infection with schistosomes and STHs
   • assess the red urine question as a survey tool
   • compare prevalence between schools
   • examine the correlation of prevalence of infection with intensity of infection
8. p8, para4. The authors should be more explicit about how they entered each selection stage of the sample into the analysis e.g. ecological zones as 1st stage, strata; traditional authorities as 2nd stage, randomly selected clusters; schools as 3rd stage, randomly selected; students as 4th stage, census [presumed from the manuscript].

9. p8, para4. The authors should state how data was weighted for the prevalence estimations.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

GENERAL

10. All headings should be bold type

11. Species names should be given in full when they first appear. They should all be in italics and there should be a space between the genus and species name.

12. Which species of hookworm and trichuris were eggs from?

ABSTRACT

13. p3, para1. 'A random nationally representative survey...' should be changed to 'This survey, based on a national probability sample excluding Northern Region Lakeside,'...

BACKGROUND

14. p4, para1. The authors should provide references to support their assertion in the first sentence.

15. p4, para1. 'helminths and schistosomiasis is...' should be 'helminths and schistosomiasis are...'

METHODS

16. The authors should:
   • define high intensity of infection for STHs

17. p7, para2. In the sentence beginning 'Children attending standard 3...', the authors should state whether all children present or a proportion of children were sampled.

RESULTS

18. p9, para1. 'Between 36–71 children were included from each school' This is inconsistent with p7, para2 in which is says '...between 40–60 [were included from each school]'.

19. p9, para2. The last sentence is not very clear, and the statistical method for making this comparison is not described in Methods.

20. p9, para3. In the third sentence, 'ascaris' should be changed to 'ascaris eggs' and 'trichuriasis' should be changed to 'trichuris eggs'.

21. p10, para1. The authors must be explicit about what prevalence they are reporting i.e. school, regional or national.

22. p10, para1. 'Only 2.7%[range, 0–11.9%]' is inconsistent with Table 2.
23. p10, para3. ‘S.mansoni was rarely detected...’ should be ‘S. mansoni was not detected...’ according to Table 2.

14. p11, para2. ‘Only the Southern lowlands [sic] zone had a prevalence of over 20%...’. The authors should say what this is a prevalence estimate for.

DISCUSSION

25. p13, para2. The authors state ‘... this survey does not represent children in Malawi who do not attend school or who were absent on the day of the survey due to illness’. It also does not represent children in the excluded ecological zone and this should be mentioned here.

26. p13, para2. The sentence ‘There is little difference between poor and non-poor [what is a non poor household?] households in regard to the proportion of primary-school-aged children in school’ should be supported with reference/s.

Discretionary Revisions (which the author can choose to ignore)

ABSTRACT, Results.

27. p2, para1. ‘The prevalence of S.mansoni is...’ should be changed to ‘The prevalence of Schistosoma mansoni infection is...’

28. p2, para1. ‘Intensity of infection..’ Authors need to be explicit about what type of infection.

29. p2, para1. The last sentence needs some more explanation.

BACKGROUND

30. p4, para1. Is there any historical information on the prevalence of STHs?

31. p4, para3. Suggest move the first sentence of this paragraph, ‘The Ministry...’ to be the second sentence of the first paragraph in BACKGROUND. Then, present material on schistosomes; then, present material on STHs.

32. p5, para2. Suggest change last sentence from ‘We are reporting the results of this survey. to ‘Results from the survey are reported in this paper’.

METHODS

33. p6, para 3. Suggest change ‘One (Chimalire) school...’ to ‘One school (Chimalire)...’

34. p7, para 4. It would be useful if the authors provided more information on how the questionnaire was administered. Was it done as a group exercise, or were children interviewed separately? Did the children have the opportunity to confer before the questionnaires were completed? These are important points as, in my experience, children have a quite labile memory in these situations.

35. p8, para2. Suggest change ‘...intestinal schistosomiasis and urine samples...’ to ‘intestinal schistosomiasis. Urine samples were tested...’

36. p10, para2. Suggest change ‘boys (9.0% as compared to 8.2% in girls).’ to ‘boys (9.0%) compared with girls (8.2%).’
37. p10, para3. Suggest change 'S. haematobium was prevalence in...' to 'S. haematobium infection was detected in...'

38. p10, para3. Suggest change 'There was a wide range of S. haematobium infection prevalence...' to 'There was a wide range in the prevalence of S. haematobium infection...'

DISCUSSION

39. p10, para3. In the last sentence it states that no STHs were detected in Central Lakeshore schools. This seems at odds with results from elsewhere and is worthy of further discussion.

40. p11, para 2. The predictive values of the red urine question for the presence of schistosome eggs in the urine were given in this paragraph. Predictive values are dependent on the pre-test probability of infection. It would be worth indicating how the authors expect predictive values will vary in the field, depending on the prevalence of infection in the areas tested.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Declaration of competing interests: None