Reviewer's report

Title: A cross sectional study of Schistosoma japonicum prevalence in 50 villages of Samar Province, the Philippines.

Version: 1  Date: 14 December 2005

Reviewer: Juerg Utzinger

Reviewer's report:

General

I enjoyed reading Tarafder and colleagues' manuscript currently under consideration for publication in BMC Public Health. The authors put forth a relevant research question, namely “is there variation in the prevalence and intensity of infection with Schistosoma japonicum in an endemic area of the Philippines?” This question is addressed through a cross-sectional survey carried out in 50 villages of Samar province. From an eco-epidemiological point of view, half of the villages were selected from rain-fed rice agro-ecosystems and the other half from irrigated rice agro-ecosystems. The epidemiological design (i.e. cross-sectional survey) is sound to address this issue. Importantly, the authors developed a state-of-the-art Bayesian three-category outcome hierarchical cumulative logit regression model with adjustment for various factors, including lack of sensitivity of the Kato-Katz technique. Possible limitations of the work and the relevance of the findings for control of schistosomiasis japonica in the Philippines (and elsewhere) are discussed.

The article presents a sound piece of work and the findings are important to those with closely related research interests (e.g. heterogeneity of schistosome transmission at the village level) and, potentially beyond (e.g. effect of water resources development and management on the frequency and transmission dynamics of schistosomiasis). The latter issue has recently been discussed by the current reviewer (JU) with the senior author of this article (STMG). In fact, the current study has the potential to fill an important gap, as there are currently no reports available documenting the impact of implementation and operation of water resources development projects (e.g. irrigated rice cultivation) on S. japonicum.

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

None

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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)

(1) Title: I was wondering whether the title could be somewhat modified, so that the main thrust of the article is more clearly articulated. Two issues are offered for consideration, namely (i) emphasis that both prevalence and intensity of S. japonicum infection were examined, and (ii) perhaps the issue of village stratification into two distinct eco-epidemiological settings (rain-fed and irrigated) could be mentioned.

(2) Gender vs. sex: The authors seem to use the terms “gender” and “sex” interchangeably. I suggest that in the current manuscript the authors adhere to “sex”. If they concur, action is required throughout.
(3) Study area: I invite the authors to add a Figure that depicts the study area in the Samar province, displaying the 50 selected villages (e.g. with numbers from 1 to 50 corresponding to Table 1). I suggest that two different symbols are used for the villages to clearly separate them with regard to means of rice cultivation (i.e. rain-fed or irrigated).

(4) Description of population sample in tabular form: I though that one more table could be added that summarizes the population sample. An effective way forward will be to have the population sample stratified into the two main eco-epidemiological settings. I would suggest that the table includes sex ratio, age structure, occupation, etc, and provides P-values for appreciation of whether there were significant differences between rain-fed and irrigated villages. Moreover, the percentage of people presenting with 1, 2 or 3 stool specimens for Kato-Katz thick smear examination should be included.

(5) Percentages: I suggest that all percentages are given with only one digit after the point. Thus replace “81.31%” with “81.3%” (page 3, line 15) [action is required throughout]

(6) Random selection of households: I would have liked to learn more about the selection of the households in the 50 villages. On page 7 the authors state that “…a maximum of 35 eligible households were randomly selected”. Was it perhaps done according to the methodology of the expanded programme on immunization? The key reference here is Lemeshow et al., 1985 (published in World Health Statistics Quarterly, Vol. 38, pages 65-75). Recently, we have done a cross-sectional survey ourselves in the western part of Côte d’Ivoire to investigate the extent of poly parasitism and we adhered to this methodology for random selection of households. It worked fine (Raso et al. 2004, International Journal of Epidemiology, Vol. 33, pages 1092-1102).

(7) Number of people examined per household: It seems to me that there is some ambiguity when comparing “…eligible households had to include at least four people” (page 7, line 18) with “Five individuals and at least one farmer were selected at random from each household for a maximum of six participants per household (page 8, lines 8-9). Please clarify.

(8) Occupation: It seems to me that there is a potential overlap in the two classes of occupation “working on a farm but never on a rice farm” and “not working on a rice farm but may be working on another type of farm”. Please clarify.

Discretionary Revisions (which the author can choose to ignore)

- Page 1, line 1: Replace “cross sectional” with “cross-sectional” [for consistency with page 3, line 6]
- Page 1, lines 1-2: Replace “Samar Province” with “Samar province” [check throughout]
- Page 1, lines 2 and 5: Omit the points (‘.”) at the end of the title and list of authors
- Page 3, line 4: Consider replacing “…prevalence of infection intensity across” with “…prevalence and intensity of infection with S. japonicum across…”.
- Page 3, line 12: Consider replacing “Kato-Katz stool examination” with “Kato-Katz technique”
- Page 3, line 16: Replace “95% Bayesian Credible Interval” with “95% Bayesian credible interval”
- Page 3, line 19: Replace “OR” with “odds ratio (OR)”, and add “OR=” before “8.76”, etc.
- Page 4, last line: Replace “…with post-treatment 12 months follow-up…” with “…with 1-year post-treatment follow-up…”.
- Page 5, line 2: “Schistosomiasis japonicum” [written in italics] should read “Schistosomiasis japonica” [not italicized] [by the way, I noted this problem also in previous manuscripts published by the same group of authors]
- Page 5, line 12: If several references are cited simultaneously, do they have to be cited in individual brackets or can they be combined? Thus, should “[2, 3]” read “[2, 3]”? If so, action is required throughout.
- Page 5, line 17: I suggest that “Kato-Katz analysis” is replaced with either “Kato-Katz technique” or “Kato-Katz method” (or Kato-Katz thick smear method).
- Page 5, last line: Omit the point (“.”) after “infection”.
- Page 6, lines 1-2: I suggest that “…infection with the number of eggs per gram…” is reworded as follows “…infection, as expressed by the number of eggs per gram (epg) of stool…”
= Page 7, line 10: What means “the absence of pvc…”?
= Page 8, line 12: What means “…were asked for their assent”?
= Page 8, line 17: Replace “Ethics” with “ethics”
= Page 8, line 18: The name of “Danish Bilharziasis Laboratory” was recently changed. The authors are invited to update.
= Page 8, line 20: Replace “…samples on three consecutive days of the week” with “…samples over consecutive days”.
= Page 9, line 4: I suggested that “epg” is introduced before [see specific point # 13]
= Page 9, lines 9-10: It would be useful to cite a reference according to which classification of infection intensity into light, moderate and heavy infection intensity was done.
= Page 10, lines 5-6: Replace “95% Bayesian Credible Interval (95% BCI)” with “95% Bayesian credible interval (BCI)”
= Page 10, lines 8-9: I suggest that “(Schistosomiasis Transmission Ecology Project in the Philippines (STEP))” is omitted.
= Page 10, Results, first paragraph: I suggest that the reasons for non-inclusion of households are given according to descending percentages.
= Page 10, line 5: Replace “standard Deviation” with “standard deviation”
= Page 11, lines 5-6: I suggest that “Maximum and minimum ages…, 85 years and 2 months, respectively” is replaced with “Minimum and maximum ages…, 2 months and 85 years, respectively”
= Page 11, lines 10-14: I suggest that the occupation for those who did not provide any stool sample is given according to descending percentages.
= Page 11, lines 17-21: To further enhance clarity, I suggest that “95% BCI” is added in all of the brackets.
= Page 12, line 11: Replace “odds ratio (OR)” with “odds ratios (ORs)”.
= Page 12, line 5: Another parasite where strong day-to-day and intra-specimen variation had been documented in hookworm, and the authors might wish to provide cross-reference to a recent paper by Booth et al. (Parasitology, Vol. 127, pages 525-531).
= Page 13, lines 12-13: Replace “…with post-treatment 12 months follow-up…” with “…with 1-year post-treatment follow-up”.
= Page 13, lines 15-16: Consider rewording the sentence “…that had to be replace were replaced…”.
= Page 14, line 1 and line 8: I suggest that these data are summarized in tabular form [see my minor essential revisions #4]
= Page 15, lines 13-15: In some of our previous work we also made an attempt to use a Bayesian approach with adjustment for lack of sensitivity of the Kato-Katz technique. The two references are (i) Utzinger et al., 2002 (International Journal for Parasitology, Vol. 32, pages 759-765) and (ii) Booth et al., 2003 (mentioned above).
= Page 16, last two sentences: As articulated in my general comments, I feel strongly that the authors should further elaborate on this interesting finding. Adding a few more sentences here would be quite useful.
= Pages 17-19: The authors are invited to check the entire reference section one more time. A few examples of inaccuracies are highlighted here (i) “DE Vlas SJ” should read “de Vlas SJ” (Ref. 7, 9, 24), (ii) “Schistosoma mansoni” should be italicized (Ref. 7, 8, etc.), (iii) “The Philippines” should read “the Philippines” (Ref. 12), (iv) update publication details of Ref. 23, (v) omit “(Pt 2)” (Ref. 24), (vi) no need for capitalization in Ref. 30.
= Pages 20-21: Percentages with only one digit after the coma.
= Page 22: Replace “…true status (% with 95 Credible Interval)” with “…true status in % (95% Bayesian credible interval)”
What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests