Reviewer's report

Title: The Contribution of Water Contact Behavior to the High Schistosoma mansoni Infection Rates Observed in the Senegal River Basin

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Reviewer: Guojing Yang

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In this paper, author is trying to investigate the causes of outbreak of S. mansoni in a village in Northern Senegal by considering water contact behavior and patterns. Although the study was well planned and organized, I still have to suggest the rejection due to scientifically unsound since the author did not choose a correct research direction. A research paper should have a good hypothesis at the beginning. In the paper, author clearly mentioned that, tracing back to a few years before outbreak, there was a construction of a dam on the Senegal River and subsequent water resource development. Then in a few years, the prevalence in Ndomborose raised from 0% (non-existing) before 1988 to 75-100% in 1992. The No.1 hypothesis would be the introduction of intermediate hosts by water resource project. Therefore, it will be more interesting to find out the existence, the density or prevalence rate of intermediate hosts. I believe there will be a strong linkage between the high prevalence of human schistosomiasis and snail infested area, density as well as positive rate. That is also why author did not find significant relation between water contact pattern and high infection rate of human.

Although I suggest the rejection of the paper, there are still some interesting findings can be further investigated. For instance, findings in Figure 5: author concluded that EPG-values are not linearly related with water contact. Especially adult females had lower egg counts than would be expected from the duration and frequency of their water contacts, while male adolescents appeared to have the highest EPG/water contact ratio. Actually it is a very interesting topic. According to the figure, the egg counts are very high. EPG reached almost 2500 for adults. Is there any possibility of egg count threshold for human? When EPG, or egg counts reach a very high value, there may not be any impact of water contact anymore due to the saturation of egg counts. There is a theory of "density dependency" which can explain the competence between parasites. In addition, schisotosomiasis is a parasite with concomitant immunity, which can also be one of reasons explaining the infection threshold.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a
statistician.