

Perspective

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Addressing schistosomiasis in the Philippines: Need for a coordinated intersectoral effort

Alvin I. Abeleda[1]✉, Don Eliseo Lucero-Prisno Ⅲ[2,3], Jerico B. Ogaya[4]

[1]*College of Public Health, University of the Philippines Manila, Philippines*

[2]*Department of Global Health and Development, Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, United Kingdom*

[3]*Faculty of Management and Development Studies, University of the Philippines (Open University), Los Baños, Laguna, Philippines*

[4]*Department of Medical Technology, Institute of Health Sciences and Nursing, Far Eastern University, Manila, Philippines*

The World Health Organization (WHO) recognized schistosomiasis as one of the neglected tropical diseases (NTDs) caused by parasitic blood flukes. With a 4.68% national prevalence in 2017, schistosomiasis is endemic in 28 provinces in the Philippines[1,2]. Having agriculture as a common source of livelihood, the country is vulnerable to schistosomiasis as this disease is transmitted when a larva, released by freshwater snails, penetrates the skin of a susceptible individual. In fact, it was estimated that 12.4 million Filipinos are at risk, while 2.7 million are directly exposed to the parasite[2]. This remains to be a major public health concern as it contributes to a considerable morbidity and mortality. In children, this disease causes malnutrition and impaired cognitive development. Globally, schistosomiasis as an NTD puts the burden on poverty-stricken areas, especially in low- and middle-income countries, exacerbating the health inequality within a country and across the globe.

To address this, the Philippines implements the National Schistosomiasis Control and Elimination Program, highlighting mass drug administration and preventive chemotherapy as the main strategies for managing morbidity. While this program is a positive step, the government needs to make additional efforts to effectively control schistosomiasis.

In particular, improvement of surveillance of schistosomiasis must be prioritized. The most common diagnostic tests done for schistosomiasis in the country are direct fecal smear and Kato-Katz Technique, both of which have low sensitivities[3]. This leads to underreporting of schistosomiasis cases, thus not seeing the true magnitude of the disease. It manifests the dire need for diagnostic advancements, shifting from microscopic examinations to serologic tests such as the detection of circulating anodic and cathodic antigen (CCA/CAA) and polymerase chain reaction (PCR), which, although more expensive, shows a significantly higher sensitivity and specificity[4,5]. By investing in making these serologic tests available and accessible in endemic areas and capacitating healthcare workers in doing such tests with higher precision, the true prevalence of schistosomiasis in the Philippines will be determined and appropriate measures will be recommended accordingly.

Aside from this, a strong collaboration with the water, sanitation, and hygiene (WASH) sector must be reinvigorated since open defecation contributes to the transmission of schistosomiasis[4]. In fact, infected individuals eliminate *Schistosoma* eggs with feces or urine[6]. To reduce its transmission, it is necessary to achieve zero open defecation in the country, especially in the endemic areas.

Along with the WASH sector, the collaboration with the Bureau of Animal Industry of the Department of Agriculture, together with other veterinary sectors, must be solidified[4]. In particular, *Oncomelania quadrasi*, a freshwater snail, serves as the main intermediate host for the growth and development of the parasite[5]. Thus, appropriate interventions, such as the use of molluscicides or

✉To whom correspondence may be addressed. E-mail: a.beleda32@gmail.com

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the proliferation of competitor snails as biological controls, must be made to control the population of these intermediate hosts.

Overall, despite the implementation of the National Schistosomiasis Control and Elimination Program, the Philippines should show more commitment to do better. There shall be a coordinated intersectoral effort, including the surveillance and epidemiology, WASH, and veterinary sector, for schistosomiasis control.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

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Authors' contributions

A.A. and L-P.D. conceived the research. A.A. led the literature review and drafted the initial version of the manuscript. L-P.D. and J.O. provided critical revision of the manuscript. A.A., L-P.D., and J.O. contributed to the final version of the manuscript.

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