



School-based Schistosomiasis Prevention and Control Program in Northern Samar

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Introduction

In impoverished nations, schistosomiasis, sometimes known as snail fever, is one of the most common parasite illnesses and one of the neglected tropical diseases. 779 million people are thought to be at risk, and 240 million instances of infection and more than 280,000 fatalities occur each year globally. In many parts of the world, it is still one of the primary causes of morbidity (US Global Health Policy, 2009).

Schistosoma japonicum is the causative agent of schistosomiasis in the Philippines. In the poorest provinces, it is still a significant public health issue since it is a disease of poverty. In 12 regions, 14 cities, 203 municipalities, and 1,593 barangays throughout 28 provinces, it is now endemic.

Contact between people and other animal hosts and waterways that serve as snails' breeding grounds is necessary for transmission and infection. Snail sites and bodies of water with snail infestations are direct sources of transmission. Leyte, 711, Western Samar, 251, Eastern Samar, 216, and Northern Samar, 334, all include around 1,512 snail sites (DOH-RHO 8 Report, 2013).

There are 168 barangays and 16 municipalities in Northern Samar that have endemic regions, with a prevalence rate of 2.45%. (Leonardo et al., 2008). In line with Belizario et. According to al. (2005), quoted by DOH, these endemic regions are mostly used for rice farming, maximizing human interaction with the *Oncomelania hupensis quadrasi* vector of fresh water snails.

Poverty, the availability of intermediate and reservoir hosts, environmental cleanliness, and access to potable water, health services, and local infrastructure

are all variables that have an impact on the dispersion of schistosomiasis (WHO Report, 2004). Distribution is also influenced by sources of income, with farmers and fishermen in the Philippines having the highest risk of infection (Zhou et al., 2008). There may be parallels and variances in infection rates between genders and age groups due to exposure to polluted water, whether for work or play.

With the aforementioned information, it is clear that schistosomiasis is still a public health issue in the area, with prevalence levels ranging from high to low (2 percent to 30 percent). The potential of an infectious comeback exists despite expanding coverage for mass therapy (Olimba, 2014). One of the primary public health issues is infection, with school-aged children being most at risk. It causes a considerable delay in children's growth and development and may eventually induce hypertension and esophageal varices.

Numerous research have looked into S's effects during the past 20 years. Effects of *japonicum* infection on Filipino children's development, diet, hemoglobin levels, and cognitive abilities. It was proven that the severity of infection was linked to slower growth of fat, muscle, and long bones in adolescents than in the same community's non-infected adolescents (McGarvey et al., 1992). Other research by S. Lower cognitive performance, including learning, memory, and verbal fluency, was linked to *japonicum* infection in children, as well as malnutrition, anemia, and other factors (Amara et al., 2005).

Barangay Camparanga in Pambujan, Northern Samar, has the highest prevalence rate to infection of around

85 or 40.48 percent, according to data of a fairly recent focused survey done in the province. Children in school age make up around 36.47 percent of this. In terms of the description of this population's characteristics, the environmental circumstances they are exposed to, and their engagement in school-related activities, there are currently no local or educational interventions being made, especially for the seriously afflicted.

Schistosomiasis School-Based Prevention and Control Program

Intestinal helminth infection caused by schistosome bring about the greatest burden of disease in poverty stricken areas in developing countries including the Philippines. The most vulnerable group and the most significant contributors to disease transmission are the school-age children. While awaiting major improvements in sanitation, recommended strategy is school-based, teacher assisted mass drug administration. School-based MDA may be scaled up where teachers have direct participation in drug administration.

Northern Samar is an endemic province for schistosomiasis. In a recent focal survey conducted, it was found out that Barangay Camparanga has the highest rate of infestation. Majority of the infected are school age children. Five of which under study conducted by the researcher are heavily infected with clinical signs and symptoms of infection.

As recommended by the WHO, communities that are endemic for schistosomiasis are categorized based on the prevalence of infection. However, irrespective of the infection status of the municipalities, schistosomiasis should be given the appropriate attention in terms of morbidity control through preventive chemotherapy. This will be beneficial in maintaining a low morbidity rate, which is indicated by the low prevalence of heavy intensity infection in the municipalities at 0.1%, and eventually, in achieving the targeted prevalence of heavy intensity infections at 0%. The researcher believe that this intervention could be best realized if it would be an school-based control program, hence this proposal.

A CAPSULE PROPOSAL FOR THE SCHISTOSOMIASIS PREVENTION AND CONTROL AMONG SCHOOL AGE CHILDREN IN NORTHERN SAMAR

Title of the Program : "School-Based Schistosomiasis Prevention and Control" Extension Project in Northern Samar

Proponent: SARAH B. DELORINO

Description: School-based Schistosomiasis Prevention and Control Program. This is a collaborative effort between the University of Eastern Philippines, College of Nursing, the DOH, DepEd, LGUs and the community in combating the effect of schistosomiasis in terms of morbidity and cognitive ability of school-age children in Northern Samar

Collaborating agency: UEP colleges and departments (CN, VetMed, Grad School, Coed, CS) DOH, DEPED, LGUs, NGOs, community

Duration: 3 years

Rationale

School-based teacher-assisted schistosomiasis control programs are among the most cost effective public health interventions. Involving teachers in mass drug administration activities is logical, strategic and advantageous since the existing infrastructures used are the schools and the target population are the school-age children. Drug administration does not require complex skills because of their safety profile. Trained teachers and other nonmedical personnel can be therefore, more than capable to ensure precautions and to identify and appropriately respond to adverse events. The cost of treatment administration and program monitoring is reduced to almost zero because there is no additional workload for teachers and school administrators during MDA events. Teachers also generally outnumber the school paramedical and medical personnel, and their assistance in drug administration and monitoring increases the efficiency of implementation of school-based MDA. Furthermore, teachers are in the best strategic position to deliver health education to school children, secure consent for treatment from parents, interact with the community through parent-teacher-community assembly, correct community misconceptions regarding MDA and facilitate other community actions.

Objectives

Generally, this intends to design a school-based schistosomiasis control and prevention program for school-age children specifically in Northern Samar.

Specifically, it will have the following objectives:

1. To establish schistosomiasis control program suited to the locality in Northern Samar
2. to reduce the incidence and prevalence and intensity of schistosome infection within three years of project implementation
3. to see a decrease in morbidity rates and improvements in the school performance (attendance and grades) and participation in school-related activities.

*Strategies of implementation

- Developing a policy framework
- Targeting school-based deworming
- Procuring and distributing deworming tablets
- Training of teachers
- Community sensitization
- Sequencing of implementation
- Monitoring and evaluation
- Preparing a budget

*Adapted from WHO recommended schistosomiasis control in school-age children. A guide for managers of control programmes.

References

- [1] DOH Focal Survey Report for Schistosomiasis Control in Northern Samar, 2014.
- [2] DOH Focal Survey. Sampling Report for Schistosomiasis Control Program, 2014.
- [3] DOH-RHO 8 Report 2013. Sourced from DOH 2012 Report.
- [4] E. Amara, J. Friedman, L. Acosta, D. Bellinger, G. Langdon, D. Manalo, et al. Helminth Infection and Cognitive Impairment Among Filipino Children. *Am J Trop Med Hyg*, 72 (2005), pp. 540-548.
- [5] Ekanem EE1, Asindi AA, Ejezie GC, Antia-Obong OE, Effect of *Schistosoma haematobium* Infection on the Physical Growth and School Performance of Nigerian Children.
- [6] Ekanem EE1, Asindi AA, Ejezie GC, Antia-Obong OE, Effect of *Schistosoma haematobium* Infection on the Physical Growth and School Performance of Nigerian Children. <http://www.ncbi.nlm.nih.gov/pubmed/8082154>. Abstract
- [7] Engel G. L. (1980). "The Clinical Application of the Biopsychosocial Model". *American Journal of Psychiatry* 137 (5): 535-544.
- [8] Engel, George L. (1977). "The need for a new medical model: A Challenge for Biomedicine". *Science* 196:129-136. ISSN 0036-8075 (print)/ISSN 1095-9203 (web)doi:10.1126/science.847460.
- [9] Fenwick A, Savioli L., Engels D., Bergquist NR, Todd MH. Drugs for the Control of Parasitic Diseases: Current Status and Development in Schistosomiasis. *Trends in Parasitology*. D20d0d3; 19:509-515. PubMed
- [10] Herman, et. al. 8th Ed. P. 278.
- [11] http://www.neglecteddiseases.gov/tar_diseases/schistosomiasis.
- [12] [Imusinstitute.net/v3/grading-system-k-12-program-department-educaton/https://www.google.com.ph/webhp_1](http://www.imusinstitute.net/v3/grading-system-k-12-program-department-educaton/https://www.google.com.ph/webhp_1)
- [13] Ivan Mulleret. AL, Effect of Schistosomiasis and Soil-Transmitted Helminth Infections on Physical Fitness of School Children in Cote d'Ivoire, Published: July 19, 2011, doi:10.1371/journal.pntd.0001239.
- [14] J. Utzinger, et al, Schistosomiasis and Neglected Tropical Diseases: Towards Integrated and Sustainable Control and A Word of Caution.
- [15] Jeaniesan B. Olimba. Schistosomiasis Control Program DOH – Eastern Visayas.
- [16] Jeainesan B. Olimba, DOH-Eastern Visayas, Lecture on Schistosomiasis Control Program to Nursing Students during the "Kick-Off" Day of the Program Implementation, August 20, 2014.
- [17] Kozier, Barbara; Erb, G., Berman, A., Snyder S., *Fundamentals of Nursing*, 7th Edition. Pearson Education Incorporated, Philippines, 2004.