Factors to Consider for the Elimination of Soil-Transmitted Helminthiasis in School Children

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OBJECTIVES

To determine the attitudes and practices towards STH control among parents and elementary school teachers; and to identify the reasons behind attitudes and practices that do not promote STH control.

Our belief is that attitudes towards MDA will be favorable, but the issue of teachers distributing deworming tablets will be controversial. The reasons behind unhelpful attitudes and practices will include misconceptions, lack of knowledge about STH, and lack of proper facilities for hygienic practices.

INTRODUCTION

In the Philippines, the cumulative prevalence of STH infections among elementary school children is 54.1% with 23.1% of infections classified as heavy intensity (Belizario, *et. al.,* 2009). To control this infection, the Filipino government is using the World Health Organization (WHO) guidelines for mass drug administration (MDA) and Water/Sanitation and Hygiene (WASH) (DOH, 2006; WHO, 2002; WHO, 2006). Because children experience the greatest morbidity of STH infection, the program targets public elementary schools for MDA (Crompton and Nesheim, 2002). The province of Guimaras will be the site of the first targeted elimination of STH in the Philippines. Baseline assessment will be conducted to aid the creation of an effective action plan for STH elimination.

METHODS

Selection of Study Sites

Eleven elementary schools in the province of Guimaras were chosen as representative of the province based on geography and socioeconomic factors.

Writing and Distribution of Survey Forms

Questions were written using a Likert scale, "Yes/No/Don't know," and open-ended formats. The surveys were translated into Filipino and back translated to verify the accuracy of the translation. One thousand survey forms were distributed to parents of students in grades 3 and 4, and 150 forms were distributed to teachers in grades 1 through 6. Answers were translated into English for analysis.

Data Processing and Analysis

Responses were analyzed using Minitab 16. Results from the questions in Likert scale format were encoded numerically. A minimum Cronbach-α value of 0.60 was used for assessing consistency within domains. Results from the "Yes/No/Don't know" questions were encoded in binary form with "Yes" corresponding to "1," and "No," and "Don't know," corresponding to "0." Answer frequency distributions for each question were analyzed. The open-ended questions were qualitatively grouped into common themes.

Ethical Consideration

This project is part of a Filipino government program and is therefore subject to federal ethical regulations. The project received an IRB waiver from the University of Pittsburgh (IRB #: PRO11070478).

FACTORS SUPPORTING ELIMINATION

BELIEF THAT STH IS A MAJOR PROBLEM

- 92.8% of parents (N= 590) and 97.0% of teachers (N=100) believed that STH is a major problem.

ADEQUATE KNOWLEDGE ABOUT STH CONTROL AND PREVENTION

- 93.2% of parents (N=396) and 98.7% of teachers (N=78) wrote comments that demonstrated correct knowledge on STH prevention.

SUPPORT FOR STOPPING OPEN DEFECATION

- 93.3% of parents and 100% of teachers gave comments that supported stopping open defecation and showed faith in the government's capabilities to accomplish this goal.

FAVORABLE ATTITUDE TOWARDS MDA

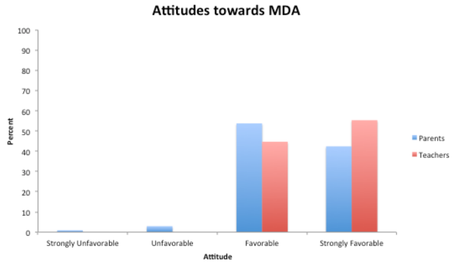

FIGURE 1. Likert scale summation distribution. Range of scores for attitudes: Strongly unfavorable (8-15), Unfavorable (16-23), Favorable (24-31), Strongly favorable (32-40). **Parents.** N=441. Cronbach-α=0.66. Mean summed score, SD: 29.7, 4.2. **Teachers.** N=94. Cronbach-α=0.67. Mean summed score, SD: 31.8, 3.3.

OVERALL AMENABLE TO TEACHERS TREATING CHILDREN

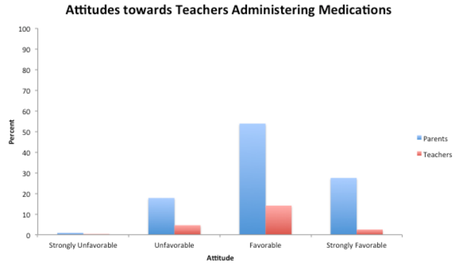

FIGURE 2. Likert scale summation distribution. **Parents.** N=433. . Cronbach-α=0.64. Range of scores for attitudes: Strongly unfavorable (6-11), Unfavorable (12-17), Favorable (18-23), Strongly favorable (24-30). Mean summed score, SD: 20.4, 4.5. **Teachers.** N=93. Cronbach-α=0.66. Range of scores for attitudes: Strongly unfavorable (9-17), Unfavorable (18-26), Favorable (27-35), Strongly favorable (36-45). Mean summed score, SD: 29.7, 4.5.

FACTORS IMPEDING ELIMINATION

MISCONCEPTIONS ABOUT MDA STRATEGY

- 69.0% of parents and 75.5% of teachers believed that stool exams were necessary before treatment (AMDA).
- 30.3% of parents and 12.3% of teachers gave reasons based on false information when asked for reasons why they would not allow treatment.

PRACTICE OF OPEN DEFECATION

- 47.8% of parents (N=559) and 42.2% of teachers (N=102) stated that open defecation occurs in their communities.

SUBSTANTIAL OPPOSITION TO TEACHERS TREATING CHILDREN

- 37.0% of parents (N=580) stated that they would not allow a teacher to give deworming medication to their children.
- Common reasons include the lack of trust in teacher's skills, and the belief that deworming is a health worker's obligation.

APPREHENSION FROM TEACHERS ABOUT TREATING CHILDREN

TABLE 1. Major apprehensions of teachers, especially regarding the side effects of deworming medication.

Statement	Yes (%)	No/Don't Know (%)	Total (count)
I know what the side effects are	33.0	67.0	103
I know what to do if student experiences side effects	21.4	78.6	103
I am afraid of side effects	81.4	18.6	102
I feel that I will be able to safely administer the medication	48.0	51.9	102

CONCLUSIONS

Major factors supporting STH elimination included the belief that STH is a major problem, adequate knowledge about STH prevention, favorable attitude towards MDA and treatment of children by teachers, and support for stopping open defecation. Major factors impeding STH elimination included misconceptions about the MDA strategy and opposition teacher involvement in treatment by both parents and teachers.

One recommendation is to incorporate information about the concept of MDA and how it is implemented into education campaigns. Another recommendation is to provide teachers with a training session to teach them about the deworming medication, including information about side effects and how to manage them. A third recommendation is to encourage the local government units to improve public sanitation by installing toilets and improving the water supply. This can be accomplished by increasing public support through education and lobbying campaigns.

The next step of this project will be to implement the suggested changes and begin targeted mass treatment in a synchronized manner on all municipalities in Guimaras. Future studies will monitor the progress and effectiveness of the elimination program.

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