KAP (KNOWLEDGE, ATTITUDE, PRACTICES) AND HEALTH-SEEKING BEHAVIOR OF SCHISTOSOMA INFECTED COMMUNITIES IN SAN MIGUEL, SURIGAO DEL SUR, PHILIPPINES

Roselle Estal-Bertulfo[1]
Faculty of Environmental Science Surigao State College of Technology
Email: rbertulfo@ssct.edu.ph

ABSTRACT: *Schistosomiasis remains a major public health problem in the Philippines. The study assessed Knowledge, Attitude, Practice (KAP) and Health Seeking Behavior (HSB) of schistosomiasis infection in San-Miguel, Surigao del Sur, Philippines. The study employed a descriptive research design utilizing quantitative data collection methods. The result of the study revealed that respondents (70-90%) have adequate knowledge of schistosomiasis and possess a positive attitude about the disease. This could be attributed to the long history of control efforts and strategies implemented in the area. Though adequate knowledge was noted, this was not concomitantly translated into preventive practices, which may be due to economic and domestic reasons. Moreso, HSB is a patient and environmentally driven decision. The respondents' behavior was influenced by perceived severity of the illness, type of living environment(p=0.015), and distance to a medical facility (p=0.041). Furthermore, results showed a significant association between KAP and HSB with demographic factors.*

Keywords: health-seeking behavior, KAP, preventive practices, schisto-related programs

I. INTRODUCTION

Schistosomiasis is considered a water-borne infection caused by parasitic trematodes of the genus Schistosoma. It is endemic in 78 tropical and subtropical countries [48]. Globally, an estimated 779 million people are at risk of schistosomiasis, more than 230 million are infected, 120 million are symptomatic, 200,000 deaths per year are recorded [8, 41, 44, 39, 7]. Such data placed schistosomiasis as the second most prevalent and socio-economically devastating disease after malaria [6]. In the Philippines, more than 12 million people are at risk of the disease, and approximately 2.5 million people are directly exposed. To this end, this research endeavored to explore the extent of the spread of the disease in the locality, specifically in the Municipality of San Miguel, and the mitigation measures to address such problem.

The disease remains endemic in 28 provinces in 12 regions, 14 cities, 203 municipalities, and 1,593 barangays, as reported by Dr. Palasi during the 15th Annual Meeting on Regional Network on Asian Schistosomiasis and other Helminthic Zoonoses (RNAS+) last July 2015 [19]. The infection affects a few provinces of Luzon, the eastern part of the Visayas and almost the whole part of the Mindanao region [5]. Surigao del Sur as it ranks 4th among the provinces in Mindanao has the highest prevalence of schistosomiasis in 2005 and 2008 [21]. Because of this alarming number of infected individuals and recorded deaths worldwide, the public health recommended by WHO for the control of morbidity associated with schistosomiasis in endemic areas is preventive chemotherapy (PC) which focuses on the periodic administration of anthelmintic medicines such as praziquantel [24]. Though effective drugs for eradicating worms are available and various intervention schemes have been attempted to control infections, but because of the constant re-exposure, it poses limited success [7].

Accordingly, the success of control initiatives involving the community depends on the level of the communities' uptake of the program, which is hinged upon understanding the community knowledge and practices towards the disease and recommended preventive and/or treatment regimens [32]. Within this context, the present study looks into the knowledge, attitudes, practices (KAP), and health-seeking behavior of the selected community included in this study.

There are a plethora of KAP and health-seeking behavior studies conducted on schistosomiasis all over the world [35, 30]. However, the call of localizing it is a requirement, since the degree of influence varies according to a community setting and programs implemented to ensure integrated and effective localized public health interventions. Undeniably, it is well established that the increased risk of parasitic infections could be due to the lack of awareness towards the mode of transmission [31]. Moreover, designing and implementing programs such as prevention and control efforts warrants the understanding of existing knowledge, attitudes, perceptions, beliefs, and practices about schistosomiasis in endemic communities [35, 33]. Community perceptions of the diseases will also influence how widely protective behaviors are adopted among populations living in endemic areas. For this reason, prevention and control interventions need to invest in social mobilization and community participation [16, 12, 3, 38], taking into account knowledge gaps, misconceptions, and barriers to the adoption of recommended behaviors. It is therefore imperative to gain a better understanding of knowledge, attitudes, and practices (KAP) with regards to schistosomiasis at the community level [33], hence this study is explored.

Health promotion programs worldwide have long been premised on the idea that providing knowledge about causes of ill health and choices available will go a long way towards promoting a change in individual behavior, towards more beneficial health-seeking behavior. Community awareness and involvement are considered as one of the cardinal tools for the success and sustainability of any disease control programs.

The main purpose of this paper is to determine the response of the people in the community with schistosomiasis cases towards the Schistosomiasis Program based on their knowledge, attitude, practices, and health-seeking behavior. It

is hoped that the findings of the study will provide new information about the schistosomiasis-related KAP and will add new insights about the prevention and control of this disease in Surigao del Sur. By conducting this study, it could improve the decisions on policy-formulation towards intensified programs that could substantially mitigate the impact of this endemic.

II. METHODS

This study used the descriptive survey method. The method is most appropriate because it aimed to identify the knowledge, attitudes, and practices of schistosomiasis among the household of the Municipality of San Miguel, Surigao del Sur. The design attempts to establish the range and distribution of the social characteristics and how these characteristics may be related to a particular behavioral pattern or attitude.

Analysis of Data included the use of descriptive and inferential statistics that allowed the Researcher to obtain the needed data for her to be able to get an objective landscape of the disease and how the people are coping it using their knowledge, attitude, practices. The Researcher targeted 267 participants. However, only 210 participants were interviewed due to security concerns and sensitivity of the topic.

The questionnaire utilized in the study was developed in reference to the existing tools used in the study of WHO [46, 28, 37, 30, 33 & 2]. Since it is compiled and adapted from the previous studies conducted, the questionnaire underwent content validation and reliability test to suit the objectives of the study and research locale.

Data were analyzed using available free statistical software. Demographic, socioeconomic, environmental, and behavioral characteristics were treated as categorical variables and presented as frequencies and percentages.

Knowledge was assessed by questions focusing on schistosomiasis etiology or causes, signs, and symptoms, transmission, treatment, and prevention. Knowledge per indicator was assessed by giving 1 to the correct answer and 0 to the wrong answer. Total scores were taken per indicator. For causes or etiology, the indicator measured knowledge from a maximum score of 9 to a minimum of 0. Scores from 0-4 were taken as poor, while 5-9 as adequate knowledge. Similarly, scores for transmission as well as treatment and prevention were described as poor if the scores are below 6, while 6 and above were described as having adequate knowledge. On the other hand, the weighted mean was used to obtain the attitude and practices of the respondents.

Since the data were found to be non-normally distributed, and the following analyses were conducted to determine significant associations between outcomes of interest and predictor variables: 1) Spearman's correlation was performed to determine the relationship between profile and KAP and health-seeking behavior; 2) Mann-Whitney U test and Kruskal-Wallis test was used to assess significant differences between profile and KAP. A p-value of less than or equal to ($p \leq 0.05$) was accepted as statistically significant for all analyses.

III. RESULTS AND DISCUSSION

Table 1. Frequency distribution of the socio-economic profile of the respondents

Profile	Frequency	Percentage (%)
Age		
19-25	12	5.71
26-32	18	8.57
33-39	31	14.76
40-46	38	18.10
47-53	30	14.29
54-60	47	22.38
61-67	25	11.90
68-74	6	2.86
75-81	2	0.95
82-88	1	0.48
TOTAL	210	100.0
Sex		
Male	135	64.3
Female	75	35.7
TOTAL	210	100.0
Civil Status		
Married	184	87.6
Separated	1	0.5
Single	14	6.7
Widow	11	5.2
TOTAL	210	100.0
Educational Attainment		
Elementary Level	37	17.6
Elementary Graduate	38	18.1
High School Level	35	16.7
High School Graduate	47	22.4
College Level	29	13.8
College Graduate	18	8.6
Vocational	4	1.9
ALS	1	0.5
Post-graduate	1	0.5
TOTAL	210	100.0
Occupation*		
Managers (Legislators and Senior Officials)	4	1.90
Professionals	7	3.33
Technicians and Associate Professionals	1	0.48
Service and Sales Workers	11	5.24
Skilled agricultural, forestry and fishery worker	134	63.81
Crafts and Related Trades	4	1.90
Others	49	23.33
TOTAL	210	100.0
Religion		
Roman Catholic	110	52.4
Born Again Christian	13	6.2
Evangelical	19	9.0
Seventh-Day Adventist	18	8.6
UCCP	8	3.8
Others	40	19.0
No Religion	2	1.0
TOTAL	210	100.0
Monthly Family Income		
Below 5,000	90	42.9
5,000 – 10,000	66	31.4
10,001 – 15,000	11	5.2
15,001 – 20,000	9	4.3
20,001 – 25,000	3	1.4
25,001 – 30,000	6	2.9
Above 30,000	2	1.0
None	23	11.0
TOTAL	210	100.0

***based on 2012 Philippine Standard Occupational Classification (PSOC)**

Table 1 presents the socio-economic profile of the respondents. As depicted in the table, the majority or 64.3 percent of the respondents interviewed are male, 87.6 percent are married, and have a mean age of 47.12. In terms of their educational attainment, most of the respondents have a formal education of which, 35.7 percent received an elementary education, and 39.1 percent in high school, and 22 percent were in college. Most of the respondents or about 70 percent of the respondents earned 10,000 Php below and the majority of them are farmers. From the data, it can be

deduced that among rural communities, agriculture plays a potential livelihood activity among the male population. The data is potentially high because farming requires rigorous physical efforts and longer exposure to the open space. In the countryside, the one earning for the family rests among males while domestic activities are assigned to women. The profile also shows that education among those who are engaged in farming is mostly on primary schooling level only; hence, more likely, they would settle for occupation in the informal sector earning a lesser wage as compared with those earning a higher wage in the formal sector.

Table 2. Frequency distribution of the respondents' environmental profiles

Profile	Frequency	Percentage (%)
Type of Living Environment		
Rural	118	56.2
Rural (Flood Prone Areas)	69	32.8
Slum/Squatter	21	10.0
Urban	2	1.0
TOTAL	210	100.0
Toilet Facility		
Composting Toilet	1	0.5
Flush/Connected Elsewhere	6	2.9
Flush/Connected to Septic Tank	198	94.3
Hanging Toilet	2	1.0
Pit Latrine with Slab	1	0.5
No Facility	2	1.0
TOTAL	210	100.0
Distance to Health Facility		
0 – 10 km	108	51.4
11 – 20 km	89	42.4
21 – 30 km	11	5.2
More than 30 km	2	1.0
TOTAL	210	100.0

Table 2 presents the distribution of the Respondents' environmental profiles. The table reveals data on the type of living environment, toilet facility, and distance to a health facility. In terms of the respondent's environmental profiles, most of them or about (89%) lived in rural areas, of which 32.8 percent of it is a flood-prone area. Fifty-one percent (51.4%) of the respondents' houses were 0 – 10 km away from the health facility while 42 percent is within the range of 11- 20 km away from the health facility. Most of the toilet facilities of the respondents are flush and connected to a septic tank. This type of toilet facility is one of the strategies being implemented by the DOH in their Community-Led Total Sanitation (CLTS) activities under the Zero Open Defecation Program [42]. CLTS is under the umbrella concept of total sanitation that includes a range of behaviors such as stopping open defecation practices by ensuring the use of sanitary toilet facility; washes hand properly; handles food and water in a hygienic manner, and disposing of animal and domestic wastes safely to create a clean and safe environment.

In addition, the barrier of a geographic location is a key feature of access to health care [9]. Physical environment including distance to health care facilities and the influence of the road and weather conditions such as heavy rains that would result in flooding is of paramount consideration among rural residents in their access to health care. Further, they postulated that these barriers may lead to difficulties in the access of quality health care systems. They also underscored that because of the limitations in terms of medical facilities in the rural settings, most rural residents opt for the traditional healing system as common health seeking behavior.

KNOWLEDGE OF THE RESPONDENTS ON SCHISTOSOMIASIS

Table 3. Respondents' knowledge on Schistosomiasis etiology, signs and symptoms, transmission, treatment and prevention.

Indicators	Scores	Adjectival Description	Frequency	Percentage (%)
Causes (Etiology)	5-9	Adequate	153	72.86
	0-4	Poor	57	27.14
TOTAL			210	100
Signs and Symptoms	5-9	Adequate	130	61.9
	0-4	Poor	80	38.1
TOTAL			210	100
Transmission	6-11	Adequate	209	99.5
	0-5	Poor	1	0.5
TOTAL			210	100
Treatment and Prevention	6-10	Adequate	128	60.9
	0-5	Poor	82	39.1
TOTAL			210	100

As depicted in table 3, respondents' knowledge about the causes, signs and symptoms, transmission, treatment, and prevention of schistosomiasis is adequate. Out of the 210 respondents interviewed, the result shows that almost 70-90% of the respondents are adequately knowledgeable about the causes or etiology, signs and symptoms, transmission, treatment, and prevention of schistosomiasis. The findings suggest that most of the respondents are well-informed about the causes, transmission, treatment, and prevention of schistosomiasis. This could be attributed to the long history of control efforts in the Municipality which includes intensive information dissemination, an educational campaign, and mass treatment of the DOH and MHO. Furthermore, the high prevalence rate of the disease in the area attributed to the necessity of gaining knowledge of the disease.

However, our findings also suggest that there are still respondents with incorrect responses which garnered more than 30% of the respondents. Incorrect responses are apparent towards the clinical manifestations of schistosomiasis, of which, they were able to mention signs and symptoms which are not medically associated with schistosomiasis such as allergies, memory loss, nerve abnormalities, and among others. This finding further suggests an information gap among respondents because some of them hold false notions about the clinical manifestations of schistosomiasis which could be attributed to their confusion with other infections or disease exhibiting similar symptoms with schistosomiasis and because of their belief that they are infected since they are

within the vicinity of positive cases of schistosomiasis. Hence, there is a call for massive stool examination in order for them to know if they are infected or not. In addition, the need to further improve the quality of disseminated information especially on the clinical manifestations of schistosomiasis so as to prevent misconceptions on it. Misconceptions could be a hindrance to the implementation of a successful control program [26].

The findings coincide with the study conducted by others [22, 14]. The high awareness and knowledge about schistosomiasis could be attributed to the result of the intensive information, educational campaign conducted by the Department of Health, and the high prevalence of disease and long history of control efforts [14]. On the other hand, confusions on the clinical manifestations of schistosomiasis were also reported in the study of others, where one-third of their respondents could not associate the infection with any symptom which could be attributed to the disease being frequently confused with other intestinal infections exhibiting similar symptoms, such as amoebic dysentery[36].

The assumption that the respondents are infected since they lived in the area with positive cases of schistosomiasis coincides with the reciprocal determinism theory of Bandura [4]. This theory posits that the feeling and behavior of the respondents in this study were triggered by an environmental and social stimulus.

RESPONDENTS' ATTITUDE RELATIVE TO SCHISTOSOMIASIS

Table 4. Respondents' attitudes toward Schistosomiasis

Statements	Mean	SD	Adjectival Description
Schistosomiasis a serious disease	3.86	0.55	Strongly Agree
If infected with schistosomiasis it is important to take anti-schistosomal tablets	3.86	0.52	Strongly Agree
Schistosomiasis can be prevented	3.81	0.41	Strongly Agree
Disease can only be treated medically by following drug treatments	3.77	0.46	Strongly Agree
Learning about schistosomiasis is important	3.75	0.45	Strongly Agree
Defecating and urinating in the toilet is important	3.73	0.49	Strongly Agree
It is important that we will be screened periodically for schistosomiasis	3.72	0.51	Strongly Agree
Schistosomiasis can reoccur	3.52	0.73	Strongly Agree
When I pass blood in urine/stool I should go to hospital and seek medication	3.47	0.73	Strongly Agree
Feces/urine as a source of infections	3.44	0.69	Strongly Agree
Schistosomiasis is part of growing up	3.00	1.03	Strongly Agree
It doesn't matter if I urinate/defecate in water	1.90	1.03	Disagree
Schistosomiasis is a shameful disease	1.71	1.10	Disagree
TOTAL	**3.34**	**0.28**	**Strongly Agree**

Legend: 1.00 – 1.74 Strongly Disagree (SD)
1.75 – 2.49 Disagree (D)
2.50 – 3.24 Agree (A)
3.25 – 4.00 Strongly Agree (SA)

Attitude is the manner in which participants view schistosomiasis and how this affects the way they might view the need for an intervention program [29]. Table 4 shows the result of the attitude of respondents towards schistosomiasis.

As depicted in Table 4, respondents showed a positive attitude towards schistosomiasis, as they strongly agree with several statements. Further, the result also revealed that respondents don't show social stigma on the disease as they disagree with the statement that schistosomiasis is a shameful disease.

The positive attitude of the respondents towards schistosomiasis is a good indicator that respondents get rid of social stigma for schistosomiasis. This could be attributed to the intensive information dissemination and educational campaign for schistosomiasis. Social stigma on a certain disease needs to be considered in dealing with the KAP study since it has an impact to control efforts caused by fear of disclosure. Social sigma not only increases feelings of fear and shame but can reduce people's capabilities to successfully obtain appropriate treatment [29].

RESPONDENTS' PRACTICES RELATIVE TO SCHISTOSOMIASIS

Table 5. Respondents Practices relative to Schistosomiasis

Statements	Mean	SD	Adjectival Description
Handwashing after toilet visiting	4.74	0.53	Always
Use toilet when defecating and urinating	4.72	0.53	Always
Working in the paddies	4.33	1.17	Always
Swimming/bathing in open water source	3.20	1.37	Sometimes
Wearing protective gear (rubber boots and gloves) when in snail-infested waters	2.84	1.40	Sometimes
Wearing shoes when going outside	2.84	0.94	Sometimes
Washing clothes or utensil in open water source	2.71	1.57	Sometimes
Wearing protective footwear or rubber boots while in the paddies	2.60	1.33	Sometimes
Drinking untreated water	2.45	1.60	Seldom
Fetching water from ponds/streams	2.32	1.43	Seldom
Indiscriminate defecation/urination	2.20	1.22	Seldom

Table 5 features the habitual practices of the respondents that could be relevant to schistosomiasis. As depicted in table 5, top on the list of the weighted mean average of respondents' practices are geared towards the preventive activities of getting schistosomiasis as the majority of them are always

using the toilet when defecating and urinating (M=4.72, SD=0.53) and do hand-washing after toilet utilization (M=4.74, SD=0.53). These findings also coincide with the study of [14] where preventability of the disease was revealed to be the key attitude of their respondents.

In addition to preventive practices, although it was shown in table 3 that almost 99% of the respondents have adequate knowledge about the mode of transmission of schistosomiasis, this high rate of knowledge has not concomitantly translated into preventive practices. This is apparent in table 5 where most of the respondents responded that they are always working in the paddies (M=4.33, SD=1.17), swimming/bathing in open water source (M=3.20, SD = 1.37) and they do not always used protective gear such as rubber boots and gloves when working in the paddies (M=2.60, SD 1.33) or when in snail-infested waters (M=2.84, SD 1.40).

The findings only suggest that knowledge or awareness alone is not a guarantee to ensure uptake and compliance of healthier practices but it can be hindered because of economic and domestic reasons [11]. Contact with infected water cannot always be avoided, especially by people in endemic areas whose occupation (eg. fishing, rice farming) or day-to-day activity exposes them to these waters [15]. The dependency of the respondents on the water for domestic and economic use including fishing, swimming, washing utensils, and watering animals are also among the reasons reported in other countries such as in North-Western Tanzania [26] and Western Kenya [32].

RESPONDENT'S AWARENESS AND PARTICIPATION IN SCHISTOSOMA-RELATED PROGRAMS

Table 6 presents the result of the respondents' awareness and participation in Schistosoma-related Programs. In terms of the awareness to schistosomiasis-related programs, the majority of the respondents, or about 94% of the respondents heard about schistosomiasis-related programs and their source of information was through health workers (88%) and the community (66%).

This result only suggests that their primary source of information is reliable there is no doubt that they have adequate knowledge about schistosomiasis. Among the schistosomiasis-related programs, mass treatment was mentioned by 88% of the respondents. Mass Treatment or Mass chemotherapy using praziquantel is a control strategy used to eliminate schistosomiasis was adopted by the Philippines' Department of Health (DOH) in the year 2000 [40]]. This mass treatment is recommended annually, however its frequency depends largely on the availability of praziquantel nationwide.

Most of the mass drug administration programs are donor-driven, that is, when the financial support stops, the treatment campaign ends [15]. Further, when the drug stock is insufficient, priority is given to highly endemic areas [40].

Table 6. Frequency Distribution on the Respondents' awareness and participation in Schistosoma-related Programs

Indicators	Frequency	Percentage (%)
Heard about Schistosomiasis Programs		
Yes	199	94.8
No	11	5.2
TOTAL	210	100
Source of Information about Schistosomiasis*		
Media	39	18.6
Health Workers	186	88.6
Family	72	34.3
Friends/Peers	30	14.3
Religious Leaders	8	3.8
Teacher	21	10.0
Community	139	66.2
Campaigns	16	7.6
IEC Materials (Pamphlets)	9	4.3
List of Schistosomiasis Programs*		
- Mass Treatment	185	88.1
- Anti-Schisto Campaign	3	1.4
Orientation	1	0.4
- Anti-Schisto Assembly	3	1.4
- Disinfect Infested Area	11	5.2
- Collection of Feces	3	1.4
- Prevention of Schistosomiasis Program		
Participate on Schistosomiasis Programs		
Yes	199	94.8
No	11	5.2
TOTAL	210	100
Reasons for Participating*		
Obliged	145	72.86
With incentive	8	4.02
Infected	128	64.32
Awareness	110	55.27
Reasons of Not Participating		
No Time	9	81.81
Afraid	4	36.36

In terms of participation, the majority, or 94% of the respondents participated in the different programs about schistosomiasis. Their participation is more likely that they are obliged (72.86%), infected (64.32%), and also to raise awareness (55.27%). This result is in line with the study of [23], where the major driving force in the participation rate is the incentives given to the people. Lorenzo pointed out the major driving force in the participation rate is compliance with the requirements of the Pantawid Pamilyang Pilipino Program, more commonly known as ”4Ps”, a government program that provides conditional cash grants to extremely poor families. One of the conditions for receiving 4Ps grants is the participation of households in mass drug administration activities.

HEALTH-SEEKING BEHAVIOR OF THE RESPONDENTS

Table 7. Respondents' Health-Seeking Behavior when infected with Schistosomiasis

Indicators	Frequency	Percentage
Factors that trigger respondents to seek medical help*		
Symptoms are serious/severe	85	40.47
Advise by friends or family members	21	10.00
Self-medication is not effective	19	9.04
Free medical services	116	55.23
Free medicines for schistosomiasis	179	85.24
Reasons for Not Seeking Medical Attention*		
Financial Difficulties	147	70.00
The seriousness of the symptoms	55	26.19
Environmental Reasons	66	31.43
Negative Attitude towards health care	30	14.29
Positive attitude towards self-medication	66	31.43

*Multiple responses were considered

Health-seeking behavior (HSB) has been defined as any activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy [27]. Table 7 presents the factors that trigger them to seek and neglect medical help or attention.

As depicted in table 7, results revealed that socio-economic status and perceived severity of the illness can be a factor to influenced HSB among respondents in San Miguel Area. Particularly, the most frequently answered reasons to seek medical help were free medicines especially on schistosomiasis (85%), free medical services (55%), and the severity of the disease (40.47%). In contrast, seeking medical help could be hampered also due to financial difficulties (70%), positive attitude towards self-medication (31%), and environmental reasons (31%) such as the distance to health facilities.

The study suggests that health-seeking behavior is a patient-related and environment-driven factor. From the table, it can be gleaned that respondents opt to seek health care twice a year gaining the highest percentage 32.38. A monthly check-up gained the lowest percentage of 5.24.

As to the reason why respondents seek medical help, most of them answered that it is because of the free medicines provided for Schistosomiasis gaining the highest percentage of 85.24, while a meager percentage of 9.04 believes that self-medication is not effective. On the other hand, as to the reasons for not seeking medical attention, an evident number reasoned out that financial barriers impede them from seeking medical help.

From the data, it can be deduced that respondents see the need to seek medical assistance, however, with the limited reason for this health-seeking behavior. The prevailing reason is the free medicines dispersed in health facilities. Further, while they have the desire to go to health facilities, financial constraints hinder them from doing so. Based on the result, distance to a medical facility and possible related costs influenced health-seeking behavior of patients with schistosomiasis. Patients from far-flung areas may incurred higher costs of transport compared to those near the health facilities. Moreover, means of transport were not always reliably available in some settings.

In terms of the perceived severity of illness, respondents contemplate first with their illnesses, when respondent perceive that the disease is very severe, they seek medical attention but because of their low-risk perceptions that are, if they feel that the disease is less severe, they embark first with self-medication using over-the-counter drugs and folk remedies to resolve the discomfort. The behaviors of these patients are consistent in the study of [36] and [9]. Perhaps the inclination towards self-medication or traditional medicine is sometimes due to financial difficulties or the distance of the residents to the medical facility.

Sad to note that the perceptions of the severity of illness among respondents in San Miguel are critical in determining treatment compliance. As mentioned by others [29], if the respondents seek help in accordance with the severity of the disease this might be detrimental considering that morbidity in schistosomiasis is a function of infection intensity and duration. Hence, if the disease is in the severe stage it affects the cardiopulmonary system, gastrointestinal and genitourinary tract, and the central nervous system [43]. Early treatment of disease produces better outcomes while late-stage treatment provides less benefit with multiple system involvement, which leads to serious systemic complications [43]. Hence, health organizations must design the health education programs in the locality by targeting the local perceptions of schistosomiasis, particularly in relation to the perceived severity of the illnesses. Their programs should be focused on the modification of behavior among respondents by engaging in clinical treatment even in the early onset of the disease.

The findings confirm the theory on Health Belief Model. Within the context of the Health Belief Model (HBM), individuals are likely to engage in health-promoting behavior depending on the extent to which the individual perceives that the illness is severe and that there are many benefits in taking action against the illness [34 as cited by 18].

ASSOCIATION OF RESPONDENTS' PROFILE WITH KAP AND HEALTH-SEEKING BEHAVIOR TOWARDS SCHISTOSOMIASIS

Table 8 shows the result of the Spearman correlational analysis on respondents' profile and their knowledge towards the causes, signs and symptoms, transmission, and prevention of schistosomiasis. Results of the study revealed that sex, educational attainment, and distance to medical facilities seemed to influence the respondents' knowledge about schistosomiasis. In terms of sex, males are found to be knowledgeable (M=6.45, SD 1.81) as they garnered high total mean scores compared to females (M=5.79, SD 2.07). Similar findings were also found in the study elsewhere, [33, 11], where men are consistently found to be more knowledgeable than women. This may be attributed to the fact that, due to their work in agriculture, men may be more exposed to the parasite and the disease, and therefore may receive treatment or advice more frequently than women.

Although the level of education seemed to be associated with knowledge, the association was only significant among those is with tertiary education ($p = 0.02$), this only implies that

Table 8. Factors that influenced respondents' knowledge towards schistosomiasis

PROFILE	KNOWLEDGE											
	Causes			Transmission			Prevention			Signs and Symptoms		
	p-value	Correlation Coefficient	Decision	*p-value*	Correlation Coefficient	Decision	*p-value*	Correlation Coefficient	Decision	*p-value*	Correlation Coefficient	Decision
Sex	0.003	-0.204	Sig.	0.006	-0.191	Sig.	0.038	-0.143	Sig.	0.033	-0.147	Sig.
Age	0.032	-0.148	Sig.	0.087	-0.118	Not Sig.	0.015	-0.168	Sig.	0.248	-0.080	Not Sig.
Civil Status	0.344	0.066	Not Sig.	0.161	0.097	Not Sig.	0.035	0.146	Sig.	0.811	0.017	Not Sig.
Educational Attainment	0.000	-0.276	Sig.	0.000	-0.261	Sig.	0.003	-0.207	Sig.	0.041	-0.141	Sig.
Occupation	0.018	-0.163	Sig.	0.070	-0.125	Not Sig.	0.085	-0.119	Not Sig.	0.147	-0.100	Not Sig.
Religion	0.508	0.046	Not Sig.	0.026	0.155	Sig.	0.716	0.025	Not Sig.	0.418	0.057	Not Sig.
Monthly Family Income	0.006	-0.189	Sig.	0.355	-0.064	Not Sig.	0.034	-0.147	Sig.	0.951	0.003	Not Sig.
Type of Living Environment	0.104	0.112	Not Sig.	0.155	0.098	Not Sig.	0.353	0.064	Not Sig.	0.625	0.035	Not Sig.
Toilet Facility	0.085	0.119	Not Sig.	0.275	0.076	Not Sig.	0.075	0.123	Not Sig.	0.145	0.101	Not Sig.
Distance to Facility	0.005	0.194	Sig.	0.000	0.262	Sig.	0.010	0.178	Sig.	0.889	0.010	Not Sig.

those respondents with tertiary education are more knowledgeable about schistosomiasis.

These findings were also noted by others as well, [17]. It is not surprising that higher education groups got high scores this could be attributed to the fact that they can perceive information so easily through reading materials and posters. In contrast, lower education groups perhaps cannot easily grasp information from reading materials or posters they need someone to relay information to them and explain it in a local language. This further suggests that there is a need to look into the level of understanding among those lower educated groups it might be that they were not able to understand those reading materials provided for them.

In addition, the table also shows a significant difference in the knowledge of the respondents about schistosomiasis in terms of their distance from the medical facility. The post-Hoc analysis further revealed that as the number of kilometers increases, the score of the respondent's decreases (p=001). The study further suggests that the knowledge of the respondents is low who are in the far-flung areas. Such a scenario could be attributed to the fact that information dissemination could not reach far-flung areas. Hence, efforts to reach out information in the far-flung areas is recommended.

The results run parallel with the findings of others [17], who mentioned that rural communities claim that they have knowledge of the disease but more from a cultural rather than a biomedical source. It appears that residents have socially constructed knowledge of the disease. Because of this, they have limitations in terms of their cure and prevention. They rely mostly on the knowledge they gained out from social facilitation and how the majority of the community understands the disease.

Influenced of Respondents Profiles to Attitude towards Schistosomiasis

Table 9 influences of respondents' profiles to attitudes towards schistosomiasis. The tabular data presents a significant relationship with sex, educational attainment, and distance to the facility on the attitude towards schistosomiasis with a p-value of 0.046, .040, and .019 respectively. Schistosomiasis remains a global health problem, and it also overruns rural communities especially so that they have limited to almost poor access to health care. The data underscores that sex, educational attainment, and distance to facility influence the attitude of respondents towards the disease.

On sex, the ones who do farming activities and are at risk of being exposed to open water sources are the males. It is because of this that contraction is also high among them. Because of this, they are more likely to be knowledgeable and more inclined to seek information about the disease. Additionally, those who are educated, earning secondary and tertiary education are the ones who can most likely easily understand the information campaign being conducted by health care providers in the community.

Table 9. Influence of respondents' profiles to attitude towards schistosomiasis

Profile	Attitude		
	p-value	Correlation Coefficient	Decision
Sex	0.046	0.195	Significant
Age	0.427	-0.055	Not significant
Civil Status	0.052	0.283	Not significant
Educational Attainment	0.040	-0.142	Significant
Occupation	0.404	0.299	Not significant
Religion	0.923	0.289	Not significant
Monthly Family Income	0.382	-0.061	Not significant
Type of Living Environment	0.398	0.212	Not significant
Toilet Facility	0.998	0.161	Not significant
Distance to Facility	0.019	0.162	Significant

Moreover, one's decision to seek health care assistance is also affected by the distance of the health care facility in the locality. All other variables proved to have no significant relationship with the respondents' attitude towards schistosomiasis.

Others, [35], reported a significantly higher level of knowledge among males compared to females because they are more exposed to risky water practices compared to females. Acquisition and dissemination of the right information is the key to the reduction of the risk of contracting schistosomiasis. Further, information about the disease is shared among the members of the community, and when not explained properly, this may foster misconceptions and superfluous ideas on the disease.

Influence of respondents' profile towards the practices of the respondents

Table 10 highlights the results on the profile towards the practices of the respondents. Results show that from among the indicators in the profile, only the type of environment has a significant relationship with the respondents' practices bearing a p-value of 0.042.

The result denotes that being in the rural area heightens the inclination to engage in traditional practices towards attending to a disease like a schistosomiasis because of the distance of the locality that could account for the limited knowledge that they have on the disease. Because of being in the rural community, residents have reduced medical awareness that could affect behavioral practices. Rural communities in the Philippine setting is usually devoid of the standard facilities that could immediately address the medical conditions of the locals. On this end, prevention and control is highly affected in these areas. This is also supported in the study elsewhere when they noted that community members in rural areas have limited access to the standard medical background that also affects their health practices in the promotion of intervention on the spread of schistosomiasis. [45] .

Table 10. Influence of respondents' profile towards the practices of the respondents

PROFILE	PRACTICES		
	p-value	Correlation Coefficient	Decision
Sex	0.374	0.122	Not Significant
Age	0.382	-0.061	Not Significant
Civil Status	0.553	0.193	Not Significant
Educational Attainment	0.887	0.010	Not Significant
Occupation	0.634	0.271	Not Significant
Religion	0.432	0.365	Not Significant
Monthly Family Income	0.383	-0.061	Not Significant
Type of Living Environment	0.042	0.342	Significant
Toilet Facility	0.612	0.274	Not Significant
Distance to Facility	0.542	-0.324	Not Significant

Table 11. Influence of respondents' profile towards the health-seeking behavior of the respondents

PROFILE	Health Seeking Behavior		
	p-value	Correlation Coefficient	Decision
Sex	0.718	0.183	Not Significant
Age	0.382	-0.061	Not Significant
Civil Status	0.486	0.332	Not Significant
Educational Attainment	0.887	0.010	Not Significant
Occupation	0.963	0.345	Not Significant
Religion	0.911	0.487	Not Significant
Monthly Family Income	0.383	-0.061	Not Significant
Type of Living Environment	0.015	0.499	Significant
Toilet Facility	0.653	0.300	Not Significant
Distance to Facility	0.041	0.122	Significant

Influence of Respondents' Profile towards the health-seeking behavior of the respondents.

Table 11 accentuates the results on the respondents' profile towards the health seeking-behavior of the respondents. The tabular data presents the type of living environment and the distance of the facility to have a significant relationship with the profile of respondent with p-values 0.653 and 0.041 respectively. This denotes that the health-seeking behavior and the distance to the facility affected the respondents' decision to seek medical assistance when faced with a medical condition such as contracting schistosomiasis which is an issue in areas with unsafe water facilities and open sources.

Schistosomiasis causes long-term illness and substantial economic liability. Thus, the type of living environment and distance to the facility are marked to be significantly related to the health-seeking behavior of the community. The enabling factor on health-seeking behavior includes geographic location and local health facility according to EAHP [13]. Because of the two significantly marked indicators, respondents opt to choose general healthcare services for them to obtain free medicine to manage their disease. The vulnerable groups in rural areas have less sufficient health care systems that affect how they perceive health risks and health-related behaviors crucial to understanding schistosomiasis as a long-term health problem.

IV.

V.

CONCLUSION

The knowledge gained from the medical and health practitioners has given the residents adequate information that could help them better understand the disease. However, because they do knowledge-sharing within the community, there are instances that they are unable to explain to their friends or neighbors, or even family members the nature of the disease using the medical perspectives. Because of the residents' information from the medical practitioners, they are able to perceive the seriousness of the disease, and that this should also be attended to using appropriate curative response

and not just the traditional way of responding to it. Open sources of water lead to being infected with the disease; hence, since farming is highly engaged by the male population, they also have a high risk of transmission. Males have more knowledge of the disease than females because they are most likely to contract the disease being the wage earner for the family doing physical work in the open areas like farmland or ponds; however, they are less knowledgeable compared to those who are in the city because of their educational attainment. The proximity of the health facility also contributes to the regular acquisition of information regarding the disease.

Being in a rural area affects the knowledge, attitude, practices, and health-seeking behavior of the respondents. Being in the countryside exposes the respondents to schistosomiasis largely because of the economic activity engaged by the residents in the area. In order to cope with the challenges of the disease, they also opt from time to time to use local knowledge in lieu of medical services to address health issues like schistosomiasis.

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