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# Practices Regarding Helminth Infections: The Study at A District in Ghana

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## Abstract

Soil Transmitted Helminths Infestations (STHIs) harm both the health and wellbeing of adults and children. Worm infestation can be described as the infection of internal organ tract with any of many species of helminths or parasitic worms such as Ascaris (Round worm), Enterobius (Pin worm), *Trichinella spiralis* and numerous species of Cestodes (Tape worm). The aim of the study was to obtain the knowledge, perception and practices regarding helminth infections amongst the people of Prampram. This study was a cross-sectional study in which a structured questionnaire was administered by the researchers to obtain socio-demographic data and knowledge regarding the subject matter. The study population involved 400 respondents from Prampram. A random sampling technique was used to select the sample and analysed by SPSS software version 14. Results showed that out of the 400 respondents, 230 males (57.5%) and the rest females, 302 respondents were not married and 290 people (72.5 %) had attained tertiary level of education. There was a higher frequency of the use of worm medication between the ages of 15 and 24 as compared to the other age groups and a greater level of education was associated with a higher level of knowledge of worm- infestation and medication use. Out of the 400 respondents, (362)90.6% had used worm medication before whiles the rest have not. All the respondents had a knowledge of at least one sign or symptom of worm infestation. There was a higher frequency of worm medication use and knowledge of the signs and symptoms of worm infestation between the ages of 15 and 24 years. Majority (36.5%) of the respondents who use worm medication resorted to (Albendazole) in treating worm infestation. There was an observed association between the socio-demographic factors of age and level of education and the knowledge of worm infestation and the practices associated with use of worm medication.

**Keywords:** Helminths; Anthelmintics; Albendazole; Mebendazole; Worms

## Introduction

Worm infestation is one of the common causes of chronic infection in humans in developing countries. According to WHO in 2018, it is a major public health problem and it has been estimated that more than 1.5 billion people, or 24% of the world's population are infected with worms, with the major incidence occurring in sub-Saharan Africa, the Americas, China and East Asia. Children of an endemic community can be expected to have intestinal parasitic infection soon after weaning and high risk of re-infection in the rest of their lives [1].

According to Ullah et al., the impure drinking water, low socio-economic state, poor sanitation coupled with low literacy rates of parents particularly the mothers are the main causes. Helminthic infections are more prevalent among school children aged 5-14 years. They constitute 12% of the total disease burden in children and also one of the major causes of malnutrition, anemia, stunted physical and mental growth and psycho-social problems in children [2]. It also causes recurrent gastrointestinal and

upper respiratory tract infection thus contributing to high morbidity and mortality in children. Amongst helminthic infestations, the hookworm infestation is a leading cause of iron deficiency anemia, whipworm in children causes growth retardation and anaemia whiles heavy infestation with both roundworm and whipworm causes protein energy malnutrition [3]. The lack of knowledge and ignorance of worm infestation has led to many studies been conducted in various countries in Africa in order to find ways to deal with some of its effects. According to studies conducted, worm infestations have an in-depth relationship with the socio-demographic and ecological factors like financial condition, illiteracy, poor personal and environmental hygiene [4].

In this vein, the WHO has classified worm infestations as long-term diseases that produces few symptoms in their early stages and sometimes serious effects at well-developed stages or may be quite fatal. Soil Transmitted Helminths infestation (STHs) can be described as the infection of internal organ tract with any of many species of helminths or parasitic worms such as Ascaris (Round worm), Enterobius (Pin worm), Trichinella spiralis and numerous species of Cestodes (Tape worm) mostly through the soil. [5]. According to Kumar and Jain, Soil-Transmitted Helminth (STH) infections can be said to form the most important group of intestinal worms affecting two billion people worldwide and the main species which infect are Ascaris lumbricoides, (roundworms), Trichuris trichuira, (whip worms) and Necator americanus / Ancylostoma duodenale (hookworms) [6].

It is estimated that approximately 10,500 deaths each year are due to complications of Ascariasis and 65,000 deaths per year are due to anemia caused by hookworm infection (Kumar and Jain 2014). According to Sam, et al., prevalence of helminthic infections exceeding 70% of the population has been reported in equatorial and tropical countries of West Africa [7]. In Ghana, up to 63% infections among school-age children have been reported. This work was carried out to access the current level of awareness, knowledge, and attitude regarding worm infestations and to evaluate how effective residents carry out a worm infestation treatment on themselves.

**Material and Methods**

A descriptive cross-sectional household survey was used to obtain the necessary information. A well-structured questionnaire was used. Data obtained from respondents include; Intake of worm medications, last time respondent took medication, knowledge on signs and symptoms of worm medications, frequency of administration of worm medications, worm medication use in children. The research also sought to determine any correlation between the respondents age and level of education on some of the factors described above.

*Study Area*

The study was conducted in Prampram of the Ningo-Prampram District of the Greater Accra Region of Ghana. The district is located in the eastern part of Greater Accra region of Ghana. It comprises of two main towns Ningo and Prampram. The capital of the district being Prampram. The district has a population of 70,923 which constitutes 1.8% of the region's population according to Ghana's 2010 census report [9].

*Study Population*

The study population involved 400 respondents from Prampram. The research was not limited to any age group but focus was laid on people from the age 15 to 60 years. A random sampling technique was used to select the sample.

*Data Collection and Processing*

A well-structured interview schedule prepared in the form of questionnaire was used to obtain information from respondents. The questionnaires were administered to the respondents to answer. Respondents having difficulties in answering were assisted. The results were analyzed using SPSS software version 14.

*Descriptive Statistics*

Frequency and percentage distribution were used to study the demographic variables of the populace. This data was collected from October 2018 to December 2018.

## Results

*Demographic Data*

Out of a total of 400 respondents surveyed, 57.5 % (230) were males whiles 42.5 % (170) were females. A high number of the population studied had obtained tertiary education whiles majority of the respondents were within the age range of 15 to 24 years. Table 1 below illustrates the results.

| Variable | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| **Male** | 230 | **57.5** |
| **Female** | 170 | **42.5** |
| **Age** | | |
| **15-24** | 232 | **58.0** |
| **25-34** | 98 | **24.5** |
| **35-44** | 35 | **8.8** |
| **45-55** | 18 | **4.5** |
| **>55** | **17** | **4.2** |
| **Marital Status** | | |
| **Married** | 91 | **22.7** |
| **Not Married** | 302 | **75.5** |
| **Divorced** | 7 | **1.8** |
| **Level of Education** | | |
| **Primary** | 14 | **3.5** |
| **Junior High School** | 23 | **5.8** |
| **Senior High School** | 42 | **10.5** |
| **Tertiary** | 290 | **72.5** |
| **Other** | 31 | **7.8** |

**Table 1:** Characteristics of the sample population.

### Intake of Worm Medication

Table 2 shows the number of respondents who have and have not taken worm medication. The category labeled YES depicts the respondents who have ever taken worm medication before and depicts frequency of 362. This represented 90.6% of the total sample size of the respondents. As indicated in Table 2 below, 38 of the respondents in the study said they had not taken a worm medication before. This represented 9.4% of the total sample size.

| | Frequency | Percentage |
|---|---|---|
| **Yes** | 362 | 90.6 |
| **No** | 38 | 9.4 |
| **Total** | 400 | 100 |

**Table 2:** Worm medication intake of respondents.

### Period For Last Worm Medication

The table below provides information on the last time the sample population took worm medication. From Table 3 below, 155 of the respondents took worm medication within recent 3-month period, representing 42.9% of the sample size. Respondents

numbering 27 had taken medication within a one-year period. Respondents numbering 69 (19.1%) could not remember the last time they took a worm medication. Table 3 below depicts the results.

| | Frequency | Percentage |
|---|---|---|
| Within 3 months ago | 155 | 42.9 |
| Within a year ago | 27 | 7.5 |
| Within 6 months ago | 76 | 21.1 |
| More than a year ago | 34 | 9.4 |
| I do not remember | 69 | 19.1 |
| Total | 361 | 100.0 |

**Table 3:** Period for last medication.

**Knowledge On Signs and Symptoms of Worm Infestation**

From the interviews conducted it was determined that 22 respondents had knowledge on passing of stools with worms as a symptom of worm infestation. A total 70 people knew that loss of appetite is a sign of worm infestation and this represents 17.5 % of the total respondents. Also, 80 and 30 people knew of itchy skin and itchy anus respectively as signs of worm infestation. This also represents 20 % and 7.5 % of the total respondents respectively. Respondents numbering 57 know that nausea and vomiting is an indicator of worm infestation whereas 34 people know of passing of stool with worms accompanied by loss of appetite as an indicator of worm infestation. Also, 29 people know of passing of stool with itchy skin as a precursor of worm infestation and 33 people know of itchy skin, loss of appetite, nausea and vomiting as indicators of worm infestation. Out of the total respondents, 40 people knew of itchy skin, itchy anus and loss of appetite as a precursor of worm infestation, representing a 10% of the total respondents. Only 5 people know of other signs and symptoms other than the ones provided by the researcher.

| | Frequency | Percentage |
|---|---|---|
| Passing stool with worms | 22 | 5.5 |
| Loss of appetite | 70 | 17.5 |
| Itchy skin | 80 | 20.0 |
| Itchy anus | 30 | 7.5 |
| Nausea and vomiting | 57 | 14.2 |
| Passing stool with worms, loss of appetite | 34 | 8.5 |
| Passing stool with worms, itchy skin | 29 | 7.2 |
| Itchy skin, loss of appetite, nausea and vomiting | 33 | 8.2 |
| Itchy skin, itchy anus, loss of appetite | 40 | 10.0 |
| Other | 5 | 1.2 |
| Total | 400 | 100.0 |

**Table 4:** Knowledge on signs and symptoms of worm infestation.

Others made mention of bloated stomach, skin rashes and stomach pains.

**Medication Used for Treatment of Worm Infestation**

From Table 5 below, 138 out of 400 respondents took Vermox brand of Mebendazole in treating worm infestation. This number represented a 34.5% of the sample size. Also, 146 responded to using Wormplex 400 albendazole brand in treating worm infections. This represented 36.5% of the sample size. Wormplex 400 is one local brand name for albendazole. Seventy-two (72) respondents admitted to taking Zentel in treating worm infestation. This represented 18% of the sample size. Zentel is the brand name for albendazole. Other forms of anthelmintic were also stated of which majority are either local brands of albendazole or mebendazole.

| | Frequency | Percentage |
|---|---|---|
| Vermox | 138 | 34.5 |
| Wormplex 400 | 146 | 36.5 |
| Zentel | 72 | 18.0 |
| Other | 44 | 11.0 |
| Total | 400 | 100.0 |

**Table 5:** Medication used in treating worm infestation.

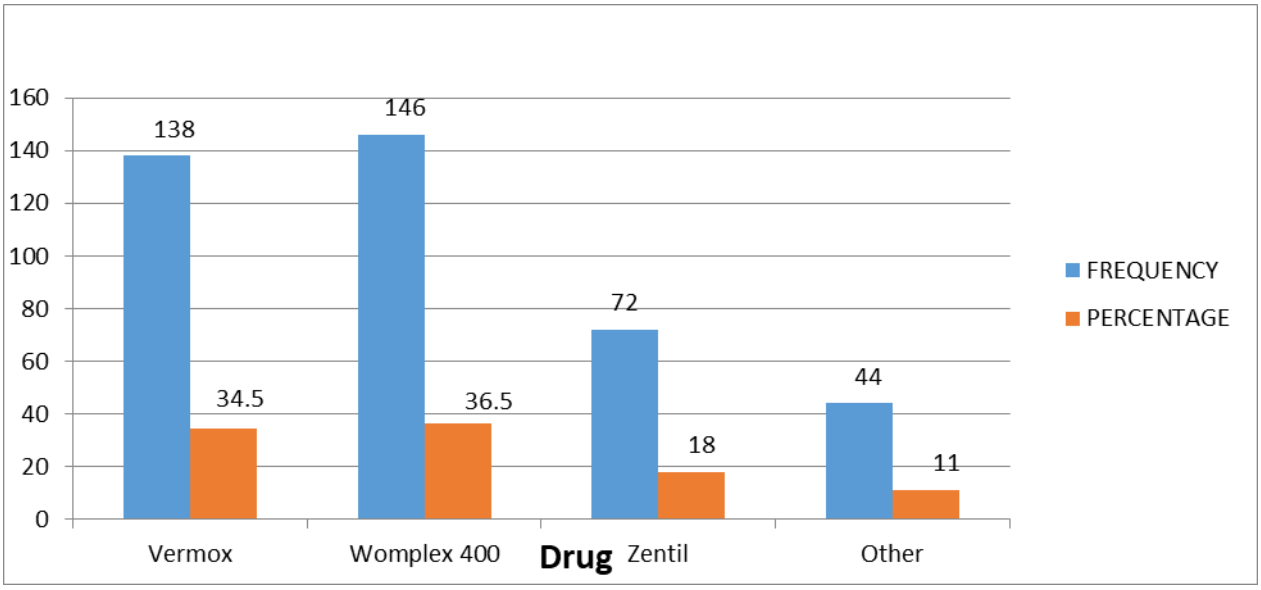


**Figure 1:** Percentages and frequency of worm medication used.

**Frequency of Medication Intake for Prophylaxis**

Table 6 below shows the number of times in a year respondents think one must take worm medication. From the results in the table below, 22 respondents had the view that in a year one can take worm medication once, representing 5.5% of the total respondents. Forty-four respondents admitted that in a year it can be taken twice and 42 respondents had the view that worm medication can be done on monthly basis. Two hundred and forty-eight out of the 400 respondents agreed that it can be taken every 2-3 months and this specifically represents 62% of the total respondents. 11% of the respondents agreed that worm medication can be taken in other different time variations.

| Period/Year | Frequency | Percentage |
|---|---|---|
| Once | 22 | 5.5 |
| Twice | 44 | 11.0 |
| Every month | 42 | 10.5 |
| Every 3 months | 248 | 62.0 |
| Irregular | 44 | 11.0 |

**Table 6:** Frequency of medication intake for prophylaxis.

**Reasons For Worm Medication Periods**

Table 7 below gives results on a follow up information on reasons why the respondents think of such period interval for worm medication as prophylaxis. Out of the 400 respondents, only 50 people gave reasons for their answer provided in Table 7.

| | Frequency | Percentage |
|---|---|---|
| Advice from parents | 1 | 0.2 |
| Heard so | 1 | 0.2 |
| I just take them | 1 | 0.2 |
| It's expensive | 1 | 0.2 |
| Normal Routine | 2 | 0.5 |
| Recommended by Health Personnel | 24 | 6.0 |
| To keep healthy | 3 | 0.8 |
| To prevent worm infestation | 17 | 4.0 |

**Table 7:** Showing reasons for Table 6.

**Respondents With Children**

This section was assigned to people involved in the survey who had a child or children. In the survey conducted, only 65 respondents had children according to the information gathered from the table above. Out of the 65 people, 26 people had their child within the age group of 0-3 (in years). This represented 40% of the sample size. 23 out of the 65 respondents with children had their child within the age group of 4-7 and this represented 35.4% of the sample size. From the table, 10 people had their child within the age group of 8-11. Specifically, those in the 8-11 yeas category represented 15.4% of the 65 respondents. Six (6) out of the 65 respondents had their child within the age group of 12-14. This represented 9.2% of the sample size.

| Age (Years) | Frequency | Percentage |
|---|---|---|
| 0-3 | 26 | 40.0 |
| 4-7 | 23 | 35.4 |
| 8-11 | 10 | 15.4 |
| 12-14 | 6 | 9.2 |
| Total | 65 | 100.0 |

**Table 8:** Age of child.

**Administering Worm Medication to Children**

Out of the 64 parents, 51 admitted to giving their children worm medications. This represented 79.68%. Six parents admitted not to ever given their children worm medication and this represented 12.1 % of the sample size. Four people declined to give an answer to this section. This represented 6.25 % of the sample size.

| | Frequency | Percentage |
|---|---|---|
| Yes | 51 | 79.68% |
| No | 9 | 14% |
| Declined to answer | 4 | 6.25% |

**Table 9:** Number of people who have or have not given their children worm medication.

Out of the 64 parents, only 59 gave reasons for their answer. Six out of the 59 parents said they gave the drugs because their children were passing stools with worms. This represented 10.2% of the sample size. From the table, 13 people gave the drugs out because their children lost appetite. This represented 22% of the sample size. 15 people gave the drugs to their kids because they were experiencing itchy skin. This represented 25.4% of the sample size. Only 2 people gave the drugs to their children because of itchy anus. This 2 represented 3.4% of the sample size. 8 parents gave the drugs to their kids because they experienced nausea and vomiting. This represented 13.6% of the sample respondents. Seven out of the 64 parents gave the drugs to their children because they experienced passing of stools with worms and itchy skin. This represented 11.9 % of the sample size. Drugs because they experienced itchy skin, loss of appetite, nausea and vomiting concomitantly. This represented 3.4 of the sample size. Two gave the drugs because the kids experienced itchy skin, itchy anus and loss of appetite concomitantly. This represented 3.4 % of the sample size.

| Reason | Frequency | Percentage |
|---|---|---|
| Passing stool with worms | 6 | 10.2 |
| Loss of appetite | 13 | 22.0 |
| Itchy skin | 15 | 25.4 |
| itchy anus | 2 | 3.4 |
| Nausea and vomiting | 8 | 13.6 |
| passing of stool with worms | 4 | 6.8 |
| passing out stool with worms, itchy skin | 7 | 11.9 |
| itchy skin, loss of appetite, nausea and vomiting | 2 | 3.4 |
| itchy skin, itchy anus, loss of appetite | 2 | 3.4 |
| Total | 59 | 100.0 |

**Table 10:** Reason for administering worm medication to children.

From Table 11 below, out of the 64 people with children, only 56 gave a response to the frequency to which they give their children worm medication. Only 2 out of the 56 parents gave their children worm medication every month. This is represented as 3.6% of the respondents. 34 people gave their children worm medication in at least every 3 months. This represented 60.7% of the sample size. Twelve people gave their children worm medication at least 6 months and this represented 5.4% of the sample size whereas 3 people gave their children worm medication in at least once a year. This represented 5.4% of the sample size. Out of the 56 parents, 5 people gave their children worm medication once in more than a year. This represented 8.9% of the sample size.

| Period | Frequency | Percentage |
|---|---|---|
| Every month | 2 | 3.6 |
| Within 3 months | 34 | 60.7 |
| Within 6 months | 12 | 21.4 |
| Within 1 year | 3 | 5.4 |
| More than a year | 5 | 8.9 |
| Total | 56 | 100.0 |

**Table 11:** Frequency of administering worm medication to children.

From Table 12 below, 36 respondents gave the worm medication based on advice from health personnel. This represented 64.3% of the sample size. Three out of the 60 respondents gave the worm medication during their duration based on the recommendation. This represented 5.4% of the sample size. Five respondents gave the worm medication during their preferred duration due to their ideology that children easily get into contact with germs. This represented 8.9% of the sample size. Twelve people gave the worm medication based on their ideology of preventing worm infestation, representing 21.4% of the sample size.

| Reason | Frequency | Percentage |
|---|---|---|
| Advice from Health Personnel | 36 | 64.3 |
| BNF recommendation | 3 | 5.4 |
| Children easily get into contact with germs | 5 | 8.9 |
| To prevent worm infestation | 12 | 21.4 |

**Table 12:** Reasons for their choice in table.

**Correlation Analysis**

The correlation between indicators is compared and analyzed in this section. Various indicators include the demographic data (age and educational level) and the socio- demographic factors (Number of times of worm infestation, last time one took worm medication, reasons for taking worm medication and knowledge on the symptoms of worm infestation).

| | | Number of times of worm medication | Last time you took worm medication | Reasons for taking worm medication | Symptoms of worm infestations |
|---|---|---|---|---|---|
| Age | Pearson Correlation (r)<br>Sig. (2-tailed)<br>N (Total Respondent) | -0.064<br>0.227<br>356 | 0.010<br>0.843<br>361 | 0.029<br>0.829<br>59 | -0.016<br>0.755<br>395 |
| | | **Symptoms of worm infestations** | **Number of times of worm medication** | | |
| Level of Education | Pearson Correlation (r)<br>Sig. (2-tailed)<br>N (Total Respondent) | 0.061<br>0.249<br>364 | 0.216**<br>0.000<br>330 | | |
| **Correlation is Significant at the 0.01 level (2-tailed) | | | | | |

**Table 13:** Correlation.

## Discussion

*Knowledge of Symptoms of Worm Infestation*

The present study showed that majority of the respondents in the community had adequate knowledge of signs and symptoms that characterize worm infestation. Majority of the respondents knew of at least a sign or symptom of worm infestation. This was similar to results obtained by Masaku, et al., a similar study conducted in Kenya [10]. From the study, it was observed that, none of the respondents knew of severe complications that could arise from worm infestation and this reflected in their use of worm medication. Knowledge of the severity of symptoms and signs is a major determinant to compliance to the use of worm medication. It can also be inferred that they were fairly educated on worm infestation per the level of knowledge they showed of the signs and symptoms indicated that they perceive worm infestation as a simple ailment with the least possibility of causing serious events.

*Correlation Between Level of Education and Symptoms of Worm Infestation*

Table 13 depicts the correlation coefficient of 0.216 for association between level of education and symptoms of worm infestation. This shows that there is a moderate positive association between level of education of the respondent and the symptoms of worm infestation. The research Hypothesis (H1) stated that, "There would be a positive correlation between the knowledge of signs and symptoms with increasing levels of education". This hypothesis was accepted and this indicated that as the level of education increased, the knowledge of symptoms of worm infestations also increased fairly. It can be deduced that even though level of education is increasing from primary through to the tertiary level of education, the kind of information they receive on worm infestation varies and this could have affected the knowledge on the symptoms they know. From the study, it was observed that respondents who were affiliated to the health sector, thus health workers and those in the educational sector showed more knowledge on the symptoms they know of as compared to other respondents in other work sectors. A similar study conducted by Dayanand, et al., also showed an increase in educational level led to more knowledge on worm infestation and decrease in worm infestation rate [10]. This was observed mostly in the children.

*Correlation Between Age and Symptoms of Worm Infestation*

From the table 13, the correlation coefficient of -0.016 shows that there is a weak negative linear association between age of the respondent and the symptoms of worm infestation. It means that as the age increased from the young age (15-24 years) to the older age (25 and above), the knowledge on the signs and symptoms decreased fairly. The research Hypothesis (H6) stated that, "There will be a positive correlation between age and the signs and symptoms of worm infestation they know". This hypothesis was not accepted because it was observed that, people of the young age group were more educated on signs and symptoms of worm infestation due to school systems. Also, public education platforms, influence of mass media and discussions from family and friends cannot be ignored as a factor to information they obtained on worm infestation. From the study, we observed that those of the older age group were highly engrossed in their occupations and work-related activities and this resulted in most of them being unable to recall the signs and symptoms they know from the education they receive when they were young.

*Misconception on STHS Infection*

The current study results showed that there were reported misconceptions on STHs symptoms. These misconceptions were due to inadequate information on STHs among adults in Prampram. These misconceptions were about the passage of worms in stools. Most of the people in the Prampram community stated that their children pass out worms in their stools and gave worm medications since that is a symptoms of worm infestation. This above scenario is a misconception because open defecation exposes their faecal matter to flies and these organisms release certain substances on the faeces when they settle on them, these results in worms emerging out of the faeces. These misunderstanding was mostly prevalent in the people with low level of education especially those with primary education.

Also, some of the respondents made mention of ring worm as a sign of worm infestation. This is a misconception because ring worm is not a sign of worm infestation but a fungal infection. This perception was mostly found within the locals with a low level of education. This occurrence was also observed by Dayanand, et al., in his study in western Nepal, he found that respondents in the community also said that they knew of ring worm as a sign of worm infestation [9].

*Drugs Used in Worm Infestation*

The research revealed that some of the respondents admitted they had never used worm medication before. They attributed the cost of the worm medication as a deterrent to its use. Others stated that the drugs were not effective and worm infestation is not a serious sickness. This information can be attributed to their knowledge on worm infestation. Most of the respondents interviewed who admitted to the use of worm medication said they mostly use wormplex 400 closely followed by vermox, zentel and other brands. Most of the respondents said they use wormplex 400 because of its availability, thus it is a relatively popular drug and can easily be purchased in pharmacies. Also, its affordability, thus the cost of wormplex 400 being GH₵ 5.50 (approx. $ 1.00) which is relatively cheap to buy as compared to the other brands. For others who resorted to vermox which is priced at GH₵9.00 (approx $ 1.60), from the study they were convinced of its brand and its relatively expensive nature as a representative of its therapeutic effect.

Zentel, priced at GH₵7.50 (approx.$ 1.40) was the third most used by the respondents and it was observed that they used Zentel because of its availability to them in their vicinity but was not used as much as Wormplex because of the price. Other brands such as Combantrin, which is priced at GH₵21.00(approx. $ 3.80) was not used as often as other brands, only one respondent admitted to the use of combantrin. The low use of combantrin can be attributed to its price. The respondents deem it too expensive leading to the use of other cheaper alternatives. Astrazole and Nezben (priced at GH₵4.00. approx. $ 0.70) amongst others were rarely used also because the public deemed its cheap nature as a representation of its low therapeutic effect. Thus, they consider the drugs less effective as compared to the other brands.

It can be deduced from the respondents that even though they knew of various worm medication, cost and availability are major factors in purchasing and use of worm medication. Cost as a determinant was inferred in those who said they do not use worm medication. Some of the worm medications are expensive and because the general populace did not consider it a serious ailment, they prefer not to purchase them in view of it been seen as a waste of money. In similar study in Kenya, the respondents stated that the average cost of worm treatment was reported to be between 50 to 700 Kenya shillings This occurrence was also observed by Dayanand, et. al., in his study [11]. By more than half of the participants. Participants felt that the cost of treatment was quite high and a hindrance to accessing worm treatment considering their low levels of income in their local rural setting [10]. Also, the availability of the drugs in the community was implicated in the use of worm medication with the popular brands been purchased regardless of what the actual drug contains. The respondents classified all the drugs as worm medication.

*Use of Worm Medication in Children*

From the results obtained, it can also be deduced that most of the respondents do not know the reason why they chose to give some of the medication to their children. It can be deduced that because they received education from people, it can be attributed as a main factor to their use of the medication in children. This was also observed report by Brannan, et. al., on the program conducted where the use of worm medication was more prevalent in children based on studies conducted by Hedley, on worm infestation where it was stated that worm infestation was much more prevalent in children [10].

Also, in a similar study conducted in Egypt by Curtale, et al., it was observed that adequate knowledge was present in mothers pertaining to etiology, prevention and treatment of worm infestation because they regarded it as harmful to their children [12]. This was exemplified in DALY's report of cause of DALY's among children of school-going age, where it was reported that close to 50 million children suffered from DALY as a result of worm infestation [12].

**Summary of Findings**

Out of the 400 respondents, 230 males (57.5%) use worm medication regularly. There was a higher frequency of worm medication for people between the ages of 15 and 24. The focus of de-worming has very often been on younger people. Most free worming medication programs undertaken by both government and non-governmental organizations are targeted at only school age children and the youth. The findings of the study show that only 49.2% use of worm medication within three months for adults. This means that greater than 50% of the people do not use worm medication as often as they should. This might explain the poor level of consistency in deworming. It is possible that the socioeconomic status of the people prevents them from deworming as they should. As was shown in the results, students at tertiary level of education had the highest compliance to worm medication use (72.5%). This suggests that education contributes to the adherence to deworming. The findings from this study also show that regardless of the knowledge of the importance of deworming, there needs to be an active health promotion programme to enhance compliance.

The respondents have shown the channels through which they get information on deworming. Such sources should be the focus for health promotion campaigns to ensure that the message gets to its target audience. Although Wormplex 400 has been the most commonly used anthelminthic (36.5%), findings from this study show that respondents generally preferred Vermox probably because it's effectiveness on the market. Since the Wormplex 400 and Vermox have comparative efficacy in intermittent de-worming, Wormplex 400 can be used in mass deworming programs in these areas to help encourage greater acceptability and enhance compliance to intermittent deworming.

Knowledge of respondents on signs and symptoms of STHIs is quite good; a few people (8.5% and 7.2%) believed that symptoms were as a result of passing stool with worms and loss of appetite passing stool with worms, since passing of stools with worms is a wrong medical symptom because mostly the visible worms they see is as a result of flies releasing maggot to the exposed faeces. Itchy skin, itchy anus and loss of appetite contributes to just 10% of the signs and symptoms. The findings from this study also show that regardless of the knowledge of the importance of worm medication use, there needs to be an active health promotion programme to enhance compliance.

The statistical findings exhibited a positive correlation between the level of education and the signs and symptoms of worm infestation, the number of times the respondents take worm medication and the reasons they take worm medication. With regards to the ages, the correlation exhibited was negative for the number of times they take worm medication but was positive for the signs and symptoms of worm infestation they know. Greater level of education was associated with a higher level of knowledge of worm medication use.

**Conclusion**

Our results show that to a large extent participant's good knowledge and information on worm infection. However, some beliefs on the pathology of the worm infestation and perceptions about the use of worm medication can affect the practices associated with the prevention and management of worm infestation.

**Conflict of Interests**

The authors have no conflict of interest to declare.

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