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Factors Affecting Uptake of Anti – Helminthic Drugs Among Children Aged 6 To 59 Months at St Joseph's Nswanjere Health Centre III, Mpigi District. A cross-sectional study.

Joseph Ssenkula*, Jane Francis Namukwaya

St. Michael Lubaga Hospital Training Schools.

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Corresponding author details:

Name: Joseph Ssenkula

St. Michael Lubaga Hospital Training School

Abstract.

Background: Intestinal helminth infections remain a major public health problem among children under five years in developing countries, contributing to poor nutrition, impaired growth, and reduced immunity. This study aimed to assess the factors affecting the uptake of anti-helminthic drugs among children attending St. Joseph's Nswanjere Health Centre III.

Methodology: A descriptive cross-sectional study was conducted among 30 caretakers of children aged 6–59 months. Data were collected using structured questionnaires focusing on caretaker-related, health facility-related, and social factors influencing deworming practices. The data were analyzed using descriptive statistics and presented in tables and figures.

Results: The majority of caretakers were female (96.7%) and below 30 years (70%). Most had primary education (36.7%) and were mothers to the children (63.3%). Over half of the caretakers (53.3%) believed deworming should be done once a year, indicating poor knowledge of recommended schedules. Many caretakers (56.7%) felt it was unnecessary to deworm children without symptoms, while 50% were unsure about the safety of anti-helminthic drugs. Although drugs were largely available at the health facility (93.3%) and considered affordable (83.3%), long distance to the health centre (86.7%) and lack of health education (60%) limited uptake. Social barriers included reliance on herbal medicine (73.3%), myths about worms being part of childhood (60%), and weak community distribution programs (46.7%).

Conclusion: Uptake of anti-helminthic drugs among children was influenced by caretaker knowledge gaps, accessibility challenges, and negative social beliefs. While drug availability and affordability were favorable, poor awareness, long distances, and cultural practices hindered optimal utilization.

Recommendations: The Ministry of Health should strengthen community distribution programs and public sensitization on deworming schedules. Health facilities should conduct outreach services and health education to address myths and improve uptake.

Keywords: Anti-helminthic drug uptake, intestinal helminths, children under five, Mpigi District, Uganda.

Background of the study.

Anti – helminthics are drugs used for the treatment and control of infections of parasitic nematodes, trematodes, and cestodes in humans (Nixon et al., 2020). Helminthiasis is among the neglected tropical diseases, which are very common in economically deprived communities. The commonest examples of helminthiasis in children include roundworms, tapeworms, hookworms, and threadworms (Clarke et al., 2019). The World Health Organisation (WHO) recommended children should be offered anti – helminthic medication twice a year, whereby children below 24 months should receive stat doses of 200 mg of albendazole or 250 mg of mebendazole and those above 24 months should be offered stat doses of 400mg of albendazole or 500mg of albendazole (WHO, 2023).

Globally, the coverage for anti – helminthic drugs among children below five years ranges from 0.5% in low-income countries to 87.5% in high-income countries (Lo et al., 2019). This is below the 75% WHO target in the endemic area, hence many children are at risk of malnutrition, poor mental and social wellbeing (WHO, 2023). Countries have established community distribution programs of anti – helminthic drugs, but still uptake is suboptimal due to illiteracy, societal myths, and misconceptions about the drugs, hence favored continued high prevalence of helminthiasis (Adrizain et al., 2024).

In Africa, the WHO reported that in 2019, approximately 54% of preschool-aged children (6 – 59 months old) received the preventive drugs for soil-transmitted helminthiases (*WHO,* 2020). Furthermore, in Sub Saharan Africa, the pooled prevalence of deworming among children below 5 years is 45.03% with estimates ranging from 24.8% in Malawi to 50.5% in Lesotho (Belay et al., 2022). The spatial variation in the uptake of anti – helminthic drugs among children has been attributed to the education status of the caregivers, employment status, distance to the nearest health care facility, and health care seeking behaviours of caregivers (Tareke, 2022). This consequently leads to malnutrition among children due to the deprivation of nutrients by the worms, thus affecting the growth and development of children (Bahago & Oyewole, 2023).

In East Africa, the prevalence of routine use of anti – helminthic drugs among children aged 12 – 59 months is 54.13% (Terefe et al., 2024). This low uptake of anti – helminthic drugs is common in low-income households located in rural areas that face challenges of inaccessibility to health care services, leading to poor health outcomes in children, such as stunting, wasting, anaemia, and poor school performance (Moshi et al., 2023).

In Uganda, community distribution of anti – helminthics program for prevention of helminthic infections has been in place for over fifteen years, but helminthic infection remains due to low uptake of anthelminthic drugs with rates ranging from 56.7% to 88.9% (Adriko et al., 2018). The factors for low uptake of anti – helminthic drugs in children include inaccessibility to health care facilities, lack of knowledge on the routine deworming schedules, and low education status of caregivers (Katende & Nakalema, 2022). These cause internal bleeding, which leads to anaemia, intestinal inflammation, diarrhea, and impaired intake of nutrients, causing malnutrition in children. (Kasiita et al., 2025). This study aimed to assess the factors affecting the uptake of anti-helminthic drugs among children attending St. Joseph's Nswanjere Health Centre III

Methodology.

Study setting.

The study was conducted in St. Joseph's Nswanjere Health Centre III, Nswanjere village, Muduuma subcounty, Mawokota County, Mpigi district in Central Uganda. The health centre is located in Nswanjere Junior Seminary, about 38.1 kilometres from Kampala. It is located in Mpigi and is bordered by Wakiso, Kampala District, and Masaka District. It has a bed capacity of 25 beds served by nurses, midwives, clinical officers, laboratory technicians, and a sonographer. The facility is located along the Kampala-Mityana highway. Mpigi district is located in a flat and rolling topographical zone. It is a private not-for-profit health facility owned by the Catholic Archdiocese of Kampala. The centre offers services like antenatal care, maternity, sonography, general outpatient, and a young child clinic. The health centre is selected due to low uptake of anti – helminthic drugs among children aged 6 to 59 months.

Study Population.

The study included caretakers of children aged 6 to 59 months attending St. Joseph's Nswanjere Health Centre III.

Sample Size.

According to Uganda Nurses and Midwives Examination Board (UNMEB) standard research guidelines for Diploma in nursing research (2009), a minimum of 30. Therefore, a sample of 30 respondents was used.

Sampling procedure.

The study used a probability sampling technique,

particularly simple random sampling, to select the representative sample of 30 respondents. The methods were chosen because they reduced biases within the study sample, thus enabling generalization of the results. Got 60 rolled papers with equal numbers written on Yes or No. The accessible men were given an opportunity to select a single paper at random, and all those who selected yes were enrolled in the study. Each day, the researcher selected six (6) respondents for five (5) days to make a total of 30 participants.

Inclusion criteria.

The study included caretakers with children aged 6 to 59 months attending the young child clinic at St. Joseph's Nswanjere Health Centre III, who consented to participate in the study.

Exclusion criteria.

Those with very sick children were not involved in the study, and those who never consented to participate in the study.

Study Variables.

Dependent variable.

Uptake of anti – helminthic drugs among children aged 6 to 59 months.

Independent variable.

Caretaker-related factors, health facility-related factors, and social factors.

Research Instruments.

Data were collected using a researcher-administered questionnaire that was addressed in four sections, i.e., demographic characteristics, caretaker-related factors, health facility-related factors, and social factors. All questions were closed-ended, and the tool was pretested before data collection at Arapi village.

Data Collection Procedure.

After completing the research proposal, an introductory letter was obtained from the research committee of Lubaga Hospital Health Training School. This was taken to the person in charge of St. Joseph's Nswanjere Health Centre III, seeking permission to conduct the study in the facility. Upon receiving permission to carry out the study, self-introduction was done by the researcher provided a self-introduction to respondents and explanations about the topic. Data was collected for 5 days by asking respondents questions as designed on the questionnaire, while noting down the responses given.

Data management.

Data was managed by the researcher to ensure that confidentiality and security were maintained. Data management also included data editing before leaving the area of study to ensure that there were no mistakes or areas left blank, and if any mistakes were found, they were corrected before leaving the area of study. Collected data was stored under lock and key and only accessed by the researcher.

Data analysis and presentation.

Data was sorted, coded, and entered into the Microsoft Excel Program Version 2016, which computed and presented data into tables, charts, and graphs.

Ethical Considerations.

After completing the research proposal, an introductory letter was obtained from the research committee of Lubaga Hospital Health Training School. This was taken to the person in charge of St. Joseph's Nswanjere Health Centre III, seeking permission to conduct the study in the facility. Upon receiving permission to carry out the study, self-introduction was done by the researcher provided a self-introduction to respondents and explanations about the topic. Respondents were assured of maximum confidentiality for all the information they give and the study only commenced after the objectives of the study were clearly and well explained to participants, and they had understood and voluntarily consented to participate in the study.

Results.

Demographic characteristics of respondents

Table 1: Demographic characteristics n = 30

Variable	Responses	Frequency (f)	Percentage (%)
Gender of caretaker	Male	1	3.3
	Female	29	96.7
	Total	**30**	**100**
Age of caretaker	Less than 30 years	21	70
	30 – 45 years	7	23.3
	Above 45 years	2	6.7
	Total	**30**	**100**
Education level	Never went to school	5	16.7
	Primary education	11	36.7
	Secondary education	10	33.3
	Tertiary education	4	13.3
	Total	**30**	**100**
Relationship with the child	Mother	19	63.3
	Father	1	3.3
	Grand parent	8	26.7
	Other relative	2	6.7
	Total	**30**	**100**

Table 1 shows that; Almost all respondents, 29(96.7%), were female, while only 1(3.3%) was a male. This is because child care is predominantly a role of female caretakers.

The majority of the respondents, 21(70%), were aged less than 30 years, while a minority, 2(6.7%), were aged above 45 years, which was because young people were the ones with more children under five years.

Most of the respondents, 11(36.7%), had primary education, while the least 4(13.3%) had attained tertiary education. This is due to high school dropout rates in the community.

The majority of the respondents, 19(63.3%), were mothers to the children, while a minority, 1(3.3%), was a father to the child. This was because child care is dominantly a role of mothers.

Caretaker-related factors affecting uptake of anti – helminthic among children aged 6 to 59 months

Figure 1 shows the awareness of the recommended frequency of deworming children. n= 30

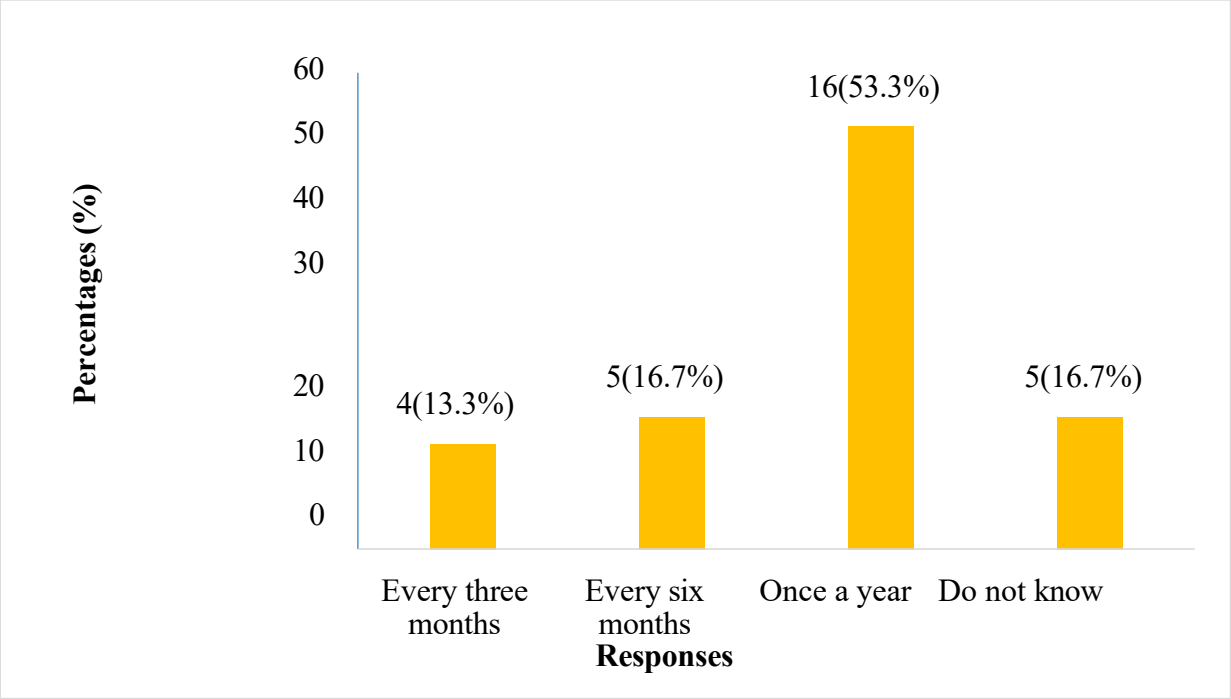

Figure 1 shows that most of the respondent 16(53.3%) mentioned that deworming should be done once a year, while the least 4(13.3%) mentioned every three months. This implied that caretakers did not know the recommended time interval for deworming children.

Table 2: Importance, necessity, and safety of deworming children n = 30

Variable	Responses	Frequency (f)	Percentage (%)
Importance of deworming children	Treatment of stomach pains	5	16.7
	Prevention of worm infections	10	33.3
	Increasing a child's appetite	13	43.3
	Do not know	2	6.7
	Total	**30**	**100**
Whether it is necessary to deworm children without symptoms of worms	Agree	6	20
	Not sure	7	23.3
	Disagree	17	56.7
	Total	**30**	**100**
Whether anti – helminthic drugs are safe to be given to children	Agree	13	43.3
	Not sure	15	50
	Disagree	2	6.7
	Total	**30**	**100**

Table 2 shows that; Most of the respondents, 13(43.3%), knew that deworming is important for increasing children's appetite, while the least 2(6.7%) did not know. This implied that caretakers would seek deworming services for children with diminished appetite. The majority of the respondents, 17(56.7%), disagreed that it is necessary to deworm children without symptoms of worms, while a minority, 6(20%), agreed. This reflects that caretakers would wait for their children to develop symptoms to seek deworming services.

Half of the respondents, 15(50%), were not sure whether anti – helminthic drugs are safe to be given to children, while at least 2(6.7%) disagreed. This showed doubt in the safety of anti – helminthic drugs.

Figure 2: showing whether fear of side effects prevents caregivers from offering anti – helminthic drugs to the child, n = 30

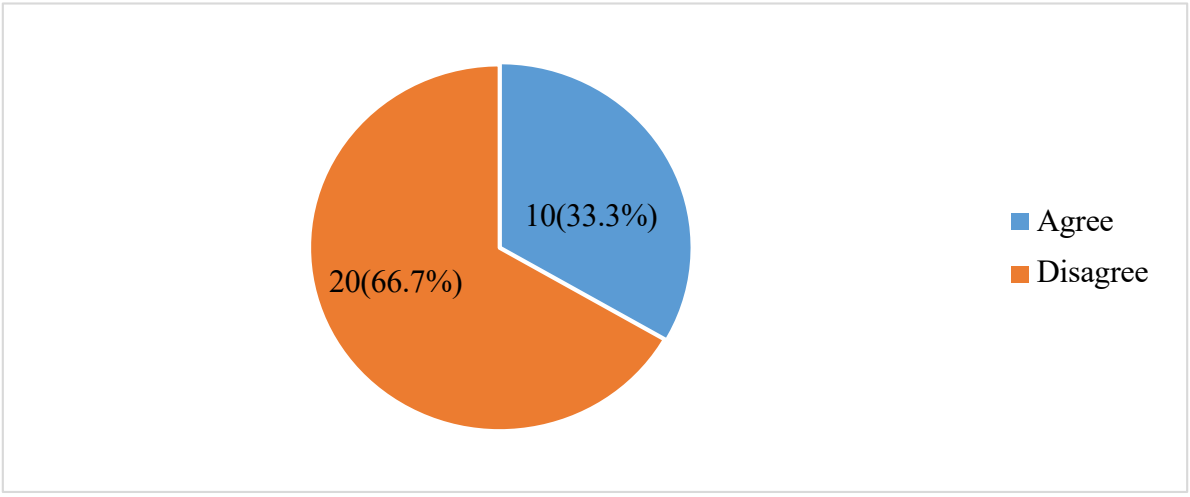

Figure 2 shows that the majority of the respondents, 20(66.7%), disagreed that side effects of anti – helminthic drugs could prevent them from offering anti – helminthic drugs to children, while a minority, 10(33.3%), agreed. This reflected that fear of side effects could not stop caretakers from deworming their children.

Health facility-related factors affecting uptake of anti – helminthic among children aged 6 to 59 months.

Figure 3: showing stock out of anti – helminthic drugs at the health centre, n = 30

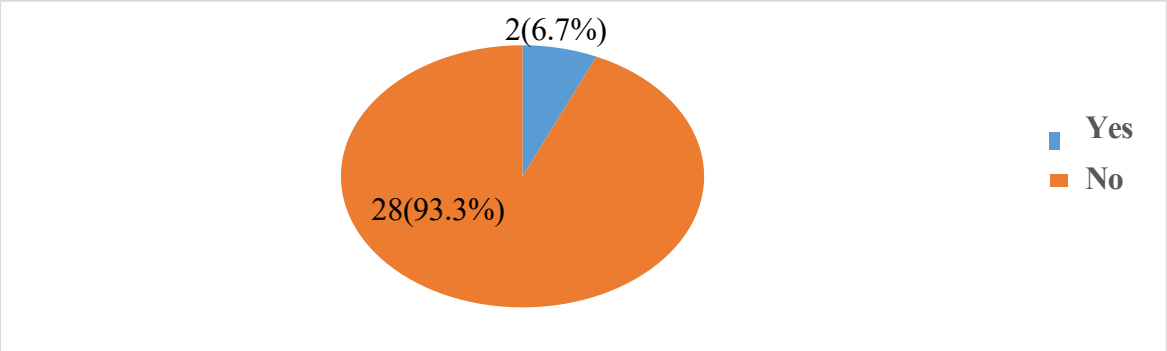

Figure 3 shows that the majority of the respondents, 28(93.3%), reported that anti – helminthic drugs were never out of stock at the health facility, while a minority, 2(6.7%), reported that anti – helminthic drugs were out of stock at the health facility. This indicated regular availability of anti – helminthic drugs at the health centre.

Table 3: Distance to health facility, costs of anti – helminthic drugs, and health education about deworming at health facility n = 30

Variable	Responses	Frequency (f)	Percentage (%)
Distance from home to the health facility that offers deworming to children	Less than 2 kilometres	4	13.3
	2 – 5 kilometres	6	20
	More than 5 kilometres	20	66.7
	Total	**30**	**100**
Whether the distance to the health centre affects uptake of anti – helminthic drugs	Yes	26	86.7
	No	4	13.3
	Total	**30**	**100**
Costs of anti – helminthic drugs at the health centre	Free	0	0
	Cheap	25	83.3
	Expensive	5	16.7
	Total	**30**	**100**
Health education about anti – helminthic drugs for the child at the health centre	Always	4	13.3
	Sometimes	8	26.7
	Never	18	60
	Total	**30**	**100**

Table 3 shows that; Most of the respondents, 20(66.7%), were living at a distance of more than 5 kilometres, while the least, 4(13.3%), were living at a distance of less than 2 kilometres. The majority of the respondents,

26(86.7%), reported that distance to health centre affected uptake of anti – helminthic drugs, while a minority, 4(13.3%), reported that distance to health centre does not affect the uptake of anti – helminthic drugs. This reflected accessibility challenges due to long distances to the health facility.

Most of the respondents, 25(83.3%), described the costs of anti – helminthic drugs to be cheap, while the least 5(16.7%) regarded them to be expensive. This showed that the costs of anti – helminthic drugs did not hinder uptake among children aged 6 to 59 months.

The majority of the respondents, 18(60%), never received health education about anti – helminthic drugs for the child at the health centre, while a minority of 4(13.3%) always received health education about anti – helminthic drugs for the child at the health centre. This could lead to knowledge gaps on the recommended frequency of offering anti-helminthic drugs.

Social factors affecting uptake of anti – helminthic among children aged 6 to 59 months.

Figure 4: showing whether family members remind them to offer anti – helminthic drugs to the child n = 30

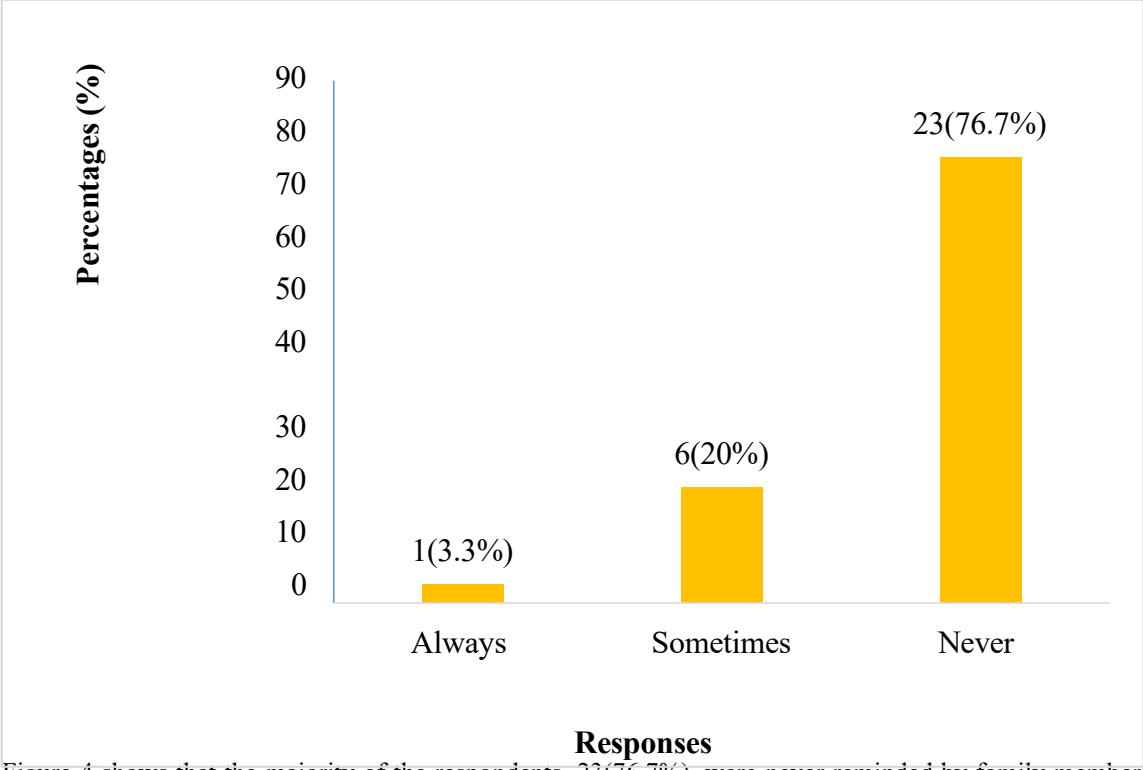

Figure 4 shows that the majority of the respondents, 23(76.7%), were never reminded by family members to offer anti – helminthic drugs to the child, while a minority of 1(3.3%) was always reminded by family members to offer anti – helminthic drugs to the child. This reflected a lack of family support towards the uptake of anti – helminthic drugs in children.

Table 4: Availability of herbal medicine, myths about deworming in child and use of media that talks about deworming n = 30

Variable	Responses	Frequency (f)	Percentage (%)
Presence of herbal medicine used for deworming children	Yes	22	73.3
	N o	8	26.7
	Total	**30**	**100**
Myths about deworming in children	Worms are part of childhood, hence no need	18	60
	Deworming would kill important worms used for digestion	10	33.3
	Nothing is said	2	6.7
	Total	**30**	**100**
Use of media platforms that talk about deworming	Always	5	16.7
	Sometimes	16	53.3
	Never	9	30
	Total	**30**	**100**

Table 4 shows that; Majority of the respondents, 22(73.3%), had herbal medicine that can be used for deworming, while a minority, 8(26.7%), did not have herbal medicine used for deworming in children. This reflected that caretakers would offer herbal medicine to deworm their children instead of using anti – helminthic drugs. Most of the respondents, 18(60%), had myths that worms are part of childhood, hence no need for deworming, while only 2(6.7%) said that nothing is said about anti – helminthic drugs. This could be due to a misunderstanding between the meaning of worms and enzymes.

Most of the respondents, 169(53.3%), sometimes used media platforms that talk about deworming, while the least 5(16.7%) always used media platforms that talk about deworming. This implied that exposure to media enhances uptake of anti – helminthic drugs.

Figure 5: A pie chart showing the presence of community distribution of anti – helminthic drugs, n = 30.

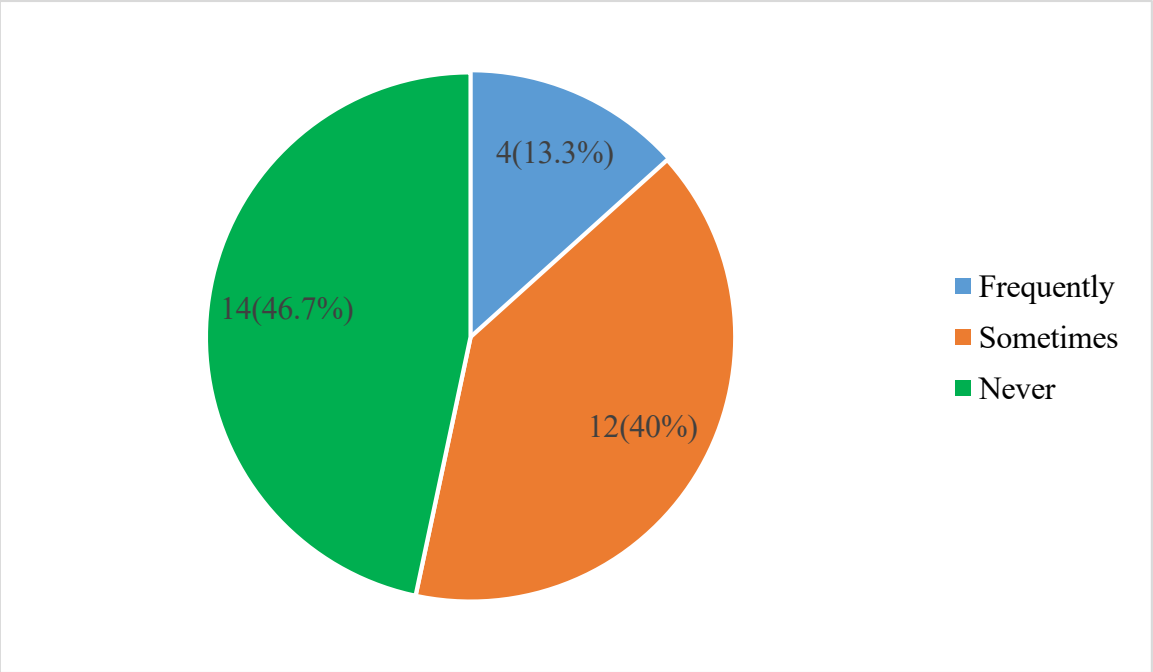

Figure 5 shows that most of the respondents, 14(46.7%), never had community distribution programs of anti – helminthic drugs, while the least 4(13.3%) had community distribution programs of anti – helminthic drugs. This implied that community distribution campaigns were unreliable sources of dewormers for children.

Discussion.

Caretaker-related factors affecting uptake of anti – helminthic among children aged 6 to 59 months.

According to study findings, most of the respondents (53.3%) mentioned that deworming should be done once a year. This indicated a lack of awareness of the recommended schedule of deworming, hence the caregiver is unable to seek deworming services on time. This disagrees with a study by Murugathas et al. (2021) carried out in Sri Lanka, which found that 85.9% of caretakers who knew the recommended frequency of offering the drug to children had dewormed their children.

Findings of the study reported that most of the respondents (43.3%) knew that deworming is important for increasing a child's appetite. This might be due to unreliable sources of information about anti – helminthic drugs, hence caregivers might wait until the child loses appetite to deworm them. On the contrary, a study by Rubio et al. (2025) carried out in Colombia found that awareness of the benefits of deworming in eradicating worms and promotion of child growth in children was influencing the uptake of the drugs.

Study findings revealed that the majority of the respondents (56.7%) disagreed that it is necessary to deworm children without symptoms of worms. This could be due to wrong perceptions within African societies that health care services are only utilized by individuals with ill – health. This is in agreement with a study by Bahago and Oyewole (2023) conducted in North Central Nigeria, which found that 98.1% of caretakers held positive attitudes that giving anti – worm medication twice every year, is necessary whether the child is infected with worms or not, was enhancing the uptake of anti – helminthic drugs.

The study findings showed that the majority of the respondents (66.7%) disagreed that the side effects of anti – helminthic drugs could prevent them from offering anti – helminthic drugs to children. This might be because they never knew that anti – helminthic drugs can be accompanied by side effects, hence these cannot hinder

the uptake of the drug. This is contrary to a study by Ouédraogo & Addo-Lartey (2024) carried out in Ghana, which found that 28.1% of children who had experienced side effects on initial doses of anti – helminthic medication affected the future seeking of the drug by the caretaker.

Health facility-related factors affecting uptake of anti – helminthic among children aged 6 to 59 months.

Results of the study revealed that the majority of the respondents (93.3%) reported that anti – helminthic drugs were in stock at the health facility. This might be because of low uptake of anti – helminthic drugs among children, hence many remain stocked at the facility. This disagrees with a study by Nath et al. (2019) carried out in Bangladesh, which found that recurrent stockouts and shortage of anti – helminthic drugs at distribution and health centres were a common barrier towards their uptake among children aged below 5 years. Another study by Roll et al. (2022) carried out in India found that the shortage of anti – helminthic drugs at health facilities was contributing to underutilization of anti – helminthic drugs in children.

According to study findings, the majority of the respondents (86.7%) reported that distance to health centre affected uptake of anti – helminthic drugs. This was because the health centre was located more than 5 kilometres from the children's residence, which led to high transport costs caregiver are unwilling to incur. This is in agreement with a study by Badu & Magalys Lopez Cuba (2024) carried out in Ghana, which found that 19.8% of caretakers had delayed buying anti–helminthic drugs for their children because the health facility was far. Another study by Welch et al. (2017) done in low and middle-income countries reported that long distances to the health care facilities were one of the hindrances for utilization of deworming services for children under five years.

Findings of the study reported that most of the respondents, 25(83.3%), described the costs of anti – helminthic drugs to be cheap. This might be because the health centre is private, not-for-profit, hence offers drugs, receives these drugs free from the government, and thus offers them at relatively lower costs than can be achieved by most of the caregivers. This agrees with a study by Animut et al. (2024) done in northwestern Ethiopia, which found that 23.4% of the caretakers of children reported that the costs of anti – helminthic drugs at health facilities were cheap for them to routinely afford for their children. Furthermore, a study by Rubio et al. (2025) conducted in Colombia found that the provision of free anti-helminthic drugs was influencing the uptake of anti-helminthic drugs.

Study findings revealed that the majority of the respondents (60%) never received health education about anti – helminthic drugs for the child at the health centre. This could be due to poor attendance at maternal and child health clinics, hence miss opportunity to learn about deworming, leading to ignorance affecting the uptake of anti – helminthic drugs. This agrees with a study by Terefe et al. (2024) carried out in East Africa, which found that 53% of caretakers who had attended health facilities and health education on deworming among children had utilized them.

Social factors affecting uptake of anti - helminthic among children aged 6 to 59 months.

The study findings showed that the majority of the respondents (76.7%) were never reminded by family members to offer anti – helminthic drugs to the child. This could be because family members might be unaware of the routine vaccination schedules, hence are unable to remind caretakers to take children for deworming service. The findings are contrary to a study by Bahago and Oyewole (2023) conducted in North Central Nigeria, which found that 91.9% of mothers who were living with their partners constantly received encouragement and reminders to take their children for deworming. In addition, a study by Badu & Magalys Lopez Cuba (2024) done in Ghana revealed presence of a supportive partner was enhancing the uptake of anti – helminthic drugs among 38.5% of children.

Results of the study revealed that the majority of the respondents (73.3%) had herbal medicine that can be used for deworming. This is probably because the health centre is located in a rural setting where they have high access to medicinal plants that they believe can effectively serve as anti – helminthic drugs. Therefore, caregivers may prioritize using herbal medicine because they are readily available at no cost over anti – helminthic drugs. This agrees with a study by Jagadeesan et al. (2019) carried out in India, which found that 85% of caregivers were using traditional medicinal preparation for deworming their children, which led to low uptake of anti – helminthic drugs for children under five years.

According to study findings, most of the respondents (60%) had myths that worms are part of childhood, hence no need for deworming. This could lead to a reluctance to offer anti – helminthic drugs to the child as they think they do not cause any harm to the child. This is supported by a study by Obi et al. (2024) carried out in Nigeria, which found that misconceptions that worms are a normal

part of childhood life, hence no need for deworming.

Findings of the study reported that most of the respondents (46.7%) never had community distribution programs of anti – helminthic drugs. This might be due to weak village health teams, thus creating hardships for caregivers who live deep in the village to access deworming services for their children. These are in disagreement with a study by Croke and Atun (2019) carried out in Uganda, which found that the presence of community distribution programs of anti – helminthic drugs at schools and households by village health teams (VHTs) was improving the uptake by children under five years. In addition, a study by Moshi et al. (2023) carried out in Tanzania found that the presence of community mass deworming programs was influencing the uptake of anti – helminthic drugs.

Conclusion.

The study found that caretaker-related factors, health facility-related factors, and social factors were affecting the uptake of anti – helminthic drugs among children aged 6 to 59 months.

Caretaker-related factors that affected uptake of anti – helminthic drugs were low education level, unawareness of the recommended schedule and importance of deworming, and belief that deworming is not necessary for children without symptoms of worms.

Health facility-related factors affecting uptake of anti – helminthic drugs were long distances to health facilities and the absence of health education sessions about anti – helminthic drugs at the health centre. However, the availability and affordability of anti – helminthic drugs at the facility were enhancing uptake among caretakers.

Social factors that hindered the uptake of anti – helminthic drugs were a lack of reminders by family members, availability of herbal medicine that can be used for deworming, myths that worms are part of childhood, and the absence of community distribution of anti – helminthic drugs in the community.

Recommendations.

The Ministry of Health should strengthen the community distribution programs of anti – helminthic drugs so as to ensure easy accessibility to those who live further away from the facility. Furthermore, public sensitization programs on the recommended schedule and the importance of deworming should be strengthened using community public address systems.

St. Joseph's Nswanjere Health Centre III should conduct routine community outreach programs so as to extend deworming services and health education closer to the community, which will assist in addressing the existing myths and knowledge gaps.

Health workers should teach caretakers that worm infestation is effectively cleared by anti – helminthic drugs, other than dependence on herbal medicine.

Researchers are encouraged to conduct more related studies on the topic so as to widen the scope of information available on the topic.

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List of abbreviations.

HMSI:	Health Management Information System.
MoH	Ministry of Health
UBOS:	Uganda Bureau of Statistics
UHPAB:	Uganda Health Professions Assessment Board
VHT:	Village Health Team
WHO:	World Health Organization

Source of funding.

The study was not funded.

Conflict of interest.

There is no conflict of interest.

Availability of data.

Data used in this study are available upon request from the corresponding author.

Authors contribution.

JS designed the study, conducted data collection, cleaned and analyzed data, drafted the manuscript, and JFN supervised all stages of the study from conceptualization of the topic to manuscript writing and submission.

Author's biography.

Joseph Ssenkula is a student of a diploma in Nursing at St. Michael Lubaga Hospital Training Schools.

Jane Francis Namukwaya is a research supervisor at St. Michael Lubaga Hospital Training Schools.

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