

ASSOCIATION BETWEEN KNOWLEDGE OF HELMINTHIASIS AND DEWORMING BEHAVIOR AMONG COMMUNITY MEMBERS IN GASING, BANYUASIN REGENCY, INDONESIA

Peni Kusumasari¹, Widyastuti¹, Rini Pratiwi^{1,2}

¹Medical Study Program, Faculty of Medicine, Universitas Indo Global Mandiri, Palembang, Indonesia

²Regional Development Planning, Research and Development Agency of Banyuasin Regency, South Sumatra, Indonesia

ARTICLE INFO

Corresponding author:

Peni Kusumasari
Medical Study Program,
Faculty of Medicine,
Universitas Indo Global
Mandiri, Palembang,
Indonesia

Email:

penikusumasari@uigm.ac.id

Kata kunci:

Kecacingan
Pengetahuan
Perilaku
Obat cacing
Banyuasin

Keywords:

Helminthiasis
Knowledge
Behavior
Anthelmintic Drug
Banyuasin

Original submission:

Februari 28. 2026

Accepted:

April 1, 2026

Published:

April 25, 2026

ABSTRAK

Infeksi kecacingan masih menjadi salah satu masalah kesehatan di dalam masyarakat, terutama mereka yang tinggal di daerah dengan sanitasi yang kurang baik, selain itu keberhasilan program pemberian obat cacing sangat dipengaruhi oleh perilaku masyarakat yang salah satunya ditentukan oleh tingkat pengetahuan. Penelitian ini bertujuan untuk menganalisis hubungan antara tingkat pengetahuan tentang kecacingan dengan perilaku minum obat cacing pada masyarakat di Desa Gasing, Banyuasin. Desain penelitian menggunakan desain observasional analitik dengan pendekatan *cross-sectional* terhadap 44 responden melalui *convenience sampling*. Data dikumpulkan melalui wawancara menggunakan kuesioner, kemudian hasilnya dianalisis secara univariat dan bivariat menggunakan uji *Chi-Square*. Hasil penelitian ini menunjukkan sebanyak 40,9 % responden memiliki tingkat pengetahuan kecacingan yang baik dan sebanyak 68,2 % memiliki perilaku minum obat cacing yang baik. Analisis bivariat menunjukkan terdapat hubungan yang signifikan antara tingkat pengetahuan kecacingan dan perilaku minum obat cacing ($X^2=22.922$, $p=0,001$). Peningkatan edukasi kesehatan masyarakat diperlukan untuk meningkatkan perilaku masyarakat dalam mengkonsumsi obat cacing yang akan mendukung program pengendalian kecacingan.

ABSTRACT

Association Between Knowledge of Helminthiasis and Deworming Behavior Among Community Members in Gasing, Banyuasin Regency, Indonesia.

Helminth infections remain a significant public health problem, particularly in areas with limited sanitation. The success of deworming programs is strongly influenced by community behavior, which is partly determined by the level of knowledge. This study aimed to analyze the relationship between knowledge of helminth infections and deworming medication-taking behavior among residents of Gasing Village, Banyuasin. This study employed an analytic observational design with a cross-sectional approach involving 44 respondents selected through convenience sampling. Data were collected through interviews using a structured questionnaire. The results were analyzed using univariate and bivariate analyses, with the Chi-square test applied to assess the association between variables. The findings showed that 40,9% of respondents had a good level of knowledge regarding helminth infections, and 68,2% demonstrated good deworming medication-taking behavior. Bivariate analysis revealed a significant relationship between knowledge of helminth infections and deworming medication-taking behavior ($p=0.001$). Strengthening community health education is necessary to improve adherence to deworming medication, thereby supporting helminth infection control programs.

INTRODUCTION

Soil-transmitted helminths (STHs) infections are still a major public health issue around the world, especially in countries with poor and intermediate incomes. The World Health Organization (WHO) states that STHs affect more than 1.5 billion people, or around 24% of the world's population. This is a big concern in Southeast Asia, Sub-Saharan Africa, and Latin America. People living in areas with poor sanitation, as well as preschoolers and school-aged children, are among the most at risk. Chronic STHs infections can have a range of adverse impacts on health, including malnutrition, iron-deficiency anemia, slower physical and mental growth, and poorer long-term productivity.

STH infections are still common in Southeast Asia, despite regular mass deworming campaigns. The World Health Organization recommends giving people anthelmintic drugs once or twice a year to avoid disease in areas where the incidence is more than 20%. It has been established that this strategy is cost-effective for reducing illness severity and improving the nutrition of affected people.

Helminth infections remain a serious public health problem in Indonesia, especially in rural and coastal areas and among people without easy access to basic sanitation. Some locations are still above the level at which extensive deworming should be done, and surveys have reported varying prevalence rates across places. As part of its goal to control neglected tropical diseases, the Republic of Indonesia's Ministry of Health has initiated regular deworming programs for school-aged children and other high-risk groups. But these programs might not work as well or be as widespread as they could be because various groups follow the proposed deworming regimen to varying degrees.

It is important for people to know about helminth infections, including where they come from, how they spread, what they do to your health, and how to avoid them. This will help people change their behavior to avoid them. People who know more about health problems are usually more aware of them and more likely to take steps to protect themselves, including taking deworming medicine regularly. But people who don't know much may be less likely to join programs that help them stay healthy. People with more education generally have an easier time finding health information.

Previous studies conducted in South Sumatra Province, particularly in Banyuasin Regency, indicate that soil-transmitted helminth infections remain a significant public health concern among the community. A study conducted in Bukit and Sri Kembang Villages within Betung District revealed a significant prevalence of soil-transmitted helminth infections among elementary school children. *Ascaris lumbricoides* and *Trichuris trichiura* were the main parasites that caused the infections. The findings further indicated that a significant number of individuals remain susceptible to environmental risk factors and continue to engage in behaviors that increase their likelihood of illness, such as inadequate hand hygiene, defecating outdoors, and frequent contact with contaminated soil. These results show that even with deworming programs in place, preventive measures and community health education remain very important.

Many studies have shown how common STHs infections are in Banyuasin Regency, but not many have looked at what makes people in the community stick to their deworming medication. There isn't much research on how knowledge and demographic characteristics affect people in the community. Understanding these traits is essential for improving the effectiveness of deworming programs and strengthening preventive strategies.

This study aimed to investigate the relationship between awareness of helminth infections, demographic variables, and adherence to deworming medication among the residents of Gasing Village, Banyuasin Regency.

METHODS

This study employed an analytic observational design with a cross-sectional approach. This design was selected to analyze the relationship between the independent variable (knowledge of helminth infections) and the dependent variable (deworming medication-taking behavior), both observed at the same point in time in the Gasing area, Banyuasin.

The study was conducted in Gasing Village, Talang Kelapa District, Banyuasin Regency, South Sumatra. Data collection was carried out on October 18, 2025. The target population consisted of residents of the Gasing area seeking treatment at the Gasing Community Health Center. The sampling technique used was probability sampling, specifically simple random sampling. The inclusion criteria were permanent residency in Gasing, willingness to participate as a respondent (by signing informed consent), and the ability to communicate effectively. The exclusion criterion was respondents who were unwilling to participate in the study.

Data was obtained through direct interviews with respondents using a questionnaire. The validity and reliability of the research instrument were examined using SPSS, confirming that the instrument is both valid and reliable for data collection. Data analysis included univariate analyses to describe the frequency distributions of each variable, presented in tables and percentages. Bivariate analysis was performed using the Chi-square test to determine the relationship between the level of knowledge about helminth infections and deworming medication-taking behavior ($p < 0.05$).

Table 1 presents the list of questions used to assess respondents' knowledge of helminth infections. Each question had two answer options: true and false. The results were then categorized into good, moderate, and poor levels of knowledge based on predetermined criteria. This instrument was used to assess respondents' understanding of helminth infections before analyzing its relationship with other variables.

Table 1. Knowledge of Helminth Infections

No	Statement	Answer Options
1	Helminth infection is a disease caused by the entry of worm eggs or larvae into the human body.	<input type="checkbox"/> True <input type="checkbox"/> False
2	Worm eggs can enter the body through contaminated food or drinks.	<input type="checkbox"/> True <input type="checkbox"/> False
3	Worms only live in human blood.	<input type="checkbox"/> True <input type="checkbox"/> False
4	Roundworms, hookworms, and pinworms are common causes of helminth infections.	<input type="checkbox"/> True <input type="checkbox"/> False
5	Not washing hands before eating can lead to the transmission of helminth infections.	<input type="checkbox"/> True <input type="checkbox"/> False
6	Walking barefoot on soil can cause hookworm infection.	<input type="checkbox"/> True <input type="checkbox"/> False
7	Children with helminth infections often appear weak, pale, and have trouble gaining weight.	<input type="checkbox"/> True <input type="checkbox"/> False
8	Children with helminth infections often appear weak, pale, and have trouble gaining weight.	<input type="checkbox"/> True <input type="checkbox"/> False
9	Helminth infections can interfere with child growth and development.	<input type="checkbox"/> True <input type="checkbox"/> False
10	Maintaining hand and fingernail hygiene can help prevent helminth infections.	<input type="checkbox"/> True <input type="checkbox"/> False
11	Cooking food thoroughly can help prevent worm transmission.	<input type="checkbox"/> True <input type="checkbox"/> False

Table 2 shows the questions used to determine how people took their deworming medicine. There are two choices for each question: yes and no. Responses that show the right way to act will give a score of 1, while responses that show the wrong way to act will give a score of 0. Then, based on the set rules, the overall score was split into good behavior and bad behavior.

Table 2. Preventive Behavior for Helminth Infections through Deworming Medication Intake

No	Question	Answer Options
1	Have you taken deworming medication within the past year?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Do you take deworming medication routinely every six months?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Do you take deworming medication even if you do not experience symptoms of helminth infection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4	Do you purchase or obtain deworming medication on your own initiative?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5	Do you take deworming medication according to the recommended dosage?	<input type="checkbox"/> Yes <input type="checkbox"/> No

RESULTS

A total of 44 respondents were included in this study. Their age distribution showed that the 30–45-year age group was the largest (34.1%), followed by the 18–30-year group (27.3%), the 46–60-year group (22.7%), and those aged 60+ (15.9%). Most of the people who answered were women (56.8%), while 43.2% were men. Most of the people who answered had finished senior high school (50%), followed by junior high school (20.5%), higher education (18.1%), and primary school (11.4%). More than half of the people who answered (59.1%) were working, while 40.9% were not. In general, most of the respondents were working-age adults with a high school diploma or less.

Table 3. Characteristics of Respondents in Gasing Village, Banyuwangi

Variable	Category	Frequency	Percentage (%)
Age	18–30 years	12	27.3%
	30–45 years	15	34.1%
	46–60 years	10	22.7%
	> 60 years	7	15.9%
	Total	44	100%
Sex	Male	19	43.2%
	Female	25	56.8%
	Total	44	100%
Highest Level of Education	Primary School	5	11.4%
	Junior High School	9	20.5%
	Senior High School	22	50%
	Higher Education	8	18.1%
	Total	44	100%
Employment Status	Unemployed	18	40.9%
	Employed	26	59.1%
	Total	44	100%

According to Table 4, most respondents (18, or 40.9%) had a solid understanding of helminth infections. A total of 15 respondents (34.1%) exhibited a moderate degree of understanding, whilst 11 respondents (25%) were classified as possessing low knowledge. The results show that most people who answered the question had a pretty good understanding of helminth infections, though some still had limited comprehension.

Table 4. Knowledge Level Categories

Knowledge Level	n	%
Good	18	40.9%
Moderate	15	34.1%
Poor	11	25%
Total	44	100%

According to Table 5, most people who answered the question (30, or 68.2%) showed good behavior when taking deworming medication. At the same time, 14 respondents, or 31.8%, were placed in the "bad behavior" group. These findings indicate that the majority of respondents exhibit commendable habits for their intake of deworming medication; however, around one-third had not exhibited optimal preventive behavior.

Table 5. Distribution of Deworming Medication–Taking Behavior

Preventive Behavior	n	%
Good	30	68.2%
Poor	14	31.8%
Total	44	100%

According to Table 6, the majority of respondents who were knowledgeable of deworming drug intake exhibit good preventive behavior, with 17 persons (94.4%) demonstrating such conduct, while only 1 respondent (5.6%) displays poor behavior. Among respondents with a moderate level of knowledge, 10 (66.7%) demonstrated good preventive behavior, while 5 (33.3%) demonstrated poor conduct. Conversely, among respondents with little knowledge, the majority exhibit poor predictive behavior: 8 individuals (72.7%) display such behavior, while only 3 (27.3%) demonstrate good behavior. The results indicate a correlation: increased awareness among respondents is associated with improved preventive behavior regarding helminth infections through the administration of deworming medicines.

The relationship between knowledge level and preventive behavior about helminth infection (deworming drug intake) was examined using the chi-square test. According to their cross-tabulation data, 94.4% of those who knew a lot tended to act well. On the other hand, most people (72.7%) who didn't know much about helminth infection exhibited inadequate preventive behavior. The Pearson chi-square test produced a p-value of 0.001 ($p < 0.05$), $\chi^2=22.922$. This research shows that there is a statistically significant relationship between the number of people in Gasing Village who know about helminth diseases and how often they take deworming medicine.

Table 6. Association Between Knowledge Level and Deworming Medication–Taking Behavior

Knowledge Level	Good (%)	Poor (%)	Total
Good	17 (94.4%)	1 (5.6%)	18
Moderate	10 (66.7%)	5 (33.3%)	15
Poor	3 (27.3%)	8 (72.7%)	11
Total	30	14	44

DISCUSSION

This study showed that most respondents had a good level of knowledge regarding helminth infections (40.9%), and the majority also demonstrated good deworming medication–taking behavior (68.2%). These findings indicate that, in general, the community

in Gasing Village has a relatively adequate understanding of helminth infections and awareness of preventive measures through the consumption of deworming medication.

The results of the bivariate analysis demonstrated a statistically significant association between knowledge level and deworming medication-taking behavior ($p = 0.001$). Respondents with a good level of knowledge almost entirely exhibited good behavior (94.4%), whereas among respondents with poor knowledge, the majority demonstrated poor behavior (72.7%). These findings suggest a consistent trend that the higher an individual's level of knowledge regarding helminth infections, the better their preventive behavior.

Research conducted by Maldini et al. (2024) in Surabaya and Andelina et al. (2026) in Palembang on parents' level of knowledge regarding the administration of deworming medication also demonstrated significant results. According to a study by Kunaedi et al., which reviewed several journals in Indonesia, the level of knowledge is shown to have a relevant relationship with an individual's level of education.

Theoretically, knowledge is one of the important predisposing factors in the formation of behavior, including health-related behavior. Individuals who understand the causes, modes of transmission, consequences, and preventive measures of helminth infections tend to have a higher perception of risk and greater awareness to engage in preventive actions, including routine consumption of deworming medication even in the absence of symptoms. Adequate knowledge also enables individuals to better accept and comply with health programs recommended by healthcare providers and government authorities.

The findings of this study are consistent with health behavior theories suggesting that increased knowledge can promote positive behavioral change toward healthier practices. In the context of controlling soil-transmitted helminths (STHs), the success of deworming programs is determined not only by the availability of anthelmintic drugs but also by the level of community understanding and active participation. Limited knowledge may therefore constitute a barrier to achieving optimal program coverage.

Nevertheless, some respondents with moderate or even good knowledge levels still demonstrated poor behavior. This finding suggests that knowledge is not the sole determinant of health behavior. Other factors such as access to medication, family support, previous experiences, perceptions of potential side effects, and trust in health programs may also influence adherence to deworming medication.

In addition, nearly one-third of respondents (31.8%) still exhibited poor deworming medication-taking behavior. This finding indicates that health education interventions still need to be strengthened, particularly among individuals with lower knowledge levels. More comprehensive and sustainable health promotion strategies, such as regular health education sessions, the use of information media, and the involvement of community leaders, may help improve community adherence to helminth control programs.

Despite the valuable findings, this study has several limitations. First, the relatively small sample size may reduce the statistical power and limit the generalizability of the results to a wider population. Second, the use of a cross-sectional design restricts the ability to establish causal relationships between variables. Additionally, the data were collected using self-reported questionnaires, which may introduce response bias. Therefore, future studies with larger sample sizes and longitudinal designs are recommended to provide more robust and generalizable findings.

CONCLUSION

This study found a significant association between the level of knowledge and deworming medication-taking behavior among the community in Gasing Village. Individuals with higher levels of knowledge were more likely to exhibit good preventive behavior, indicating that knowledge plays an important role in supporting participation in helminth control efforts.

These findings suggest that strengthening community awareness through structured and continuous health education programs is essential to improve adherence to deworming interventions. From a policy perspective, integrating health education into routine public health programs and enhancing collaboration between healthcare providers and local authorities may help increase community participation and optimize the effectiveness of helminth control strategies.

LIMITATIONS

Despite the valuable findings, this study has several limitations. First, the relatively small sample size may reduce the statistical power and limit the generalizability of the results to a wider population. Second, the use of a cross-sectional design restricts the ability to establish causal relationships between variables. Additionally, the data were collected using self-reported questionnaires, which may introduce response bias. Therefore, future studies with larger sample sizes and longitudinal designs are recommended to provide more robust and generalizable findings.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the Faculty of Medicine, Universitas Indo Global Mandiri (UIGM), the Banyuasin District Health Office, and Gasing Public Health Center for their support and cooperation in facilitating this study.

REFERENCES

1. World Health Organization. Soil-transmitted helminth infections [Internet]. Geneva: World Health Organization; 2023 Jan 18 [cited 2026 Feb 28]. Available from: <https://www.who.int/news-room/fact-sheets/detail/soil-transmitted-helminth-infections>
2. Bundy DAP, Appleby LJ, Bradley M, Ajjampur SSR, Richardus JH, Rheingans R, et al. Mass deworming programs in middle childhood and adolescence. In: Bundy DAP, de Silva N, Horton S, Jamison DT, Patton GC, editors. *Child and adolescent health and development*. 3rd ed. Washington (DC): The International Bank for Reconstruction and Development/The World Bank; 2017. doi:10.1596/978-1-4648-0423-6_ch13
3. Widiastara AA, Lucas AM, da Gama LB, Guterres BB, Ferreira E, Gomes Fernandes SH. Emerging resistance to albendazole in soil-transmitted helminths. *Community Med Indones Res J* [Internet]. 2025 Jul 31 [cited 2026 Feb 28];6(2):151-6. Available from: <https://e-journal.unair.ac.id/CIMRJ/article/view/71299>
4. World Health Organization. Helminth control in school-age children [Internet]. Geneva: World Health Organization; 2019 [cited 2026 Feb 28]. Available from: <https://www.who.int/tools/elena/interventions/deworming>

5. Kurniawan A, Pratiwi AD, Afa JR. Hubungan pengetahuan, sikap dan tindakan pencegahan dengan kejadian kecacingan pada anak balita di wilayah kerja Puskesmas Puuwatu Kota Kendari tahun 2021. *J Kesehat Lingkung* [Internet]. 2022 [cited 2026 Feb 28];3(1):15-22. Available from: <https://jkl-fkm.uho.ac.id/index.php/journal/article/view/21>
6. Errisya M, Susanti N, Suraya R. Program pemberian obat cacing pada anak sekolah dasar di Puskesmas Tanjung Selamat. *JPP* [Internet]. 2025 Jun 24 [cited 2026 Feb 28];8(3):460-78. Available from: <https://journal.unpacti.ac.id/index.php/JPP/article/view/1886>
7. Fakhruddin F, Wirastuti A, Molidia SR, Dermawan AM, Rommy R, Ajwad MN, et al. Peningkatan pengetahuan masyarakat tentang pencegahan dan pengobatan cacingan sejak dini. *J Inov Pengabd Masy (JIPengMas)* [Internet]. 2025 [cited 2026 Feb 28];5(2):244-50. Available from: <https://jurnal.itkesmusidrap.ac.id/JIPengMas/article/view/1699>
8. Fitriani N, Tobing AA, Safitri AN. Generasi emas bebas cacingan: edukasi dan pencegahan mengenai cacingan pada siswi di SMP Muhammadiyah 5 Samarinda. *J Abdita Naturafarm* [Internet]. 2023 [cited 2026 Feb 28];1(1):21-6. Available from: <http://jan.bcreta.com/index.php/jan/article/view/32>
9. Wahidah. Hubungan tingkat pengetahuan orang tua dengan pemberian obat cacing pada anak balita (usia 1–5 tahun) di Kelurahan Kandai II. *J Rev Pendidik Pengajaran* [Internet]. 2023 Oct 20 [cited 2026 Feb 28];6(4):502-6. Available from: <http://journal.universitaspahlawan.ac.id/index.php/jrpp/article/view/19934>
10. Maldini CA, Darmawan EH, Rahma PDF, Marinda IS, Syaharani NP, Putri DI, et al. Hubungan tingkat pengetahuan orang tua terhadap kepatuhan pemberian obat cacing pada anak di Surabaya. *Jurnal Farmasi Komunitas* [Internet]. 2024;11(2):189–196. Available from: <https://e-journal.unair.ac.id/JFK/article/view/52622>
11. Andelina R. Hubungan tingkat pengetahuan orang tua mengenai infeksi cacing dan kepatuhan pemberian obat terhadap kecacingan pada anak SD di Palembang [skripsi]. Palembang: Universitas Muhammadiyah Palembang; 2025. Available from: <https://repository.um-palembang.ac.id/id/eprint/34564/>
12. Kunaedi A, et al. Tingkat pengetahuan masyarakat tentang kecacingan dan pengobatannya di Indonesia: review beberapa jurnal. *Medical Sains: Jurnal Ilmiah Kefarmasian* [Internet]. 2023;8(3):—. Available from: <https://ojs.ummada.ac.id/index.php/iojs/article/view/568>