

IMPROVING MOTHERS' KNOWLEDGE AND AWARENESS OF HELMINTH INFECTION PREVENTION THROUGH BOOKLET-BASED HEALTH EDUCATION AT A COMMUNITY HEALTH CENTRE

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Received: 27/04/2026

Revised: 30/04/2026

Accepted: 26/05/2026

Abstract. *Helminth infections remain a significant public health problem in Indonesia, particularly among young children. The high prevalence of helminth infection increases the risk of stunting, anaemia, and malnutrition. Prevention efforts are often hindered by limited public awareness and the misconception that helminth infection is not a serious health issue. This community service program aimed to improve mothers' knowledge and awareness of helminth infection prevention through booklet-based health education at a community health centre. The participants comprised 12 mothers of young children who visited Community Health Centre X in Depok. The activity was conducted on April 24, 2026, using health counselling, group discussion, and question-and-answer sessions supported by educational booklets. Qualitative evaluation results indicated an improvement in mothers' understanding of risk factors, transmission, and preventive measures related to helminth infections. In addition, community health volunteers demonstrated increased confidence and readiness to deliver health education to the wider community. In conclusion, booklet-based health education was effective in enhancing mothers' knowledge and awareness, and community-based educational strategies can support the prevention of helminth infections among young children.*

Keywords: *booklet, community health centre, health education, helminth infection*

Abstrak. Infeksi cacing masih menjadi masalah kesehatan masyarakat yang signifikan di Indonesia, terutama pada anak-anak usia dini. Tingginya kejadian cacingan meningkatkan risiko stunting, anemia, dan malnutrisi. Upaya pencegahan sering terhambat oleh rendahnya kesadaran masyarakat serta anggapan bahwa cacingan bukan merupakan masalah kesehatan yang serius. Program pengabdian kepada masyarakat ini bertujuan untuk meningkatkan pengetahuan dan kesadaran ibu mengenai pencegahan infeksi cacing melalui pendidikan kesehatan berbasis booklet di puskesmas. Peserta kegiatan berjumlah 12 ibu yang memiliki anak usia dini dan berkunjung ke Puskesmas X di Depok. Kegiatan dilaksanakan pada tanggal 24 April 2026 melalui penyuluhan kesehatan, diskusi kelompok, serta sesi tanya jawab dengan dukungan media booklet. Hasil evaluasi kualitatif menunjukkan adanya peningkatan pemahaman ibu mengenai faktor risiko, penularan, dan langkah pencegahan infeksi cacing. Selain itu, kader kesehatan juga menunjukkan peningkatan kepercayaan diri dan kesiapan dalam memberikan edukasi kepada masyarakat. Disimpulkan bahwa pendidikan kesehatan berbasis booklet efektif dalam meningkatkan pengetahuan dan kesadaran ibu, serta strategi edukasi berbasis komunitas dapat mendukung pencegahan infeksi cacing pada anak usia dini.

Kata Kunci: booklet, cacingan, pendidikan kesehatan, puskesmas

How to Cite: Riadi, D., Zahrah, S. N. & Ramadhani, I. (2026). IMPROVING MOTHERS' KNOWLEDGE AND AWARENESS OF HELMINTH INFECTION PREVENTION THROUGH BOOKLET-BASED HEALTH EDUCATION AT A COMMUNITY HEALTH CENTER. *Mitra Mahajana: Jurnal Pengabdian Masyarakat*, 7(2), 203-208. doi: <https://doi.org/10.37478/mahajana.v7i2.7904>

INTRODUCTION

The World Health Organization (WHO) reports that over 1.5 billion people globally contracted soil-transmitted worms in 2015 (Kamil, 2019). In Indonesia, the Ministry of Health data showed that 36.97 million children received Mass Drug Administration (MDA) for deworming in 2021. Post-treatment evaluation surveys conducted between 2017 and 2021 reported that worm prevalence was below 5% in 66 districts or cities, while 26 districts or cities still recorded prevalence rates above 10% (Kementerian Kesehatan RI, 2023). Helminthiasis is also included in eleven of the twenty neglected tropical diseases (NTD) categories identified in Indonesia (Edy et al., 2024). If left untreated, worm infestation may develop into a chronic condition that contributes to anaemia, malnutrition, and impaired child growth and development (Syaputri et al., 2025). Children with a history of helminth infection were reported to have a 3.2 times greater likelihood of experiencing stunting compared with those who had never been infected (Eldrian et al., 2023).



Helminth infection refers to a disease caused by parasitic worms entering the human body, many of which are transmitted through contaminated soil (Ministry of Health of the Republic of Indonesia, 2017). Soil-transmitted helminths are intestinal nematodes that spread through soil and remain one of the major causes of worm infestation (Kamil, 2019). Several risk factors contribute to infection among children. Child-related factors include poor nail hygiene, failure to wash hands before eating, and consumption of unhygienic food (Chatterjee et al., 2022). Parent-related factors include not washing fruits and vegetables before consumption, inadequate promotion of clean and healthy habits, and limited parental knowledge. Environmental factors include lack of access to clean water, absence of household toilets, and unsanitary living conditions (Syaputri et al., 2025).

Common symptoms of helminth infection include abdominal pain, diarrhea, nausea, vomiting, reduced appetite, and weight loss (Edy et al., 2024). Prevention strategies include regular handwashing, especially after defecation, after changing diapers, before preparing food, and before meals; proper storage and thorough cooking of raw meat and fish; careful washing of fruits and vegetables; routine deworming of pets such as cats and dogs; deworming treatment for children every six months; avoiding walking barefoot or touching soil and sand without protection; and trimming fingernails regularly while discouraging nail biting (Riadi et al., 2026).

Many people still assume that helminth infection is harmless. In reality, untreated helminthiasis may lead to nutritional deficiencies, anemia, and weakened immune function (Syaputri et al., 2025). In some cases, the infection may not be immediately recognized because children can appear healthy, while its effects are seen gradually through impaired physical growth. Without treatment, worms continue to multiply and may worsen malnutrition (Eldrian et al., 2023). Therefore, community education regarding helminth infection and its prevention is essential to reduce the risk of infection among young children.

METHODS

This community service program was conducted at Community Health Center X in Depok using a booklet-based health education approach to improve mothers' knowledge and mindfulness regarding helminth infection prevention among young children. The participants comprised of 12 mothers with youthful children who visited the health center. Before implementation, administrative permission was obtained from the health center, and participants were informed about the activity schedule.

The program was carried out on April 24, 2026. Educational conditioning included health counseling sessions supported by pamphlets, interactive group conversations, and question and answer sessions. The pamphlets contained information on the prevalence, causes, risk factors, symptoms, prevention, and management of helminth infection in children. Assessment of the program was conducted using a qualitative approach that included firsthand observation as well as input from those involved. The comprehension of participants was evaluated through interactive group conversations and sessions for questions and answers, during which their capacity to recognize risk factors, articulate transmission routes, and mention preventive strategies was noted. The degree of participation and commerce during exchanges acted as further pointers of increased mindfulness and appreciation.

RESULTS AND DISCUSSION

Prior to the implementation of this community service program, permission and scheduling were coordinated with the community health center. After administrative approval was obtained, the health center assisted in informing and organizing participants for the activity. The community health center was selected as the venue because it is a strategic setting for delivering maternal and child health education and reaching mothers with young children. Community health centers have an important role in providing accessible primary health services and preventive education for the surrounding population.

This program involved 12 mothers with young children who visited the health center on the scheduled date. Mothers were selected as the primary target group because they play a

central role in childcare practices, hygiene maintenance, food preparation, and health seeking behavior within the household. Improving mothers' knowledge is therefore expected to contribute to better prevention of helminth infection among children. This shows that the husband's role in accompanying his wife is essential, especially during pregnancy and childbirth, while mothers remain central figures in maintaining child health within the household (Rahmadina et al., 2026).

This activity represented a direct form of community empowerment and the practical implementation of health education knowledge (Kruahong et al., 2023). The program consisted of counseling sessions followed by interactive discussions and question and answer activities, supported by booklet media (Suryawati et al., 2024). Booklets are a form of printed educational material that are practical, easy to distribute, and convenient for participants to read again at home. They are generally designed to provide clear, concise, and simple information, and become more attractive when accompanied by illustrations (Fiqriani et al., 2023). Previous studies have also shown that booklet-based health education can effectively improve knowledge and awareness (Apriani et al., 2023).

The booklet used in this program contained information on the prevalence, causes, transmission, risk factors, symptoms, prevention, and management of helminth infection in children. During the session, participants were encouraged to ask questions and share their experiences regarding hygiene practices and child health at home. This interactive approach was intended to strengthen understanding, correct misconceptions, and increase motivation to apply preventive behaviours. Consistent with previous findings, educational interventions that combine printed media with direct counselling are effective in promoting community health awareness (Apriani et al., 2023).

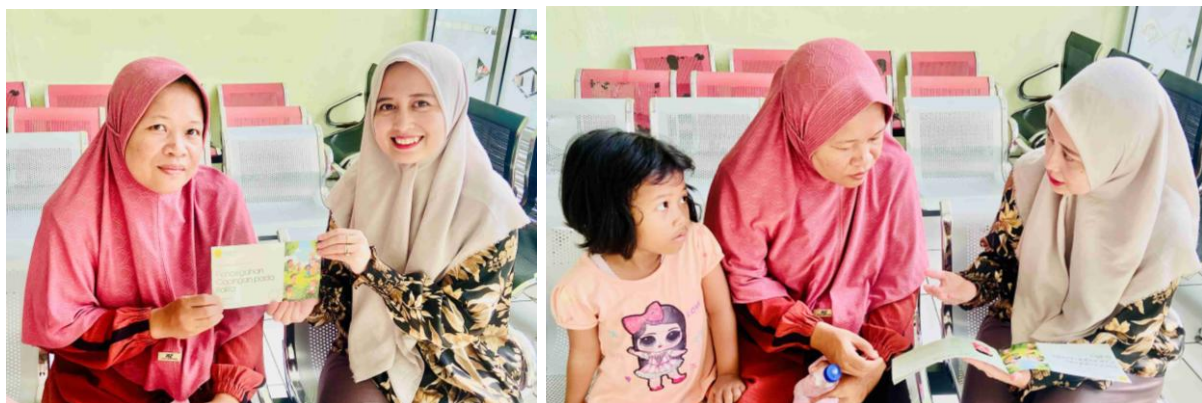


Figure 1. Overview of a booklet-based health education session delivered to Participant 1 at the community health center

Health counselling can transform a person's lack of knowledge into understanding by providing relevant health information. For this reason, counselling serves as an important tool for influencing attitudes and introducing new ideas (DiMatteo et al., 2025). Ultimately, individual behaviour is often shaped by attitudes and the level of knowledge (Yeo et al., 2024). People are more likely to take action regarding a particular issue when they understand it, as new knowledge provides a cognitive basis for behavioural change (Abadi et al., 2023). Early identification of worsening symptoms and timely communication with caregivers are also important strategies in health management (Riadi et al., 2025).

Lecturers from the Faculty of Medicine, Universitas Pembangunan Nasional Veteran Jakarta, delivered educational material covering the prevalence of helminth infection, its impact on children's health, causes of infection, risk factors, and preventive measures (Figure 1 and Figure 2). In this community service program, the information was presented through booklet media supported by verbal counselling. The purpose of health education is to encourage health promoting behavior within the community. This means that people become more aware and skilled in maintaining their health while avoiding behaviors that may endanger health (Sulastrri & Astuti, 2020).



Figure 2. Overview of a booklet-based health education session delivered to Participant 2 at the community health center

Following the educational session, participants took part in an interactive discussion and question-and-answer session. They actively raised several questions, particularly regarding the appropriate timing of deworming medication and the risks of allowing young children to play barefoot (Aruldas et al., 2024). During the activity, the understanding of participants regarding helminth prevention in children was assessed qualitatively. Evaluation findings indicated that the program successfully improved participants' knowledge and awareness (Abdissa et al., 2024). Most participants reported feeling more alert to risk factors associated with helminth infection and more confident in applying preventive measures at home. They were able to identify common risk factors and explain practical prevention strategies for young children (Sujan et al., 2020). This evaluation used a qualitative approach, which focuses on individuals or groups within a specific social setting, and the findings are interpreted within that context (Jayadi, 2024). Overall, participants demonstrated strong enthusiasm throughout the program. This positive response suggests that booklet-based health education is an effective strategy for improving community awareness and promoting helminth infection prevention among young children (Ramayanti et al., 2026).

CONCLUSION

This community service initiative was effective in increasing mothers' knowledge and awareness of the risk factors, impacts, and preventive measures related to helminth infection through booklet-based health education at a community health centre. The integration of booklets, health counselling, and interactive discussions helped participants gain a better understanding of the educational content. Mothers also developed greater awareness of behavioural and environmental conditions that may place young children at risk of helminth infection.

As a community empowerment effort, the program showed promising value in supporting the prevention of helminth infection and improving child health in the long term. It is recommended that community health centres implement regular educational activities on helminth prevention, especially in communities with higher vulnerability to infection. Continuous mentoring and training for community health workers are also needed to strengthen future health promotion programs. Furthermore, mothers are encouraged to practice clean and healthy lifestyles and to ensure that their children receive deworming treatment according to the recommended schedule.

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