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Empowering Community Health Cadres in Monitoring Toddler Growth and Development Through The Maternal and Child Health (MCH) Book Counseling for Stunting Screening

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ABSTRACT

Cadres are the drivers of various aspects of society's social life. Health cadres are one of the partners of health workers who are expected to be able to bridge between health workers and the community, helping improve the health and welfare of people in the region. The principle of community empowerment is applied in health development programs; one example is the Integrated Service Post (Posyandu). Posyandu is an activity that is managed and organized from, by, for, and with the community. The aim of community service activities is to provide education about the KIA book to health cadres. The target of the activity was health cadres, totaling 20 participants. The methods used were lectures, questions, and answers using the KIA book as tools and presentation material about the use of the KIA book. Evaluation of community service activities by assessing pre-test and post-test regarding knowledge of KIA book use by cadres. The post-test was carried out after participants received information about using the KIA book. The results of the activity showed an average pre-test score of 60.71 and an average post-test score of 72.85. The conclusion of this community service activity was that there was an increase in the level of knowledge of health cadres in using KIA books to monitor the growth and development of toddlers as an effort to screen for early stunting.



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INTRODUCTION

According to the World Health Organization (WHO), the global prevalence of stunting in 2020 was 150.8 million or 22.2% (Kemenkes RI, 2022a). Data from the Indonesian Nutritional Status Survey (SSGI) reported that the prevalence of stunting in Indonesia in 2022 was 21.6%, while the stunting rate in the Special Region of Yogyakarta (DIY) was 16.4% in the same year. The causes of stunting in Indonesia include proximate factors (maternal nutritional status, breastfeeding and complementary feeding practices, exposure to infectious diseases), and distal factors such as education, food systems, healthcare, water, and sanitation (Beal et al., 2018). In the WHO stunting framework, the causes of stunting are categorized into two groups: proximate causes and contextual determinants. Proximate causes include household and family-level factors, inadequate complementary feeding, breastfeeding, and infectious diseases. Contextual determinants encompass social and community-level factors (Kemenkes RI, 2022b). In an effort to accelerate the improvement of

human capital in Indonesia, the Ministry of Health has initiated a transformation in the health sector. There are six transformations to be carried out: transformation of primary care services, referral services, health resilience systems, health financing systems, health human resources, and health technology.

Maternal and Child Health (MCH) services are one of the key aspects of the health system, aiming to improve the health status of mothers and children and reduce maternal and infant mortality rates. Efforts to address this issue have become a priority in the 2020–2024 National Medium-Term Development Plan, which emphasizes the importance of strengthening primary health care through promotive and preventive approaches (Presiden RI, 2017). Primary care integration is part of the primary health care service transformation, which is the first pillar of the Health System Transformation initiated by the Ministry of Health to improve public health and address key health issues, such as maternal and child health, family planning, reproductive health, community nutrition, disease control, the Healthy Living Community Movement, and drug and food control. The integration of primary health care services with a life-cycle approach ensures that all aspects of maternal and child health are addressed comprehensively. This includes collaboration across various levels of health services from community health centers to integrated service posts to provide comprehensive services. In this way, each life stage, from pregnancy to early childhood, can be managed appropriately.

The principle of community empowerment is implemented in health development programs. Institutional arrangements and health services at the village or urban ward level are integrated into a single entity, namely the Posyandu, in accordance with the Village Law mandate to utilize community institutions in providing basic social services. Posyandu (Integrated Health Service Post) is one of the Community-Based Health Efforts managed and organized "by, from, for, and with" the community in delivering development in health, education, and the economy. The aim is to empower the community and make it easier to access basic health, education, and economic services (Kemenkes RI, 2023). The objectives of Posyandu include reducing infant mortality rates, maternal mortality rates (during pregnancy, childbirth, and postpartum), promoting clean and healthy living behaviors, increasing community participation and capacity in developing health and family planning programs, and supporting other activities that contribute to achieving a healthy and prosperous society. Posyandu cadres are key partners of health workers. They are expected to bridge communication between health professionals and the community and assist in identifying the community's own health needs (Anwar, Syahrianti, et al., 2021; Kemenkes RI, 2018). The role of cadres is essential and inseparable from health services, particularly maternal and child health services (Anwar, Naningsih, et al., 2021; Prasetyo, 2019).

To improve maternal and child health services, the government has launched the MCH Handbook, which can be utilized by the community. The MCH Handbook contains records of maternal health from pregnancy, delivery, postpartum care, and child health records from birth to five years old, as well as various information on how to care for maternal and child health. The MCH Handbook aims to improve the quality of MCH services, thereby reducing maternal and infant mortality in Indonesia. Additional objectives include helping families understand health information related to mothers and children as presented in the handbook, supporting mothers in independently monitoring their and their child's health, and enhancing health practices among families and communities in caring for maternal and child health (Kemenkes RI, 2024). Preliminary studies have shown that many community members are

unwilling to become cadres because the work is demanding and unpaid, leading them to prefer staying at home or finding home-based work. Most of them do not understand the duties and responsibilities of cadres, and as a result, some do not perform their roles effectively. This is thought to stem from a lack of knowledge and a negative attitude toward becoming a Posyandu cadre. Therefore, efforts are needed to raise public awareness about the importance of the cadre's role in Posyandu management. This issue requires motivational training using an integrated module that includes materials about Posyandu as well as supporting content from religious and community leaders to strengthen understanding of the vital role of Posyandu cadres. This is supported by Nurmi (2014), which found that the use of modules in training can improve cadres' behavior.

Based on the explanation above, cadres have a highly strategic role as educators for mothers. During the pandemic, interaction between health workers and the community was very limited, making it necessary to empower community members (cadres) as educators in stunting prevention. Cadres who are willing, capable, and have the time to voluntarily conduct Posyandu activities must be equipped with knowledge to perform their duties more effectively—especially during a pandemic—particularly in delivering information to the community about monitoring child growth and development. Therefore, it is necessary to conduct an in-depth study on the effect of health education based on the 2020 MCH Handbook on the knowledge and attitudes of Posyandu cadres in providing counseling to prevent stunting.

METHODS

The community service activity began with an initial site visit conducted in April 2024. During this stage, an approach was made to the village authorities to obtain data in order to identify the characteristics of health cadres, including age, education, occupation, and duration of service as health cadres in the Timbulharjo Village area, Sewon Subdistrict, Bantul Regency. The next activity involved planning and preparing the counseling materials, including leaflets, PowerPoint presentations, the 2022 edition of the MCH Book, as well as pretest and posttest questions. This activity involved three lecturers and three students from the Midwifery Department of the Health Polytechnic of the Ministry of Health Yogyakarta (Poltekkes Kemenkes Yogyakarta), assisted by three field facilitators. During the implementation, the students were responsible for preparing the equipment for the community service activities and assisting throughout the process.



Figure 1 Flowchart of the Community Service Activities

Note: The community service program was implemented in three main stages. Stage 1 consisted of a preliminary survey, planning meetings, and the development of

educational materials. Stage 2 included the administration of a pretest, delivery of educational content, demonstration activities, and a posttest. Stage 3 focused on post-training follow-up through the creation of a WhatsApp group, ongoing mentoring of health cadres, and final monitoring and evaluation.

The second visit took place on July 11, 2024, at the meeting room of Timbulharjo Village, Sewon, Bantul. The total number of participants in this activity was 20 health cadres. Based on the community service report, the evaluation of the activity was carried out using a pre-test and post-test design to assess the impact of health education on cadres' knowledge regarding the use of the Maternal and Child Health (MCH) Handbook. The questionnaire consisted of 35 items and was declared valid after undergoing a validity test. The questions were distributed to all cadres with seating arrangements made to prevent cheating. Upon completion, the questionnaires were immediately collected by the service team.

The next session was a presentation of the material and a demonstration on how to use the MCH Handbook. After all the material had been delivered, a post-test was administered using the same questions as in the pre-test. The next stage involved providing assistance by creating a WhatsApp group to support the cadres. Any additional information or questions, whether related to the topic or not, could be shared through this platform. Monitoring, evaluation, and follow-up were then conducted by the team through this group.

RESULT AND DISCUSSION

The result of this community service activity showed an increase in knowledge among the health cadres in Timbulharjo Village, Sewon, Bantul regarding monitoring child growth and development using the MCH Handbook. The knowledge was delivered through face-to-face meetings using lecture methods, Q&A sessions, and the MCH Handbook as a teaching aid. Community service activities that utilized video and lectures proved effective in improving participants' knowledge, consistent with the findings of this activity, where an improvement was seen between pretest and posttest results.

A total of 20 health cadres participated in the health education session. These were women cadres from Timbulharjo Village, Sewon, Bantul. As shown in Table 2, most of the participants were housewives (9 respondents or 45%). Community participation was also evident through the provision of various facilities and infrastructure needed for the activity, such as the use of a meeting hall. The face-to-face session proceeded smoothly and effectively, using lectures and Q&A sessions involving the MCH Handbook to support discussions on monitoring child growth and development. The activity was carried out by three lecturers and three students from the Midwifery Department of Poltekkes Kemenkes Yogyakarta, assisted by three field facilitators.

The effectiveness of this educational effort was evident from the average scores of the pretest and posttest. These scores are shown in Table 1 below.

Table 1. Correlation Between Pretest and Posttest Results

Variable Pair	N	Pearson Correlation (r)	Sig. (2-tailed)
Pre-test and Post-test	20	0.736	0.000

The correlation test showed that the Sig. value was 0.000, which is less than 0.05, indicating a significant relationship between pretest and posttest results.

Table 2. Effect of Health Education on Knowledge Levels

Variable Pair	Mean Difference	Std. Deviation	Std. Error Mean	95% CI	t	df
Pre-test – Post-test	-12,14	4,23	0.95	-14.12-(-10.16)	-12,82	19

Based on the table, the p-value was 0.000, indicating a significant difference in the mean scores between the pretest and posttest. This shows that providing health education using the MCH Handbook significantly improved participants' knowledge.

**Figure 2. Presentation of Material on Child Growth and Development****Figure 3. Monitoring of Child Growth and Development**

Figure 2 illustrates the community service team conducting a counseling session for cadres on monitoring the growth and development of toddlers using the MCH Handbook. The MCH Handbook is essential for every mother from pregnancy until the child reaches six years of age. It serves as a tool for early detection of potential maternal and child health issues, a communication and counseling medium that provides critical information to mothers, families, and the wider community. One of its most fundamental benefits is its function as an educational tool to help mothers and families address potential health problems. Moreover, using the MCH Handbook can help prevent maternal and infant morbidity and mortality through early detection of health issues.

The MCH Handbook is an easily usable educational medium, offering key information particularly related to maternal and child health. (Wijhati, 2022) research found that cadres play a vital role in utilizing the MCH Handbook to provide health education, record growth and development data, and act as intermediaries between the community and healthcare workers. In this study, cadres also helped connect students and village midwives. The success of educational efforts during mentoring sessions was tailored to participant availability, indicating that the activity was adapted to the respondents' needs (Osaki et al., 2019).

Figure 3 showed that the cadres, accompanied by students, carried out the process of monitoring the growth and development of toddlers based on child data. The cadre mothers were asked to practice the correct use of the MCH Handbook. The optimization of MCH Handbook utilization can be achieved through various methods, including enhancing the role of cadres. This is because cadres serve as facilitators in delivering information related to programs to be implemented to mothers (Rahmi et al., 2018). The results of this community service activity are supported by previous

research, which found that the knowledge and skills of posyandu cadres can be improved through education and training. Education enhances cadres' knowledge and skills immediately after training (Herliani et al., 2018). Wahyuni et al. (2019) study stated that training posyandu cadres using an integrated module is more effective in increasing knowledge. Training is used as a specific educational method to enhance the knowledge and skills of cadres (Siagian, 2019).

The community service activity involved 20 health cadres from Timbulharjo Village, Sewon, Bantul, with the majority being housewives (9 people or 45%). Most of the cadres had a high school education level (14 respondents or 70%). The face-to-face sessions went smoothly, using lecture methods and Q&A with the MCH Handbook to discuss child growth and development. Pretests and posttests were used as evaluation tools to assess knowledge improvement, alongside real-time Q&A during the session. The correlation test showed a Sig. value of 0.000, indicating a significant relationship between pretest and posttest scores. Additionally, the p-value of 0.000 confirmed a significant difference between the average scores of the two tests, demonstrating the positive effect of health education using the MCH Handbook on increasing knowledge.

Training for Posyandu cadres is effective in increasing the utilization of the MCH Handbook among cadres. The improved knowledge regarding the use of the MCH Handbook experienced by the cadres is attributed to the training. This training helps cadres enhance their knowledge and skills. Cadres are more likely to use the MCH Handbook effectively and positively, and to communicate all the information contained in the book to pregnant women and mothers with toddlers who visit the posyandu (Zolekhah et al., 2020). According to Anwar et al. (2023) study, training cadres on the provision of complementary feeding (MP-ASI) significantly influenced their knowledge and attitudes toward MP-ASI. Cadre training is essential for improving their knowledge and skills in educating mothers and children on the use of the MCH Handbook (Sistiarani & Suratman, 2013).

A person's knowledge is largely obtained through the senses of sight and hearing when optimally utilized (Anwar, Syahrianti, et al., 2021). Based on research by (Rosalinna & Astuti, 2022) there is a significant relationship between MCH Handbook training for cadres and improved health knowledge, with a p-value of 0.000. According to (Triguno et al., 2022), providing counseling can improve pregnant women's understanding of the importance and use of the MCH Handbook. Furthermore, there was an increase in cadres' understanding of their role in utilizing the MCH Handbook.

The overall achievement of this community service objective was good, as observed during the explanation sessions on child growth and development. Topics included an overview of the MCH Handbook, monitoring via Growth Charts, monitoring using Early Detection and Stimulation of Child Development, completing the Pre-screening development questionnaire forms, and educating about complementary feeding according to the child's age. Participants appeared attentive and asked questions. During the Q&A, participants were able to explain the material using their own words, indicating that the objectives of the activity were met. It can be concluded that the objectives of this activity were successfully achieved. The achievement of the material targets in this community service activity was satisfactory, as all of the content was delivered in full. Overall, this community service activity—focused on promotive efforts to improve health cadres' knowledge regarding the monitoring of toddler growth and development using the MCH Handbook as an early stunting screening tool in Timbulharjo Village, Sewon, Bantul—can be considered successful.

The success of this activity, in addition to being measured by the five components mentioned above, was also reflected in participants' satisfaction after the activity. The benefits gained by the health cadres included increased knowledge about the MCH Handbook, monitoring growth and development through the Growth Chart, developmental monitoring through Early Detection of Child Development, filling out the Pre-Screening Developmental Questionnaire form, and education on age-appropriate complementary feeding. It is expected that the health cadres will serve as promoters and mobilize the community, especially mothers with toddlers, to actively engage in monitoring child growth and development using the MCH Handbook as an early effort to screen for stunting.

In 2020, the government released the latest version of the MCH Handbook. This updated version is divided into two sections that was the maternal section and the child section. The maternal section includes additional photos and more comprehensive health education for pregnant women (Kemenkes RI, 2020). As community members who are well known and close to pregnant women, cadres act as extensions of health workers to facilitate more intensive community engagement and counseling, especially for pregnant women who live nearby. As a result, pregnant women are expected to develop a positive perception of the cadre's role and make optimal use of the MCH Handbook during their antenatal visits (Rahmi et al., 2018).

The dissemination of the 2020 MCH Handbook was a community service initiative aimed at increasing the knowledge and skills of health cadres. This is important for cadres, as it can enhance their performance within the community. The 2020 version of the MCH Handbook includes updates, making it necessary to be socialized. This dissemination led to increased knowledge among pregnant women; however, other factors such as maternal age and education level also influence a person's knowledge. According to the researcher's assumption, training cadres on the 2020 MCH Handbook is effective in improving their skills in utilizing the updated version. A study by (Sarhini & Galaupa, 2024) showed that the effectiveness of the MCH Handbook in increasing mothers' knowledge. Knowledge has also been shown to be significantly related to the role of cadres in using the MCH Handbook ($p\text{-value} = 0.013$).

CONCLUSION AND RECOMMENDATION

The implementation of the community service activity aimed at increasing knowledge on monitoring the growth and development of toddlers using the MCH Handbook (Buku KIA) as an early stunting screening effort in Timbulharjo Village, Sewon, Bantul, was successfully carried out. A total of 20 health cadres from Timbulharjo Village actively participated in the community service activity held at the village hall. In general, the health cadres were able to explain the concept of the MCH Handbook, monitoring child development using the Growth Monitoring Chart, monitoring through Early Detection of Child Development, completing the Pre-Screening Developmental Questionnaire (PDQ) form, and educating on age-appropriate complementary feeding. However, not all participants fully mastered the material presented. Statistically, there was a significant increase in knowledge regarding the monitoring of child growth and development using the MCH Handbook before and after the information was delivered. A correlation was found between pre-test and post-test scores, indicating that the health education significantly improved the health cadres' knowledge on toddler growth and development monitoring in Timbulharjo Village, Sewon, Bantul.

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