

Improving Cadre Competence through Anthropometry Training in Mawang Village, Gowa Regency, Indonesia

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ABSTRACT

A common issue in public health services is the limited knowledge and skills of posyandu cadres in conducting accurate anthropometric measurements, which affects the assessment of children's nutritional status. This community service program through training aims to improve the competencies of posyandu cadres in anthropometric measurements in Mawang Village, Somba Opu District, Gowa Regency. Anthropometric measurements are essential for assessing children's nutritional status and overall community health. The participatory training method involved cadres actively in every stage, from planning to evaluation. The training was conducted on September 14, 21, and 28, 2024, at Nurul Huda Mosque, with the participation of 35 posyandu cadres. The training materials included anthropometric measurement theory, correct techniques, and practical demonstrations. The evaluation results showed a significant increase in cadres' knowledge, with an average pre-test score of 13.37 and an average post-test score of 14.60 (p-value 0.000). This increase demonstrates the effectiveness of the training in enhancing cadres' understanding of anthropometric measurements, which is expected to contribute to improving the quality of health services at posyandu. This study emphasizes the importance of continuous training for posyandu cadres to support public health improvement efforts.

ABSTRAK

Masalah umum yang dihadapi dalam layanan kesehatan masyarakat adalah keterbatasan pengetahuan dan keterampilan kader posyandu dalam melakukan pengukuran antropometri secara akurat, yang berpengaruh pada penilaian status gizi anak. Pengabdian masyarakat melalui pelatihan ini bertujuan untuk meningkatkan kompetensi kader posyandu dalam pengukuran antropometri di Kelurahan Mawang, Kecamatan Somba Opu, Kabupaten Gowa. Pengukuran antropometri sangat penting untuk menilai status gizi anak dan kesehatan masyarakat. Metode yang digunakan adalah pelatihan partisipatif yang melibatkan kader secara aktif dalam setiap tahap, mulai dari perencanaan hingga evaluasi. Pelatihan dilaksanakan pada tanggal 14, 21, dan 28 September 2024, di Mesjid Nurul Huda, dengan partisipasi 35 kader posyandu. Materi pelatihan mencakup teori pengukuran antropometri, teknik yang benar, dan demonstrasi praktis. Hasil evaluasi menunjukkan peningkatan signifikan dalam pengetahuan kader, dengan skor pre-test rata-rata 13,37 dan post-test rata-rata 14,60 (p-value 0,000). Peningkatan ini membuktikan efektivitas pelatihan dalam meningkatkan pemahaman kader mengenai pengukuran antropometri, yang diharapkan dapat berkontribusi pada peningkatan kualitas layanan kesehatan di posyandu. Studi ini menekankan pentingnya pelatihan berkelanjutan untuk kader posyandu guna mendukung upaya peningkatan kesehatan masyarakat.

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INTRODUCTION

Anthropometric measurements play a crucial role in monitoring child growth and nutrition, serving as objective indicators of health status. These measurements, including weight, height, and mid-upper arm circumference, are essential for assessing undernutrition, which manifests as stunting, wasting, and underweight (Kundan et al., 2021; Khan & Das, 2020; Ekholuenetale et al., 2023). The World Health Organization (WHO) has established growth standards that provide benchmarks for evaluating children's growth patterns globally, emphasizing the importance of regular monitoring (Rajendran et al., 2024; Kumar & Kumar, 2024).

Moreover, accurate anthropometric assessments are vital for early detection of growth faltering, allowing for timely interventions to mitigate the risks of malnutrition and associated health complications (Heemann et al., 2021; Bukari et al., 2020). Studies have shown that inadequate growth monitoring can lead to missed opportunities for nutritional education and health promotion, further exacerbating malnutrition issues (Sunjaya et al., 2021; Legoale & Manafe, 2024). Thus, anthropometric measurements not only reflect individual health but also inform public health strategies aimed at improving child nutrition and overall well-being (Melkamu et al., 2019; Prabhu et al., 2023).

The role of healthcare workers in monitoring child growth and maternal health is pivotal for ensuring optimal health outcomes. Healthcare professionals (HCPs) are essential in implementing growth monitoring practices, which are critical for early detection of growth-related issues and nutritional deficiencies in children. Regular anthropometric assessments, such as measuring height and weight, allow HCPs to identify undernutrition and obesity, thereby facilitating timely interventions (Dommelen et al., 2020). Moreover, HCPs are tasked with educating parents about the importance of these measurements, fostering a collaborative approach to child health (Santini et al., 2023).

In the context of maternal health, HCPs play a significant role in providing prenatal and postnatal care, which is crucial for both maternal and child health outcomes. They are responsible for monitoring maternal health indicators, providing nutritional guidance, and addressing psychosocial factors that may affect maternal well-being (Santini et al., 2023; Backer et al., 2024). Effective communication between HCPs and mothers is vital; it not only enhances maternal knowledge but also builds trust, which is essential for adherence to health recommendations (Backer et al., 2024). Furthermore, HCPs can facilitate access to resources and support systems that empower mothers, particularly in vulnerable populations (Backer et al., 2024).

The integration of soft technologies and interprofessional collaboration among HCPs enhances the quality of care provided to mothers and children. These technologies can improve communication and streamline health services, making it easier for families to access necessary care (Santini et al., 2023). Additionally, HCPs are in a unique position to advocate for children's best interests, ensuring that their health needs are prioritized during healthcare interactions (Quaye et al., 2021). This advocacy is particularly important in cases of suspected child maltreatment, where HCPs must navigate complex ethical considerations while ensuring the safety and well-being of the child (Joh-Carnella et al., 2023).

The training aims to provide the necessary knowledge and practices for posyandu cadres to carry out their duties more effectively. By improving the skills of the cadres, it is expected that the quality of health services at the posyandu can improve, which in turn will contribute to the improvement of community health in Kelurahan Mawang. In addition, the training is also expected to encourage cadres to be more active in educating the community on the importance of health and nutrition monitoring.

METHODS

This training uses a participatory approach, which involves cadres actively in every stage, from planning to evaluation. Cadres are encouraged to participate in discussions and share their experiences related to anthropometric measurements. The cadre training activities were carried out on September 14, 21, and 28, 2024 at the Nurul Huda Mosque, Mawang Village, Somba Opu District.

This cadre training was also attended by the Head of Samata Health Center and 3 (three) midwives who assisted the posyandu cadres. The 35 posyandu cadres from Posyandu in Mawang Village and Bontoramba Village were invited to attend the posyandu cadre training.

The training material begins with the delivery of theory about the importance of anthropometric measurements, correct techniques, and tools used. This explanation is done in an easy-to-understand manner and accompanied by real examples. After the delivery of the theoretical material, the instructor conducted a live demonstration of how to measure body weight, height, and upper arm circumference (LILA). This demonstration aims to give cadres a clear picture of the correct technique. After the presentation of the material, it was continued with the practice of anthropometric measurements by posyandu cadres guided by the speaker.

Before and after the training, cadres filled out pre-test and post-test questionnaires. The pre-test was used to measure initial knowledge, while the post-test was used to evaluate the improvement of knowledge and skills after the training. At the end of the training, an overall evaluation of the activities was conducted to assess the effectiveness of the training and obtain feedback from participants on the materials and methods used.

RESULTS AND DISCUSSION

The Based on **Table 1**, it is known that before counseling, there were 21 (40%) respondents out of 35 total respondents who had good knowledge with an average score of 13.37. After counseling, there was an increase in respondents who had a good knowledge category to 27 (77.1%) respondents with an average score of 14.60. This shows an increase in score of 1.23. **Table 2** shows statistical analysis with the Wilcoxon test showed that the increase was significant with a p value of 0.000, meaning that the counseling conducted was proven to increase the knowledge of posyandu cadres related to anthropometric measurements in infants and toddlers.

Table 1. Pre-posttest Score of Knowledge

| Knowledge | Pre-Test | | Post-Test | |
|-----------|----------|-----|-----------|------|
| | n | % | n | % |
| Less | 14 | 40 | 8 | 22.9 |
| Good | 21 | 40 | 27 | 77.1 |
| Total | 35 | 100 | 35 | 100 |

The results of this community service activity show that there is a significant difference in the knowledge of cadres in anthropometric measurements compared to before attending the training. The increase in cadre knowledge scores in this activity is supported by the use of media such as tools used in anthropometric measurement training which are explained in detail and use simple language so that they can be easily understood by cadres (see **Figure 1**).

Table 2. Wicoxon Test Results

| Variables | Pretest (Mean±SD) | Posttest (Mean±SD) | Improved Average | p-value |
|-----------|-------------------|--------------------|------------------|---------|
| Knowledge | 13.37 ± 1.374 | 14.60 ± 0.941 | 1.23 | 0.000 |

Community service activities in the form of training cadres in anthropometric measurements proved effective and succeeded in increasing the understanding of cadres. This increased understanding is an important basis in achieving optimal Posyandu management competence. Good knowledge is one of the main factors that influence cadres' skills in managing Posyandu, and is the key to success in the community service system. Services provided by skilled cadres will get a positive response from the target, creating a friendly, organized and good impression, which in turn encourages the target to continue visiting Posyandu.



Figure 1. Anthropometric Measurement Training

The enhancement of skills among health cadres significantly contributes to improved growth monitoring and early detection of malnutrition in children. Health cadres, including community health workers and volunteers, are often the first point of contact for families in rural and underserved areas. By empowering these individuals with the necessary knowledge and skills, they can effectively monitor child growth and nutritional status, which is crucial for preventing malnutrition and its associated health complications (Masita et al., 2023; Tengkwawan et al., 2020).

Training programs that focus on growth monitoring techniques, nutritional education, and effective communication strategies are essential. These programs equip health cadres with the tools to accurately assess children's growth parameters, such as weight and height, and to interpret these measurements against established growth standards (Singh et al., 2023). For instance, studies have shown that when health workers receive comprehensive training, they are better able to plot growth data on health cards and provide quality counseling based on growth trends, leading to improved health outcomes for children (Singh et al., 2023; Marume et al., 2022).

Moreover, the integration of health cadres into community health systems enhances the reach and effectiveness of growth monitoring initiatives. Cadres can facilitate regular health check-ups and nutritional counseling sessions, ensuring that families are informed about the importance of proper nutrition and growth monitoring (Baguune et al., 2022; Pollifrone et al., 2020). This proactive approach not only helps in early detection of malnutrition but also empowers caregivers with knowledge about appropriate feeding practices and child development (Tengkwawan et al., 2020; Undi et al., 2019). Additionally, the use of mobile health technologies can further augment the capabilities of health cadres. These technologies can provide real-time data collection and monitoring, enabling health workers to track growth patterns and nutritional status more effectively (Lulianthy et al., 2022). Such innovations can enhance communication between health workers and families, fostering a collaborative environment for addressing child health issues (Lulianthy et al., 2022; Bossman et al., 2022).

Despite the overall success of the anthropometric measurement training conducted in Mawang Village, several challenges were identified during the sessions. One of the primary obstacles was the limited availability of standardized equipment, which occasionally led to inconsistencies in measurements. Additionally, some cadres initially faced difficulties in comprehending technical terms and applying measurement techniques accurately, particularly those with limited prior experience in growth monitoring. These challenges highlight the need for ensuring that all cadres have access to appropriate tools and comprehensive guidance during training sessions.

To maintain and further enhance the competencies of posyandu cadres, it is essential to provide regular refresher courses that reinforce their knowledge and skills. Periodic training sessions can help cadres stay updated with the latest guidelines and best practices in anthropometric

measurements. Moreover, incorporating hands-on practice and real-life scenarios during these courses can improve cadres' confidence and accuracy in conducting assessments. Continuous mentoring and supervision by healthcare professionals, such as midwives and health center staff, can further support cadres in applying their skills effectively in daily practice.

Expanding similar training programs to other villages within Gowa Regency is highly recommended to achieve a broader impact on community health. By replicating the training model used in Mawang Village, more health cadres can be empowered to monitor child growth accurately, contributing to the early detection and prevention of malnutrition across the region. Collaborative efforts between local health authorities, community organizations, and healthcare professionals can facilitate the successful implementation and sustainability of these programs, ultimately improving the overall well-being of children and families in Gowa Regency.

CONCLUSION

The anthropometric measurement training conducted in Mawang Village, Somba Opu District, Gowa Regency, successfully enhanced the competencies of posyandu cadres. The evaluation results demonstrated a significant increase in cadre knowledge, as reflected by the improvement in pre-test and post-test scores. This increase was supported by an effective training methodology that combined theoretical explanations, practical demonstrations, and hands-on exercises using appropriate tools. The training not only improved cadres' understanding of anthropometric measurements but also contributed to better posyandu management, which is essential for delivering quality community health services.

Furthermore, expanding similar training programs to other villages within Gowa Regency is crucial for broadening the impact on community health. By replicating the successful training model used in Mawang Village, more cadres can be empowered to accurately monitor child growth, enabling early detection and prevention of malnutrition. Collaborative efforts among local health authorities, community organizations, and healthcare professionals will be essential to ensure the sustainability and effectiveness of these programs, ultimately contributing to the overall well-being of children and families in the region.

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