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Improving the Capacity of Posyandu Cadres in Flipchart and Leaflet-Assisted Education for Toddler Diarrhea Management

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ABSTRACT

Toddler diarrhea remains a leading cause of morbidity and mortality in low and middle income countries, with effective home management being crucial to prevent deaths. The purpose of this community service activity is to improve the knowledge and skills of Posyandu cadres in providing education on handling toddler diarrhea using flipchart and leaflet assisted training. The activity was carried out from December 2025 to January 2026, involving a total population of 13 cadres at RW 27 Tlogosari Kulon. The intervention consisted of a 4 hour intensive workshop featuring lectures, demonstrations of Oral Rehydration Salt (ORS) preparation and role play sessions using media. One supervised mentoring session during actual Posyandu activities to ensure the practical application of the visual aids. Knowledge was measured using a validated 20 item pre and post test questionnaire, while skills were assessed using a standardized clinical checklist during demonstrations. The results showed a significant increase in knowledge; initially, 61.5% of cadres had poor knowledge, which improved to 100% in the good category post intervention. Furthermore, cadres demonstrated 100% proficiency in using flipcharts and correctly preparing ORS solution. This program effectively empowers cadres as frontline educators in community based diarrhea management.



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INTRODUCTION

Diarrhea remains a leading cause of morbidity and mortality among children under five in developing countries (Singh et al., 2024). Globally, diarrhea contributes significantly to deaths due to dehydration complications if not promptly addressed at the household level (Arifin et al., 2022; Merghani et al., 2022). In Indonesia, the government has established a national strategy called Five Steps to End Diarrhea (LINTAS Diare), which includes administering oral rehydration salts (ORS), zinc for 10 consecutive days, breastfeeding/feeding, administering a combination of antibiotics, and providing counseling to parents (Mariyam et al., 2025; Ministry of Health of the Republic of Indonesia, 2021).

The success of the LINTAS Diarrhea strategy relies heavily on the strategic role of Posyandu (Integrated Service Center) cadres as the frontline in educating the community. Furthermore, community-based strategies have been implemented to strengthen household self-management and expand the reach of information and the quality of public health practices ([Niyibitegeka et al., 2021](#)). Cadres are expected to be able to transfer technical knowledge about proper diarrhea management at home to mothers of toddlers. However, the effectiveness of this education is often hampered by limitations in media and cadre communication skills.

Data from the Tlogosari Kulon Community Health Center (Puskesmas) shows a persistently high rate of diarrhea, reaching 1,231 cases in 2025 ([Dinkes Kota Semarang, 2023](#)). The main problem identified in the field is that many mothers fail to recognize the early signs of dehydration, which risks delaying medical treatment ([Akande et al., 2026](#); [Mariyam et al., 2025](#)). It was found that the cadres had never received specific training on how to provide effective diarrhea management education. Current practice relies solely on passive, one-way lectures without the aid of visual aids. As a result, information transfer to parents of toddlers is suboptimal, and cadres often lack confidence in explaining technical procedures such as assessing dehydration or administering zinc doses.

To overcome these obstacles, capacity building is needed through practical visual aid-based educational training. The use of flipcharts and leaflets is designed to help cadres provide more structured and memorable instructions. This community service activity aims to improve the knowledge and skills of RW 27 cadres in Tlogosari Kulon Village in educating toddlers about diarrhea management to support the achievement of the LINTAS Diarrhea target at the community level.

IMPLEMENTATION METHOD

This community service activity aims to improve the capacity of Posyandu (Integrated Service Post) cadres in providing education on diarrhea management in toddlers through visual media. The activity was conducted in RW 27, Tlogosari Kulon, Semarang, from December 2025 to January 2026. The participants consisted of 13 Posyandu cadres selected using a total sampling technique.

The intervention was carried out through three main stages. Preparation Stage: Development of educational media in the form of flipcharts and leaflets covering the concept of diarrhea, the role of mothers, and the five steps to resolving diarrhea (LINTAS Diarrhea), including assessment of dehydration and perianal care. The team also prepared intensive teaching aids such as oral rehydration solution packets, zinc tablets, and cups and spoons. Training Stage (Main Intervention): Cadres participated in a four-hour intensive workshop session. This session included an interactive lecture, documentation of the preparation of ORS solution, and demonstration (independent practice) by the cadres using flipcharts. Mentoring Phase: One mentor session was conducted directly during routine Posyandu activities, where the team observed and provided feedback as the cadres educated mothers of toddlers using the developed media.

Cadre knowledge was measured using a structured questionnaire consisting of 20 multiple-choice questions. This questionnaire was developed based on the Indonesian Ministry of Health's Diarrhea Control Guidelines (LINTAS Diarrhea). The instrument covers four main domains: (1) recognizing signs of dehydration, (2) procedures for administering oral rehydration salts and zinc, (3) providing nutrition during diarrhea, and (4) preventing perianal irritation. Prior to use, the instrument underwent content validity testing by pediatric nursing experts.

RESULTS AND DISCUSSION

The implementation of community service through training cadres on handling diarrhea in toddlers was held on Thursday, December 18, 2025, from 10:00 to 12:00. The learning media used during the activity were practical media that had been prepared, namely flip cards and leaflets on caring for toddlers with diarrhea at home. The number of cadres who participated in the activity was 13 cadres. A total of 1 (7.7%) cadre had an elementary school education, 8 (61.5%) had a high school education, and 4 (30.8%) had a college education. The characteristics of the cadres can be seen in Table 1. Based on Table 1, the average age of the cadres was 50.6 years and the average length of time as a cadre was 9.8 years.

Table 1. Characteristics of Posyandu Cadres RW 27 Tlogosari Kulon (n=13)

Variables	Mean	Minimum	Maxium	Standard Deviation
Age	50,6	41	63	7,56
Time as a member	9,8	2	35	11,8
Knowledge before	12,3	11	13	0,63
Knowledge after	18,6	17	20	1,84

The training was conducted using lecture, demonstration, and discussion methods. Knowledge before and after the training was evaluated. An overview of knowledge before and after the training can be seen in Tables 1 and 2. An explanation was also provided regarding the use of educational media such as flip cards, leaflets, and teaching aids, explained and demonstrated by the community service provider, with the hope that the cadres could provide education to mothers of toddlers during Posyandu activities. Material related to diarrhea, the role of mothers, and diarrhea management was provided to increase the cadres' knowledge regarding toddler diarrhea management.

Table 2. Cadre Knowledge Before and After Training (n=13)

Knowledge	n	%
Before		
Poor	8	61,5
Moderate	5	38,5
Good	0	0
After		
Poor	0	0
Moderate	0	0
Good	13	100

The results of this activity showed a significant increase in cadre knowledge. Before the intervention, 61.5% of cadres had poor knowledge, and after the intervention, 100% achieved a good level. Structured training can drastically improve cadre understanding ([Mariyam mariyam et al., 2024](#)). Structured training, which included education, demonstrations, and discussions, significantly improved cadre knowledge ([Tampake et al., 2021](#)).

The success of this knowledge improvement is inseparable from the combination of demonstration methods and visual media (flipcharts and leaflets). Flipcharts are visual media consisting of a collection of sheets of paper arranged sequentially. The material in the flipcharts is systematically and structured. The use of flipcharts in training was highly effective for cadres, as they could be read clearly and reused to explain to mothers ([Sapkota et al., 2026](#)). Unlike conventional education, which is based on one-way lectures, the use of flipcharts helps cadres visualize signs of dehydration that are difficult to explain verbally. Furthermore, the return demonstration (independent practice) session provides an opportunity for cadres to actively internalize information (active learning), thereby increasing their confidence in educating the community.

Following training for cadres, mentoring was provided to cadres in providing education to mothers. Cadres provided education on caring for toddlers with diarrhea to mothers who attended Posyandu activities. This activity took place on Saturday, January 10, 2026, from 9:00-11:00 a.m. at the Posyandu RW 27 Tlogosari Kulon. Cadres provide education to mothers with toddlers using flipchart media and demonstrate how to prepare oralit and zinc for children with diarrhea. A direct mentoring session during Posyandu activities is a key factor in the successful implementation of skills ([Astutik et al., 2025](#)). This mentoring serves as a bridge between the theory learned during training and actual practice in the field (Enis et al., 2025). Immediate feedback from the community service team when cadres interact with mothers of toddlers helps correct errors in conveying information about the administration of ORS and Zinc, which are often the most crucial parts of the LINTAS Diarrhea protocol. Cadre self-efficacy increases significantly when training is followed by field observation and immediate feedback, rather than just one-way theoretical training ([Abdollah & Zohreh, 2025](#)).

Improving the capacity of Posyandu cadres is highly relevant given the high number of diarrhea cases in the Tlogosari Kulon Community Health Center (Puskesmas) working area (1,231 cases). By equipping cadres with practical media, communication barriers previously encountered due to the lack of visual aids can be overcome. Cadres now possess not only theoretical knowledge but also concrete tools (leaflets) that can be given to parents as a guide for self-care at home to prevent delays in managing dehydration.



Figure 1. Explanation of activities



Figure 2. Pre test



Figure 3. Cadre training



Figure 4. Practice of administering fluids and zinc



Figure 5. Discussion and Q&A



Figure 6. Post Test



Figure 7. Cadres provide education to mothers of toddlers



Figure 8. Cadre mentoring



Figure 10. Posyandu cadres and community service team

CONCLUSION AND SUGGESTION

This community service activity successfully improved Posyandu cadres' knowledge regarding diarrhea management in toddlers. Evaluation results showed an increase in the proportion of cadres with "Good" knowledge, from 0% before the intervention to 100% immediately after the training. The use of visual aids in the form of flipcharts and leaflets proved effective in strengthening cadres' technical understanding. However, it is important to recognize that this increase in knowledge is a short-term outcome. Further research is needed to determine whether this capacity building can translate into consistent changes in educational behavior in the field and

have a tangible impact on reducing the risk of dehydration in toddlers at the household level..

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