

EDUCATION OF POSYANDU CADRES ON THE HAZARDS OF DIARRHEA IN
TODDLERS IN DESA CIAMPEA UDIK, KECAMATAN CIAMPEA,
KABUPATEN BOGOR

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ABSTRACT

*Diarrhea is defined as a phase of abnormal feces discharge in the form of more liquid consistency with a frequency of more than 3 times a day. Pathogens that cause diarrhea are infections of *Vibrio cholerae*, *Shigella*, *Campylobacter jejuni*, *Escherichia coli*, and *Salmonella*. For toddlers, diarrhea can cause death if not treated properly because they are easily dehydrated. Therefore, one step to overcome diarrhea in toddlers is to increase the capacity of cadres. This community service activity aims to educate posyandu cadres about the hazards of diarrhea in toddlers in the Desa Ciampea Udik, Kecamatan Ciampea, and Kabupaten Bogor. A total of 36 cadres who participated in the activity were educated and evaluated by providing pre-test and post-test questions. The test results showed that the average pre-test score was 69.7, and the average post-test score increased to 74.9. In the future, activities that need to be carried out include educating posyandu cadres about the use and processing of local food in an effort to increase toddler immunity, especially against the risk of diarrhea.*

Keywords: *Diarrhea, Education, Posyandu cadres, Toddlers*

1. INTRODUCTION

Recently, diarrhea has still one of the leading causes of death in toddlers at 10.3%; in Indonesia, the highest number of cases is in the province of West Java (Kemenkes RI, 2018). Common symptoms in toddlers include frequency of defecation more than 3 times a day, liquid feces concentration, abdominal pain, fever, decreased appetite, weight loss, and fatigue (Dinkes Jabar, 2020). If not treated immediately, the complications that arise will be more severe, such as organ damage, dehydration, hypovolemia, and even death (Utami & Luthfiana, 2016). The main microbes that cause diarrhea are the pathogenic bacteria *Vibrio cholerae*, *Shigella*, *Campylobacter jejuni*, *Escherichia coli*, and *Salmonella* (Sanyaolu et al., 2020).

Transmission of diarrheal diseases can occur directly through the hands of people with diarrhea or indirectly through contaminated water and food (Keusch et al., 2016). However, most cases of transmission often occur due to poor hygiene, drinking water, and sanitation (Unicef, 2020). Of all age groups, toddlers are the most vulnerable group to diarrheal disease infection, especially for families living in slums that have limited clean

water, poor waste disposal facilities, and no health facilities (Pagisi et al., 2023). Toddlers who often experience diarrhea have a higher potential for malnutrition than toddlers who rarely (1 time in 3 months) (Puhi et al., 2023). (Betan et al., 2018) reported that the incidence of infectious diseases is related to malnutrition in toddlers.

Desa Ciampea Udik is one of the villages in Kecamatan Ciampea, Kabupaten Bogor, Provinsi Jawa Barat, with an area of 243.15 Ha. This village is located to the west of Kota Bogor, 24.7 km away, with a travel time of 55 minutes by private vehicle (Figure 1). The northern part borders Desa Cibuntu, Kecamatan Ciampea; the southern part borders Desa Cibening, Kecamatan Pamijahan; the eastern part borders Desa Cibitung, Kecamatan Tenjolaya; and the western part borders Desa Ciaruteun, Kecamatan Cibungbulang. The center of government or office of Desa Ciampea Udik is located on Jl. Desa Cikampak Segog, Laladon RT 01/03 Desa Ciampea Udik, Kecamatan Ciampea, Kabupaten Bogor, Postal Code 16620.

In overview, there are around 618 toddlers in Desa Ciampea Udik, divided into 9 posyandu (integrated service post) work areas. According to the head of the posyandu working group, who also serves as the village secretary, the main obstacle to toddler health problems that are often experienced is the low quality of posyandu cadres. This is because there are still few educational activities to improve the quality of cadres, especially regarding knowledge of the risks of foodborne diseases.

This community service activity aims to provide education to posyandu cadres about the hazards of diarrhea in toddlers in the Desa Ciampea Udik area, Kecamatan Ciampea, Kabupaten Bogor. This activity will enhance the knowledge of cadres so that it can reduce cases of diarrhea in toddlers. As one form of implementing the Tri Darma Perguruan Tinggi, this community service activity is a form of campus responsibility. In addition, it can be an experience for students and a forum for collaboration between interdisciplinary cooperation, generating synergy.

2. THE PROBLEM AND QUESTION FORMULATION

From the results of the field survey conducted by the team, several problems need to be followed up. Among others, some people still rely on rivers as a source of drinking water, household needs, and bathing, washing, and toilet needs. In addition, the knowledge of posyandu cadres regarding the hazards of diarrhea in toddlers is still low. Some questions related to the background of this problem are:

- a. Are drinking water and household needs still obtained from rivers?
- b. What are good environmental conditions to support toddler health?
- c. Do cadres know the hazards of diarrhea and its spread to toddlers?
- d. Do cadres know the causes of diarrhea symptoms in toddlers?
- e. Do cadres know how to process good food?

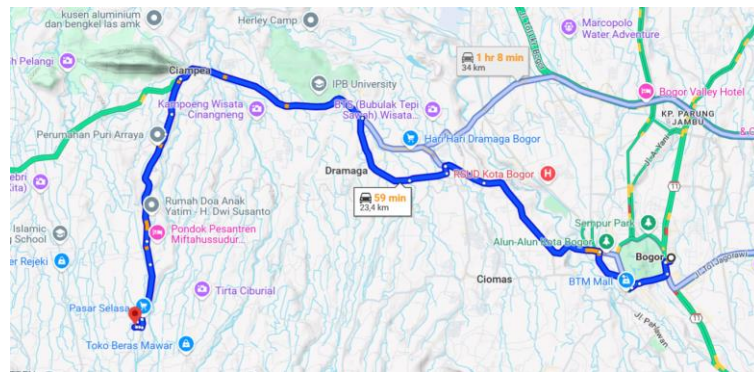


Figure 1. Map of activity locations

3. LITERATURE REVIEW

Diarrhea is a major cause of health problems in toddlers. In Indonesia, diarrhea is classified as an endemic disease with the potential to cause an extraordinary case. As many as 10.3% of toddlers experience acute death after experiencing diarrhea (Kemenkes RI, 2022). Therefore, as a form of preventing the occurrence of diarrhea in toddlers, education of posyandu cadres needs to be carried out. According to (Unicef, 2020), posyandu is an organization for community participation in the form of a community center. The main function of posyandu includes assisting the head of the village to improve essential social services in the health sector. Posyandu is a dynamic and open form of organization so that each member gets information immediately (Kemenkes RI, 2023).

This needs to be done in an incentive and continuous manner so that the capacity of the posyandu does not decrease. As reported by Rahmayanti et al., (2022), it was stated that many posyandu are still unable to provide optimal services. Thus, close cooperation and synergy will be formed so that the expected goals are achieved (Fajriyah et al., 2019). Some of the people involved in this environment are called posyandu cadres. Some of the requirements submitted include being willing, having the ability, and having a lot of free time for all activities that will later be carried out at the posyandu (Ristanti & Iwan., 2018). (Therefore, these cadres must be easily accessible or met by people who need help with toddler health matters. Thus, the education provided to these posyandu cadres is expected to reduce cases of diarrhea in toddlers in the future.

4. RESEARCH METHODOLOGY

This community service activity was carried out in Desa Ciampea Udik, Kecamatan Ciampea, Kabupaten Bogor, from August 1 to August 8, 2024. This community service activity was attended by 4 lecturers and 6 students from the Fakultas Ilmu-Ilmu Kesehatan (FIKES) Universitas Esa Unggul, 2 health center officers from Desa Ciampea Udik, and 36 posyandu cadres. In this activity, the inclusion criteria are participants registered as posyandu cadres in Ciampea Udik Village, Bogor Regency, West Java, willing to participate by signing a consent agreement. The exclusion criteria are that posyandu cadres are absent during the training activities.

The implementation method of the activity consists of the stages of managing permits to the lembaga penelitian dan pengabdian masyarakat (LPPM) Universitas Esa Unggul, permits to the Desa Ciampea Udik as a partner, collecting supporting data, and the main activity is education for field surveys and collecting supporting data obtained from the sub-district office and village office. The data needed include public health conditions and environmental sanitation, the number and health conditions of toddlers, and the number of posyandu cadres.

The main activity of community service begins with the registration of cadres (Figure 2). It is continued with the preparation of a 15-minute pre-test questionnaire regarding cadres' understanding of the hazards of diarrhea in toddlers. Furthermore, education (counseling) is carried out for 45 minutes using laptops, in focus, and layers, and then a 30-minute discussion event. After that, a post-test questionnaire is carried out on the posyandu cadres as evaluation material. Several questions given during the pre-test and post-test are related to cadres' understanding of the dangers of diarrhea in toddlers. For example, what things need to be considered in preventing diarrhea? How is diarrhea transmitted? And how is diarrhea handled and treated in toddlers?



Figure 2. The registration of posyandu cadres

5. RESEARCH RESULTS AND DISCUSSION

This community service activity was carried out in Desa Ciampea Udik, Kabupaten Bogor, and Jawa Barat. In this village there are 9 toddler posyandu, including arumanis, banyuhurip, beringin 1, beringin 2, cempaka, cempala, hegarmanah, kenanga, and medalsari. Table 1 shows the preliminary data that has been collected, which consists of several supporting data information for activities in this service. Overall, there are 618 toddlers in Desa Ciampea Udik. Data from July 2024 shows that 12.8% of toddlers were diagnosed with diarrhea by health workers. Although this percentage is not that high, it can be a reference for increasing awareness of clean and healthy living.

Diarrhea is defined as a phase of abnormal stool discharge in the form of a more liquid consistency, with a frequency of more than three times a

day (Mendri & Agus, 2017). Generally, diarrhea in toddlers is caused by infection with the pathogens *V. cholerae*, *Shigella*, *C. jejuni*, *E. coli*, and *Salmonella* (Sanyaolu et al., 2020). In areas with low-income communities, the incidence of diarrhea is relatively high. The transmission process can occur through contaminated water and food or transmitted directly from person to person.

In general, diarrhea is associated with poor hygiene and poor access to drinking water and sanitation (Unicef, 2016). For toddlers, diarrhea can be fatal if not treated seriously because the toddler's body does not have a strong enough immunity, so if they get diarrhea, they will be very easily dehydrated. In fact, it is not uncommon for an area of diarrhea to cause an extraordinary case. The emergence of various health problems was initially caused by poor clean water facilities and the environment, so the spread of microbes occurs rapidly (Fadhilla et al., 2023).

The data in Table 1 shows that in maintaining environmental cleanliness, most toddlers (95.6%) have defecated in the toilet. In addition, the personal hygiene of mothers of toddlers is also excellent; 97.5% of mothers of toddlers always wash their hands with soap. Knowledge and understanding of mothers of toddlers about the spread and infection of diarrhea is essential for prevention and treatment. Knowledge of mothers of toddlers regarding the handling of toddler diarrhea has been in accordance with health procedures. In handling it, 62.8% of toddlers have been given antidiarrheal drugs (antibiotics), oralit, sugar salt solution, and herbal medicine (traditional). According to Fatmawati et al. (2017) reported that social interaction is strongly related to the incidence of diarrhea. For example, the behavior of washing hands before eating, people who have the behavior of not wash food properly have a 36 times higher potential to experience diarrhea.

Table 1. Number of posyandu cadres and toddlers and utilization of water sources in Desa Ciampea Udik

Parameters	Unit
Number of posyandu cadres	36 people
Number of toddlers:	618 people
- The toddler defecates in the toilet	95,6%
- All toddler mothers wash their hands with soap	97,5%
- Cases of toddler diarrhea (July)	12,8%
- Administering diarrhea medicine	62,8%
Household water source:	
- Protected dug wells	58,5%
- Protected Water springs	20,6%
- PDAM water	11,6%
- River water	5,3%
Source of drinking water:	
- Refill water	46,3%
- Protected dug wells and drilled wells	31,9%
- Protected Water springs	13,1%

In utilizing water sources for household needs, most people in Desa Ciampea Udik rely on protected dug wells 58.5%. The rest use protected springs by 20.6%, PDAM water by 11.6%, and river water by 5.3% (Table 1). For drinking water needs, the community uses independently managed refilled drinking water by 46.6%, protected dug wells and drilled wells by 31.9%, and protected springs by 13.1%. Water is a crucial factor that must be considered in the risk of spreading diarrhea. The cleaner and better the water source facilities in the toddler's house, the lower the risk of diarrhea in toddlers (Argarini et al., 2023).

Several factors should be considered because they can affect the incidence of diarrhea in children. Namely, sociodemographic, behavioral, and environmental factors. Sociodemographics are factors regarding education, parental occupation, and age of the toddler. Behavioral factors include the habit of washing hands, fruits, and vegetables before consumption and exclusive breastfeeding. In contrast, environmental factors are the condition or cleanliness of the environment. Among others, the provision of clean water sources, waste disposal installations, household waste installations (feces), and cleanliness of housing areas (Utami & Luthfiana, 2016).

The number of posyandu cadres who participated in the educational activities on the hazards of diarrhea to toddler health was 36 people, with an age range of 24-57 years. To determine the level of cadre understanding, pre-test and post-test questions were given with 15 questions each. Table 2 shows the distribution of cadre knowledge scores regarding diarrhea problems in toddlers. The average pre-test score obtained was 69.7, with the lowest score being 27 and the highest score being 100. From these scores, the cadre's initial understanding was quite good. However, the results of the answers showed that cadres still needed to understand more deeply about the dangers of diarrhea in toddlers. In particular, regarding environmental health problems and personal sanitation, the characteristics of pathogens that cause diarrhea in toddlers, and the use of water for drinking and household needs.

Table 2. Pre-test and post-test results

Measured	Results	
	Pre-test	Post-test
Minimum	27	40
Maximum	100	93
Mean±SD	69,7±18,53	74,9±16,77

After that, educational activities on the core material were carried out for 45 minutes using laptop equipment, InFocus, and Layer. Then continued with a discussion and question and answer session for 30 minutes (Figure 3). During the discussion, cadres can ask anything they do not understand about the material provided and can also submit a case related to diarrhea in toddlers. Many things affect the characteristics of cadres, such as work, marriage, experience, age, and education (Yosin et al., 2024). The same problem was also reported in the study of (Faridi et al., 2020) regarding the implementation of cadre work. Education is one of the important components that must be considered in the development of the human

resources (HR) of an institution. The new knowledge gained will influence attitudes and habits to be better, thereby improving performance (Pribadi, 2020).



Figure 3. Primary Material Education



Figure 4. Photo session

At the end of the activity session, an assessment was carried out by giving a post-test to determine the level of care and understanding of the dangers of diarrhea in toddlers. The scores obtained will also be used as evaluation material. Data from Table 2 shows that the average score for the post-test was 74.9, with the lowest score of 40 and the highest score of 93. The scores obtained were classified as good, although not high; there was an increase compared to the pre-test score. Therefore, in the future, similar activities are recommended to be carried out to improve cadre understanding. One step in overcoming the incidence of toddler diarrhea is through strengthening the posyandu, namely by increasing the capacity of cadres. At the closing of this educational activity, a group photo was taken with all the community members and residents involved (Figure 4).

6. CONCLUSION

This community service activity was carried out in Desa Ciampea Udik, Kabupaten Bogor, and Jawa Barat. The total number of toddlers recorded was 618 toddlers, of which data from July 2024 showed that 12.8% were diagnosed with diarrhea by health workers. Most of the community relies on

protected dug wells (58.5%) for household needs; the rest use protected springs (20.6%), PDAM water (11.6%), and river water (5.3%). Generally, the transmission of diarrhea is related to poor hygiene and poor access to drinking water and sanitation. Therefore, one of the steps to overcome the incidence of diarrhea in toddlers is to increase the capacity of cadres. A total of 36 posyandu cadres participated in educational activities on the hazards of diarrhea to toddler health. The results of the evaluation test carried out, the average pre-test score was 69.7, and the post-test score obtained increased to 74.9. In the future, activities that need to be carried out include educating posyandu cadres about the use and processing of local food in an effort to increase toddler immunity, especially against the risk of diarrhea.

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