

COMMUNITY DEVELOPMENT INFLUENCE ON PUBLIC'S KNOWLEDGE IN MANDANGIN ISLAND ABOUT ACUTE DIARRHEA AND FUNCTIONAL CONSTIPATION IN CHILDREN

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ABSTRACT

In children, acute diarrhea and functional constipation (FC) are still more prevalent in Indonesia, especially in isolated islands, and need comprehensive management. This study aimed to determine the effect of community development from the Department of Child Health Faculty of Medicine, Universitas Airlangga, Surabaya, on Mandangin Island's public knowledge about acute diarrhea and functional constipation in children. This cross-sectional study was conducted on 29 subjects from Mandangin Island, Sampang, Indonesia on 17th February 2022. Subjects were given education and dissemination as community development by pediatricians via hybrid and could ask questions and discuss at the end of the presentation. The subject's knowledge was measured using a pre-and post-test questionnaire about children's acute diarrhea and functional constipation. Each questionnaire (diarrhea and functional constipation) consisted of 5 questions, with a minimum score of 0 and the maximum score of 100. The subject's knowledge was compared before and after the webinar using Paired T-Test and $p < 0,05$ was measured as significant. We assessed the subject's age, gender, occupation, and last education. There was a significant increase in public knowledge about diarrhea ($26,9 \pm 18,7$; $55,1 \pm 24,3$; $p = 0.000$) and functional constipation pre-and post-webinar ($24,8 \pm 18,2$; $48,3 \pm 24,2$; $p = 0.000$). These findings support the importance of community development with education about acute diarrhea and functional constipation in children.

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INTRODUCTION

Acute diarrhea and functional constipation (FC) in children are the most common disease, and the reason parent brings their children to the medical facility¹. Acute diarrhea management remains a complicated problem with high morbidity and mortality worldwide; meanwhile, childhood FC still causes many complications. Indonesia is still becoming

one of higher prevalence of these two diseases, especially in isolated island areas such as Mandangin Island, which is located near Sampang, Indonesia. Based on RISKESDAS 2018, the prevalence of Diarrhea in children under five years old in East Java was still 6,5%, in which only 37,1% were given oralit and 22,7% zinc². Early detection and appropriate early management by the parents are crucial keys

to reducing the mortality rate. Five fundamental pillars in the management of acute diarrhea in children and knowledge in preventing childhood FC and acute diarrhea are necessary to be educated for parents³. We conducted community development to empower and educate about childhood FC and acute diarrhea, particularly in early management through an online webinar at the village hall, Mandangin Island, Sampang. This study aimed to evaluate the effect of our community development on the Mandangin Island public's knowledge about acute diarrhea and functional constipation in children.

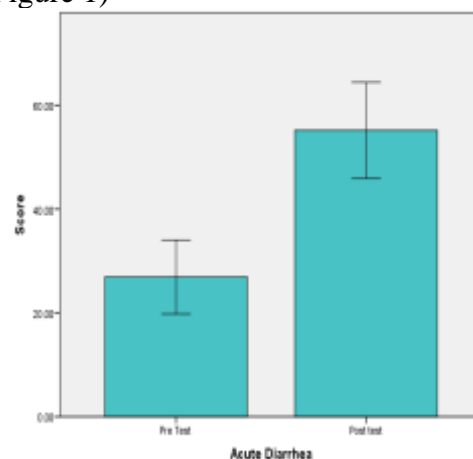
MATERIALS AND METHODS

This research was a cross-sectional study and was conducted on 17th February 2022. The subjects of this study were 29 people who took part in educational activities in the village hall, Mandangin, Sampang. The education was disseminated via hybrid by pediatricians that understood the local language. The speaker was given presentation via Zoom. Meanwhile, the subjects participated and listened presentation from village hall. Each topic needed 30 minutes of short explanations about the early management and brief explanation about diarrhea and functional constipation in children focusing on functional constipation. The subjects could discuss the question and answer with the presenter and other pediatricians about the presentation given at the end of the presentation. We assessed each subject for their age, gender, occupation, and last education. The subject's knowledge was measured using two questionnaires (acute diarrhea and FC) pre-and post- online activity. We developed the questionnaire, and the subjects were asked to answer

questions at the village hall with separate seats with a minimum distance of 1 meter from the side and back to avoid collectively cheating. The acute diarrhea questionnaire consisted of 5 questions about acute diarrhea in children from definition and the management, with a minimum score of 0 and a maximum score of 100. Likewise, the FC questionnaire also had five questions with the same scoring system as the diarrhea questionnaire. The knowledge was defined as Good if the questionnaire score was ≥ 60 and bad if the questionnaire score was < 60 . All data were described in mean \pm standard deviation. We compared pre-and post-test questionnaires using Paired T-Test utilized with SPSS version 20.0 for Windows and $p < 0,05$ was considered significant. Ethical approval was not applicable to this article.

RESULTS

A total of 29 subjects were included in this study, 100% male, and most of them (44,8%) were entrepreneurs. Subject characteristics were described in Table 1. There was significant increase in public knowledge about diarrhea management after education event ($26,9 \pm 18,7$; $55,1 \pm 24,3$; $p = 0,000$) and functional constipation management after education event ($24,8 \pm 18,2$; $48,3 \pm 24,2$; $p = 0,000$). (Figure 1)



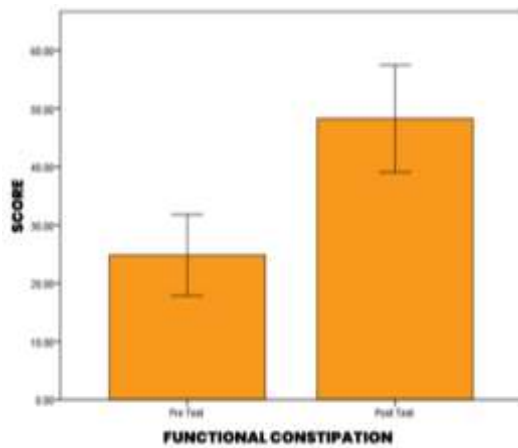


Figure 1. Subject's knowledge of early management acute diarrhea and functional constipation in Children

Table 1. Subject Characteristics

Characteristics	N = 29(%)
Age	47±13.7
<50 Years old	17 (58,6)
≥50 Years old	12 (41,4)
Occupation	
Teacher	1 (3,4)
Village chief	1 (3,4)
Construction laborers	2 (6,9)
Fisherman	8 (27,6)
Village apparatus	3 (10,3)
Village head	1 (3,4)
Entrepreneur	13 (44,8)
Gender	
Male	29 (100)
Female	0 (0)
Last Education	
SD (Elementary school)	3 (10,3)
SMP (Middle school)	13 (44,9)
SMA (High school)	10 (34,5)
S1 (Bachelor)	3 (10,3)
Pre-Test Acute	
Diarrhea	2 (6,9)
Good	27 (93,1)
Bad	
Post-Test Acute	
Diarrhea	19 (65,5)
Good	10 (34,5)
Bad	
Pre-Test Functional	
Constipation	3 (10,3)
Good	26 (89,7)
Bad	
Post-Test Functional	
Constipation	15 (51,7)
Good	14 (48,3)
Bad	



Figure 2. Community Development in Mandangin Hall Village

DISCUSSION

Diarrhea and functional constipation are the leading causes of mortality and morbidity in children worldwide. The factors that contribute to the prevalence of diarrhea in children are complicated, and the relative importance of each component shifts as a consequence of the combination of socioeconomic, environmental, and behavioral variables⁴. Several cohort studies have suggested a strong correlation between the total burden of diarrhea and impaired visual-motor coordination, auditory short-term memory, and information processing in children⁵⁻⁷.

A lack of knowledge and awareness among caregivers and health professionals has been implicated in inadequate care for childhood diarrhea and functional constipation⁸. Addressing these gaps in

knowledge and behavior is crucial to ensure that diarrhea is prevented and children are treated appropriately⁹. This is especially important in remote regions where caregivers have limited access to health care and education. Behera *et al.* exhibited that enhancing diarrhea management necessitates community knowledge and collaboration with health workers. It has been found to reduce diarrhea-related morbidity and mortality and strongly suggest that handwashing, hygiene habits, and the availability of safe water must be emphasized in the tribal territory¹⁰.

According to Andersson *et al.*, education is more effective than enforcement and regulation in affecting people's behaviour¹¹. The appropriate education method needs to be chosen to modify community behavior. Health education communication involves different forms, including lectures, group or panel discussions, symposia, poster or exhibit presentations. Each health education mode has its benefits, limitations, and sphere of effectiveness. In addition, it has to overcome communication barriers (e.g., physiological, psychological, environmental and cultural)¹².

The findings of this study indicated immediate effects on public knowledge about diarrhea and FGID following an education event, demonstrating that good health education and communication can significantly increase knowledge despite knowing that there were many communication barriers between the educator and participants. Korzeniowska *et al.* stated that low education is a substantial barrier to personal and social development^{13,14}. Thus, adapting health education to the needs of low-educated individuals necessitates a thorough investigation of the potentially unique beliefs, rationalizations,

and motivations¹³. Those activities must reflect the specific educational demands of this population to be more effective. Health education must be well-planned, targeted, and presented by individuals who have proved their effectiveness in the general population, particularly those with higher educational standing (in this study, the education delivered by pediatricians). Health education organizers also should avoid using paper media (help books, newspaper magazines) when providing education to low educated people¹³⁻¹⁵.

Due to the outbreak of Covid-19, this health education could not be given directly due to limited mobility, and it had to be delivered via online seminar or webinar. The educational process was real-time, and participants could interact and communicate with the educator throughout the program. The post-test results showed a significant increase in public knowledge after online lectures. Online teaching and education strategies that have a high level of preparedness can be effective and efficient for learning practices for adjusting to the Covid-19 pandemic or other natural disasters, although there was a lack of personal attention with more distraction¹⁶.

Time limitations made the post-intervention observation-only conducted in a short time. We did not evaluate the long-term effect of the public's knowledge about diarrhea and functional constipation or the behavior changing after the education. This study only used lecture methods, while many practical and efficient methods can be applied in community education programs, such as mass media as an information source.

CONCLUSION

Health education activities, such as personal communication and lectures as

community development, significantly improve public knowledge about diarrhea and functional constipation in children. Different approach used in health education would be an effective strategy to enhance parents' knowledge and competence in managing their children at home. Health services should support the community-based interventions to reinforce the activities.

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The authors declare there is no potential conflict of interest.

CONFLICT OF INTEREST

All Authors have no conflict of interest

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AUTHOR CONTRIBUTION

All authors have contributed to all process in this research, including preparation, data gathering and analysis, drafting and approval for publication of this manuscript.

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