DIRECT HEALTH EDUCATION EFFECT ON MANDANGIN ISLAND PUBLIC'S KNOWLEDGE OF THE MOST COMMON DISEASES IN CHILDREN

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ABSTRACT

Pneumonia, diarrhea, and other infectious diseases are some of the most common diseases found in children. Although preventable, the morbidity and mortality rate in children caused by these common diseases are relatively high, and the poor regions are disproportionally affected. Comprehensive health education for adults and parents can effectively prevent these common diseases, especially in remote areas. This study aimed to determine the effect of health education as community development program from the Gastroenterology Division of the Department of Child Health Faculty of Medicine Universitas Airlangga on Mandangin Island public's knowledge about the most common diseases in children. This cross-sectional study was conducted on 61 subjects from Mandangin Island on 4th October 2022. The subjects were assessed on their characteristics and given a pre- and post-health education questionnaire to evaluate their knowledge. The questionnaire was composed of five questions with a minimum score of 0 and a maximum of 100. Results from the pre- and post-test questionnaires were compared using the Paired T-Test method and processed with SPSS; p <0.05 was considered significant. There was a significant increase in public knowledge about the most common diseases in children with a p-value of 0.002 (64.26±31.44; 76.9±22.63). These findings support the importance of health education in the public's knowledge of the most common diseases in children.

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INTRODUCTION

Children under five years old are especially at risk of pneumonia, diarrhea, tuberculosis, and other infectious diseases. Despite being preventable and curable, those diseases contribute to a large number of children's deaths globally[1]. Based on data from the Ministry of Health, the infant and under-five's mortality rate reached 7.412 deaths, with the highest causes of death being pneumonia and diarrhea[2]. These diseases are mediated by environmental factors, lifestyle, and the host of each child and require proper early diagnosis and prevention. Thus, an isolated island such as Mandangin, with a

population with low per capita income and a lack of health facilities and healthcare providers, is at higher risk of being exposed to those diseases[3]. The lack of health literacy in a community is one of the common factors of non-compliance in the medical system in a country. The factors that caused those conditions to vary from miseducation, low engagement in health services, and poor economic conditions. Therefore, we conducted a health education to educate the community about common children's diseases and aimed to assess the impact of health education on Mandangin people's knowledge of common children's diseases[4].

MATERIALS AND METHODS

This study was conducted using a group pretest–posttest design method on 61 residents who carry out daily activities on the island of Mandangin, Sampang, Indonesia. The intervention was direct health education on the public's knowledge of the most common diseases in children. The activities were held face-to-face. The presentation by the pediatricians was delivered using language that was more easily understood by the public. The presentation's theme was "The most common diseases in children" and was presented for 1.5 hours. Participants were then also given a book "*Memahami Penyakit Paling Sering Pada Anak*" to better understand the provided material. Before the presentation, the participants carried out pre-test. They were not allowed to open the book, and asked to sit 1 meter away from each other to prevent cheating. The activity continued with a discussion session where the subjects could ask questions in which the presenter and other pediatricians involved and answered questions from the subjects, and followed by a post-test. The session was followed by an evaluation, where we the team asked the participants to evaluate our community development program. We analyzed subjects by age, gender, occupation, and latest education in descriptive statistics. The variable studied was the knowledge of the residents as measured during the pre-test and post-test. The pre-and post-test questionnaire contained 5 questions, with a minimum score of 0 and a maximum of 100. Results from the pre and post-test questionnaires were compared with analytical statistics using the Paired T-Test method and processed with SPSS and $p<0.05$ was regarded as significant. Ethical approval is not applicable to this article.

RESULTS

A total of 61 subjects were included in this study. Most of them were male and mostly housewives and fishermen. Subjects' characteristics are described in Table 1. There was an increase in the post-test average score (76.8±22.63) compared to the mean pre-test score (64.26±31.44) with a significance value of 0.002 ($p <0.05$) from the paired T-Test, which indicates that there is a significant difference between the results of the pre-test and post-test. (Figure 1). There was a significant increase in residents' knowledge during the post-test after receiving the intervention.

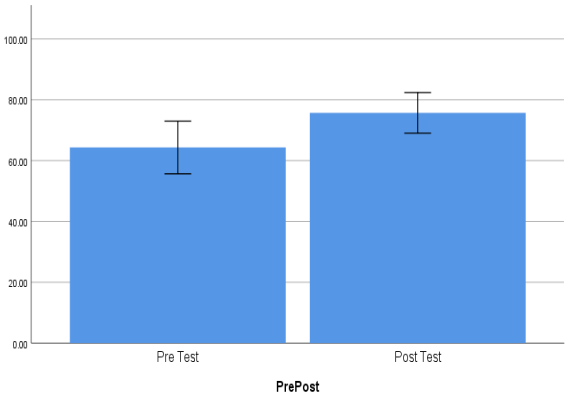

Figure 1. Pre-and Post-test questionnaire results

Table 1. Subject Characteristics

Variables	N (n=61) or mean ±SD	Percentage (%)
Last- education		
Elementary school	10	16.4
Junior high school	14	23
Senior high school	23	37.7
Associate degree	1	1.6
Bachelor degree	13	21.3
Age	37.46±11.99	
Occupation		
Housewives	20	32.7
Teacher	9	14.8
Fisherman	19	31.1
Entrepreneur	5	8.2
Village Employee	3	4.9
Nurse		
Not working	4	6.6
	1	1.6
Gender		
Male	36	59
Female	25	41

Table 2. Evaluation score

Characteristics	**evaluation**	**N = 51 (%)**
Presenters (n=48)	Bad	0 (0)
	Appropriate	4 (8.3)
	Good	11 (22.9)
	Very good	33 (68.7)
Time (n=49)	Bad	0 (0)
	Appropriate	8 (16.3)
	Good	40 (81.6)
	Very good	1 (2.0)
Material book (n=49)	Bad	2 (4.0)
	Appropriate	1 (2.0)
	Good	13 (26.5)
	Very good	32 (64.0)
Audio & Visual (n=49)	Bad	5 (4.0)
	Appropriate	10 (2.0)
	Good	21 (26.0)
	Very good	13 (65.3)
Overall presentation (n=49)	Bad	0 (0)
	Appropriate	4 (8.1)
	Good	21 (42.8)
	Very good	24 (48.9)
Had similar eduaction (n=48)	Yes	26(54.1)
	No	22 (45.8)

We observed the results of the evaluation questionnaire that we distributed to the participants and found that 45.8% of participants had never received any similar health education. Almost half of all participants in the seminar (48.9%) considered the activity's overall quality to be very good. Meanwhile, in terms of the presenters' quality, most participants (68.7%) considered that the quality of the presenters was very good. Regarding time, almost all participants (81.6%) considered the seminar duration sufficient. (Table 2)

DISCUSSION

According to the World Health Organization, children, especially those living in poor regions, are prone to pneumonia, diarrhea, and other infectious diseases[1,5,6]. From this study, we found that most of the people living in Mandangin island worked as fishermen. It was also stated by the Ministry of Health that Mandangin island, a separated island from mainland Sampang, Indonesia, experienced considerable economic problems such as low income per capita. Their income was mostly under Indonesia's regional minimum wage (UMR)[2,7], and had very limited access to health facilities due to a lack of health facilities and poor transportation. Children in Mandangin Island are very vulnerable to experiencing these diseases with the above factors.

These common diseases in children are spread through one's environment, lifestyle, and *host*. It requires proper early diagnosis as well as good prevention to avoid severe complications and reduce the morbidity and mortality rate caused by these diseases. Health education helps individuals understand the importance of complying with medical policy, rules, and

requirements and developing trust between the general public and health professionals by improving morale and health security throughout the community[4,8].

Comprehensive health education can provide information and encouragement for people to take medications for specific health problems and even go as far as looking at the daily measures (such as hygiene) and behavioral changes to prevent the spread of infectious diseases and reduce the prevalence of preventable diseases. Well-educated adults or parents can feel empowered to make good choices for their families and their health. It is important for individuals to be confident to decide on what to do to protect themselves and their community[9,10].

Health education is especially important in remote regions where people have lesser access to health facilities and care due to limited resources[11,12]. This is related to the small number of health facilities (*puskesmas*) in one area, resulting in a high ratio between the people and the number of health centers. This relatively high ratio between health professionals and people in need of health care in Mandangin Health Centers caused the lack of optimality in the provision of health care including health education[12], thus this presentation showed that education was found beneficial for the participants to improve their knowledge about the most common diseases in children. This finding shows a significant difference between the participant's pre-and post-test results. This supports Chawla's research of 100 diabetic subjects aged more than 40 years with 50 cases and 50 controls which resulted in a significant increment of mean knowledge from the baseline compared to the control group[13]. This finding also indicated the prompt effect of health education on the public's knowledge and behavior in health.

In order for health education to be more efficient, appropriate teaching methods are needed for the specific target[14]. Health systems in rural areas face several challenges with access to a health facility being the major problem. Most health issues in rural areas revolve around communication difficulties and a lack of healthcare providers[15]. Remote and rural communities need a health service model that is specifically designed based on their unique needs to make health education effective. Rural upbringing is one of the factors that should be considered when providing health care. This is due to some rural communities that consider rural upbringing as absolute guidance; thus, taking their unique beliefs and values into account in health education will be perceived better[14,15].

This study involved adults, with most of them holding secondary school leaving certificate, which allowed us to provide basic and functional health knowledge that is accurate and directly contribute to health-promoting decisions and behavior[16,17]. We avoided using scientific and complicated words to make the material book easier to understand and feasible[14,18]. Effective education should also be presented by teachers who are knowledgeable about the curriculum content, comfortable and skilled in implementing instructional strategies, and especially with higher educational standing. Therefore, our health education was brought by pediatricians who are experts in their field[14,19,20].

CONCLUSION

There was a significant increase in public knowledge during the post-test after receiving the intervention. These findings support the importance of direct health education through community development on the public's knowledge of the most common diseases in children, especially in remote areas or islands. Future research is needed to evaluate whether there is a reduction in the number of cases of the most common disease in children and early prevention before referrals to the higher health facility.

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CONFLICT OF INTEREST

All Authors have no conflict of interest.

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AUTHOR CONTRIBUTION

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

REFERENCES

1. WHO. *Children: improving survival and well-being*, [online] 2020 [cited 2022 Nov 01]. Available from: URL: https://www.who.int/news-room/fact-sheets/detail/children-reducing-mortality
2. Kementerian Kesehatan Republik Indonesia. *Profil Kesehatan Indonesia 2021*. [online] 2022 [cited 2022 Nov 01]. Available from: URL: https://www.kemkes.go.id/downloads/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-2021.pdf
3. BPS Kabupaten Sampang. *Kabupaten Sampang dalam Angka 2022*. [online] 2022 [cited 2022 Nov 01]. Available from: URL: https://sampangkab.bps.go.id/publication/2022/02/25/0eef4e178ea93d0872337f2f/kabupaten-sampang-dalam-angka-2022.html
4. European Association For The Education of Adults. How Adult Education can Promote Bettter Public Health. [online] 2020 [cited 2022 Nov 01]. Available from: URL: https://eaea.org/2020/03/26/how-adult-education-can-promote-better-public-health/
5. Hailu, B., Ji-Guo, W., & Hailu, T. Water, sanitation, and hygiene risk factors on the prevalence of Diarrhea among under-five children in the rural community of Dangila District, Northwest Ethiopia. *Journal Tropical Medicine*. 2021; 2688500
6. Baker K., O'Reilly CE., Levine MM, Kotloff KL, Nataro JP, Ayers TL, Farag TH, Nasrin D, Blackwelder WC, Wu Y, Alonso PL, Breiman RF, Omore R, Faruque ASG, Das SK, Ahmed S,

Saha D, Sow SO, Sur D, Zaidi, AKM, Quadri F, Mintz D. Sanitation and Hygiene-Specific Risk Factor for Moderate to Severe Diarrhea in Young Children in the Global Enteric Multicenter Study, 2007-2011: Case-Control Study. *Plos Medicine.* 13(5):e1002010

7. Sumampouw OJ, Nelwan JE & Rumayar AA. Socioeconomic Factors Associated with Diarrhea among under-five children in Manado coastal area, Indonesia. *Journal of Global Infectious Diseases*. 11(4):140-146.
8. Raghupathi V, & Raghupathi W. The influence of education on health: an empirical assessment of OECD countries for the period 1995-2015. *Archives of Public Health.* 78(20)
9. Ghahremani L, Faryabi R & Kaveh MH. Effect of Health Education Based on the ProtectionMotivation Theory on Malaria Preventive Behaviors in Rural Households of Kerman, Iran. Internation Journal of Preventive Medicine. 2014, 5(4): 463-471
10. Unger, C. C., Salam, S. S., Sarker, M. S. A., Black, R., Cravioto, A., & Arifeen, S. El. Treating diarrhoeal disease in children under five: the global picture. *Archives of Disease in Childhood*. 2014; *99*(3), 273–278.
11. Miller GF, Coffield E, Leroy Z, Wallin R. Prevalence and Costs of Five Chronic Conditions in Children. J Sch Nurs. 2016 Oct;32(5):357–64.
12. Pascapurnama DN, Murakami A, Chagan-Yasutan H, Hattori T, Sasaki H & Egawa S. Integrated Health education in disaster risk reduction: lesson learned from disease outbreak following natural disasters in Indonesia. *International Journal of Disaster Risk Reduction.* 2018. 29: 94-102
13. Chawla SPS, Kaur S, Bharti A, Garg R, Kaur M, Soin D, Ghosh A, Pal R. Impact of health education on knowledge, attitude, practices and glycemic control in type 2 diabetes mellitus. J Family Med Prim Care. 2019 Jan;8(1):261-268.
14. Centers for Diseases Control and Prevention. *Characteristics of an Effective Curriculum*. [online] 2019 [cited 2022 Nov 01]. Available from: URL: https://www.cdc.gov/healthyschools/sher/characteristics/index.htm
15. Strasser R. Learning in context: education for remote rural health care. Rural Remote Health. 2016 Apr-Jun;16(2):4033.
16. Hogberg B, Strandh M, Petersen S,& Johansson K. Education ysstem stratification and health complaints among school-aged children. 2018. *Social Science & Medicine* 220: 159-166
17. Gao W, Li W, Zang Y, Zhong Y & Wu H. Stratification of Health Professional education and its funding disparities: evidence from China during the period of 1998-2017. 2022. *Frontiers in Public Health.* 9(2021)
18. Mupa P & Chinooeka TI. Factors contributing to ineffective teaching and learning in primary schools: why are schools in decadence? 2015. Journal of Education and Practice. 6(19):125-132
19. Blomeke S, Sihl U & Kaiser, G. Teacher Education Effectiveness: quality and equity of future primary teachers' mathematics and mathematics pedagogical content knowledge. 2019. Journal of Teacher Education. 62(2): 154-171

20. Korzeniowska, E., Puchalski, K., Goszczyńska, E., & Pyżalski, J. Should we adjust health education methodology to low-educated employees needs? Findings from Latvia, Poland, Slovenia and Spain. *International Journal of Occupational Medicine and Environmental Health*. 2014;*27*(3).