HTechJ Health and Technology Journal (HTechJ)

Volume 02 Number 06
December 2024
p-ISSN: 2986-5662
e-ISSN: 2985-959X

Case Study: Implementation of Health Education on Clean and Healthy Living Behavior (PHBS) in Families with Toddlers Suffering from Diarrhea

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Abstract:
Clean and healthy living behavior is crucial for family health, with families, especially mothers, playing a key role in implementing Clean and Healthy Living Behavior (CHLB) to impact overall family health. This study aims to evaluate the application of CHLB in families with toddlers who have experienced diarrhea and to assess their knowledge following health education. Methode: This descriptive study used a case study approach, focusing on families with toddlers who had diarrhea in Dukuh Sutorejo RT.01 RW.06, Surabaya. The study utilized a closed-ended questionnaire with 30 questions, involving 2 families: one with an extended family type and one with a nuclear family type. The findings revealed that the CHLB application in Family A (Extended Family) scored 44 (Satisfactory), while Family B (Nuclear Family) scored 40 (Insufficient), indicating that neither family met the CHLB standards. However, knowledge improved significantly after health education, with an average score of 77.5, indicating a good understanding. The study identified differences in CHLB implementation between extended and nuclear families, with extended families showing better application. Health education effectively enhanced family knowledge about the importance of CHLB in preventing diarrhea. There is a notable disparity in CHLB application between extended and nuclear families, with extended families demonstrating better practices. Health education significantly improved families' knowledge, emphasizing the need for increased awareness and adherence to CHLB to prevent toddler diarrhea.

Article info:
Submitted:
03-08-2024
Revised:
22-09-2024
Accepted:
23-09-2024

Keywords:
clean and healthy living behavior; diarrhea; family; case study

DOI: https://doi.org/10.53713/htechj.v2i6.244

INTRODUCTION

Health knowledge refers to an individual's understanding of how to maintain and improve personal health. A negative attitude towards health reflects an individual's response to health actions. Public health practices encompass direct actions taken to achieve healthy behavior (Hastuty, & Nasution, 2023). The implementation of Clean and Healthy Living Behavior (PHBS) is crucial, especially within the family environment, as the family is the primary health promoter (Friedman, 2010). The main goal of the PHBS movement is to improve health quality through awareness, encouraging individuals to engage in daily clean and healthy behaviors. The main benefit of PHBS is to create a health-conscious community equipped with the knowledge and

awareness to lead a healthy lifestyle and meet health standards (Kementerian Kesehatan, 2011; Kurniyawan, et al., 2024).

PHBS guidance is carried out through various approaches, such as PHBS in households, health institutions, schools, workplaces, and public places (Departemen Kesehatan RI, 2009). Health issues related to poorly implemented PHBS can lead to various health problems such as helminthiasis, diarrhea, and acute respiratory infections (ARI). According to WHO data (2017) (WHO, 2017), each year 100,000 Indonesians die from diarrhea, with the incidence of helminthiasis reaching 40-60%, anemia 23.2%, and dental caries 74.4%. In the household setting, PHBS aims to create healthy families, minimize health problems, and enhance the well-being and productivity of family members. Implementing PHBS in households also helps family members adopt healthy lifestyles, ensuring children grow healthily with adequate nutrition (Kementerian Kesehatan, 2016). Based on health service data, it is known that there are 2.5% of families who experience PHBS problems (Dinkes Jatim, 2018; Kementrian Kesehatan Republik Indonesia, 2019).

An initial study on the implementation of PHBS was conducted in Dukuh Sutorejo RT.01 RW.06, Surabaya City, involving two families with toddlers who had recently experienced diarrhea. This research identified inadequate PHBS implementation, requiring greater attention to reduce the risk of diseases caused by suboptimal PHBS practices.

Diarrheal disease is an endemic issue that can cause outbreaks and remains a leading cause of death in Indonesia, particularly among toddlers. According to the 2018 Riskesdas, the prevalence of diarrhea among toddlers in Indonesia is 11.5%. Diarrhea is characterized by a bowel movement frequency of more than three times a day with loose or watery stools, sometimes accompanied by abdominal pain. Fluid loss due to diarrhea can lead to dehydration and electrolyte imbalances affecting a child's growth and potentially causing death if not promptly addressed. Clinically, diarrhea can be caused by infections (bacteria, viruses, parasites), malabsorption, allergies, poisoning, and immunodeficiency (Maharani, 2016). Toddlers are more susceptible to diarrhea because their organs are still sensitive, and poor environmental conditions make them more prone to illness compared to adults (Bolon, 2021). This research has been carried out ethically with the number: 0360/E/C/LPPM/STIKES/KHVIII/2024 from the ethics commission of Stikes Husada Kediri

STUDY DESIGN

The descriptive research design uses a case study approach, with a sample of 2 families with the criteria of families who have toddlers and have a history of diarrhea for 3 months, the family is an outpatient at the Kalijudan Health Center, Surabaya. The research subjects consist of two families with toddlers (children under 5 years old). The instruments used include a questionnaire with closed-ended statements, where respondents can only choose from options provided by the researcher. This questionnaire consists of 10 PHBS indicators: (a) childbirth attended by healthcare workers, (b) exclusive breastfeeding, (c) monthly weighing of infants and toddlers, (d) use of clean water, (e) handwashing with clean water, (f) use of latrines, (g) mosquito larvae control at home, (h) consumption of vegetables and fruits, (i) physical activity, and (j) no smoking at home. These indicators are packaged into 30 statements using a Guttman scale in the form of a checklist, where a "yes" answer is valued at 2 and a "no" answer is valued at 1 (Riduwan, 2010) (Aulina, 2018).

The second instrument is a questionnaire regarding knowledge about the importance of PHBS, consisting of 6 closed-ended questions, with correct answers valued at 2 and incorrect answers valued at 1. These questions cover the implementation of PHBS, the relationship between PHBS and the incidence of diarrhea in families, and the impact if the family does not implement PHBS. This study received ethical approval before implementation, and both respondents obtained consent. This

research has been carried out ethically with the number: 0360/E/C/LPPM/STIKES/KHVIII/2024 from the ethics commission of Stikes Husada Kediri

PATIENT INFORMATION

Respondent 1: Mrs. H's family, 41 years old, with a high school equivalent education. This family consists of 7 members: husband, wife, 4 children, and 1 parent from the wife's side. One of their toddlers, aged 3 years and 2 months, experienced diarrhea about a month ago. The diarrhea occurred more than 3 times a day with watery stool consistency and refusal to eat, including milk and complementary feeding. This toddler was taken to the nearest healthcare facility for medical treatment. This family is categorized as an extended family type as there is an additional family member outside the nuclear family living in the same house.

Respondent 2: Mrs. R's family, 34 years old, with a high school equivalent education. This family consists of 4 members: husband, wife, and 2 children. They have a 3-year-old toddler who experienced diarrhea about 2 months ago. The diarrhea also occurred more than 3 times a day with watery stool consistency and refusal to eat, so the toddler was taken to the nearest healthcare facility and was hospitalized for 3 days.

CLINICAL FINDINGS

The following is a table that describes the results of the initial assessment of the two families regarding the implementation of Clean and Healthy Living Behavior (PHBS).

Table 1. Initial assessment result

Statement	Family A			Family B		
	Decreasing	Moderate	Increasing	Decreasing	Moderate	Increasing
Family's capacity to implement the Clean and Healthy Living Behavior (PHBS), specifically handwashing in daily activities	√			√		
The family's capacity to understand the importance of Clean and Healthy Living Behavior (PHBS) within the family	√				√	
Family perception that the health status of children can be influenced by the implementation of Clean and Healthy Living Behavior (PHBS) within the family		√		√		
Family knowledge that diarrhea is caused by improper implementation of Clean and Healthy Living Behavior (PHBS).	√			√		
Family's understanding that improper disposal of garbage at home can cause diarrhea		√		√		
Family behavior in regularly cleaning toilets can reduce the	√			√		

Statement	Family A			Family B		
	Decreasing	Moderate	Increasing	Decreasing	Moderate	Increasing
incidence of diarrheal diseases.						

Based on Table 1, it is observed that Family A has some knowledge deficits but exhibits two abilities in the moderate category, whereas Family B's knowledge abilities have decreased.

Table 2. PHBS Implementation in Families

No	Statement	Family A	Family B
1	Assisted Delivery by Health Professionals		
	– At a healthcare facility.	Yes	Yes
	– Assisted by healthcare workers.	Yes	Yes
	– Refer the mother to healthcare services if there are complications during pregnancy.	Yes	Yes
2	Exclusive Breastfeeding		
	– Provide only breast milk to the baby.	Yes	No
	– Give the baby breast milk from birth until 6 months of age.	Yes	Yes
	– Ensure a calm and peaceful home environment.	Yes	Yes
3	Weighing Toddlers Monthly		
	– Weigh toddlers at the posyandu (community health post).	Yes	Yes
	– Bring toddlers to the community health center (puskesmas) when they are ill.	Yes	Yes
	– To prevent growth and development issues in toddlers.	Yes	Yes
4	Using Clean Water		
	– The mother boils water until it reaches a rolling boil.	Yes	Yes
	– Water should be clear, not cloudy, tasteless, and odorless.	Yes	Yes
	– Water should come from a well, a water source, or a municipal water supply (PDAM).	Yes	Yes
5	Washing Hands with Water and Soap		
	– Before and after meals.	Yes	Yes
	– Wash hands with running water and soap.	No	No
	– To prevent the transmission of diseases.	Yes	Yes
6	Using a Sanitary Latrine		
	– Used for urination and defecation.	Yes	Yes
	– The latrine should not contaminate the surrounding soil, be easy to clean, and be safe to use.	Yes	Yes
	– Clean the latrine daily.	Yes	Yes
7	Eliminating Mosquito Larvae		
	– Empty the bathtub every 3 days.	Yes	Yes
	– Cover the bathtub/bucket.	No	No
	– Bury or dispose of used items.	No	Yes
8	Eating Fruits and Vegetables Every Day		
	– Consume fruits and vegetables daily.	No	No
	– Include vegetables that are green, yellow, or orange.	No	Yes
	– Choose fresh fruits and vegetables.	Yes	Yes
9	Engaging in Daily Activities		
	– Engage in physical activities and exercise every day.	Yes	Yes
	– Activities should be performed for 30 minutes each day.	Yes	No
	– Include warm-up and stretching exercises beforehand.	No	No
10	No smoking in the house		
	– The mother reprimands family members who smoke.	No	No
	– No ashtrays are provided.	Yes	No
	– The family agrees to maintain a smoke-free home.	Yes	No
	Total Score	44	40

Volume 02 Number 06
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Based on Table 2 above, the implementation of respondent behavior concerning 10 PHBS family indicators shows that Family A has a score of 44 (sufficient), while Family B has a score of 40 (insufficient).

THERAPEUTIC INTERVENTION

The intervention implemented for Family A and Family B involved health education on the importance of Clean and Healthy Living Behavior (PHBS). This health education was conducted using leaflet media. The duration of the health education was two sessions, each lasting 50 minutes. Before health education with leaflets was provided, both families were given a questionnaire. The same questionnaire was also administered after the health education sessions. The results showed that both families experienced an increase in knowledge and understanding regarding the importance of implementing PHBS.

Results of the Health Education Implementation

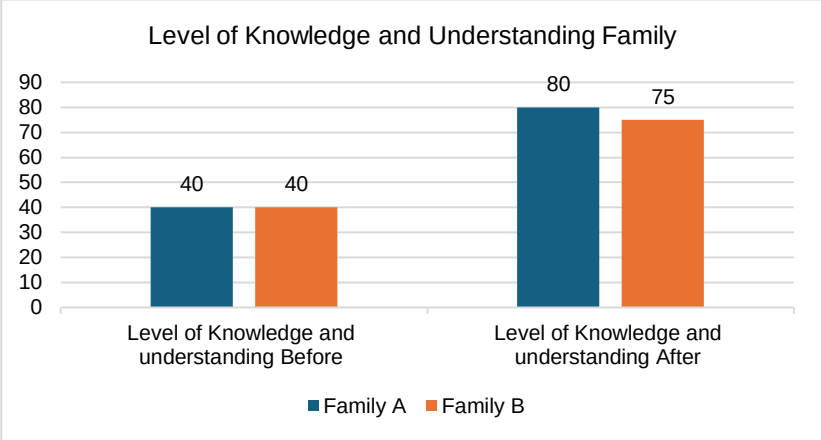

Figure 1. Level of Knowledge and Understanding Before and After Health Education

Based on the above figure, it is known that Families A and B experienced an improvement in the knowledge category, from an average score of 40 (poor) before the health education to an average score of 77.5 (good) after the health education.

DISCUSSION

Family Characteristics

The research results show that Family A and Family B have different family types. Family A consists of 7 members: a husband, wife, 4 children, and 1 parent of the wife. Thus, Family A falls into the category of an extended family, where a couple inhabits one household along with their children and the wife's parent.

In contrast, Family B consists of 4 members: a husband, wife, and 2 children. This family is classified as a nuclear family, where the immediate family members only inhabit the household without any relatives from outside living with them.

According to (Friedman, 2010), the family is the smallest unit of society. Theoretically, a family can be defined as two or more individuals living in the same household, bound by marriage, interacting with each other, and having their own roles. Interaction among family members also

depends on the type of family itself, whether it is a small family, an extended family, a blended family, or another type.

The researcher assumes that the type of family influences the success of the family in maintaining health. Therefore, every household member is expected to be sensitive to efforts to prevent potential health issues.

Implementation of PHBS

Clean and Healthy Living Behavior (PHBS) reflects a family's lifestyle that continuously considers and maintains the health of all family members. Factors such as the surrounding environment, family environment, and school environment play a significant role in influencing clean and healthy living behavior through daily habits to increase awareness (Afandi, et al., 2023).

Ali & Murdiana (2020) reinforce this by stating that knowledge about health values within the family is a crucial component in improving health levels in the household, especially in practicing clean and healthy living behavior. An individual's attitude towards health issues is also necessary for creating effective health actions.

Based on the researcher's assumptions, the implementation of PHBS in a family should include interactions among family members who consistently maintain and consider health, as well as supporting factors to achieve PHBS effectively and enhance health levels within the household and surrounding environment.

Based on the application of PHBS in both families, there are several actions at risk for diarrhea. One such action is handwashing with water and soap. Both families did not perform this activity correctly. Family A reported difficulties in finding soap and washing hands, while Family B considered washing without soap to be normal and non-risky.

Another PHBS practice related to diarrhea in toddlers is exclusive breastfeeding. In Family A, the toddler was exclusively breastfed, whereas in Family B, the toddler did not receive exclusive breastfeeding. Exclusive breastfeeding can enhance the immune system and health status of the toddler. Expectant mothers need to increase their knowledge about exclusive breastfeeding, its benefits, how to maintain themselves to provide exclusive breastfeeding, and other factors affecting diarrhea, especially related to child-rearing and lactose intolerance (Siregar et al., 2020). Inadequate breastfeeding is influenced by maternal knowledge, family support, family child-rearing patterns, and local culture.

Therefore, it is essential to provide appropriate education to families and mothers with toddlers to ensure proper exclusive breastfeeding. This will improve the quality of the toddler's intake and immune system. The use of formula milk poses a risk for diarrhea due to factors such as hygiene in milk preparation.

Another PHBS practice at risk for causing diarrhea is the use of sanitary latrines. Both families indicated that they did not clean the latrine daily, reasoning that it appeared clean and not visibly dirty. A clean latrine can reduce the risk of diarrhea since diarrhea-causing vectors often originate from the latrine in the home (Fadhilah, 2015; Wibowo & Elvandi, 2022).

Based on the above discussion, it is important for families to be aware of performing daily PHBS to prevent gastrointestinal diseases, particularly diarrhea (Rahmadhani et al., 2018). Cooperation with the community health center (Puskesmas) and health departments is necessary to enhance public education on the importance of PHBS and preventive measures. Thus, family health can be realized, and the goal of a healthy community can be achieved. The message that prevention is better than cure should be instilled in the community alongside awareness of implementing PHBS.

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Knowledge After Health Education

Based on the results, both Family A and Family B experienced an improvement in their knowledge category, moving from poor to good after receiving health education. To implement Clean and Healthy Living Behavior (PHBS) within the family, a change in attitude originating from oneself is necessary (Puteri & Yuristin, 2021). Environmental factors play a significant role in shaping individual behavior. Lack of education and low knowledge can significantly impact the application of healthy living habits in daily life (Restika Dwi, Harnani Yessi, 2021).

The results of the study on the implementation of PHBS in families with children with diarrhea showed that the implementation of PHBS was not good, this is in accordance with the theory that states that health behavior in the home, environmental cleanliness and personal hygiene actions both in preparing food and drinks for children have an impact on toddler health. Even based on previous study states that home conditions and behavior increase the incidence of diarrhea in children (Nasiatin & Hadi, 2019).

The limitation of this study is the case study of 2 family samples in a limited scope, still needing a more representative sample so that the research results are more valid and have a broad picture of the implementation of clean and healthy living. The hope for further research is to take families with different cultures to find out other factors that influence the incidence of diarrhea in families.Health education is fundamentally an effort to convey health messages to the public, groups, or individuals, with the expectation that these messages will enhance their knowledge about health (Kementerian Kesehatan, 2016). Families with good knowledge of health and high awareness of the importance of family health are more likely to demonstrate sustained healthy behaviors. Family health significantly affects the quality of life of family members. Therefore, providing health education is crucial for preventing the risk of diarrhea (Ulina, 2018).

CONCLUSION

The differences in characteristics and knowledge of families who have children with diarrhea have an impact on the implementation of clean and healthy living behaviors every day. Preventing diarrhea in toddlers requires good PHBS practices, including safe food selection, food hygiene, environmental cleanliness, and the use of clean water. Therefore, it is important to improve the implementation of PHBS within families to reduce the risk of diseases and enhance overall family health.

ACKNOWLEDGEMENT

This research was conducted in collaboration with the Surabaya City Health Office and the Kalijudan Community Health Center in Surabaya.

CONFLICT OF INTEREST

This research was conducted without any affiliations or interests with any institution.

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