Omni Health Journal
e-ISSN: 3047 - 6216
Volume 2 Issue 2: page 33-38, April 2025

Original Research

Factors Related to Open Defecation Behavior in Rivers

Mardiana Kobandaha[1*], Siska N Sibua[2], Gita Sandy Patonengan[3]
[1,2,3]Faculty of Health Sciences, Graha Medika Institute of Health and Technology, Kotamobagu, Indonesia

Article Info

Received: 23-01-2025
Revised: 07-03-2025
Accepted: 07-04-2025

*Corresponding Author:
Mardiana Kobandaha
Faculty of Health Sciences, Graha Medika Institute of Health and Technology, Kotamobagu
Email: mardiana.mardiana08@gmail.com

Abstract

Background: Careless bowel movements are one of the unhealthy behaviors. Careless Defecation (BABS) behavior in rivers is still a problem faced by the world community, especially in developing countries including Indonesia.
Objective: This study aims to find out the factors related to the behavior of open defecation in the river
Methods: This type of research is quantitative with a cross sectional research design.
Results: This study obtained p value = 0.275 on the knowledge factor. P value = 0.255 on the attitude factor. P value 0.350 on the factor of bowel habit
Conclusion: Based on the test results , it can be concluded that there is a relationship between the factors of knowledge, attitude, and habit of defecation and the behavior of open defecation in the river.
Keywords: Attitudes; Bowel Habits; Bowel Movements; Knowledge

Introduction

Careless bowel movements are one of the unhealthy behaviors. Careless Defecation (BABS) behavior in rivers is still a problem faced by the world community, especially in developing countries including Indonesia. It is recorded that 2.4 billion people still lack access to toilets and 946 million people still practice open defecation. (UNICEF and WHO, 2015).

The World Health Organization (WHO) states that menopause in Suangai is one of the leading causes of diarrhea, which causes the death of more than 750,000 children under the age of five every year. India is the top country that still defecates in rivers with data 626 million people living without adequate sanitation, 60% of the number of people who still defecate in rivers worldwide. Indonesia currently occupies the second position after India with a total of 63 million people who do not have toilets/latrines. Around 51 million Indonesians are still defecating in rivers. Indonesian people still defecate next to rivers and on the beach. (UNICEF and WHO, 2015).

Based on data from the *World Health Organization* , it is estimated that 1.1 billion people or 17% of the world's population are still defecating in open areas, from this data 81% of the population who defecation (BABS) is found in 10 countries and Indonesia as the second country with the most people who defecate in open areas, namely India (58%), Indonesia (12.9%), China (4.5%), Ethiopia (4.4%), Pakistan (4.3%), Nigeria (3%), Sudan (1.5%), Nepal (1.3%), Brazil (1.2%) and Nigeria (1.1%) (WHO, 2014 in Hayana et al, 2022).

The latest data from the Community-Based Total Sanitation (STBM) monitor website is that there are still 8.6 million households whose family members are still practicing defecation as of January 2020, this situation causes as many as 150,000 children in Indonesia to die every year due to diarrhea and other diseases derived from poor sanitation (WHO, 2019). Community-Based Total Sanitation (STBM) is a new approach and paradigm in sanitation development in Indonesia that prioritizes community empowerment and behavioral changes *in hygiene* and sanitation through triggers in families, individuals, and households for total sanitation change. The activity of using latrines in the river has been carried out for generations so that it has become a habit. In addition, the lack of knowledge of the people of Hamlet I related to what a healthy and decent place to defecate is like. Residents who have been interviewed explained that they have been used to defecating in the river since childhood, even residents who have toilets at home still do defecation in the river. Based on the description above, the researcher is interested in conducting research on "Factors Related to Careless Defecation in Rivers".

Methods

Study Design

This type of research is quantitative with a cross sectional research design.

Samples/Participants

The sampling technique in this study is to use the purposive sampling technique, which is a sampling technique based on certain considerations such as population traits or characteristics that have been known previously (Notoatmodjo, 2018). Namely 65 respondents found by the researcher did not have latrines and in accordance with these criteria were used as samples.

Instruments

This questionnaire is sourced from Eva Purnamayanti in 2021 who has been tested for validity with results (r results > r table = valid) with df (Degree of Freedom) = n-2 (30-2 = 28). At the significance level of 5% R table = 0.361. And a reliability test that showed all reliability questions, with a Crombach Alpha value of ≥ 0.6 which aimed to find out the factors related to open defecation behavior in the river of Hamlet I of North Tanoyan Village, Bolaang Mongondow Regency. This questionnaire includes 30 questions related to factors related to open defecation behavior in the river in hamlet I of North Tanoyan Village, Bolaang Mongondow Regency. Each question is measured on the Guttman scale.

Data Collection

The researcher brought a letter of introduction from the Graha Medika Kotamobagu Institute of Health and Technology to North Tanoyan Village, especially Hamlet I, to request research approval in Hamlet I, North Tanoyan Village, Bolaang Mongondow, after obtaining approval from the village head and the head of hamlet I to conduct the research. The researcher also explained the research and the respondents had signed an agreement sheet. After that, the researcher distributed a questionnaire.

Data Analysis

After all the data is collected, it is continued with data processing. In data processing, statistical data analysis is used, namely SPSS.

Ethical Considerations

Based on the results of the reviewer of the Health Research Ethics Commission of the Graha Medika Institute of Health and Technology, Kotamobagu provided approval and ethical recommendations for research submissions.

Results

Univariate Analysis

Respondent Criteria Based on Age

Based on table 1, it shows that the age with many opportunities is 26-35 years old with 27 people (41.4%), 36-45 years old with 20 people with a percentage (30.8%) and 56-65 years old as many as 18 people (27.7%).

Table 1 Frequency Distribution by Age

Age	Frequency	Percentage
26-35 Years	27	**41,5**
36-45 Years	20	**30,8**
56-65 Years	18	**27,7**
Total	65 Respondents	**100**

Source : SPSS Processed Data

Respondent Criteria by Gender

Based on table 2, it shows that out of a total of 65 respondents, it is known that 49 people are male (75.4%) and 16 are female (24.6%).

Table 2 Frequency Distribution of Respondents by Gender

Gender	Frequency	Percentage
Man	49	**75,4**
Woman	16	**24,6**
Total	65 Respondents	**100**

Source : SPSS Processed Data

Respondent Criteria Based on Education

Based on table 3, it shows that out of a total of 65 respondents, 4 people (6.2%) are not educated, 53 people (81.5%) are educated at the Junior High School level and 8 people (12.3%) from 65 samples.

Table 3 Frequency Distribution of Respondents by Education

Education	Frequency	Percentage
No School	4	**6,2**
Elementary Equivalent	53	**81,5**
Junior High School Equivalent	8	**12,3**
Total	65 Respondents	**100**

Source : SPSS Processed Data

Knowledge Factor

Table 4 shows that 40 (61.5%) of the respondents were less knowledgeable and 25 (38.5%) were knowledgeable.

Table 4 Frequency Distribution Based on Knowledge Factors

Category	Frequency	Percentage (%)
Less	40	**61,5**
Good	25	**38,5**
Total	65 Respondents	**100,0**

Source : SPSS Processed Data

Attitude Factors

Table 5 shows that respondents who have a negative attitude are 41 (63.3%) and those who have a positive attitude are 24 (36.9%).

Table 5 Frequency Distribution by Factor

Category	Frequency	Percentage (%)
Negative	41	**63,1**
Positive	24	**36,9**
Total	65 Respondents	**100,0**

Source : SPSS Processed Data

Factors of Bowel Habits

Table 6 shows that respondents who have good bowel habits are 7 (10.8%) and those who have poor bowel movements are 58 (89.2%).

Table 6 Frequency Distribution Based on Bowel Habit Factors

Category	Frequency	Percentage (%)
Not Good	58	**89,2**
Good	7	**10,8**
Total	65	**100,0**

Source : SPSS Processed Data

Careless Defecation Behavior

Table 7 shows that respondents who had the practice of defecating did not use toilets, namely defecation as many as 49 (75.4%) and those who did not have defecation as many as 16 (24.6%).

Table 7 Frequency Distribution by Random Defecation Behavior

Category	Frequency	Percentage (%)
The practice of defecation does not use latrines	49	**75,4**
Practice of defecation using latrines	16	**24,6**
Total	65 Respondents	**100,0**

Source : SPSS Processed Data

Bivariate Analysis

Knowledge Factor with Careless Defecation Behavior in the River

Based on table 8, it shows that out of 65 respondents, the number of respondents who have indiscriminate bowel behavior with the practice of defecating does not use toilets is more than 32 respondents (30.2%)

and 8 respondents practice defecation using latrines. Good knowledge who had open defecation behavior with the practice of defecating did not use latrines amounted to 17 (18.8%) and only 8 respondents used latrines. The results of *the Chi Square Test* from the knowledge factor with open defecation behavior in the river in hamlet I of North Tanoyan Village, Bolaang Mongondow Regency, the results of the statistical test were obtained *p value* = 0.275 <0.05 so that it can be concluded that there is a relationship between the knowledge factor and the behavior of open defecation in the river.

Table 8 Cross-tabulation of Knowledge Factors Related to Careless Bowel Behavior or Chi Square Test

Factor categories Knowledge	Careless Defecation Behavior				Total		*P - Value*
	The practice of defecation does not use latrines		Practice of defecation using latrines				
	n	%	n	%	n	%	
Less	32	30,2	8	9,8	40	40,0	0,275
Good	17	18,8	8	6,2	25	25,0	
Total	49	49,0	16	16,00	65	65,0	

Source : SPSS Processed Data

Attitude Factors with Careless Defecation in the River

Based on table 9, it shows that out of 65 respondents, the number of respondents who have open defecation behavior with the practice of defecating does not use toilets is more than respondents who have a negative attitude amounting to 29 (30.9%) and 12 respondents who practice defecation using latrines. Respondents who had a positive attitude who had open defecation behavior with the practice of defecating did not use latrines amounted to 20 (18.1%) and 4 respondents practiced defecation using latrines. The results of the Chi Square Test from the attitude factor with the behavior of open defecation in the river of Hamlet I of North Tanoyan Village, Bolaang Mongondow Regency, the results of the statistical test were obtained p value = 0.255 <0.05 so that it can be concluded that there is a relationship between the attitude factor and the behavior of open defecation in the river.

Table 9 Cross-tabulation of Attitude Factors related to Careless Bowel Behavior or Chi Square Test

Factor categories Attitude	Careless Defecation Behavior				Total		*P - Value*
	The practice of defecation does not use latrines		Practice of defecation using latrines				
	n	%	n	%	n	%	
Negative	29	30,9	12	10,1	41	41,0	0,255
Positive	20	18,1	4	5,9	24	24,0	
Total	49	49,0	16	16,00	65	65,0	

Source : SPSS Processed Data

Factors of Bowel Habits with Careless Bowel Behavior in the River

Based on table 10, it shows that out of 65 respondents, the number of respondents who have open defecation behavior with the practice of defecating does not use toilets is more than 45 respondents who have poor bowel habits, amounting to 45 (43.7%) and 13 respondents who practice defecation using latrines. Respondents who had good bowel habits who had open defecation behavior with the practice of defecating did not use toilets amounted to 4 (5.3%) and 3 respondents practiced defecation using toilets. The results of *the Chi Square Test* from the habitual factor of defecation with open defecation behavior in the river of Hamlet I of North Tanoyan Village, Bolaang Mongondow Regency, the results of the statistical test were obtained *p value* = 0.350 <0.05 so that it can be concluded that there is a relationship between the habit factor of defecation and the behavior of open defecation in the river.

Table 10 Cross-tabulation of Factors of Bowel Habits in relation to Careless Bowel Behavior or Chi Square Test

Factor categories Habit of bowel movements	Careless Defecation Behavior				Total		*P - Value*
	The practice of defecation does not use latrines		Practice of defecation using latrines				
	n	%	n	%	n	%	
Not Good	45	43,7	13	14,3	58	58,0	0,350
Good	4	5,3	3	1,7	7	7,0	
Total	49	49,0	16	16,00	65	65,0	

Source : SPSS Processed Data

Discussion

According to Notoatmodjo in Adam 2019, knowledge or cognition is a very important domain for the formation of a person's actions. Behavior based on knowledge is more inherent in a person than behavior that is not based on knowledge. A person must get new information so that his knowledge will continue to grow and deepen, because by increasing knowledge, a person can have a self-aware attitude to behave better. This research is in line with research conducted by Da'i M. and I Nyoman Sujaya (2021) which stated that there is a relationship between knowledge and open defecation behavior.

Based on the results found in the field, researchers assume that the knowledge factor is a fundamental thing that a person must have in shaping his behavior. Good knowledge will determine a person's behavior in performing actions in defecation, if a person has less knowledge then a person will commit more bad actions such as doing the practice of open defecation.

Notoadmodjo in Hayana et al. (2022) explained that attitude is a reaction or response that is still closed from a person to a stimulus or object situation. Attitude is an important thing in daily life, because if an attitude has been formed in a person, then attitude will determine behavior towards something and can even become a characteristic or character inherent in a person. Attitudes in order to become a real change need certain conditions that allow for facilities and support, among others. The results of this study are in line with research conducted by Dzilfiyah, Nur M. et al (2022) which prove that attitude has a relationship with open defecation behavior. Researchers assume that good attitudes tend to result in good actions. On the other hand, a bad attitude will tend to result in bad actions as well, in this case being reluctant to use the toilet. To overcome negative attitudes, efforts need to be made to increase awareness of attitudes in a better direction with real examples of healthy and decent use of latrines.

According to Notoatmodjo in Adam 2019, habit is something that is commonly done and so on, a pattern to respond to certain situations that an individual learns and that he does repeatedly for the same thing. This research is in line with research conducted by Hayana et al. (2022) with results showing that there is a relationship between the factors of bowel habits and the behavior of people who still defecate indiscriminately. Based on the results obtained in the field, researchers assume that a good attitude will give rise to habits that are fixed, take place automatically and unplanned. To raise awareness of the importance of defecation in one's toilet, there must be a desire to apply a positive attitude that has the potential to develop good habits that are permanent in a person and become good habits that are maintained. The limitation in this study is that to get samples, the researcher conducted a direct exploration to find respondents who did not have latrines so that it took a long time. Even when it was time contracted, when the researcher came to distribute the questionnaire to the respondent, it turned out that the researcher found a family member (child) of the respondent who was not willing to be a resource person and the researcher was asked to wait for the respondent (his parents) concerned so that the researcher had to wait. Not only that, in the research process there are limitations in the research time, even when the interview process wants to be carried out, the researcher must adjust the time and willingness of the respondents where they spend more time at work (mines, rice fields or gardens).

Conclusion

The conclusion in this study is that there is a relationship between the knowledge factor and the behavior of open defecation in the river, the relationship between attitude and the behavior of open defecation in the river, the relationship between the factor of bowel habit and the behavior of defecation. This research is expected to help the Open Defecation Free (ODF) program for government officials and leaders in North Tanoyan Village, and become a reference for improving the program as well as improving cleanliness and environmental health in the Hamlet I area of North Tanoyan Village, Bolaang Mongondow Regency.

Reference

Adam Setya, P, 2019., "The Relationship between Population Characteristics and Openness Defecation Behavior (BABS) in Kenongorejo Village, Pilangkenceng District, Madiun Regency", Undergraduate thesis. Faculty of Public Health. STIKES Bhakti Husada Mulia, Madiun.

Abdul A. et al., 2021, "*Nursing Research Methodology",* 2021, Surabaya: UMSurabaya Publishing.

Belay *et al*, 2022, "*Open Defecation Practice and its Determinants among Households in sub-Saharan Africa : Pooled Prevalence and Multilevel analysis of 33 sub-Saharan Africa Countries Demographic and Health Survey*" Journal of Tropical Medicine and Health, 50:28, p. 2

Brylliant, F. M. 2019., "*The Relationship of Cultural Factors with Open Defecation in Mangunrejo Village, Kajoran 2 Health Center Area, Magelang Regency in 2019*", Undergraduate thesis. Faculty of Nursing. University of Muhammadiyyah, Magelang.

Directorate General of Health - Kesling, 'STBM Data of the Ministry of Health of the Republic of Indonesia North Sulawesi Province', 2022 <http://monev.stbm.kemkes.go.id/monev/> [*accessed* 12 January 2023].

Elvi .J., 2022, *"Behavior of Stopping Open Bowel Movements"*, Journal of Health Solutions, Vol. 01. No. 01, pp. 1–9.

Fristy .F. 2021, *"Medical Cerebral Scientific Journal of Typhus Abdominalis",* Vol. 03, No.0.2, pp. 1–6.

Gautam. A, 2019*, The book of about "Understanding Behavior Change for Ending Open Defecation in Rural India: A review of India's Sanitation Policy Efforts" National University of Singapore, (Edited by Naoyuki Yoshino, Eduardo Araral and KE Seetha Ram),* p. 283-284.

Hayana, N. M, 2022, *"Factors related to open defecation (BABS) in the Community-Based Total Sanitation (STBM) program in Taluk Kanidai Village, Tambang District"*, Vol. XVI. No.02, pp. 16–23.

Luthfikar Irhamna, 2021., "The Relationship between Population Characteristics and Open Defecation Behavior (BABS) in the Working Area of the Puskesmas of Pulau Panggang Village, Thousand Islands in 2021", Undergraduate Thesis, Faculty of Environmental Health, Ministry of Health Polytechnic, Jakarta II.

NH et al., "*Efforts to Prevent the Negative Impact of Open Defecation Free (ODF) in Sengon Hamlet, Trasan Village, Bandongan District, Magelang Regency"*, (2020), P-ISSN: 2615-0921 E-ISSN: 2622-6030, Vol.3 No.2, P.508-514

Risa Amalia et al, 2022, *"Determinants of Open Defecation (DEFS) in the Community of Tuah Negeri Village RW 01, Tenayan Raya District, Pekanbaru City in 2022"*, Vol. 1, No. 3

Sugiyono. (2013). Quantitative, Qualitative and R&D Research Methods. Alphabet CV

Thomas Ayalew Abebe and Gudina Terefe Tucho, 2020, '*Open defecation-free slippage and its associated factors in Ethiopia: a systematic review', Systematic Reviews,* 9.1 pp. 1–15 *<https://doi.org/10.1186/s13643-020-01511-6>.*

Wisnu H et al, 2021, "*Implementation of Community-Based Total Sanitation (STBM) in Parbotihan Village, Onan Ganjang District, Humbang Hasundutan Regency*", Abdimas Mutiara Journal, Vol.2 No.2, P.142-143