

Social support to eradicate open defecation: raise awareness and promote healthy behavior

Muhammad Ikhtiar, Nur Ulmy Mahmud, Andi Asrina, Andi Arysta, Putri Khairunnisa

Public Health Faculty, Muslim University of Indonesia, Kota Makassar, Sulawesi Selatan, Indonesia

Abstract

Indonesia has achieved a 100% Open Defecation-Free (ODF) status; however, a significant portion of the population still practices open defecation, particularly in proximity to rivers, swamps, and coastal areas. This study aimed to analyze the role of social support in the context of efforts to halt open defecation. This study employed quantitative methodology with a cross-sectional study design. The research was conducted in the catchment area of the Manggarabombang community health center in Takalar Regency. Data were analyzed using both univariate and bivariate techniques, and results were presented through narrations, distribution

tables, and graphs. The study population comprised 178 households, with sampling conducted using the Slovin formula to obtain a sample size of 123 households. The results of the statistical tests using the chi-square method revealed a p-value of 0.000, indicating a significant relationship between social support and open defecation behavior. This highlights the important roles played by health workers, community leaders, and religious leaders. The findings of the study suggest that emotional and social support, as well as exposure to information about the health risks associated with open defecation, encourage individuals to adopt healthy practices in their environment. With increased knowledge and awareness of the importance of personal health, individuals are more likely to commit to long-term open defecation-free behaviors.

Correspondence: Muhammad Ikhtiar, Public Health Faculty, Muslim University of Indonesia, Kota Makassar, Sulawesi Selatan, Indonesia.
E-mail: Muhammad.ikhtiar@umi.ac.id
Tel.: +62.853.4372.3079.

Key words: social support; ODF; healthy behavior; cross-sectional study.

Conflict of interest: the authors declare that they have no competing interests, and all authors confirm accuracy.

Ethics approval and consent to participate: not applicable.

Availability of data and materials: all data generated or analyzed during this study are included in this published article.

Funding: this study was financially supported by the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia.

Acknowledgments: we would like to express our gratitude to the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia for providing financial support for this research project in 2024. We would also like to acknowledge the Muslim University of Indonesia for their continued encouragement and assistance in advancing our knowledge, as well as the Government of Takalar Regency, South Sulawesi, for allowing us to conduct our research in their region. Finally, we would like to thank all those who have contributed to this research project in any way.

Received: 13 November 2024.

Accepted: 11 December 2024.

Early access: 11 February 2025.

This work is licensed under a Creative Commons Attribution 4.0 License (by-nc 4.0).

©Copyright: the Author(s), 2025
Licensee PAGEPress, Italy
Healthcare in Low-resource Settings 2025; 13:13381
doi:10.4081/hls.2025.13381

Publisher's note: all claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article or claim that may be made by its manufacturer is not guaranteed or endorsed by the publisher.

Introduction

Globally, over 1.5 million people still lack access to basic sanitation services, such as private toilets and latrines. Furthermore, 419 million people continue to defecate in unprotected locations, including street gutters, vacant lots, and open water.¹ Sanitation-related issues have become a global concern, including in Indonesia, which has set the goal of achieving 0% open defecation and 15% access to safe sanitation by 2024.²⁻⁴ The Community-Based Total Sanitation Profile up to 2021 indicates that Indonesia's population of 288.22 million people still includes 32.77 million individuals engaged in open defecation practices.^{5,6}

The Indonesian government has implemented a series of initiatives with the objective of sustaining a decline in the prevalence of open defecation on an annual basis. It is expected that open defecation will be eliminated by 2025, while complete access to improved sanitation is projected to be attained by 2027.^{7,8} Despite the limitations of the data, it would appear that access to safe sanitation has remained constant at 7% over the past five years, which suggests that there is still much work to be done by all parties.^{2,9} It remains challenging to alter long-established habits and practices regarding latrine use, particularly in coastal areas, due to deeply entrenched cultural norms and behaviors. Furthermore, some households possess latrines but refrain from utilizing them despite convenient access to water due to the unfitness or unsanitary nature of the latrines.^{10,11}

As reported by the Ministry of Health of the Republic of Indonesia in 2022, the prevalence of open defecation in Indonesia has declined over time, with an estimated 5.69% of the population engaging in this practice.² This is inextricably linked to the numerous initiatives implemented by the government with the objective of eradicating open defecation, including the provision of latrines and the implementation of awareness-raising campaigns. Despite various efforts, many communities, especially in coastal areas, are reluctant to change their practices regarding open defecation. Government collaboration typically aims to educate these communities to prevent this issue. While positive knowledge and attitudes

exist, many still engage in open defecation, highlighting the need for a community-based approach that includes social support. Unhealthy behaviors are often deeply rooted and unconscious, making social support essential, particularly in environments lacking strong social norms and encouragement for proper latrine use and maintenance.^{12,13}

It is anticipated that the assistance of local residents, particularly community leaders, will facilitate the government's efforts to establish a healthy environment. The findings indicate that a significant number of residents continue to engage in open defecation due to a lack of social support from community leaders. Furthermore, there is a lack of social disapproval or warnings from the surrounding community when someone is caught engaging in open defecation. While many residents are aware that open defecation is unhealthy, this awareness is often disregarded if it is not accompanied by community involvement and commitment to achieving open defecation-free status.^{14,15} Open defecation practices are prevalent across Indonesia, particularly in coastal areas, including South Sulawesi.

The province of South Sulawesi has reported and declared that the year 2023 was 100% Open Defecation-Free (ODF), although the Central Statistics Agency (CSA) has indicated that there were still 2.26% of households engaging in open defecation. This represents a decrease from the 3.69% of households engaged in open defecation in 2022.^{16,17} The government has invested significant resources to achieve the goal of zero open defecation, a target that was met in Takalar District by 2023. However, obtaining a 100% ODF status has not completely eliminated open defecation practices among residents in riverine and coastal areas of Takalar. Despite the local health workers' efforts in triggering and monitoring activities, instances of open defecation continue to occur in rivers, gardens, and other open spaces. A dataset from the Takalar District Health Office in 2022 indicated that 120 households in the Bontomanai village area of the Mangarabombang Community Health Centre still practiced open defecation due to a lack of access to latrines. In the following year, the number of latrine owners increased due to a local government assistance program for latrines.¹⁸

The provision of triggering and latrine assistance has been carried out in stages. However, it has been observed that a portion of

the population has not been able to access this assistance due to a lack of financial resources. Some community members do not prioritize latrines and even construct homes without bathroom or toilet facilities. It is, therefore, evident that a robust commitment and motivation from the community, coupled with the provision of social support, is essential to encourage individuals to adopt healthier behaviors.

Table 1. Respondents' characteristics.

Characteristics	n	%
Age		
<20 years	3	2.4
20-29 years	26	21.1
30-39 years	25	20.4
40-49 years	35	28.5
>49 years	34	27.6
Gender		
Male	54	36.4
Female	69	63.6
Education		
Elementary school	57	46.4
Senior high school	26	21.1
High school	23	18.7
Not working	17	13.8
Occupation		
Trader/self-employed	14	11.3
Farmer/fisherman	38	30.9
Laborer	8	6.5
Not working	29	23.6
Housewife	34	27.7
Income of head of family		
>Rp.3.643.321,- / month	0	0
<Rp.3.643.321,- / month	123	100
Latrine ownership		
Have a toilet	78	63.4
Do not have a toilet	45	36.6
Total	123	100

Source: Primary Data 2024.

Table 2. Distribution of respondents' answers regarding community support to stop open defecation.

Number	Statement	Yes		No	
		n	%	n	%
1	Health workers are engaged in providing counseling services related to latrine ownership and use.	113	92.0	10	8.0
2	Health workers recommend that family members utilize the toilet at home, as long as it is available.	116	94.4	7	5.6
3	Health professionals elucidate the health risks associated with the lack of access to adequate sanitation facilities.	118	96.0	5	4.0
4	In the preceding 12-month period, health workers have conducted home surveys.	121	98.4	2	1.6
5	In order to facilitate the utilization of latrines, village officials, community leaders and religious leaders collaborate with household heads to ensure their participation.	120	97.6	3	2.4
6	A program of empowerment has been developed by village officials, community leaders, and religious leaders to encourage the use of latrines.	119	97.4	4	3.2
7	The village head, community leaders, and religious leaders are involved in providing advice and guidance on the construction of healthy latrines.	107	87.2	16	12.8
8	Village officials, community leaders, and religious leaders have provided assistance to facilitate the use and utilization of latrines.	122	99.2	1	0.8
9	Family members encourage the use of the latrine.	119	97.4	4	3.2
10	Local people view the use of latrines positively.	122	99.2	1	0.8
11	In the event of open defecation, neighbours are quick to express their disapproval.	102	83.2	21	16.8

This study highlights the role of social support provided by community leaders in the Mangarabombang area, which has achieved a 100% open defecation-free status. Despite this achievement, a significant number of residents continue to practice open defecation. Typically, when a community reaches such a goal, it is expected that sustainable positive behavior follows. However, this study has uncovered that there are still residents, including both children and adults, who engage in open defecation due to a lack of access to toilets. The purpose of this study is to analyze social support for ending open defecation, with the aim of improving awareness and promoting healthy behaviors among coastal communities.

Materials and Methods

A cross-sectional study design was employed to utilize quantitative methods. The research was conducted in the catchment area of the Manggarabombang Health Centre in Takalar Regency. Univariate and bivariate data analysis was conducted, with data presentation utilizing narration, distribution tables, and graphs. The population comprised 178 households, with sampling conducted using the Slovin formula to obtain 123 households.

Results

Table 1 reveals that the majority of respondents are between the ages of 40 and 49 (28.5%) and that the gender distribution is predominantly female (69%). The educational attainment of the respondents is generally at a middle to lower level (81%). Most respondents (30.9%) identified as farmers or fishermen, and 84% of their income was below the provincial minimum wage. Furthermore, 36.6% of households do not have access to latrines.

Table 2 presents the respondents' responses regarding their perception of social support in relation to their open defecation habits. It was noted that 16.8% of respondents reported that there were no reprimands from their neighbors when they defecated outside. Additionally, 12.8% of respondents indicated that religious leaders, hamlet leaders, and community leaders did not provide guidance on the importance of ceasing open defecation. Furthermore, 5.6% of respondents mentioned that they did not receive any encouragement to use latrines.

Research variables

The distribution of respondents regarding the role of social support in achieving an ODF status is illustrated in Table 3.

Bivariate analysis

Table 4 illustrates that 6 (40.0%) of the households surveyed reported receiving inadequate social support and engaging in open defecation practices. Conversely, 108 households (86.4%) indicated that they had sufficient social support to adopt defecation-free behaviors. The results of the chi-square statistical tests indicated a statistically significant relationship between social support and open defecation behavior ($p=0.000$, <0.05). This was observed in the working area of Mangarabombang Health Center, Takalar Regency, where the role of health workers, community leaders, and religious leaders was found to be particularly influential.

Discussion

The role of social support is to facilitate community participation, thereby enhancing the capacity to adopt and maintain clean and healthy behaviors. The influence of social support, including that from family, friends, and neighbors, on health-improvement behaviors is well documented. Social relationships and social support are reciprocal and can influence both positive and negative behaviors.^{19,20} Other forms of social support, which can be provided by health workers, local government, religious leaders, and community leaders in conjunction with the promotion of family latrines, include the dissemination of information and the delivery of educational programs about the advantages of latrines. Additionally, assistance can be provided to communities that continue to practice open defecation to foster motivation and awareness among these communities regarding the ownership and utilization of latrines.²¹⁻²³

Table 4 shows that 40.0% of households still receive poor or no social support from health workers, religious leaders, and community leaders, and they practice open defecation. This situation can be attributed to the fact that there are still individuals who have not been made aware of the consequences of open defecation and who continue to engage in this practice due to the lack of social disapproval and the absence of any adverse consequences in their immediate environment. Another contributing factor is that some households have not yet received facilities from stop-defecation programs, such as the free latrine program provided by the government. Nonetheless, some households have received free latrines but have chosen not to build or use them because they believe they require funds for other purposes. As a result, it is critical to implement a voluntary community awareness program to discourage open defecation, which can be harmful to people's health.^{24,25}

A total of 108 respondents (86.4%) reported receiving sufficient social support and did not engage in open defecation practices. This finding is supported by the fact that health workers frequently conduct educational initiatives aimed at promoting behavior.

Table 3. Distribution of respondents based on the role of social support in stopping open defecation behavior.

Research variable	n	%
Social support		
Enough	108	87.8
Lack	15	12.2
Defecation behavior		
Open defecation	6	4.9
ODF	117	95.1
Total	123	100

Source: Primary Data 2024

Table 4. Relationship between social support and open defecation behavior.

Social support	Open defecation (OD) behavior				Total		P
	OD		ODF		N	%	
	n	%	n	%	N	%	
Lack	6	40.0	9	60.0	15	100	0
Enough	0	0	108	86.4	108	100	
Total	6	4.9	117	95.1	123	100	

Source: Primary Data 2024.

ioral change. These efforts have proven effective in raising awareness and encouraging individuals to adopt recommended health behaviors. Additionally, the latrine assistance program encourages community members to use latrines, helping to maintain a defecation-free environment. The local government plays a crucial role in reinforcing this behavioral change by setting a positive example and providing motivation to protect the environment through the use of latrines.^{26,27} According to Lawrence Green's theory,²⁸⁻³⁰ which suggests that behavior change is influenced by three factors—predisposing, enabling, and reinforcing—education through triggering can facilitate or predispose changes in knowledge and attitudes. Similarly, social support, the provision of facilities, and the involvement of community leaders and neighbors in the use of latrines are effective in motivating ODF.^{31,32} Health workers, religious and community leaders, and local government are reinforcing for the community to change, as they are the reference group for community behavior.^{33,34}

The results demonstrate that open defecation behavior is more prevalent among respondents with limited social support than among those who receive social support. The chi-square statistical test in this study yielded a p-value of ($0.000 > 0.05$), indicating a statistically significant relationship between the role of health workers and open defecation behavior in the Mangarabombang Puskesmas area, Takalar Regency.

The influence of health workers and community leaders on changing open defecation habits depends on several factors. Firstly, community members need access to information and support from health workers and leaders, as well as consequences for not adhering to open defecation practices. Secondly, it is essential for the community to be committed to using latrines. When both of these conditions are met, they can serve as powerful catalysts for behavioral change.^{35,36} Households that have never received education from health workers are 5.037 times more likely to continue open defecation practice compared to those who have been educated by health workers.^{37,38} Raising public awareness about recommended practices, such as ensuring cleanliness and proper sanitation, is essential for maintaining a healthy environment and improving the overall health of the community.

Conclusions

The research findings suggest that social support from health workers, religious leaders, and community leaders plays a crucial role in adopting healthy behaviors. Exposure to information and emotional encouragement from individuals who have stopped open defecation serves as a significant motivator for others to protect their environment. Knowledge and awareness of the benefits of healthy practices can lead to lasting behavior change, ultimately contributing to the achievement of open defecation-free status.

References

1. UNICEF. Sanitation and Hygiene for All: "Make a Splash!" Partnership Progress Report 2022-2023. United Nations: UN: The United Nations; 2023.
2. Kemenkes RI. Laporan Tahunan 2022 Stop Buang Air Besar Sembarangan di Indonesia [Internet]. Jakarta; 2022. Available from: http://p2p.kemkes.go.id/wp-content/uploads/2023/06/FINAL_6072023_Layout_SBS-1.pdf
3. Jati SP, Nandini N, Dewanti NAY, et al. The Readiness of Wonosobo and Banjarnegara Towards Open Defecation Free Regencies. *J Environ Health* 2023;15:283–90.
4. Nurhayati R, Kusumaningtiar DA, Handayani P, Sangadji NW. The effectiveness of the implementation of the community-based total sanitation program, the first pillar of stop open defecation in the work area of the palmerah district community health center in 2022. *KESANS Int J Heal Sci* 2023;2:351–69.
5. Direktorat Jenderal Kesehatan Masyarakat. Monitoring Data Sanitasi Total Berbasis Masyarakat (STBM). Direktorat Jenderal Kesehatan Masyarakat, Kementerian Kesehatan RI. 2021 [cited 2024 Jun 4]. Available from: <https://stbm.kemkes.go.id/nspk>
6. Sari AFK, Azizah R, Jalaludin J, et al. A Review of Open Defecation (OD) In Indonesia and The Control with Logic Model. *Malaysian J Med Heal Sci* 2022;18:157–65.
7. Arora NK, Mishra I. Sustainable Development Goal 6: Global Water Security. *Environ Sustain* 2022;5:271–5.
8. Juniati A, Rahman R, Marlina S, et al. Gerakan Edukasi dalam Pencegahan Stunting dan Perilaku ODF Pada Masyarakat Desa Jayalaksana. *An-Nizam* 2023;14:279–88.
9. Fitriyah N, Yuniarti T, Wahyono E, et al. Clean water issues, community behavior and communication models in sustainable development goals 6 in Banten West Java Indonesia. *Int J Sustain Dev Plan* 2024;19:247–58.
10. Fathonah U. Faktor-Faktor yang Berhubungan dengan Kepemilikan Jamban Sehat di Wilayah Kerja Puskesmas Lempur Kabupaten Kerinci Tahun 2023. Universitas Jambi; 2024.
11. Daniel D, Djohan D, Machairas I, et al. Financial, Institutional, Environmental, Technical, and Social (FIETS) aspects of water, sanitation, and hygiene conditions in indigenous-rural Indonesia. *BMC Public Health* 2021;21:1–15.
12. Odagiri M, Muhammad Z, Cronin AA, et al. Enabling factors for sustaining open defecation-free communities in rural Indonesia: a cross-sectional study. *Int J Environ Res Public Health* 2017;14:1572.
13. Wu F, Sheng Y. Social support network, social support, self-efficacy, health-promoting behavior and healthy aging among older adults: a pathway analysis. *Arch Gerontol Geriatr* 2019;85:103934.
14. Aulia A, Nurjazuli N, Darundiati YH. Perilaku Buang Air Besar Sembarangan (BABS) Di Desa Kamal Kecamatan Larangan Kabupaten Brebes. *J Kesehat Masy* 2021;9:166–74.
15. Nzioki JM, Korir A. Effective methods for community sanitation and hygiene promotion in the developing world: a scoping review. *Africa J Tech Vocat Educ Train* 2020;5:175–85.
16. Badan Pusat Statistik. Persentase Rumah Tangga yang Masih Mempraktikkan Buang Air Besar Sembarangan. 2023 [cited 2024 Jun 8]. Available from: <https://www.bps.go.id/id/statistics-table/2/MjE3NiMy/persentase-rumah-tangga—yang-masih-mempraktikkan-buang-air-besar-sembarangan—babs—di-tempat-terbuka-menurut-provinsi-dan-tipe-daerah—persen.html>
17. Dinas Kesehatan Provinsi Sulawesi Selatan. Laporan Kinerja Tahun 2022. Makassar; 2022. Available from: https://apidinkes.sulselprov.go.id/repo/dinkes-LKJ_TAHUN_2022.pdf
18. Puskesmas Mangarabombang. Profil Kesehatan UPT Puskesmas Mangarabombang. Mangarabombang; 2022.
19. Kelly ME, Duff H, Kelly S, et al. The impact of social activities, social networks, social support and social relationships on the cognitive functioning of healthy older adults: a systematic review. *Syst Rev* 2017;6:1–18.
20. Richmond CAM, Ross NA. Social support, material circum-

- stance and health behaviour: influences on health in First Nation and Inuit communities of Canada. *Soc Sci Med* 2008;67:1423–33.
21. Ruba YE, Joko T, Budiyo B. Faktor Pendukung dan Penghambat Program Stop Buang Air Besar Sembarangan (BABS) di Wilayah Kerja Puskesmas Maronggela Kecamatan Riung Barat Kabupaten Ngada. *J Ris Kesehat Masy* 2021;1:1–11.
 22. Madon S, Malecela MN, Mashoto K, et al. The role of community participation for sustainable integrated neglected tropical diseases and water, sanitation and hygiene intervention programs: a pilot project in Tanzania. *Soc Sci Med* 2018;202:28–37.
 23. Ikhtiar M, Riswan KA, Asrina A, Puspitasari A. Hubungan Perceived Severity Dengan Perilaku BABS Pada Masyarakat Pesisir kab. Takalar Tahun 2024. *Media Kesehat Politek Kesehat Makassar* 2024;19:77–83.
 24. Bhatt N, Budhathoki SS, Lucero-Prisno DEIII, et al. What motivates open defecation? A qualitative study from a rural setting in Nepal. *PLoS One* 2019;14:e0219246.
 25. Ghani N, Asrina A, Septiyanti S, et al. Pengaruh Penyuluhan dan Media MP3 terhadap Pengetahuan dan Sikap Pemanfaatan Jamban di Desa Bontomanai Kecamatan Mangarabombang Kabupaten Takalar. *Wind Public Heal J* 2022;3:814–23.
 26. Linggar F, Rantetampang AL, Tingginehe R, Mallongi A. The factors influencing defecation behavior in toilet Pasca community led total sanitation at Wamesa Sub District Manokwari Selatan District. *Int J Sci Healthc Res* 2019;4:88–99.
 27. Ikhtiar M. Pengantar Kesehatan Lingkungan. Makassar: CV. Social Politic Genius (SIGn); 2017.
 28. Notoatmodjo S. Promosi Kesehatan dan Ilmu Perilaku. Jakarta: PT. Rineka Cipta; 2012.
 29. de Vries H, Kremers SPJ, Lippke S. Health education and health promotion: key concepts and exemplary evidence to support them. In: *Principles and Concepts of Behavioral Medicine: A Global Handbook*. New York: Springer; 2018. p. 489–532.
 30. Asrina A, Yusriani, Idris FP, et al. Path analysis of the influence of knowledge on clean and healthy living behavior through perceived susceptibility as an intervening variable in HIV AIDS prevention. *Heal Educ Heal Promot* 2023;11:293–8.
 31. Horhoruw A, Widagdo L. Perilaku Kepala Keluarga dalam Menggunakan Jamban di Desa Tawiri Kecamatan Teluk Ambon Kota Ambon. *J Promosi Kesehat Indones* 2014;9:226–37.
 32. Asrina A, Payapo R, Idris FC, et al. Health behavior and social support in postpartum mothers treatment in Ba'ukup tradition in Maluku. *Pharmacogn J* 2023;15:438–42.
 33. Dupai L, Majid R, Kamaluddin S, Sabilu Y. The effectiveness of environmental health behavior in the community through coastal community empowerment program in Kendari City Southeast Sulawesi Province, Indonesia. *Indian J Public Heal Res Dev* 2019;10.
 34. Asrina A. Dole-dole tradition in health seeking behavior of Buton society, Southeast Sulawesi. *Indian J Public Heal Res Dev* 2018;9:270–4.
 35. Sari NP, Susanti S. Kebiasaan Buang Air Besar Sembarangan (BABS) di Desa Tanjung Peranap, Tebing Tinggi Barat. *J Kesehat* 2021;9:123–31.
 36. Ratnasari Y, Fadilla T, Amiruddin S. Achievement of ODF (Open Defecation Free) Villages through the social functions approach in Teba Village. *J Antropol Isu-Isu Sos Budaya* 2023;25:21–33.
 37. Rosita Y, Ahyanti M. Pengetahuan, Dukungan Tokoh Masyarakat dan Pemaparan Petugas Kesehatan Terhadap Perilaku BABs. *Media Publ Promosi Kesehat Indones* 2022;5:698–702.
 38. Fitrianingrum RE. Community-based total sanitation health promotion strategy in Kebaman Village, Srono District, Banyuwangi Regency. *J Qual Public Heal* 2020;3:611–8.