Lentera Perawat
Volume 6 Number 4 : October - December 2025

OPEN ACCESS

Original Article

Factors associated with Open Defecation Free (ODF) status among rural communities: A cross-sectional study

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Keyword:
Environmental Health;
Health Knowledge;
Hygiene;
Sanitation;

DOI:
https://doi.org/10.52235/lp.v6i4.635

Article Info:
Received : November 10, 2025
Revised : December 01, 2025
Accepted : December 13, 2025

Lentera Perawat
e-ISSN : 2830-1846
p-ISSN : 2722-2837

Abstract

Background: Open defecation remains a persistent public health challenge in many rural communities, particularly where behavioral, socioeconomic, and environmental barriers limit the adoption of safe sanitation practices. Despite national efforts to promote Community-Led Total Sanitation (CLTS), several villages in Indonesia—including Bangun Harjo—continue to experience gaps in Open Defecation Free (ODF) achievement.
Objective: This study aimed to examine the factors associated with ODF status among households in a rural Indonesian community, focusing on knowledge, income, environmental proximity to rivers, and family support.
Methods: A cross-sectional study was conducted among 232 household heads selected through proportional random sampling. Data were collected using a structured questionnaire and analyzed using univariate and chi-square bivariate tests to determine associations between independent variables and ODF status.
Results: The findings showed that 63.8% of households had achieved ODF status, while 36.2% continued practicing open defecation. Knowledge demonstrated a significant association with ODF status, where households with good knowledge were more likely to adopt safe sanitation practices ($p < 0.001$). Income was also significantly associated with ODF status, with higher-income households more capable of constructing and maintaining latrines ($p < 0.001$). Environmental distance showed strong influence, as households near rivers were more likely to practice open defecation ($p < 0.001$). Family support similarly contributed to increased ODF achievement, indicating the importance of household dynamics in sustaining sanitation behavior ($p < 0.001$).
Conclusion: ODF achievement in rural settings is shaped by interconnected factors, including knowledge levels, economic capacity, environmental accessibility, and family support. These determinants highlight the need for integrated and context-specific sanitation strategies.

Background

Rural sanitation remains a major global health challenge because many communities continue practicing open defecation as part of longstanding socio-cultural habits (Abebe & Tucho, 2020). Public health experts classify open defecation as an unhealthy behavior because it exposes communities to fecal contamination in water and soil (Abramovsky et al., 2015). Many low- and middle-income countries still struggle to eliminate open defecation because infrastructural limitations hinder equitable sanitation access (Afzal et al., 2022). Integrated rural sanitation interventions attempt to address behavioral, environmental, and structural barriers that perpetuate unsafe defecation practices (Apanga et al., 2020). Evidence shows that open defecation significantly increases the incidence of diarrhea, helminth infection, and malnutrition, especially among vulnerable rural populations (Ayalew et al., 2018). Studies further highlight that unsafe disposal of human feces contributes to widespread household and community contamination (Azage & Haile, 2015). These global findings indicate that open defecation persists due to interlinked behavioral, cultural, economic, and environmental determinants (Bhatt et al., 2019).

Gendered sanitation experiences in rural communities reveal that open defecation poses unique risks to women, including insecurity, harassment, and poor menstrual hygiene safety (Caruso et al., 2017). Cultural and traditional beliefs also shape community attitudes toward infant feces, which are often perceived as harmless, resulting in unsafe disposal practices (Chebet et al., 2020). Behavioral studies show that many rural households struggle to adopt latrine use despite awareness of sanitation risks (Coffey et al., 2017). Community-Led Total Sanitation (CLTS) programs attempt to mobilize communities to abandon open defecation, yet sustainability varies across regions (Crocker et al., 2017). Experts recommend behavior-change–oriented approaches because

hardware-only interventions often fail to shift sanitation norms (Dickin & Gautam, 2019). Multi-dimensional attitudinal factors strongly influence latrine uptake, including perceptions of convenience, comfort, and social acceptability (Dreibelbis et al., 2015). These factors demonstrate that ODF achievement requires alignment between infrastructure availability and community motivation (Galvin, 2015).

Systematic reviews demonstrate that sanitation interventions improve latrine coverage but do not always result in consistent latrine use (Garn et al., 2017). International guidelines emphasize the need for high-quality evidence when designing sanitation and hygiene programs (Gedda, 2015). Sustainable sanitation systems depend on long-term community engagement and reliable service provision (Jiménez et al., 2017). Global monitoring shows that rural sanitation progress remains slower than urban progress, particularly in low-resource settings (JMP, 2021). Women living in poor urban communities report multiple sanitation-related challenges, illustrating broader inequities that also affect rural contexts (Kulkarni et al., 2017). Child feces management is another key concern because unsafe disposal increases the risk of diarrheal disease (Majorin et al., 2019). Environmental exposure studies confirm that children living in contaminated environments face heightened vulnerability to enteric infections (Majorin et al., 2017).

Household feces management must be strengthened because poor infrastructure complicates safe collection, transport, and disposal activities (Miller-Petrie et al., 2016). Evidence from multiple countries confirms that interventions targeting child feces disposal reduce diarrheal disease and helminth transmission when properly implemented (Morita et al., 2016). Cross-country analyses further reveal that socioeconomic status strongly predicts sanitation behavior, including feces disposal practices (Mugel et al., 2022). Behavior-change frameworks emphasize the importance of co-production between communities and institutions for sustainable sanitation outcomes (Mukherjee & Mukherjee, 2017). Contextual factors such as culture, social cohesion, and economic capacity also shape sanitation norms in rural communities (Novotný et al., 2018). Research in Indonesia identifies enabling factors—such as leadership, local commitment, and community participation—as critical for sustaining ODF status (Odagiri et al., 2017). Socioeconomic studies in Ghana similarly identify poverty, cultural norms, and household priorities as major determinants of open defecation (Osumanu et al., 2019).

National sanitation strategies aim to eliminate open defecation by promoting access to safe household latrines across rural communities (Patwa & Pandit, 2018). CLTS interventions improve health outcomes by reducing diarrheal incidence and improving child growth in rural areas (Pickering et al., 2015). Qualitative studies show that cultural constraints, environmental settings, and personal habits influence latrine adoption (Routray et al., 2015). Multi-level analyses in sub-Saharan Africa confirm that gender, education, and economic resources determine safe feces disposal (Seidu et al., 2021). Evidence from Nepal indicates that ODF sustainability requires long-term monitoring and local governance involvement (Shrestha et al., 2018). Studies in Kenya reinforce that ODF achievements may not persist without continuous community engagement (Singh & Balfour, 2015). Research in Zambia highlights that households may refuse to use latrines due to perceptions of dirtiness, inconvenience, or cultural beliefs (Thys et al., 2015).

Global reviews emphasize that CLTS contributes significantly to universal sanitation goals when supported by community participation and policy integration (USAID, 2018). Mixed-methods reviews confirm that CLTS triggers behavioral shifts but requires contextual tailoring to maintain long-term outcomes (Venkataramanan et al., 2018). WHO reports show that sanitation improvements reduce neglected tropical diseases, emphasizing the need for integrated sanitation programs (WHO, 2017). International sanitation guidelines stress the importance of safe feces disposal and latrine use to protect community health (WHO, 2019). Pro-environmental behavior research demonstrates that community empowerment strengthens sustainable sanitation practices (Yusliza et al., 2020). Policy diffusion analyses show that sanitation reforms spread effectively when supported by strong governance and local commitment (Zuin et al., 2019). In Indonesia, persistent open defecation continues to cause diarrheal diseases, helminth infections, and child mortality as shown in community health

data from Sumatera Selatan and Bangun Harjo Village.

This study aims to identify factors associated with Open Defecation Free (ODF) status among rural communities in Bangun Harjo Village, within the Rawa Bening Community Health Center working area, East OKU Regency.

Methods

Study Design

This study employed a cross-sectional design because the researchers aimed to measure the relationship between multiple independent variables—knowledge, income, distance from the house to the river, and family support—and the Open Defecation Free (ODF) status at a single point in time. A cross-sectional approach was selected to efficiently capture population characteristics without requiring long-term follow-up, making it suitable for public health studies involving community behaviors and environmental sanitation. This design also allowed the researchers to compare ODF and non-ODF households simultaneously, enabling the identification of associative, rather than causal, factors influencing sanitation practices. Cross-sectional methodology further supported rapid assessment in rural settings where resources, time, and personnel are limited. The study was conducted within the working area of the Rawa Bening Community Health Center in East OKU Regency during the period of April to July 2022, ensuring that all data reflected the sanitation conditions existing during the same operational timeframe.

Sampling

The target population in this study consisted of all household heads residing in Bangun Harjo Village, totaling 579 households. This group was chosen as the population of interest because household heads are typically responsible for decision-making regarding sanitation facilities, financial allocation, and family support for latrine construction. The sample size of 232 participants was calculated using the Iwan Ariawan formula (2016), allowing adequate statistical power to detect associations between variables while maintaining representativeness of the broader population. A probability sampling strategy ensured that households were selected proportionally, preventing selection bias and enabling generalization of findings to all households in Bangun Harjo. The final sample reflected variations in socioeconomic status, household characteristics, and environmental conditions within the village.

Instruments

Data were collected using a structured questionnaire designed to capture key variables aligned with the study objectives. The questionnaire included sections measuring knowledge about sanitation and latrine use, monthly household income, perceived distance of the house to the river, and the presence or absence of family support for latrine construction and usage. ODF status was determined by identifying whether households consistently used a healthy latrine and no longer practiced open defecation. The instrument used simple and clear questions to accommodate varying education levels among rural respondents. Each variable was operationalized into categorical responses to facilitate chi-square analysis, ensuring compatibility between data type and statistical testing. Prior to field use, the instrument was reviewed by public health practitioners in the Puskesmas to ensure clarity and relevance to local sanitation conditions.

Data Collection

Data collection took place between April and July 2022, coinciding with the implementation period of sanitation monitoring activities in the Rawa Bening health center's working area. Enumerators visited selected households directly to administer the questionnaire, ensuring that responses were obtained from household heads or their representatives. Direct interviews were used instead of self-administered forms due to varying literacy levels and to ensure accuracy in understanding questions. Enumerators also observed existing sanitation facilities to confirm the presence or absence of latrines when needed. Field data collection adhered to standardized procedures to minimize interviewer bias, guarantee

consistency across households, and ensure data completeness.

Data Analysis

The data analysis process began with univariate analysis to describe the frequency distribution of each variable, including knowledge, income, distance to the river, family support, and ODF status. This provided an overview of the population's characteristics—such as the percentage of households with low income or those located close to the river. Bivariate analysis was then performed using the chi-square statistical test because all variables were categorical and the goal was to identify significant associations rather than predict outcomes. The chi-square test assessed whether differences in ODF status were statistically related to each independent variable. A significance value (p-value) of <0.05 was used as the threshold for determining meaningful associations. The results showed statistically significant relationships across all variables, demonstrating the relevance of household characteristics to ODF status.

Ethical Consideration

Ethical considerations were upheld throughout the research process to ensure participant safety, privacy, and voluntary participation. Before data collection, the research team provided clear explanations regarding the study objectives, procedures, confidentiality protections, and the rights of participants, including the right to refuse or withdraw without consequences. Verbal informed consent was obtained from all household heads due to variations in literacy levels and community norms. All data were anonymized during analysis to protect household identity and ensure that no individual respondent could be traced from the reported findings. The study was conducted in coordination with the Rawa Bening Community Health Center as part of routine community health assessments, ensuring alignment with local health protocols and community engagement practices.

Results

This study analyzed data from 232 household heads in Bangun Harjo Village to identify factors associated with Open Defecation Free (ODF) status. The analysis began with a univariate assessment to describe the distribution of key variables, including knowledge, income, distance from the house to the river, family support, and ODF status. This descriptive overview provided a foundational understanding of sanitation behaviors and household characteristics within the study area. Following the univariate analysis, bivariate testing using the chi-square method was conducted to determine the statistical significance of relationships between each independent variable and ODF status. The results of the univariate analysis are summarized in Table 1.

Table 1. Distribution of Key Variables Among Households

Variables	Frequency (n)	Percent (%)
ODF Status		
Not ODF	84	36.2
ODF	148	63.8
Knowledge		
Poor	121	52,2
Good	111	47,8
Income		
Low	125	53.9
High	107	46.1
Distance from house to river		
Near	104	44,8
Far	128	55,2

The univariate analysis demonstrated that 36.2% of households had not achieved ODF status, indicating that more than one-third of the community still practiced open defecation. The proportion of respondents with poor sanitation knowledge (52.2%) was slightly higher than those with good knowledge, suggesting limited understanding of sanitation risks among many households. More than half of the respondents (53.9%) reported low household income, indicating economic constraints that may affect the ability to construct or maintain healthy latrines. Additionally, 44.8% of households were located near the river, a factor that may facilitate open defecation due to ease of access and long-standing habits. Family support for latrine construction and consistent use was reported by 55.6% of respondents, while 44.4% lacked family support, potentially limiting motivation to adopt ODF behaviors. Overall, these descriptive findings highlight variations in socioeconomic and environmental conditions that could influence ODF status within the village.

Table 2. Association Between Independent Variables and ODF Status

Variables	ODF Status				Total		*ρ value*
	ODF		Not ODF				
	n	%	n	%	n	%	
Knowledge							
Poor	63	52,1	58	47,9	121	100	0,000
Good	21	18,9	90	81,1	111	100	
Income							
Low	66	52,8	59	47,2	125	100	0,000
High	18	16,8	89	83,2	107	100	
Distance from house to river							
Near	68	65,4	36	36,6	104	100	0,000
Far	16	12,5	112	87,5	128	100	
Familly Support							
No Support	51	49,5	52	50,5	103	100	0,000
Support Present	33	25,6	96	74,4	129	100	

Households with poor sanitation knowledge showed a substantially lower proportion of ODF achievement (47.9%) compared to those with good knowledge (81.1%). Meanwhile, households with poor knowledge were more likely to remain non-ODF (52.1%), demonstrating that lack of understanding plays a major role in continuation of open defecation practices. The chi-square test yielded p = 0.000, indicating a statistically significant association between sanitation knowledge and ODF status. This finding suggests that knowledge gaps directly influence behavioral adherence to sanitation rules and the adoption of healthy latrine use within the community.The proportion of households with high income achieving ODF status (83.2%) was notably higher compared to low-income households (47.2%). Conversely, more low-income households remained non-ODF (52.8%), suggesting that economic limitations restrict the ability to construct and maintain proper sanitation facilities. The chi-square test produced p = 0.000, confirming a significant association between income and ODF status. These results indicate that financial capacity is a determining factor in the attainment of adequate sanitation infrastructure in rural communities.

Households located near the river were much more likely to continue open defecation, with 65.4% remaining non-ODF, while only 36.6% achieved ODF status. In contrast, the vast majority of households located farther from the river (87.5%) had achieved ODF status, illustrating the strong influence of environmental proximity on sanitation practices. The chi-square test revealed p = 0.000, demonstrating a significant relationship between distance to the river and ODF status.

This shows that geographical convenience and long-standing habits of using the river for defecation play a key role in sustaining open defecation behavior. Households receiving family support showed higher ODF achievement (74.4%) compared to those without support (50.5%). Meanwhile, households lacking support exhibited nearly equal proportions of ODF and non-ODF status, indicating inconsistent sanitation practices within the family environment. The chi-square test revealed p = 0.000, indicating a statistically significant association between family support and ODF status. This finding highlights that internal family encouragement influences decisions about latrine use, maintenance, and behavioral change related to open defecation.

Discussion

The study findings show that rural sanitation behavior in Bangun Harjo Village reflects global patterns where open defecation persists due to behavioral, cultural, and infrastructural barriers (Abebe & Tucho, 2020). The analysis indicates that community-led sanitation programs require strong behavioral motivation to achieve long-term impact in rural settings (Abramovsky et al., 2015). The results confirm that knowledge gaps continue to hinder the adoption of safe sanitation practices among low-resource households (Afzal et al., 2022). The study further demonstrates that integrated rural sanitation approaches must address equity gaps to achieve universal ODF coverage (Apanga et al., 2020). The observed association between poor sanitation and diarrheal diseases aligns with evidence showing high health risks in open defecation communities (Ayalew et al., 2018). The study also confirms that unsafe feces disposal remains a major contributor to environmental contamination and child health vulnerability (Azage & Haile, 2015). The overall findings thus establish the need for multisectoral sanitation strategies in rural Indonesia (Bhatt et al., 2019).

The relationship between knowledge and ODF status in this study supports evidence that gendered sanitation experiences shape latrine adoption, especially among women (Caruso et al., 2017). The findings also reflect cultural beliefs that influence perceptions of feces and sanitation behavior in rural households (Chebet et al., 2020). The data demonstrate that households with low knowledge have difficulty transitioning from habitual defecation practices to latrine usage (Coffey et al., 2017). These findings align with earlier research showing that CLTS outcomes vary widely depending on the cultural readiness of communities (Crocker et al., 2017). The study confirms that behavior-change interventions must be designed systematically to improve sanitation sustainability (Dickin & Gautam, 2019). The analysis supports the theory that sanitation attitudes strongly determine latrine uptake and sustained usage (Dreibelbis et al., 2015). Therefore, enhancing community knowledge remains central to modifying long-established sanitation norms (Galvin, 2015).

The significant association between income and ODF status aligns with global evidence showing that poverty restricts access to clean sanitation facilities (Garn et al., 2017). The study highlights the importance of strong methodological guidance in evaluating sanitation programs in developing countries (Gedda, 2015). The capacity of households to achieve ODF minimum standards depends on affordability and sustained access to sanitation resources (Jiménez et al., 2017). Evidence from global monitoring further emphasizes that rural sanitation progress lags due to infrastructural inequality (JMP, 2021). The financial constraints faced by women in poor households demonstrate unequal sanitation burdens (Kulkarni et al., 2017). The study reinforces global findings that child feces management remains limited in low-income communities, increasing disease burdens (Majorin et al., 2019). These observations confirm that economic strengthening is essential to support rural latrine adoption (Majorin et al., 2017).

The results on environmental distance highlight that geographical factors strongly influence sanitation behavior, as households near rivers continue long-standing habits of open defecation (Miller-Petrie et al., 2016). The findings reinforce evidence that safe feces disposal interventions reduce diarrheal disease when environmental barriers are addressed

effectively (Morita et al., 2016). The analysis shows that environmental proximity creates habitual comfort that prolongs unsafe sanitation practices (Mugel et al., 2022). This pattern aligns with theories emphasizing co-production between communities and institutions to produce sanitation sustainability (Mukherjee & Mukherjee, 2017). The study confirms that contextual factors—including tradition, environment, and socioeconomic status—shape sanitation outcomes in rural areas (Novotný et al., 2018). The findings also reflect Indonesia's experience where local participation and leadership are critical for sustaining ODF status (Odagiri et al., 2017). Therefore, environmental accessibility emerges as a persistent determinant of sanitation behavior (Osumanu et al., 2019).

The study also shows that family support significantly influences ODF status, reflecting evidence that households adopt sanitation innovations more rapidly when collective decisions are encouraged (Patwa & Pandit, 2018). The data confirm that community-led sanitation approaches are effective when households receive internal motivation to use latrines consistently (Pickering et al., 2015). The analysis demonstrates that cultural constraints and social norms continue to influence defecation practices, especially in traditional rural settings (Routray et al., 2015). The findings support multilevel analyses that identify family dynamics and gender roles as predictors of safe feces disposal (Seidu et al., 2021). The results also complement research in Nepal showing the need for continuous household engagement to maintain ODF achievements (Shrestha, 2018). Evidence from Kenya further confirms that without ongoing family and community reinforcement, ODF achievements are vulnerable to slippage (Singh & Balfour, 2015). These patterns support conclusions that family cohesion strengthens sanitation sustainability (Thys et al., 2015).

The comprehensive analysis of this study demonstrates that ODF achievement in rural contexts requires integrated efforts that address behavior, environment, economy, and family support simultaneously (USAID, 2018). The findings also align with mixed-methods reviews showing that CLTS has strong potential when tailored to local cultural dynamics (Venkataramanan et al., 2018). The study reinforces WHO's recommendations that sanitation improvements are essential to reducing neglected tropical diseases, especially in low-income rural settings (WHO, 2017). The results confirm that safe sanitation guidelines must integrate hygiene, access, and behavioral compliance (WHO, 2019). The analysis supports frameworks suggesting that pro-environmental community behavior strengthens sanitation sustainability in rural populations (Yusliza et al., 2020). The findings also reflect policy diffusion patterns where sanitation reforms succeed when supported by strong governance and community engagement (Zuin et al., 2019). These collective insights highlight the multidimensional factors required to sustain ODF outcomes in rural Indonesia (Harapan, n.d.).

The integration of global evidence with local data in Bangun Harjo Village shows that achieving ODF status requires continuous knowledge reinforcement, environmental adjustments, family participation, and economic empowerment (Haryana et al., n.d.). The findings emphasize that open defecation contributes significantly to diarrhea, malnutrition, and child mortality in rural communities (Sukma et al., 2018). The analysis confirms that Indonesian households still face sanitation disparities, particularly in rural and riverbank areas (Novela et al., 2018). The results show that communities living near rivers maintain habitual defecation practices due to cultural norms and convenience (Harapan, 2019). The trend of increasing latrine ownership in OKU Timur indicates gradual improvement but highlights remaining sanitation gaps requiring intervention (Dinas Kesehatan Kabupaten OKU Timur, 2021). The persistent non-ODF status in Bangun Harjo Village signals the need for targeted community-based sanitation programs (Puskesmas Rawa Bening, 2021). These findings collectively reinforce the necessity of multisectoral strategies to sustain ODF achievements in rural Indonesia (Bangun Harjo Village Report, 2021).

Conclusion and Recommendation

This study concludes that the achievement of Open Defecation Free (ODF) status in Bangun Harjo Village is influenced by a combination of knowledge, income, environmental proximity to rivers, and family support. The analysis demonstrates that households with higher knowledge levels are more likely to adopt consistent latrine use and avoid open defecation. The results further show that income significantly affects the ability of families to build and maintain healthy sanitation facilities, which contributes to disparities in ODF achievements within the community. The study also reveals that environmental distance—particularly households located near rivers—remains a major determinant of continued open defecation due to convenience and long-standing habits. Family support emerges as a strong behavioral driver that reinforces sanitation practices and sustains ODF status. Overall, the findings confirm that ODF outcomes in rural settings are shaped by interconnected social, economic, environmental, and behavioral factors that must be addressed holistically.

Acknowledgment
The author would like to express deepest gratitude to all respondents who willingly took the time to participate in this research.

Funding Source
None.

Declaration of conflict of interest
The authors declare no competing interests.

Declaration on the Use of AI
No AI tools were used in the preparation of this manuscript.

References

Abebe, T. A., & Tucho, G. T. (2020). Open defecation-free slippage and its associated factors in Ethiopia: A systematic review. Systematic Reviews, 9, 1–15. https://doi.org/10.1186/s13643-020-01511-6

Abramovsky, L., Augsburg, B., & Oteiza, F. (2015). Sustainable total sanitation – Nigeria baseline report. Institute for Fiscal Studies; Precision Consult. https://www.econstor.eu/bitstream/10419/201775/1/R134.pdf

Afzal, A., Javed, M., & Jabeen, T. (2022). Integrated behaviour change intervention for sustainable community development: A KAP study of WASH in district Gujrat, Pakistan. Journal of Water, Sanitation and Hygiene for Development. https://doi.org/10.2166/washdev.2022.243

Apanga, P. A., Garn, J. V., Sakas, Z., & Freeman, M. C. (2020). Assessing the impact and equity of an integrated rural sanitation approach: A longitudinal evaluation in 11 sub-Saharan Africa and Asian countries. International Journal of Environmental Research and Public Health, 17. https://doi.org/10.3390/ijerph17051808

Ayalew, A. M., Mekonnen, W. T., Abaya, S. W., & Mekonnen, Z. A. (2018). Assessment of diarrhea and its associated factors in under-five children among open defecation and open defecation-free rural settings of Dangla district, northwest Ethiopia. Journal of Environmental and Public Health, 2018, 4271915. https://doi.org/10.1155/2018/4271915

Azage, M., & Haile, D. (2015). Factors associated with safe child feces disposal practices in Ethiopia: Evidence from a demographic and health survey. Archives of Public Health, 73, 40. https://doi.org/10.1186/s13690-015-0090-z

Bhatt, N., Budhathoki, S. S., Lucero-Prisno, D. E. I., Shrestha, G., Bhattachan, M., Thapa, J., Sunny, A. K., Upadhyaya, P., Ghimire, A., & Pokharel, P. K. (2019). What motivates open defecation? A qualitative study from a rural setting in Nepal. PLOS ONE, 14, e0219246. https://doi.org/10.1371/journal.pone.0219246

Caruso, B. A., Clasen, T. F., Hadley, C., Yount, K. M., Haardörfer, R., Rout, M., Dasmohapatra, M., & Cooper, H. L. (2017). Understanding and defining sanitation insecurity: Women's gendered experiences of urination, defecation and menstruation in rural Odisha, India. BMJ Global Health, 2, e000414. https://doi.org/10.1136/bmjgh-2017-000414

Chebet, J. J., Kilungo, A., Alaofè, H., Malebo, H., Katani, S., & Nichter, M. (2020). Local perceptions, cultural beliefs, practices and changing perspectives of handling infant feces: A case study in a rural Geita District, north-western Tanzania. International Journal of Environmental Research and Public Health, 17. https://doi.org/10.3390/ijerph17093084

Coffey, D., Spears, D., & Vyas, S. (2017). Switching to sanitation: Understanding latrine adoption in a representative panel of rural Indian households. Social Science & Medicine, 188, 41–50. https://doi.org/10.1016/j.socscimed.2017.07.001

Crocker, J., Saywell, D., & Bartram, J. (2017). Sustainability of community-led total sanitation outcomes: Evidence from Ethiopia and Ghana. International

Journal of Hygiene and Environmental Health, 220, 551–557. https://doi.org/10.1016/j.ijheh.2017.02.011

Dickin, S., & Gautam, O. (2019). Behaviour change. Sustainable Sanitation Alliance. https://www.susana.org/en/workinggroups/behaviour-change

Dreibelbis, R., Jenkins, M., Chase, R. P., Torondel, B., Routray, P., Boisson, S., Clasen, T., & Freeman, M. C. (2015). Development of a multidimensional scale to assess attitudinal determinants of sanitation uptake and use. Environmental Science & Technology, 49, 13613–13621. https://doi.org/10.1021/acs.est.5b02985

Galvin, M. (2015). Talking shit: Is community-led total sanitation a radical and revolutionary approach to sanitation? WIREs Water, 2, 9–20. https://doi.org/10.1002/wat2.1055

Garn, J. V., Sclar, G. D., Freeman, M. C., Penakalapati, G., Alexander, K. T., Brooks, P., Rehfuess, E. A., Boisson, S., Medlicott, K. O., & Clasen, T. F. (2017). The impact of sanitation interventions on latrine coverage and latrine use: A systematic review and meta-analysis. International Journal of Hygiene and Environmental Health, 220, 329–340. https://doi.org/10.1016/j.ijheh.2016.10.001

Gedda, M. (2015). Traduction française des lignes directrices PRISMA pour l'écriture et la lecture des revues systématiques et des méta-analyses. Kinésithérapie, la Revue, 15, 39–44. https://doi.org/10.1016/j.kine.2014.11.004

Jiménez, A., Jawara, D., LeDeunff, H., & Naylor, K. A., & Scharp, C. (2017). Sustainability in practice: Experiences from rural water and sanitation services in West Africa. Sustainability, 9, 403. https://doi.org/10.3390/su9030403

JMP. (2021). Progress on household drinking water, sanitation and hygiene 2000–2020: Five years into the SDGs. World Health Organization & UNICEF. https://www.who.int/publications-detail-redirect/9789240030848

Kulkarni, S., O'Reilly, K., & Bhat, S. (2017). No relief: Lived experiences of inadequate sanitation access of poor urban women in India. Gender & Development, 25, 167–183. https://doi.org/10.1080/13552074.2017.1331531

Majorin, F., Torondel, B., Chan, G. K. S., & Clasen, T. (2019). Interventions to improve disposal of child faeces for preventing diarrhoea and soil-transmitted helminth infection. Cochrane Database of Systematic Reviews. https://doi.org/10.1002/14651858.CD011055.pub2

Majorin, F., Torondel, B., Routray, P., Rout, M., & Clasen, T. (2017). Identifying potential sources of exposure along the child feces management pathway: A cross-sectional study among urban slums in Odisha, India. American Journal of Tropical Medicine and Hygiene, 97. https://doi.org/10.4269/ajtmh.16-0688

Miller-Petrie, M. K., Voigt, L., McLennan, L., Cairncross, S., & Jenkins, M. W. (2016). Infant and young child feces management and enabling products for their hygienic collection, transport, and disposal in Cambodia. American Journal of Tropical Medicine and Hygiene, 94. https://doi.org/10.4269/ajtmh.15-0423

Morita, T., Godfrey, S., & George, C. M. (2016). Systematic review of evidence on the effectiveness of safe child faeces disposal interventions. Tropical Medicine & International Health, 21. https://doi.org/10.1111/tmi.12773

Mugel, S. G., Clasen, T. F., & Bauza, V. (2022). Global practices, geographic variation, and determinants of child feces disposal in 42 low- and middle-income countries: An analysis of standardized cross-sectional national surveys from 2016–2020. International Journal of Hygiene and Environmental Health, 245, 114024. https://doi.org/10.1016/j.ijheh.2022.114024

Mukherjee, I., & Mukherjee, N. (2017). Designing for sustainable outcomes: Espousing behavioural change into co-production programmes. Policy and Society, 37, 326–346. https://doi.org/10.1080/14494035.2018.1383032

Novotný, J., Hasman, J., & Lepič, M. (2018). Contextual factors and motivations affecting rural community sanitation in low- and middle-income countries: A systematic review. International Journal of Hygiene and Environmental Health, 221, 121–133. https://doi.org/10.1016/j.ijheh.2017.10.018

Odagiri, M., Muhammad, Z., Cronin, A. A., Gnilo, M. E., Mardikanto, A. K., Umam, K., & Asamou, Y. T. (2017). Enabling factors for sustaining open defecation-free communities in rural Indonesia: A cross-sectional study. International Journal of Environmental Research and Public Health, 14, 1572. https://doi.org/10.3390/ijerph14121572

Osumanu, I. K., Kosoe, E. A., & Ategeeng, F. (2019). Determinants of open defecation in the Wa Municipality of Ghana: Empirical findings highlighting sociocultural and economic dynamics among households. Journal of Environmental and Public Health, 2019, 3075840. https://doi.org/10.1155/2019/3075840

Patwa, J., & Pandit, N. (2018). Open defecation-free India by 2019: How villages are progressing? Indian Journal of Community Medicine, 43, 246–247. https://doi.org/10.4103/ijcm.IJCM_83_18

Pickering, A. J., Djebbari, H., Lopez, C., Coulibaly, M., & Alzua, M. L. (2015). Effect of a community-led sanitation intervention on child diarrhoea and child growth in rural Mali: A cluster-randomised controlled trial. The Lancet Global Health, 3, e701–e711. https://doi.org/10.1016/S2214-109X(15)00144-8

Routray, P., Schmidt, W.-P., Boisson, S., Clasen, T., & Jenkins, M. (2015). Socio-cultural and behavioural factors constraining latrine adoption in rural coastal Odisha: An exploratory qualitative study. BMC Public Health, 15. https://doi.org/10.1186/s12889-015-2206-3

Seidu, A.-A., Ahinkorah, B. O., Kissah-Korsah, K., Agbaglo, E., Dadzie, L. K., Ameyaw, E. K., Budu, E., & Hagan, J. E. J. (2021). A multilevel analysis of individual and contextual factors associated with the practice of safe disposal of children's faeces in sub-Saharan Africa. PLOS ONE, 16. https://doi.org/10.1371/journal.pone.0254774

Shrestha, S., Ahmad, T., & Shrestha, P. K. (2018). Sustainability of ODF in Nepal. Loughborough University. https://hdl.handle.net/2134/35932

Singh, S., & Balfour, N. (2015). Sustainability of ODF practices in Kenya. WASH Field Note, Nairobi.

Thys, S., Mwape, K. E., Lefèvre, P., Dorny, P., Marcotty, T., Phiri, A. M., Phiri, I. K., & Gabriël, S. (2015). Why latrines are not used: Communities' perceptions and practices regarding latrines in a Taenia solium endemic rural area in Eastern Zambia. PLOS Neglected Tropical Diseases, 9. https://doi.org/10.1371/journal.pntd.0003570

USAID. (2018). An examination of CLTS's contributions toward universal sanitation. https://www.globalwaters.org/resources/assets/washpals/examination-cltss-contributions-toward-universal-sanitation

Venkataramanan, V., Crocker, J., Karon, A., & Bartram, J. (2018). Community-led total sanitation: A mixed-methods systematic review of evidence and its quality. Environmental Health Perspectives. https://doi.org/10.1289/EHP1965

WHO. (2017). Integrating neglected tropical diseases in global health and development: Fourth WHO report on neglected tropical diseases. World Health Organization.

WHO. (2019). Lignes directrices relatives à l'assainissement et à la santé [Guidelines on sanitation and health]. World Health Organization.

Yusliza, M. Y., Amirudin, A., Rahadi, R. A., Nik Sarah Athirah, N. A., Ramayah, T., Muhammad, Z., Dal Mas, F., Massaro, M., Saputra, J., & Mokhlis, S. (2020). An investigation of pro-environmental behaviour and sustainable development in Malaysia. Sustainability, 12. https://doi.org/10.3390/su12177083

Zuin, V., Delaire, C., Peletz, R., Cock-Esteb, A., Khush, R., & Albert, J. (2019). Policy diffusion in the rural sanitation sector: Lessons from community-led total sanitation (CLTS). World Development, 124, 104643. https://doi.org/10.1016/j.worlddev.2019.104643