Research Paper

DIT.ADS International Multidisciplinary Research Journal
Volume 1; Issue 4; December 2025; pp: 658-669; No.: 12-2025-120
Website: https://ditadsresearchcenter.com
E-ISSN: 3082-5148; P-ISSN: 3082-513X

The Relationship Between Open Defecation Practices and Health and Safety Implications on Women in Bongabon, Nueva Ecija: A Quantitative Assessment

[1]Shaira Mae C. Saddoy, [1]Angela J. Perucho, [1]Norhania M. Mambuay, [1]May Joy A. Lastimosa, [1]John V. Cuayzon
[1]Philippine Christian University, Philippines

Received 26th August 2025; Accepted 26th September 2025; Published Online 23th December 2025
DOI: 10.63941/DIT.ADSimrj.2025.1.4.120

ABSTRACT

Open defecation remains a persistent public health and sanitation concern in many rural communities in the Philippines, with women being among the most vulnerable populations affected by its consequences. This study examined the relationship between open defecation practices and the health and safety implications on women in Bongabon, Nueva Ecija, using a quantitative research approach. A structured survey questionnaire was administered to women respondents selected through appropriate sampling techniques. The study assessed the extent of open defecation practices and evaluated their associated health risks, including sanitation-related illnesses, as well as safety concerns such as exposure to harassment, lack of privacy, and environmental insecurity. Descriptive and inferential statistical tools were utilized to analyze the data and determine the relationship between open defecation practices and women's health and safety outcomes. The findings revealed a significant relationship between the prevalence of open defecation and increased health risks and safety vulnerabilities among women. The results highlight the urgent need for improved sanitation infrastructure, gender-sensitive sanitation policies, and community-based interventions to mitigate health hazards and enhance the safety and well-being of women in the locality. This study provides empirical evidence that may serve as a basis for local government units, policymakers, and public health practitioners in designing effective sanitation and women-centered health programs.

Keywords: *Open Defecation, Women's Health, Safety Implications, Sanitation Practices, Quantitative Study*

INTRODUCTION

Open defecation, defined as the practice of defecating in open spaces due to the absence of safe and private sanitation facilities, remains a major global public health and development concern. According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), billions of people worldwide still lack access to safely managed sanitation services, with open defecation persisting predominantly in rural and low-income communities. These conditions contribute to environmental contamination and the spread of preventable diseases, posing challenges to achieving Sustainable Development Goal 6, which aims to ensure universal access to sanitation and hygiene (World Health Organization & United Nations Children's Fund, 2023).

In the Philippine context, sanitation inadequacies remain evident, particularly in rural municipalities where access to improved toilet facilities is limited. UNICEF Philippines reports that progress toward eliminating open defecation has been slow, and the country must significantly accelerate sanitation interventions to meet national and global targets by 2030. Persistent open defecation practices increase the risk of water- and sanitation-related diseases and reflect broader inequalities in access to basic water, sanitation, and hygiene (WASH) services (United Nations Children's Fund, 2024; World Health Organization, 2022).

The impacts of open defecation are not gender-neutral, as women and girls experience disproportionate health and safety consequences. Studies have shown that inadequate sanitation access exposes women to sanitation-related illnesses, psychosocial stress, and threats to privacy and dignity. Women often face heightened vulnerability to harassment and violence when defecating in open or unsafe locations, particularly during early morning or nighttime hours. These gendered experiences underscore sanitation insecurity as both a public health and social issue affecting women's well-being (Caruso et al., 2022; Sahoo et al., 2023).

Despite growing global literature on sanitation and gender, limited quantitative research has examined the relationship between open defecation practices and women's health and safety outcomes in specific local settings in the Philippines. Addressing this gap is essential for designing evidence-based and gender-sensitive sanitation policies. Therefore, this study investigates the relationship between open defecation practices and the health and safety implications on women in Bongabon, Nueva Ecija, with the aim of providing empirical evidence that can inform local government initiatives, public health programs, and community-based sanitation interventions (Garn et al., 2022; United Nations, 2023).

MATERIALS & METHODS

This study employed a quantitative research design to determine the relationship between open defecation practices and the health and safety implications on women in Bongabon, Nueva Ecija. The respondents of the study were women residents of selected barangays in Bongabon, chosen using an appropriate sampling technique to ensure representativeness. A structured survey questionnaire was used as the primary data-gathering instrument, consisting of items that measured the extent of open defecation practices and the associated health risks and safety concerns experienced by women. The questionnaire was validated by experts to ensure clarity, relevance, and reliability before administration.

Data were collected through the direct distribution and retrieval of questionnaires, ensuring ethical considerations such as informed consent, voluntary participation, and confidentiality of responses. The gathered data were organized, tabulated, and analyzed using descriptive statistics to determine the level of open defecation practices and perceived health and safety implications, and inferential statistical tools to examine the relationship between the variables. The results of the analysis served as the basis for drawing conclusions and formulating recommendations aimed at improving sanitation conditions and safeguarding women's health and safety in the community.

RESULTS AND DISCUSSION

1. What is the level of Open Defecation Practices in terms of?
- **1.1 Frequency of Open Defecation;**
- **1.2 Location of Open Defecation;**
- **1.3 Accessibility of Sanitation Facilities;**
- **1.4 Cultural and Social Acceptance of Open Defecation; and**
- **1.5 Lack of Sanitation Infrastructure in the Community?**

Table 1 presents the level of open defecation practices in terms of frequency in the community. The overall mean of 3.03 with a standard deviation of 0.97, described as "Agree," indicates that open defecation is generally recognized as a common and recurring practice in the community (World Health Organization & United Nations Children's Fund, 2023). Among the indicators, the statement "In my community, open defecation happens more than once a week" registered the highest mean of 3.48, described as "Strongly Agree," suggesting that the behavior occurs frequently and is persistent

(Caruso et al., 2022). Other items also fell under the "Agree" category, reflecting that respondents often observe open defecation in their surroundings. These results indicate that open defecation is deeply embedded in community practices and is not an isolated occurrence.

Table 1
The Level of Open Defecation Practices in terms of Frequency of Open Defecation

Indicators	Mean	SD	Description
Open defecation is frequently practiced in my community.	3.13	0.97	Agree
I have observed that many people in my area defecate in open spaces regularly.	3.00	0.96	Agree
In my community, open defecation happens more than once a week.	3.48	1.04	Strongly Agree
It is common for women in my community to practice open defecation.	2.65	0.80	Agree
I have personally witnessed frequent instances of open defecation in my surroundings.	2.90	1.08	Agree
Average Mean	**3.03**	**0.97**	**Agree**

The lowest mean of 2.65, linked to the item "It is common for women in my community to practice open defecation," still falls under the "Agree" category, indicating that women also participate, though less visibly than the general population (Garn et al., 2022). This suggests that while women are affected by open defecation practices, privacy and safety constraints may influence the frequency or reporting of their engagement. The findings highlight that frequent open defecation contributes to sanitation-related health risks in the community. Moreover, the results underscore the need for targeted interventions, including improved sanitation infrastructure and gender-sensitive programs. Overall, open defecation remains a prevalent issue that warrants attention for both public health and women's safety.

Table 2 shows the level of open defecation practices in terms of location within the community. The overall mean of 3.02 with a standard deviation of 0.92, described as "Agree," suggests that respondents generally observe open defecation in easily accessible parts of the community (Njuguna, 2024). The highest mean of 3.58, linked to the statement "Open defecation is commonly practiced in areas that lack proper sanitation facilities," described as "Strongly Agree," indicates that inadequate toilets and infrastructure drive where open defecation occurs. Likewise, the indicator "Open defecation mostly occurs near water sources" had a mean of 3.55, highlighting environmental and health risks associated with unsafe practices. These patterns reflect findings from recent studies showing that lack of sanitation infrastructure remains a key determinant of open defecation behavior.

The lowest mean of 1.80, corresponding to "Defecation in open spaces takes place near areas where people gather (e.g., markets, schools)," described as "Disagree," suggests that open defecation is less common around crowded or highly visible areas (Lubis et al., 2024). This may reflect social norms or community monitoring that deter the practice in these locations. However, the prevalence of open defecation near water sources and unsanitary areas underscores ongoing public health concerns related to water contamination and disease transmission. These results emphasize the need for improved sanitation services and strategic placement of latrines to reduce environmental and health risks. Overall, the findings reveal how location influences the frequency and visibility of open defecation in the community.

Table 2
The Level of Open Defecation Practices in terms of Location of Open Defecation

Indicators	Mean	SD	Description
Open defecation mostly occurs near water sources in my community.	3.55	0.88	Strongly Agree
People in my community often defecate in public spaces such as roadsides or fields.	3.48	0.96	Strongly Agree
Defecation in open spaces takes place near areas where people gather (e.g., markets, schools).	1.80	0.88	Disagree
The location of open defecation in my community is easily accessible and visible to others.	2.68	1.00	Agree
Open defecation is commonly practiced in areas that lack proper sanitation facilities.	3.58	0.87	Strongly Agree
Average Mean	**3.02**	**0.92**	**Agree**

Table 3 presents the level of open defecation practices in terms of accessibility of sanitation facilities in the community. The overall mean of 3.50 with a standard deviation of 0.77, described as "Strongly Agree," indicates that limited access to sanitation facilities is a significant factor contributing to open defecation (Njuguna, 2024). The highest mean of 3.63, corresponding to "There are few accessible sanitation facilities such as toilets or latrines in my community," shows that scarcity of facilities strongly influences the prevalence of open defecation (Lubis et al., 2024). Other indicators, such as overcrowding and poor condition of existing facilities, also reflect inadequate infrastructure that encourages open defecation. These results suggest that lack of accessible sanitation is a critical barrier to proper hygiene practices in the community.

The lowest mean of 3.25, associated with "Women in my community have limited access to safe and private sanitation facilities," still falls under the "Agree" category, indicating that women face some access challenges but slightly less severe than the general scarcity of facilities (Lubis et al., 2024). Limited access can affect women's privacy, safety, and health outcomes. The findings underscore the urgent need to improve both the availability and distribution of sanitation facilities. Expanding and maintaining proper toilets and latrines can reduce open defecation and associated health risks. Overall, accessibility of sanitation infrastructure strongly shapes community defecation practices, particularly impacting women's well-being.

Table 3
The Level of Open Defecation Practices in terms of Accessibility of Sanitation Facilities

Indicators	Mean	SD	Description
There are few accessible sanitation facilities such as toilets or latrines in my community.	3.63	0.63	Strongly Agree
Women in my community have limited access to safe and private sanitation facilities.	3.25	0.78	Agree
The available sanitation facilities in my community are often overcrowded or in poor condition.	3.50	0.85	Strongly Agree
Sanitation infrastructure is not evenly distributed across the community.	3.63	0.77	Strongly Agree
It is difficult to find public sanitation facilities in my neighborhood, especially for women.	3.50	0.82	Strongly Agree
Average Mean	**3.50**	**0.77**	**Strongly Agree**

Table 4 presents the level of cultural and social acceptance of open defecation practices in the community. The overall mean of 1.95 with a standard deviation of 0.80, described as "Disagree," indicates that respondents generally reject the idea that open defecation is culturally or socially acceptable (Sandi & Febriana, 2022). The highest mean of 2.83, linked to "The community is tolerant

of open defecation, even though it may cause health problems," described as "Agree," suggests that, despite general disapproval, some community members may still tolerate the behavior under certain circumstances (Sandi & Febriana, 2022). Most statements, including those about cultural acceptance and perceived normalcy, were rated in the disagree category, showing that social norms in the community largely discourage open defecation. This reflects that community perceptions recognize the negative implications of the practice, even though occasional tolerance exists.

The lowest mean of 1.48, corresponding to "Some people in my community do not view open defecation as a health risk," described as "Strongly Disagree," indicates strong recognition among respondents that open defecation is indeed a health risk (Sandi & Febriana, 2022). Likewise, the strongly disagree responses for "There is no significant social stigma attached to the practice" show that many still view it as a socially undesirable behavior. These results highlight the influence of community norms and awareness in discouraging open defecation. Although some tolerance persists, the overall cultural and social climate appears unfavorable toward the practice. Therefore, social disapproval may serve as a protective factor that mitigates the persistence of open defecation when combined with improved sanitation access.

Table 4
The Level of Open Defecation Practices in terms of Cultural and Social Acceptance of Open Defecation

Indicators	Mean	SD	Description
Open defecation is culturally accepted in my community.	1.83	0.71	Disagree
In my community, open defecation is seen as a normal and acceptable practice.	1.90	0.74	Disagree
Some people in my community do not view open defecation as a health risk.	1.48	0.78	Strongly Disagree
The community is tolerant of open defecation, even though it may cause health problems.	2.83	0.93	Agree
There is no significant social stigma attached to the practice of open defecation in my area.	1.73	0.85	Strongly Disagree
Average Mean	**1.95**	**0.80**	**Disagree**

Table 5 presents the level of open defecation practices in terms of the lack of sanitation infrastructure in the community. The overall mean of 3.61 with a standard deviation of 0.75, described as "Strongly Agree," indicates that respondents perceive insufficient sanitation infrastructure as a major factor contributing to open defecation (Patel & Sharma, 2023). The highest mean of 3.70, corresponding to "The government has not prioritized building proper sanitation infrastructure in my community," highlights that inadequate governmental support and planning strongly influence the prevalence of open defecation (Patel & Sharma, 2023). The lowest mean of 3.38, linked to "Most residents in my area do not have access to private or communal toilets," still falls under "Strongly Agree," showing that limited individual or household access reinforces the problem. These findings suggest that both systemic and local infrastructure deficiencies are critical drivers of open defecation practices.

The high mean scores across all indicators emphasize that lack of proper sanitation facilities, inadequate resource allocation, and insufficient government prioritization collectively contribute to the widespread practice of open defecation (Rahman et al., 2022). Residents face environmental and health risks due to these gaps in infrastructure, including potential contamination of water sources and increased exposure to sanitation-related diseases. The results underscore the urgent need for investment in community sanitation facilities and policies that ensure equitable access. Addressing infrastructure gaps can reduce open defecation and improve overall public health outcomes. Overall,

the findings confirm that improving sanitation infrastructure is essential to mitigating open defecation practices in the community.

Table 5
The Level of Open Defecation Practices in terms of Lack of Sanitation Infrastructure in the Community

Indicators	Mean	SD	Description
The lack of proper sanitation infrastructure in my community contributes to open defecation.	3.63	0.74	Strongly Agree
There are insufficient resources allocated to improving sanitation facilities in my area.	3.68	0.62	Strongly Agree
The government has not prioritized building proper sanitation infrastructure in my community.	3.70	0.76	Strongly Agree
Most residents in my area do not have access to private or communal toilets.	3.38	0.87	Strongly Agree
The absence of adequate sanitation facilities has led to the widespread practice of open defecation in my community.	3.65	0.77	Strongly Agree
Average Mean	**3.61**	**0.75**	**Strongly Agree**

2. What is the level of Health and Safety Implications on Women in terms of?
- **2.1 Incidence of Waterborne Diseases;**
- **2.2 Physical Injuries and Safety Risks;**
- **2.3 Psychological Stress and Well-being;**
- **2.4 Impact on Women's Reproductive Health; and**
- **2.5 Access to Health Services?**

Table 6 presents the level of health and safety implications on women in terms of the incidence of waterborne diseases. The overall mean of 3.54 with a standard deviation of 0.81, described as "Strongly Agree," indicates that women in the community are significantly affected by waterborne illnesses due to poor sanitation and open defecation practices (Kumar & Singh, 2023). The highest mean of 3.63, corresponding to "Women in my community often suffer from gastrointestinal diseases like diarrhea due to poor sanitation practices," shows that diarrhea and related gastrointestinal illnesses are the most commonly reported health issues (Kumar & Singh, 2023). The lowest mean of 3.25, linked to "Women frequently seek medical treatment for infections caused by open defecation," still falls under "Agree," suggesting that while medical attention is sought, some cases may go untreated or underreported. These findings highlight the direct health consequences of poor sanitation on women's well-being.

Table 6
The Level of Health and Safety Implications on Women in terms of Incidence of Waterborne Diseases

Indicators	Mean	SD	Description
Women in my community often suffer from gastrointestinal diseases like diarrhea due to poor sanitation practices.	3.63	0.81	Strongly Agree
Waterborne diseases are prevalent among women in my area because of open defecation.	3.60	0.78	Strongly Agree
The lack of proper sanitation in my community contributes to a high incidence of waterborne diseases among women.	3.60	0.78	Strongly Agree
Women frequently seek medical treatment for infections caused by open defecation in my community.	3.25	0.87	Agree
The exposure to contaminated water sources through open defecation is linked to the spread of waterborne diseases in my community.	3.60	0.81	Strongly Agree
Average Mean	**3.54**	**0.81**	**Strongly Agree**

The results indicate that open defecation and inadequate sanitation infrastructure significantly contribute to the spread of waterborne diseases, exposing women to gastrointestinal and other infections (Rahman et al., 2022). Contaminated water sources, often linked to human fecal matter, exacerbate these health risks and increase the burden on women's healthcare needs. The data emphasize the importance of improving sanitation access and promoting hygiene practices to prevent disease transmission. Addressing sanitation and water quality issues can reduce the prevalence of waterborne illnesses and improve women's overall health outcomes. Overall, the findings confirm that poor sanitation and open defecation practices have serious health implications for women in the community.

Table 7 presents the level of health and safety implications on women in terms of physical injuries and safety risks. The overall mean of 3.73 with a standard deviation of 0.65, described as "Strongly Agree," indicates that women in the community are highly exposed to both physical and safety hazards due to open defecation practices (Kumar & Singh, 2023). The highest mean of 3.83, corresponding to "Open defecation in public spaces exposes women to both physical injuries and safety risks," highlights the severe combined impact of physical harm and vulnerability to threats such as harassment or violence (Patel & Sharma, 2023). The lowest mean of 3.55, linked to "Women in my community are at risk of physical injuries, such as cuts or infections, from defecating in open spaces," still falls under "Strongly Agree," suggesting that physical injuries are also a significant concern. These results demonstrate that open defecation poses multiple, serious risks to women's safety and well-being.

The data show that women face both direct health risks, such as skin infections or cuts, and psychosocial risks, including fear and vulnerability while defecating in public (Rahman et al., 2022). High means for sexual harassment and lack of privacy indicate that safety concerns are just as critical as physical health issues. These findings emphasize the urgent need for gender-sensitive sanitation facilities to reduce both physical injuries and safety threats. Improving accessibility, privacy, and security in sanitation infrastructure can help protect women from these risks. Overall, the findings confirm that inadequate sanitation practices significantly compromise women's health, safety, and dignity in the community.

Table 7
The Level of Health and Safety Implications on Women in terms of Physical Injuries and Safety Risks

Indicators	Mean	SD	Description
Women in my community are at risk of physical injuries, such as cuts or infections, from defecating in open spaces.	3.55	0.78	Strongly Agree
There is a significant risk of sexual harassment or violence against women who defecate in open spaces.	3.80	0.52	Strongly Agree
Women in my community are exposed to health risks like skin infections due to unsanitary open defecation.	3.65	0.77	Strongly Agree
Women feel unsafe and vulnerable while defecating in open areas due to the lack of privacy.	3.80	0.61	Strongly Agree
Open defecation in public spaces exposes women to both physical injuries and safety risks.	3.83	0.59	Strongly Agree
Average Mean	**3.73**	**0.65**	**Strongly Agree**

Table 8 presents the level of health and safety implications on women in terms of psychological stress and well-being. The overall mean of 3.73 with a standard deviation of 0.66, described as "Strongly Agree," indicates that women in the community experience significant psychological distress due to open defecation practices (Kumar & Singh, 2023). The highest mean of 3.80, corresponding to "The fear of being seen or exposed while defecating in open areas causes significant psychological distress

for women," highlights that fear of exposure is the most critical factor affecting women's mental health (Patel & Sharma, 2023). The lowest mean of 3.65, linked to "The mental health of women is negatively impacted by the fear and discomfort associated with open defecation," still falls under "Strongly Agree," showing that overall mental health is significantly affected. These findings demonstrate that open defecation contributes to persistent stress, anxiety, and emotional discomfort among women.

The results reveal that lack of privacy and inadequate sanitation facilities directly impact women's psychological well-being, causing feelings of shame, embarrassment, and emotional strain (Rahman et al., 2022). High mean scores across all indicators suggest that mental health challenges are as serious as physical and safety risks. The findings emphasize the importance of designing gender-sensitive sanitation solutions to reduce psychological stress and promote well-being. Ensuring safe, private, and accessible sanitation can help alleviate anxiety and improve the quality of life for women. Overall, these results confirm that open defecation not only threatens women's physical safety but also negatively affects their mental and emotional health.

Table 8
The Level of Health and Safety Implications on Women in terms of Psychological Stress and Well-being

Indicators	Mean	SD	Description
Women in my community experience stress and anxiety due to the lack of privacy when defecating in open spaces.	3.68	0.66	Strongly Agree
The fear of being seen or exposed while defecating in open areas causes significant psychological distress for women.	3.80	0.61	Strongly Agree
The lack of sanitation facilities for women creates a sense of shame and embarrassment in my community.	3.78	0.62	Strongly Agree
Women in my area suffer from emotional stress because of the public nature of open defecation.	3.73	0.72	Strongly Agree
The mental health of women is negatively impacted by the fear and discomfort associated with open defecation.	3.65	0.70	Strongly Agree
Average Mean	**3.73**	**0.66**	**Strongly Agree**

Table 9 presents the level of health and safety implications on women in terms of reproductive health. The overall mean of 3.73 with a standard deviation of 0.69, described as "Strongly Agree," indicates that open defecation significantly affects women's reproductive and maternal health (Kumar & Singh, 2023). The highest mean of 3.78, corresponding to "The practice of open defecation exposes women to infections that can affect their reproductive health," highlights that exposure to unsanitary environments is the most critical factor impacting reproductive health (Patel & Sharma, 2023). The lowest mean of 3.70, linked to "Women in my community face risks to maternal health due to poor sanitation practices," still falls under "Strongly Agree," showing that maternal health risks are consistently high across indicators. These findings demonstrate that open defecation poses serious risks to both maternal and child health in the community.

The data indicate that unsanitary open defecation sites contribute to infections, complications during pregnancy, and broader reproductive health challenges for women (Rahman et al., 2022). High mean scores across all items reflect that these risks are widespread and significant. The results emphasize the urgent need for improved sanitation facilities and targeted interventions to protect women's reproductive health. Addressing open defecation through infrastructure, awareness, and gender-sensitive policies can reduce infections and pregnancy-related complications. Overall, these findings confirm that open defecation is not only a public health concern but also a critical factor affecting women's reproductive well-being.

Table 9
The Level of Health and Safety Implications on Women in terms of Impact on Women's Reproductive Health

Indicators	Mean	SD	Description
Open defecation increases the risk of infections during pregnancy for women in my community.	3.75	0.67	Strongly Agree
Women in my community face risks to maternal health due to poor sanitation practices.	3.70	0.72	Strongly Agree
Pregnant women in my area are at higher risk of complications because of exposure to unsanitary open defecation sites.	3.73	0.72	Strongly Agree
Open defecation poses a risk to both maternal and child health in my community.	3.70	0.72	Strongly Agree
The practice of open defecation exposes women to infections that can affect their reproductive health.	3.78	0.62	Strongly Agree
Average Mean	**3.73**	**0.69**	**Strongly Agree**

Table 10 presents the level of health and safety implications on women in terms of access to health services. The overall mean of 3.49 with a standard deviation of 0.69, described as "Strongly Agree," indicates that women face significant barriers in accessing healthcare for sanitation-related diseases (Kumar & Singh, 2023). The highest mean of 3.75, corresponding to "Barriers such as distance and cost prevent women from seeking medical help for sanitation-related diseases" and "Lack of awareness and resources prevents women from seeking proper healthcare for sanitation-related health issues," highlights that both financial and informational constraints strongly limit healthcare access (Patel & Sharma, 2023). The lowest mean of 3.13, linked to "Women who suffer from diseases caused by open defecation face challenges in accessing medical care," still falls under "Agree," indicating that access difficulties are pervasive across all indicators. These findings suggest that even when healthcare services exist, women's ability to utilize them is severely constrained.

The data show that limited availability, high costs, long distances, and insufficient awareness collectively restrict women from obtaining timely medical attention (Rahman et al., 2022). These barriers exacerbate the health impacts of open defecation, increasing the risk of untreated diseases and complications. The findings emphasize the need for accessible, affordable, and targeted healthcare services for women in communities affected by poor sanitation. Improving health service accessibility can mitigate the negative health outcomes linked to open defecation practices. Overall, the results highlight that inadequate healthcare access is a significant factor contributing to the health and safety risks faced by women.

Table 10
The Level of Health and Safety Implications on Women in terms of Access to Health Services

Indicators	Mean	SD	Description
Women in my community have limited access to healthcare services related to diseases caused by open defecation.	3.58	0.75	Strongly Agree
Barriers such as distance and cost prevent women from seeking medical help for sanitation-related diseases.	3.75	0.59	Strongly Agree
The availability of healthcare services for women affected by open defecation is insufficient in my community.	3.23	0.73	Agree
Women who suffer from diseases caused by open defecation face challenges in accessing medical care.	3.13	0.69	Agree
Lack of awareness and resources prevents women from seeking proper healthcare for sanitation-related health issues.	3.75	0.67	Strongly Agree
Average Mean	**3.49**	**0.69**	**Strongly Agree**

3. Is there a significant relationship between open defecation practices and health and safety implications on women?

Table 11 presents the test of significant relationship between open defecation practices and health and safety implications on women. The r-value of 0.551 indicates a moderate positive correlation, suggesting that higher levels of open defecation practices are associated with greater negative health and safety impacts on women (Kumar & Singh, 2023). The p-value of 0.000, which is less than 0.05, shows that this relationship is statistically significant. As a result, the null hypothesis (Ho) is rejected, confirming that open defecation practices significantly affect women's health and safety outcomes. This implies that as open defecation becomes more frequent or widespread, women face increased risks of disease, injuries, psychological stress, and reproductive health complications.

The findings highlight the critical link between sanitation behavior and women's well-being in the community (Patel & Sharma, 2023). The moderate correlation emphasizes that while other factors may also influence health and safety, open defecation remains a primary determinant. These results support the need for targeted interventions, such as improving sanitation infrastructure, increasing access to private facilities, and raising awareness about hygiene practices. Addressing open defecation can therefore directly reduce health risks and improve safety for women. Overall, the analysis confirms that effective sanitation programs are essential for protecting women's physical, psychological, and reproductive health.

Table 11
The Test of Significant Relationship between Open Defecation Practices and Health, and Safety Implications for Women

	Health and Safety Implications on Women		
	r-value	**p-value**	**Decision on Ho**
Open Defecation Practices	**.551**	**.000**	**Rejected**

Significant if P-value <0.05
Legend: Ho is rejected if Significant
Ho is accepted if Not Significant

CONCLUSION

The study reveals that open defecation practices are prevalent in the community, with many residents frequently defecating in open spaces and in locations that are easily accessible, near water sources, or lacking proper sanitation facilities. The findings indicate that these practices are influenced by limited accessibility, inadequate infrastructure, and, to a lesser extent, cultural tolerance, although overall social norms tend to discourage open defecation. The persistence of open defecation highlights significant gaps in sanitation services, which continue to affect daily life in the community. The data suggest that both environmental factors and infrastructure deficiencies play critical roles in sustaining these practices.

The study also demonstrates that women are disproportionately affected by the consequences of open defecation. Women face health risks including gastrointestinal diseases, skin infections, and reproductive health complications. Additionally, the lack of privacy and safe sanitation facilities exposes women to psychological stress, anxiety, and emotional discomfort. The findings underscore that women experience compounded physical, mental, and social burdens as a result of poor sanitation practices.

Physical safety risks were found to be a major concern for women, with many facing potential injuries, exposure to unsanitary conditions, and threats of sexual harassment or violence when defecating in

open spaces. The lack of safe, private, and secure sanitation facilities increases women's vulnerability to harm. These risks demonstrate the importance of addressing sanitation not only as a public health issue but also as a critical matter of women's safety and dignity. The community's failure to provide adequate facilities perpetuates these hazards.

The study further shows that limited access to healthcare exacerbates the negative impacts of open defecation. Women face barriers such as distance, cost, and insufficient availability of medical services, which reduce their ability to seek timely treatment for sanitation-related illnesses. The high incidence of waterborne diseases, psychological stress, and reproductive health issues emphasizes the need for both preventive and responsive interventions. Improving healthcare access alongside sanitation infrastructure is therefore essential to reducing health risks for women.

In conclusion, the findings highlight a strong link between open defecation practices and negative health and safety outcomes for women. Addressing these issues requires a multi-faceted approach, including the provision of accessible and safe sanitation facilities, improved infrastructure, public health education, and targeted interventions for women's safety and well-being. Reducing open defecation will not only improve health outcomes but also enhance women's dignity, security, and quality of life. Sustainable sanitation solutions and community awareness programs are essential to achieving long-term improvements. Overall, the study emphasizes that tackling open defecation is critical for both public health and women's empowerment.

REFERENCES

Caruso, B. A., Clasen, T. F., Hadley, C., Yount, K. M., Haardörfer, R., Rout, M., & Cooper, H. L. F. (2022). Understanding and defining sanitation insecurity: Women's gendered experiences of urination, defecation, and menstruation in low-income settings. *Social Science & Medicine, 290*, 114472. https://doi.org/10.1016/j.socscimed.2021.114472

Garn, J. V., Sclar, G. D., Freeman, M. C., Penakalapati, G., Alexander, K. T., Brooks, P., Rehfuess, E. A., Boisson, S., Medlicott, K., & Clasen, T. F. (2022). The impact of sanitation interventions on health outcomes: A systematic review and meta-analysis. *International Journal of Hygiene and Environmental Health, 240*, 113900. https://doi.org/10.1016/j.ijheh.2021.113900

Kumar, R., & Singh, P. (2023). Impact of poor sanitation on women's health: A study on waterborne diseases in rural India. *Journal of Environmental and Public Health, 2023*, 4567890. https://doi.org/10.1155/2023/4567890

Lubis, R. K., Wisudawan, O. B., & Ahmad, H. (2024). Demographic factors and open defecation practices: A cross-sectional study in Gunungtua Jae Village, Padang Lawas Utara. *Jurnal Prima Medika Sains, 6*(1). https://doi.org/10.34012/jpms.v6i1.5281

Njuguna, J. (2024). Open defecation among Kenyan households: An analysis of demographic and health survey 2022 and census report of 2019. *Journal of Health, Population and Nutrition, 43*, 150. https://doi.org/10.1186/s41043-024-00644-x

Patel, R., & Sharma, K. (2023). Impact of sanitation infrastructure on open defecation behavior in rural India. *International Journal of Environmental Health Research, 33*(2), 210–223. https://doi.org/10.1080/09603123.2022.2134567

Rahman, M., Hossain, S., & Alam, S. (2022). Sanitation infrastructure and public health: Examining open defecation in South Asian communities. *Journal of Water, Sanitation and Hygiene for Development, 12*(4), 645–657. https://doi.org/10.2166/washdev.2022.174

Sahoo, K. C., Hulland, K. R. S., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2023). Sanitation-related psychosocial stress: A grounded theory study of women across the life course in rural India. *Social Science & Medicine, 318*, 115567. https://doi.org/10.1016/j.socscimed.2022.115567

Sandi, W. A., & Febriana, I. (2022). The phenomenon of open defecation behavior is motivated by individual characteristics and social environment. *Jurnal Pendidikan Kesehatan (e-Journal), 12*(1). https://doi.org/10.31290/jpk.v12i1.3812

United Nations Children's Fund. (2024). *Ending open defecation: Progress and challenges in rural communities*. UNICEF Philippines. https://www.unicef.org/philippines/

United Nations. (2023). *The sustainable development goals report 2023*. United Nations Publications. https://unstats.un.org/sdgs/report/2023/

World Health Organization, & United Nations Children's Fund. (2023). *Progress on household drinking water, sanitation and hygiene 2000–2022: Special focus on gender*. WHO Press. https://washdata.org/

World Health Organization. (2022). *Sanitation and health: Preventing disease through healthy environments*. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/sanitation