

SOCIO-CULTURAL DETERMINANTS OF OPEN DEFECATION AMONG
HOUSEHOLDS IN THE KINTAMPO NORTH MUNICIPALITY IN THE BONO
EAST REGION OF GHANA.

BY

ABDUL-KARIM ABDUL-MUMIN

(UDS/MPH/0001/22)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY FOR DEVELOPMENT
STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE
AWARD OF MASTER OF PUBLIC HEALTH DEGREE IN ENVIRONMENTAL
HEALTH

SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF ENVIRONMENTAL AND
OCCUPATIONAL HEALTH, UNIVERSITY FOR DEVELOPMENT STUDIES



MARCH, 2025

UNIVERSITY FOR DEVELOPMENT STUDIES

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DECLARATION

STUDENTS DECLARATION

I Abdul-Karim Abdul Mumin declare that, this thesis is as a result of my independent work. I also affirm that; this thesis has not been submitted in part or in full by any person or group of persons to any University for the award of a Master of Science Degree in Public Health.

ABDUL-KARIM ABDUL-MUMIN

Date

Signature

UDS/MPH/0001/22

1/09/2024



SUPERVISOR'S DECLARATION

I hereby declare that, I supervised the preparation of this Thesis in accordance with the guidelines on supervision of Thesis, as laid down by the University for Development Studies.

Vivian Kapio Abem (PhD)

Date

Signature

Supervisor

1/09/2024



DEDICATION

I dedicate this thesis first of all to the Almighty Allah for His Mercy, Love and Grace that has brought me this far in life. I also dedicate this work to my parents to whom I owe the foundations of my education as well as the ladder through which I climbed to this point. I dedicate this thesis to my wife Mrs. Issah Suraiya and our children for their understanding, love and support during the many times I had to be away from them to conduct this study.



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ABSTRACT

Open defecation is a long-standing public health issue, particularly in developing nations like Ghana. In Kintampo North Municipality, the practice is widespread and has significant health, environmental, social, and economic implications. This study investigated these determinants in Kintampo North using a cross-sectional design with both qualitative and quantitative methods. Data were gathered through structured questionnaires, focus groups, interviews, and observations. Systematic Random Sampling (SRS) was employed in sampling houses for data collection. A sampling frame of houses was obtained from the Kintampo Health Research Centre. Data collection instruments used in this study included focus group discussion (FGD) guide, key informant (KI) interview guide, structured questionnaire and checklist for latrine observations. Variables included attitudes, beliefs, social norms, sanitation knowledge, and emotional or physical experiences with open defecation. Participants were household heads, men, women, adolescents, health officers, chiefs, and community leaders, totaling 538 individuals. Male household heads comprised of 68.4% and 31.6% female household heads. Most participants (61.2%) had no formal education with nearly 60.2% of households lacked toilet facilities. High costs of constructing and maintaining latrines were reported by 94.8% and 74.4% of respondents respectively. While 31.4% belief that children's faeces are harmless, another 91.3% is associating OD with ancestral customs. Majority of the respondents, (57.9%) intimated that a big challenge associated with latrine use was the possibility of a foul odour emanating from pits. Other Cultural beliefs like the idea that men and women should not share toilets, feces should not remain in homes, and certain groups like children or menstruating girls should not use toilets also contributed. Open defecation, underpinned by socio-cultural factors is a pervasive practice in the Kintampo North Municipality with far-reaching consequences on the social, cultural, economic, environmental, health and general well-being of the people. These findings highlight the need for culturally sensitive sanitation policies, community-led infrastructure development, strict enforcement of sanitation laws, and engagement with traditional leaders to curb open defecation effectively.



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LIST OF ABBREVIATIONS/ACRONYMS

The following are definitions of important abbreviations/acronyms which are frequently used in this thesis:

Abbreviation	Definition
ASIP	Accra Sewage Improvement Project
BCC	Behaviour Change Communication
CHPS	Community Based Health Planning and Service
CLTS	Community Led Total Sanitation
FGD	Focused Group Discussion
OD	Open Defecation
GDHS	Ghana Demographic and Health Survey
GSS	Ghana Statistical Service
KVIP	Kumasi Ventilated Improved Pit
KMA	Kumasi Metropolitan Assembly
MDA	Municipal and District Assemblies
MHM	Menstrual Hygiene Management
MMDA	Metropolitan, Municipal and District Assemblies
NGO	Non-governmental Organization
PPP	Public-Private Partnership
RCT	Randomized Controlled Trial
SDG	Sustainable Development Goals
UN	United Nations
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WC	Water Closet
WHO	World Health Organization



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

When it comes to the issue of open defecation, often defined as the act of defecating in open areas like fields, forests, and water bodies instead of using proper sanitation facilities, it continues to pose a significant public health concern in various regions worldwide, including Ghana. Open defecation, defined as the practice of defecating in open spaces such as fields, forests, or bodies of water, remains a critical public health issue globally, especially in developing regions where access to sanitation facilities is limited. According to the World Health Organization (WHO) and UNICEF, approximately 494 million people worldwide still practiced open defecation as of 2020, with the majority residing in South Asia and sub-Saharan Africa (WHO & UNICEF, 2021). This practice contributes to a high prevalence of waterborne diseases, including diarrhea, cholera, and typhoid, and poses significant risks to environmental sustainability and community health (Bartram & Cairncross, 2010).

In Africa, open defecation is particularly prevalent in rural and impoverished areas, where cultural beliefs, socio-economic factors, and inadequate infrastructure contribute to its persistence. As of 2020, sub-Saharan Africa accounted for nearly 24% of the global open defecation population (WHO & UNICEF, 2021). In many African countries, including Nigeria, Ghana, and Ethiopia, rapid population growth coupled with insufficient sanitation facilities exacerbates the challenge, with an estimated 40% of rural Africans lacking access to basic sanitation (Jenkins et al., 2014).

The impacts of open defecation in Africa extend beyond health concerns to affect social cohesion, economic development, and educational outcomes. Research shows that open



defecation negatively impacts children's health and cognitive development, reducing school attendance and productivity (Spears, 2013). Additionally, open defecation poses significant economic costs due to healthcare expenses and productivity losses associated with sanitation-related illnesses (Hutton, 2012). Recognizing these impacts, the African Union's Agenda 2063 and the United Nations' Sustainable Development Goal 6 emphasize the importance of achieving universal access to adequate sanitation and ending open defecation globally by 2030 (United Nations, 2015). Efforts to eliminate open defecation in Africa increasingly involve community-led initiatives and culturally sensitive policies that address the socio-cultural and economic barriers to sanitation. However, achieving sustainable change requires a collaborative approach involving governments, NGOs, and local communities to prioritize sanitation infrastructure, education, and policy enforcement.

Despite global initiatives aimed at enhancing sanitation practices and reducing open defecation, this problem remains widespread, especially in rural and less developed areas.

Open defecation (OD) remains a pervasive public health issue in Ghana, especially in rural and semi-urban areas where access to sanitation facilities is limited. Defined as the act of defecating in fields, bushes, or other open spaces rather than in a designated toilet, OD poses significant risks to community health, water quality, and general sanitation (World Health Organization [WHO], 2019). In Ghana, about 17% of the population practiced open defecation as of 2021, with rural areas accounting for a higher prevalence compared to urban settings (Ghana Statistical Service [GSS], 2021). This practice contributes to waterborne diseases, undercuts efforts to improve health outcomes, and perpetuates economic burdens on affected communities (UNICEF, 2020).

The Bono East region, including the Kintampo North Municipality, typifies the sanitation challenges in Ghana's rural settings, with OD widespread due to insufficient sanitation infrastructure, socio-cultural practices, and community perceptions (Asante & Kumi-Kyereme, 2020). Despite nationwide initiatives such as the "Clean Ghana Campaign" and the Community-Led Total Sanitation (CLTS) approach, OD persists, underlining the complex socio-cultural and economic factors at play (Osumanu, Kosoe, & Ategeeng, 2019). Traditional beliefs, for instance, discourage using shared toilets among different genders or keeping feces in the home environment, complicating efforts to promote household latrine use (Amoah & Boateng, 2019). Addressing open defecation in the Bono East region thus requires an understanding of its specific socio-cultural context. Public health interventions targeting OD must integrate community values, gender norms, and religious beliefs, which play a pivotal role in sanitation practices. Moreover, collaborations with local leaders and the provision of affordable, accessible latrine facilities are critical for promoting sustainable behavior change in the region (WaterAid Ghana, 2021).



Kintampo North Municipality situated in the Bono East Region of Ghana is one of the districts where open defecation is prevalent, which leads to severe health hazards and impedes progress towards achieving sustainable development objectives related to hygiene and health. The enduring prevalence of open defecation in the Kintampo North Municipality can be ascribed to a range of socio-cultural factors influencing the behaviors and attitudes of households towards sanitation practices. Cultural beliefs, societal norms, and traditional customs significantly shape individuals' choices regarding defecation practices. Certain communities may view open defecation as a customary or acceptable behavior inherited across generations, reinforcing its



perpetuation (Jenkins & Scott, 2007). Additionally, inadequate access to proper sanitation amenities, compounded by poverty and limited education, exacerbates the situation as households may not prioritize the establishment or utilization of latrines (WHO & UNICEF, 2019). Furthermore, gender dynamics and power dynamics within households play a pivotal role in determining sanitation behaviors. In many rural settings, decisions regarding sanitation facilities and practices are often influenced by male heads of households, who may be hesitant to invest in latrine construction due to competing financial obligations (Kwiringira, Atekyereza, & Niwagaba, 2014). Moreover, women and children, who are more vulnerable to the health risks associated with open defecation, may have limited authority to advocate for improved sanitation facilities within their households. An in-depth comprehension of the socio-cultural factors contributing to open defecation in the Kintampo North Municipality is crucial for devising effective and culturally appropriate interventions to address this issue. By exploring the intricate interplay of cultural beliefs, societal norms, gender dynamics, and economic determinants, this study aims to uncover the root causes of the continued prevalence of open defecation in the region and propose interventions that resonate with the community's values and requirements.

1.2 Statement of the Problem

Open defecation continues to pose a significant public health challenge in the Kintampo North Municipality of the Bono East Region in Ghana, despite extensive national and international efforts to enhance sanitation practices. The persistent nature of this behavior is concerning due to its link to an increased risk of waterborne diseases, environmental pollution, and negative health outcomes, particularly impacting vulnerable groups such as children and the elderly (WHO & UNICEF, 2019). While inadequate infrastructure, notably the lack of access to



latrines, is often attributed as a key factor driving open defecation, socio-cultural elements also play a pivotal role in perpetuating this cancer. In Kintampo North, deeply ingrained cultural beliefs, social norms, and traditional customs significantly shape household choices concerning sanitation. Some communities perceive open defecation as a customary behavior that aligns with their lifestyle, posing cultural barriers to adopting latrine usage (Jenkins & Curtis, 2005). Furthermore, gender dynamics within households can complicate sanitation improvement endeavors, as decision-making authority tends to rest with male heads of households who may not prioritize sanitation investments (Kwiringira, Atekyereza, & Niwagaba, 2014). The intricate interplay of these socio-cultural factors, coupled with economic limitations, underscores the need for holistic approaches beyond infrastructure enhancements to address open defecation effectively. Despite the acknowledgment of these socio-cultural influences, there is a notable dearth of comprehensive studies delving into how these factors sustain open defecation in the Kintampo North Municipality. This knowledge gap impedes the formulation of targeted interventions that respect cultural nuances and could facilitate the lasting eradication of open defecation. Hence, this research aims to scrutinize the socio-cultural determinants underpinning open defecation practices in households within this region, with the intention of uncovering insights to guide tailored strategies for combatting this issue and enhancing public health outcomes. The Government of Ghana has set a target to eradicate open defecation nationwide by 2030 in alignment with the Sustainable Development Goals. Key initiatives include the implementation of the Community-Led Total Sanitation (CLTS) program, utilizing local collective action and communication strategies to promote latrine use and hygienic practices adoption. Nonetheless, CLTS implementation faces challenges in Bono East, with resistance from several communities towards its triggering methods (Perez et al., 2019). The sociocultural

drivers sustaining open defecation in this specific context remain inadequately understood. This study employs qualitative research in communities engaged by CLTS in the Kintampo North Municipality to explore the root causes of open defecation, aiming to pave the way for more effective, context-tailored interventions to eradicate this harmful practice and bolster rural sanitation outcomes.

1.3 Justification for the Study

Eliminating open defecation can yield major health, social, environmental and economic benefits/gains for the study population and the larger society and this supports sustainable development. This is expatiated as follows: An open defecation free society reduces the risk of contracting infectious diseases like diarrhea, cholera, typhoid, poliomyelitis, trachoma and intestinal parasites spread through fecal contamination. This is especially important for children under 5. Halting open defecation can lower the prevalence of chronic malnutrition and stunting which results from sustained exposure to enteric pathogens. Ending open defecation decreases the likelihood of the occurrence of neglected tropical diseases like soil-transmitted helminths which impact physical and cognitive development as well as cutting down child mortality rates, a major health goal in developing regions.

Socially, when people defecate in toilet facilities rather than in the open, it improves privacy, dignity, and personal safety, especially for women and girls who are at risk of physical attacks when defecating in the open. The social impact of attending to nature's call in toilet facilities includes freeing up time spent finding places to defecate, which can be invested in education or livelihoods. Additionally, an open defecation free society increases school attendance rates among girls who often skip school during menstruation without access to sanitation as well as promotes gender equality and empowerment when sanitation facilities safely meet women's



needs. Environmentally, ending open defecation prevents contamination of soil, groundwater, streams and food crops by fecal waste, reduces transmission of zoonotic infections passed between humans and livestock from feces entering the environment and allows safe reuse of human waste as fertilizer to improve agricultural yields and incomes.

1.3.1 Significance of the study

The study will provide insights into the socio-cultural factors that contribute to open defecation in the Bono East Region, which can inform the design of effective interventions. By identifying the socio-cultural determinants of open defecation, the study can contribute to the development of targeted strategies to reduce the incidence of diarrheal diseases and other health problems associated with poor sanitation. The findings will provide evidence-based recommendations for policymakers, development practitioners, and community leaders to address open defecation in the region. The study will also contribute to the achievement of the Sustainable Development Goals (SDGs), particularly Goal 6, which aims to ensure universal access to sanitation and hygiene. The study can empower communities in the region to take ownership of their sanitation and hygiene practices, promoting sustainable behavior change. The findings will also fill knowledge gaps on the socio-cultural determinants of open defecation providing new insights and perspectives on this complex issue.

1.4 Research Objective(s)

The objectives of the study were categorized into the main and specific objectives. These are presented as follows:





1.4.1 Main Research Objective

The main research objective for the study was “to document the socio-cultural determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”

1.4.2 Specific Research Objectives

Specifically, the study sought:

1. To examine community attitudes, beliefs and perceptions regarding open defecation and latrine use through using both qualitative and quantitative methods.
2. To analyze how social norms and cultural practices relate to sustaining open defecation and hindering latrine adoption/use using both qualitative and quantitative methods.
3. To assess levels of sanitation-related knowledge and risk awareness associated with open defecation across communities with differing access to sanitation facilities using a structured questionnaire.
4. To determine how emotional and physical experiences, conveniences, and discomforts shape defecation practices through in-depth interviews and latrine observations.

1.4.3 Research Questions

The research questions for the study were categorized into main and specific research questions as follows:

1.4.4 Main Research Question

The main research question for the study was “What are the socio-cultural determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana?”

1.4.5 Specific Research Questions

In order to achieve the main research question, the following questions were posited:

1. What are the communities' attitudes, beliefs and perceptions regarding open defecation and latrine use?
2. How do social norms and cultural practices relate to sustaining open defecation and hindering latrine adoption/use?
3. How are communities' level of sanitation-related knowledge and risk awareness associated with open defecation across communities with differing access to sanitation facilities?
4. How does emotional and physical experiences, conveniences, and discomforts shape defecation practices?

1.5 Conceptual Framework for the Study

The socio-cultural determinants of open defecation are multi-factorial and interrelated in nature. How these determinants relate to each other is presented as follows.

The practical feasibility and tolerability of a particular sanitation system depend on various factors, including cost, affordability, and communal or household characteristics. There exists a correlation between household wealth/social status and open defecation. Improved latrine owners typically exhibit higher wealth, education levels, and literacy rates compared to unimproved latrine owners or open defecators (WHO, 2015). Typically, low-income groups allocate no more than 2–5% of their income to excreta disposal (Anand, 1999). Osumanu and Kosoe, (2013) argue that financial constraints lead to two main challenges: hindering homeowners from providing household toilets and causing individuals to be unable to afford fees charged by public toilet operators. Consequently, if a household cannot afford public toilet



fees or construct a toilet facility, they may resort to open defecation. Water Aid (2008) has identified negative attitudes such as carelessness, disrespect for traditional authority, and community norms as factors contributing to open defecation, indicating a deficiency in law enforcement. Furthermore, according to Jenkins and Scott (2008), the adoption of latrines within impoverished communities follows three behavioral patterns: preference, intention, and choice. The third pattern, choice, is predominantly influenced by the individual's financial status. Social norms play a crucial role in open defecation, encompassing the behavioral standards within a community that dictate individual behavior and include cultural traditions and practices (Connell, 2014). It is common for family members, peers, and community members to practice open defecation, a behavior deeply rooted in culture and tradition which is learned from childhood. Connell (2014) noted in Peru that open defecation is considered 'natural' portraying the behavior as traditional, habitual, and an integral part of daily routines, particularly among open defecators. Belcher (2017) documented that in Uganda during the late 1940s, people avoided using latrines due to superstitions that fixed latrine locations could provide sorcerers with access to their excreta for malicious purposes, associating spiritual contamination with contact between one's faeces and those of others. Consequently, defecating in random outdoor locations was perceived as a safer alternative. Traditional beliefs and perceptions significantly influence latrine use and open defecation behaviors, as highlighted by incidents in Kumasi, Ghana, where Cotton et al. (1995) reported a householder refusing to use a latrine because of religious reasons linked to the direction of Mecca. Similar superstitions and beliefs have been reported by Water Aid (2008) in various communities in Burkina Faso, Mali, Tamale (Ghana), and among the Idoma people in Nigeria, as well as by Osumanu. The

conceptual framework for the study is presented in figure 1.0. In this framework, socio-demographic, economic and cultural factors interplay to culminate in open defecation practices.

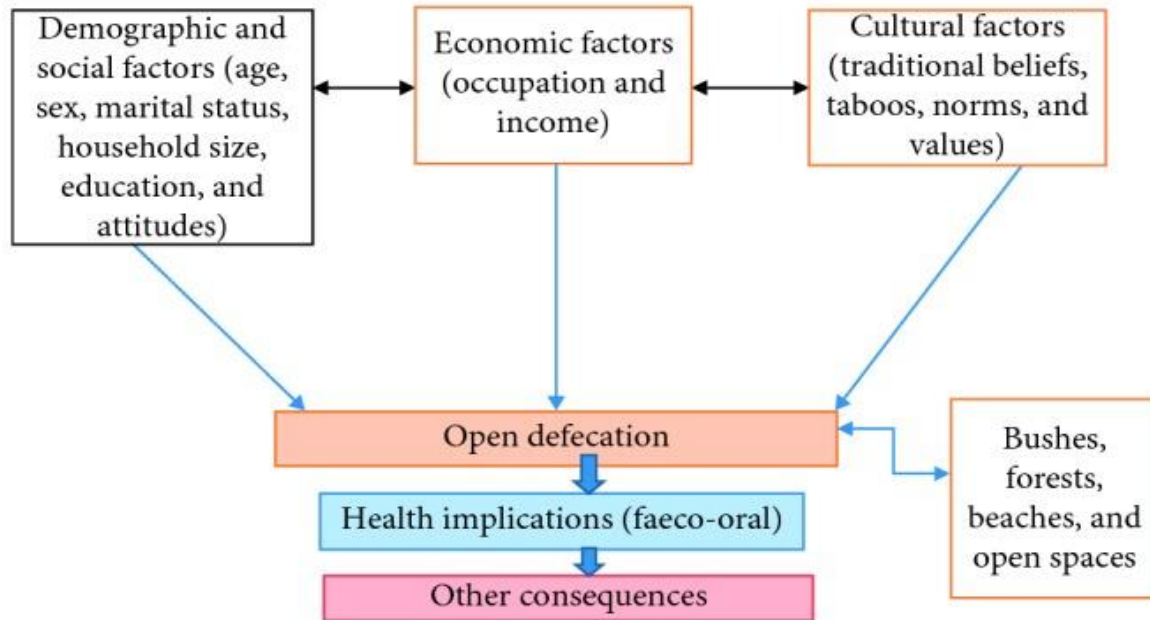


Figure 1.0 Conceptual Framework for the Study

Source: (Osumanu et al., 2019)



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

In this chapter, literature relevant to the topic of study, the socio-cultural determinants of open defecation was reviewed. Key issues concerning the topic that were examined included: Overview of Open Defecation in Ghana and Sub-Saharan Africa, Theoretical Frameworks for Understanding Sanitation Practices, Socio-Cultural Factors Influencing Open Defecation, Economic Determinants of Sanitation Practices, Impact of Education and Awareness on Sanitation Behavior, Health Risks Associated with Open Defecation, Barriers to Latrine Adoption and Use, Gender Dynamics in Sanitation Practices, Case Studies of Sanitation Interventions in Ghana, Policy and Governance in Sanitation Management, Cultural Sensitivity in Sanitation Programs, Research Gaps and Future Directions. The aim of the literature review was to provide a synthesis of existing research on open defecation.

2.2 Literature Search Strategy and Key Resources

The electronic databases (PubMed, OVIDS, EMBASE, Global Health, Medline, Scopus, Science direct, CINAHL Complete, EBSCO host, Cochrane Library, Google scholar, etc.) were searched for articles on the study topic. Search terms related to open defecation and sanitation practices were imputed into search engines. Volumes of articles found were screened and only relevant articles to the topic were selected and reviewed.

2.3 The Concept of Open Defecation

The issue of defecating outside instead of using a toilet has been a longstanding problem for humanity, particularly in developing countries. This involves going to the bathroom in areas



like fields, bushes, forests, open water bodies or other public places (WHO/UNICEF 2019). Open defecation is prevalent in rural areas of developing nations, especially in Sub Saharan Africa and South Asia (WHO/UNICEF 2019). The reasons for this practice often include limited access to sanitation facilities societal norms deeply ingrained cultural traditions and individual preferences (Routray et al., 2015). Open defecation poses risks, to health as human waste can contaminate food and water sources leading to the spread of diseases such as diarrhea, soil transmitted infections and other fecal oral illnesses (Pruss Ustun et al., 2016). Young children are particularly vulnerable to illness malnutrition and mortality caused by pathogens (Spears et al., 2013). Additionally, women face challenges, related to dignity privacy and safety when defecating outdoors. Furthermore, the practice of defecating perpetuates social inequalities and marginalization within communities (UNICEF 2012).

2.4 Overview of Open Defecation

Open defecation, which is the practice of defecating in open spaces such as fields, forests, or bodies of water, rather than using a toilet or latrine is a significant public health issue and is closely associated with poverty, lack of access to sanitation facilities, and cultural practices. Global Perspective, according to the World Health Organization (WHO) and UNICEF Joint Monitoring Programme (JMP), as of 2020, approximately 494 million people worldwide practiced open defecation, down from 1.3 billion in 2000. Regions with the highest prevalence include South Asia and Sub-Saharan Africa. Open defecation is linked to the transmission of diseases such as diarrhea, cholera, typhoid, and intestinal worm infections. Diarrheal diseases, for instance, cause about 525,000 deaths annually among children under five. Fecal contamination of water sources contributes to pollution and reduces the availability of clean

drinking water. Women and girls are particularly vulnerable to safety risks, including sexual violence, when defecating in the open.

The Sustainable Development Goal (SDG) 6 aims to achieve access to adequate and equitable sanitation and end open defecation by 2030. Programs like the Total Sanitation Campaign (TSC) in India and Community-Led Total Sanitation (CLTS) in multiple countries have shown varying levels of success. Sub-Saharan Africa is one of the regions most affected by open defecation, with around 20% of the population practicing it as of 2020. The problem is particularly acute in rural areas, where access to improved sanitation is limited. Poverty is one of the determined causes of Open defecation. A significant proportion of the population lives below the poverty line, making it difficult to afford sanitation facilities. Many rural communities lack access to latrines, toilets, and sewage systems. In some communities, open defecation is seen as a traditional practice, and there is resistance to adopting latrines. Insufficient investment in sanitation infrastructure and public health education exacerbates the issue. Open defecation contributes significantly to waterborne diseases and malnutrition in the region. Studies link high rates of stunting in children to poor sanitation. Lost productivity due to illness and healthcare costs burdens families and economies. Women and children bear the brunt of the impacts, with risks to personal safety and dignity. Community-Led Total Sanitation (CLTS) is widely adopted in Sub-Saharan Africa, CLTS focuses on behavior change rather than hardware subsidies, encouraging communities to eliminate open defecation. Countries like Ethiopia and Kenya have adopted national sanitation strategies that aim to achieve Open Defecation Free (ODF) status in rural areas. Organizations like UNICEF, the World Bank, and NGOs have implemented projects to improve access to sanitation and hygiene education. Open defecation remains a critical challenge, particularly in Sub-Saharan Africa, where cultural,





economic, and infrastructural barriers persist. Addressing this issue requires a multi-faceted approach, combining community engagement, robust infrastructure development, and sustained political commitment to ensure access to safe sanitation for all. Continued efforts are crucial to meeting global sanitation targets and improving public health outcomes.

Open defecation, which entails defecating outside instead of using designated toilet facilities, is a prevalent issue in numerous developing nations, particularly in Sub-Saharan Africa. This practice holds significant implications for public health, the environment, and socio-economic aspects. Despite various initiatives by governments, NGOs, and international organizations to combat the problem, open defecation persists in Ghana and the broader Sub-Saharan African region. The rural areas of Sub-Saharan Africa face a higher prevalence of open defecation due to limited access to sanitation facilities. Data from UNICEF and WHO (2019) indicates that around 29% of the Sub-Saharan African population practiced open defecation, with some countries reporting even higher rates. In Ghana, similar trends are observed, with an estimated 18% of the population still engaging in open defecation as of 2020, despite ongoing efforts by the government to eliminate the practice (World Bank, 2020). Notably, rural regions, especially in Ghana's Northern, Upper West, and Upper East areas, exhibit the highest rates of open defecation. In some rural communities, up to 70% of households lack basic sanitation facilities (UNICEF Ghana, 2021). Urban areas also face challenges, particularly in slums and informal settlements characterized by inadequate infrastructure. The impacts of open defecation extend to health and the environment. This practice significantly contributes to the spread of waterborne diseases like cholera, typhoid, and diarrhea, contaminating water sources and exacerbating the issue of unsafe drinking water. According to the WHO (2017), inadequate sanitation, including open defecation, plays a role in nearly 1.6 million deaths of children under



five globally due to diarrhea. In Ghana, cholera outbreaks have been attributed to poor sanitation and open defecation, especially in urban slum areas (Gyasi, 2020). Furthermore, open defecation has adverse environmental effects. The accumulation of human waste in open areas, rivers, and fields leads to soil degradation and water pollution. Open defecation near water bodies can diminish fish populations, impacting food security in regions dependent on fishing livelihoods (Hutton & Varughese, 2016). Moreover, this practice poses a threat to tourism, particularly in coastal towns of Ghana, where beaches suffer from unsanitary conditions.

2.4.1 Socio-Cultural Factors

Cultural beliefs and social norms play a pivotal role in perpetuating open defecation in Sub-Saharan Africa. Within certain communities, the notion of using toilets is deemed superfluous or even culturally taboo. Long-standing traditions of defecating in fields or bush areas are deeply rooted, especially in rural regions where inhabitants may exhibit resistance to change. Research conducted by Coffey et al. (2014) in rural African contexts indicates that the prevalence of open defecation cannot solely be attributed to poverty; rather, it is often a conscious decision influenced by established practices and habits. In Ghana, research reveals varying degrees of social stigma associated with open defecation across different regions. While defecating openly is considered a norm in some rural areas, urban settings view this practice as stigmatizing, prompting individuals to seek secluded or concealed locations for such activities (Kar, 2015). This disparity underscores the divergent attitudes toward sanitation in urban and rural areas.

2.4.2 Efforts to Eliminate Open Defecation

Numerous initiatives have been launched to combat open defecation in Ghana and throughout Sub-Saharan Africa. Notably, the Community-Led Total Sanitation (CLTS) initiative stands out



as a prominent effort empowering communities to address their sanitation challenges collectively and eradicate open defecation. In Ghana, the implementation of CLTS has yielded positive results, particularly in the Northern and Volta regions, where open defecation rates have significantly decreased following the program's implementation (UNICEF Ghana, 2021). Governments in the region, including Ghana, have established ambitious goals to achieve Open Defecation Free (ODF) status. The Ministry of Sanitation and Water Resources in Ghana is actively pursuing the goal of eradicating open defecation by 2030, aligning with the Sustainable Development Goals (SDGs) (Government of Ghana, 2020). Policy measures encompass a range of strategies such as expanding public latrine construction, incentivizing household toilet construction through subsidies, and fostering behavioral change via sanitation advocacy campaigns. Nevertheless, the attainment of ODF status presents challenges, including the high costs associated with building household latrines, inadequate maintenance of public toilets, and lapses in political commitment in certain regions. Findings from a study by Jenkins and Scott (2010) underscore that households with limited incomes often struggle to afford latrines, even with financial assistance, leading to a continued reliance on open defecation.

Efforts aimed at eradicating open defecation have seen numerous interventions in Ghana and throughout Sub-Saharan Africa. A notable initiative is the Community-Led Total Sanitation (CLTS) program, empowering communities to tackle sanitation challenges collectively and eradicate open defecation. This endeavor has shown promising results in Ghana, particularly in the Northern and Volta regions, where open defecation rates have markedly decreased following the inception of the program (UNICEF Ghana, 2021). Governments in the region, such as Ghana, have set ambitious goals to achieve 'Open Defecation Free' (ODF) status. The Ministry of Sanitation and Water Resources in Ghana has set a target to eliminate open defecation by



2030 in alignment with the Sustainable Development Goals (SDGs) (Government of Ghana, 2020). Strategies implemented include enhancing the construction of public latrines, encouraging household toilet construction by providing subsidies, and promoting behavioral change through sanitation campaigns. Nonetheless, attaining ODF status presents challenges due to the high expenses associated with constructing household latrines, inadequate maintenance of public toilets, and lacking political commitment in certain regions. Research conducted by Jenkins and Scott (2010) has indicated that low-income households often struggle to afford latrines, even with financial assistance, leading to a persistent reliance on open defecation.

2.4.3 Economic and Gender Considerations

The financial impact of open defecation is substantial. A World Bank report from 2012 found that inadequate sanitation costs Sub Saharan African nations more than \$5.5 billion each year. In Ghana alone the annual loss amounts to \$79 million due to healthcare expenses, decreased productivity and diminished tourism income. This economic strain disproportionately affects communities and vulnerable groups who are also more prone to practicing open defecation. Women and girls bear the brunt of the consequences, as the lack of privacy and safety when defecating in areas exposes them to harassment and sexual violence. Moreover, girls reaching puberty may skip school during menstruation due to insufficient sanitation facilities hindering their education negatively (Sommer 2013).

The problem of defecating in the open in Ghana and Sub-Saharan Africa is still a pressing issue that has serious impacts on health, the environment and socio-economic factors. Although there have been advancements through programs like CLTS and government sanitation campaigns challenges such as cultural beliefs, financial limitations and insufficient infrastructure continue

to exist. To tackle the causes of open defecation and work towards achieving a status in the region a comprehensive approach is needed. This should involve education, building infrastructure and implementing behavior change initiatives.

2.5 Theoretical Frameworks for Understanding Sanitation Practices

Sanitation plays a role in safeguarding public health as it impacts both environmental conditions and the overall quality of life. To grasp sanitation practices, it is essential to establish a solid theoretical foundation that provides context for the actions, habits and systems that determine the effectiveness or ineffectiveness of sanitation efforts. This review of literature delves into various frameworks that researchers have utilized to examine sanitation practices such as the health belief model (HBM), the social ecological model (SEM) the theory of planned behavior (TPB) and the capability approach (CA). Each of these frameworks presents perspectives on sanitation behaviors, transformation and policy execution.

Incorporating two models (e.g., the Health Belief Model and Theory of Planned Behavior) alongside a relevant theory (such as Cultural Theory of Sanitation or Social Cognitive Theory) offers several advantages in studying the socio-cultural determinants of open defecation. These models allow researchers to:

1. Understand the **individual and social** drivers of OD.
2. Address the **cultural, normative, and structural** barriers that may inhibit the adoption of sanitation practices.
3. Design more **effective interventions** that target both individual and community-level factors. By examining the problem through multiple lenses, researchers can identify the most effective approaches to end open defecation and improve public health outcomes, particularly in socio-culturally diverse regions.





2.5.1 Health Belief Model (HBM)

The Health Belief Model (HBM) is a widely used framework in public health for understanding behaviors related to health, including sanitation practices. It was developed in the 1950s by psychologists Hochbaum, Rosenstock and others to explain why individuals do not adopt preventive health measures like vaccinations or hygiene practices (Rosenstock 1974). According to the HBM, a person's behavior is influenced by their beliefs about the seriousness of a health issue their vulnerability to it the advantages of taking preventive action and the obstacles in their way (Champion & Skinner 2008). In the field of sanitation HBM has been used to gain insights into the reasons behind the adoption or rejection of hygiene practices within communities. For example, research has indicated that people are more inclined to embrace sanitation habits if they believe that inadequate sanitation can result in severe health issues like diarrhea or cholera Curtis et al. 1995. On the hand obstacles such as limited access to water, high costs or cultural beliefs regarding toilet usage can hinder individuals from embracing sanitation behaviors Jenkins & Scott 2007.

The Health Belief Model (HBM) introduces the idea of cues to action to encourage changes in behavior. When it comes to sanitation these cues can take the form of public health campaigns community workshops or even witnessing a sanitation related health crisis that prompt people to alter their sanitation habits (Rosenstock 1974). However, while the HBM offers insights into the motivations for sanitation behavior it has faced criticism for being too focused on decision making and not adequately considering the wider social or environmental factors that impact sanitation practices (Nutbeam et al. 2010).



2.5.2 Relevance of the Health Belief Model

The Health Belief Model provides a valuable framework for understanding the socio-cultural factors that contribute to open defecation. The model emphasizes the role of individual perceptions (risk, severity, benefits, and barriers) in shaping health behaviors. In the context of open defecation, socio-cultural factors—such as traditions, gender dynamics, community norms, and economic constraints—can influence these perceptions and, consequently, sanitation practices. For interventions to succeed, they must address the perceived susceptibility and severity of OD-related diseases, highlight the benefits of sanitation, and reduce the barriers to behavior change. Additionally, cues to action and enhanced self-efficacy are critical to encouraging individuals and communities to adopt safer sanitation practices.

By applying the Health Belief Model, researchers and policymakers can design more effective, culturally sensitive interventions that address the root socio-cultural drivers of open defecation.

2.5.3 Social Ecological Model (SEM)

The Social Ecological Model (SEM) tackles the shortcomings of approaches by offering a perspective on sanitation behaviors. Created by Bronfenbrenner in 1977 SEM highlights that health actions are influenced not only by personal factors but also by social connections, community settings, organizational contexts and broader policy frameworks.

When it comes to sanitation SEM acknowledges that a person's behavior is shaped through interactions across different societal levels. On an individual basis elements like knowledge, attitudes and beliefs impact sanitation practices (Sharma 2017). At the level family dynamics peer influences and societal norms have an effect. For instance, studies have shown that sanitation habits often involve decisions regarding shared latrines or open defecation (Dreibelbis et al. 2013). Additionally societal norms, such as the stigma surrounding toilet use



in certain communities can either promote or hinder the adoption of safe sanitation behaviors (Mosler 2012). At the level of organizations such as schools, workplaces and healthcare facilities policies and facilities can either support or hinder safe sanitation. For example, the absence of sanitation facilities in schools has been found to discourage female students from attending school, especially during menstruation (Sommer et al., 2016). The SEM also emphasizes the role of the environment in shaping sanitation practices. National sanitation policies, infrastructure development and government subsidies for toilet construction can significantly impact the ability of individuals and communities to maintain safe sanitation practices (Cairncross et al., 2010). By examining layers of influence the SEM offers a framework, for understanding sanitation practices across various contexts. However similar to other ecological models, applying the SEM in real life can be challenging due to the complexities involved in analyzing interactions, at multiple levels (Stokols, 1996).

2.5.4 Relevance of the Social Ecological Model

The Social Ecological Model offers a comprehensive approach to understanding the socio-cultural factors that influence open defecation. By recognizing the interplay between individual beliefs, interpersonal relationships, community practices, and societal norms, the SEM highlights the complexity of OD as a public health issue. It underscores the need for multi-level interventions that target not only the provision of infrastructure but also cultural norms, social dynamics, and broader policy frameworks.

2.5.5 The Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) introduced by Icek Ajzen in 1991 is a widely recognized framework for predicting and comprehending human actions, including hygiene practices. TPB suggests that behavior is influenced by three factors, attitudes, subjective norms



and perceived behavioral control (Ajzen 1991). According to TPB if someone holds a view on a behavior (like using a restroom) believes that significant others (such as family or community leaders) endorse the behavior and thinks they have control over it (for instance having access to a toilet) they are more inclined to engage in that behavior.

The Theory of Planned Behavior (TPB) has been extensively utilized in research to shed light on actions related to hygiene, restroom usage and waste management. For instance, findings suggest that people are more inclined to use toilets when they hold views about them and perceive strong support from their family and community (Jenkins & Curtis, 2005). The perception of control over one's behavior plays a role too; individuals are more likely to embrace sanitation practices if they believe they possess the necessary resources and capabilities such as access to water and adequate sanitation facilities (Mosler, 2012).

However, while TPB proves valuable it does have limitations, in relation to sanitation behaviors. Although the theory considers intentions it may not fully address obstacles like poverty, insufficient infrastructure or government policies that hinder access to sanitation amenities (Fishbein & Ajzen, 2010). Additionally, TPB has faced criticism for presuming that people act based on their intentions when, in reality behavior can be swayed by factors, like emotions, habits or subconscious influences (Sniehotta, 2009).

2.5.6 Relevance of the Theory of Planned Behavior

The Theory of Planned Behavior provides a comprehensive framework for understanding the socio-cultural factors that influence open defecation practices. By addressing attitudes, subjective norms, and perceived behavioral control, TPB can guide the design of interventions that aim to reduce open defecation. The integration of socio-cultural factors into the TPB framework is essential for developing effective, context-sensitive strategies to promote

improved sanitation practices, especially in communities where open defecation is deeply ingrained.

2.5.7 Capability Approach (CA)

The Capability Approach (CA), developed by Amartya Sen (1999) and further developed by Martha Nussbaum, presents a human-centered framework to comprehend sanitation practices by concentrating on individuals' capabilities or freedoms to accomplish desired outcomes. Sen posits that poverty and deprivation should be assessed not only based on income but also on individuals' capacities to achieve valued “functionings” like good health, education, and adequate sanitation. The CA framework is utilized in the sanitation domain to assess if individuals possess the capabilities—such as having access to clean water, safe toilets, and health education—required for practicing good sanitation (Nussbaum, 2000). For instance, in a community with toilets, individuals may lack the ability to use them if they are unsafe, poorly maintained, or culturally inappropriate (Robeyns, 2005). Additionally, the CA framework examines how public policies can either enhance or limit individuals' capabilities, making it a valuable tool for evaluating the impact of sanitation interventions and policies (Alkire, 2005). One notable aspect of the CA is its emphasis on freedom and agency in sanitation practices, acknowledging that individuals need the freedom to select and engage in safe sanitation practices in ways that hold meaning for them. Nonetheless, the application of the CA in sanitation research necessitates thoughtful consideration of the wider socio-economic and cultural milieu in which sanitation behaviors unfold, adding complexity to its implementation (Robeyns, 2005)





2.5.8 Relevance of the Capability Approach Theory

In the context of open defecation (OD), the Capability Approach is highly relevant, as it offers a nuanced perspective on how socio-cultural factors influence individuals' well-being and their ability to access sanitation. The theory helps explain why OD persists despite interventions and how socio-cultural contexts shape people's opportunities and freedoms regarding sanitation practices.

2.5.9 Conclusion

To comprehend sanitation practices thoroughly, a comprehensive approach encompassing individual behavior, social influences, structural elements, and human capabilities is essential. Theoretical frameworks like the Health Belief Model, Social Ecological Model, Theory of Planned Behavior, and Capability Approach contribute distinct perspectives to the understanding of sanitation practices. While the HBM and TPB are instrumental in analyzing individual behaviors, SEM and CA emphasize the significance of structural and contextual determinants. Through the integration of insights from various frameworks, researchers and policymakers can craft enhanced strategies to enhance sanitation practices and outcomes.

2.6 Socio-Cultural Factors Influencing Open Defecation

The practice of OD has been found to pose a major public health risk and is attributed to faecal contamination of water sources, thereby spreading diseases such as; diarrhoea, cholera and typhoid and other environmental hazards (Coffey et al., 2014). Although many developing countries have made significant advances in access to safe sanitation infrastructure, the presence of OD practice remains high primarily in rural areas. The continued nature of this suggests OD is not simply due to poorly functioning infrastructure, but related to more complex societal and cultural issues. This paper is an integrative literature review among the sixteen

publications that address the sociocultural determinants associated with open defecation, such as traditional beliefs, social norms (non-defecation practices), taboos (prohibition of defecation in certain places or time), gender roles, caste systems and community identity. These are essential to contextualize why OD persists in the presence of sanitation and will inform design of relevant interventions for elimination.

2.6.1 Traditional Beliefs and Cultural Practices

Sanitation behavior participation, especially in rural areas, is substantially associated with traditional beliefs and cultural practices. Most societies link defecation to purity and pollution hence it determines where one can defecate. In rural India, for instance, it is considered unclean to open-defecate inside or near the home, and individuals who can simply choose to OD in fields or other secluded sites far from their residence (Vyas & Spears 2018). This emphasis of keeping domestic space clean from such human excreta continues even when toilets are provided, as the use of latrines contradicts their most ancient and cherished imaginations of purity and pollution (Gupta et al 2016).

For some, though, OD is just part of another day at the office. Open defecation might become part of an ecological cycle in which the nutrients return to the earth (Heijnen et al., 2015). Also, for millions of people, long-standing habits of defecating in nature are part of everyday life in rural areas and those people cannot be simply informed their toilets (Coffey & Spears, 2017).

The fact that these cultural beliefs relating to sanitation practices persist, suggests that efforts to eliminate OD should be respectful of the culture and also address the deeper symbolism of toilets. However, these kinds of facilities mere provision without changing the behavior are less sustainable in nature (Chambers & Myers, 2016).

2.6.2 Social Norms and Collective Behavior

Social norms are other most essential socio-cultural factor affecting OD. A social norm is a standard of behaviour that is performed by the members of the community about what kind of behaviour should or could be. Practice of OD is established as a social norm, which is in turn reinforced by others' behavior in many rural areas prevalent with OD. However, OD behaviour may be common simply because people see others doing so, and there is insufficient social pressure to perform otherwise (Bicchieri & Lindemans, 2019). In countries like India, Bangladesh and Nigeria where few literatures have reported on the social norms perpetuating OD- it is shown that OD may be perceived as a socially and community appropriate behaviour or even a desirable practice (Jenkins & Curtis; 2005) Indeed, in some instances OD is more or less structured into everyday social life with people using the practice as an occasion to otherwise engage with their neighbours or take part in community activities (Coffey et al., 2017). Although the communal practice of OD reinforces a sense of community in itself, Pattanayak et al. (2009) suggests that this same sense of belonging can crowd-out individual incentives to use privately owned toilets and make shifting behaviour towards usage difficult. Although changing social norms around OD may be achievable, it is not easy and often requires collective behavior change strategies — what are sometimes called community-led total sanitation (CLTS) programs — where communities are openly confronted with the fact that everybody contributes to the public health disaster through OD and so must feel guilty about their involvement in perpetuating this scourge (see Kar & Chambers 2008). While CLTS been valuable in some contexts to catalyze broad based community commitment towards the goal of stopping OD, motivated by co-created communities; however, CR such deep seated social



norms can only be changed through sustained and consistent efforts to establish new norms around toilet use (Harter et al.

2.6.3 Gender Roles and Household Dynamics

Gender is a very important factor for sanitation, and so therefore Out door CP. Women's exposure to and experience of sanitation specific challenges in many societies influence their defecation practices. Women are often expected to maintain modesty and privacy, which may challenge their ability or desire to use communal or public latrines (Mahon & Fernandes 2010) in the absence of gender-segregated facilities Consequently, women might prefer OD in safe private environments—so as to not appear impolite or be exposed to humiliation, potentially more the case where there is limited sanitation infrastructure (O'Reilly 2016).

The gendered norm also defines women's role as household food managers which influences their sanitation and hygiene practices. One explanation may be that across many cultures, men are generally prioritized in the use of household resources, notably sanitation facilities. Studies in India, for example, have found that women are often expected to delay using the household toilet until after men's use has finished or might even be discouraged from using it at all on grounds of cleanliness and maintenance (Routray et al., 2015). This gendered dynamic can also perpetuate OD practice, as open defecation for women may be the only option during periods or post-partum when a heightened need of privacy Sommer et al., 2016).

In addition to this, women are often time-poor due to caring for household duties which can prevent them from accessing sanitation facilities. Women, especially water carriers could prefer OD to queuing for communal sanitation facilities, other studies from sub-Saharan Africa have reported these findings (Nyoka et al. 2017) as it saves time and in rural areas often perennially devoid of sustainable sanitation infrastructure.



2.6.4 Caste Systems and Social Hierarchies

In numerous societies, particularly in South Asia, the caste system and social hierarchies exert a substantial influence on sanitation practices, notably open defecation (OD). In places like India, the caste system assigns certain groups, such as Dalits (formerly known as “untouchables”) the role of cleaning human waste. This entrenched division has fostered beliefs about the impurity of waste and the social stigma attached to toilet cleaning (Jewitt, 2011). Conversely, among higher-caste communities, having a toilet indoors or nearby is often considered demeaning and improper, thus encouraging the preference for open defecation (OD) (Banda et al., 2007). In rural areas, caste-based segregation can result in lower-caste households lacking access to shared or communal toilets, compelling them to resort to open defecation (Tiwari et al., 2020). Even when public toilets are accessible, individuals from lower castes may refrain from using them due to the apprehension of discrimination or harassment by higher-caste counterparts (Desai et al., 2015). The confluence of caste and sanitation behaviors highlights the imperative for inclusive sanitation interventions that address the underlying structural disparities perpetuating open defecation. Moreover, caste dynamics play a pivotal role in shaping sanitation practices in educational institutions, workplaces, and other public settings, where individuals from lower castes may encounter obstacles in utilizing sanitation facilities either due to biases or because these amenities are inadequately maintained and reserved for higher-caste individuals (Doron & Jeffrey, 2014). Mitigating these caste-driven inequities is essential for fostering open defecation-free environments and ensuring fair access to sanitation facilities across all societal strata.



2.6.5 Community Identity and Resistance to Change

Community identity and resistance to change play a significant role in influencing efforts towards organizational development (OD). One particular aspect where this is evident is in sanitation practices, including open defecation (OD). In certain communities, these practices are deeply tied to the local identity and can trigger resistance towards external interventions. This resistance is particularly notable in rural areas, where development programs are often seen as being imposed by outsiders. As a result, communities may resist adopting sanitation technologies or behaviors associated with urban lifestyles or foreign cultures (Hanchett et al., 2011). This resistance is often reinforced by a sense of pride in traditional practices and skepticism towards modern sanitation systems. In Bangladesh, for example, rural communities may view open defecation as a practice that connects them to their ancestors and the land, causing them to resist efforts to introduce toilets, which they may perceive as unnecessary or invasive (Routray et al., 2017). Similar findings have been observed in sub-Saharan Africa, where some communities resist the adoption of modern sanitation facilities, seeing them as incompatible with their rural way of life (Jenkins et al., 2014). Community resistance to change can also be influenced by economic and political factors. Local leaders, in particular, may be hesitant to support sanitation interventions if they perceive them as a threat to their authority or control over resources (Black & Fawcett, 2008). In such contexts, addressing open defecation requires not only changing individual behaviors but also engaging with community leaders and addressing the power dynamics that shape decision-making regarding sanitation initiatives.





2.7 Conclusion

Socio-cultural factors significantly impact the sustainability of open defecation (OD) practices, even with enhanced sanitation infrastructure. Influential factors include traditional views on purity and pollution, societal norms favoring communal defecation, gender disparities, caste-related discrimination, and community reluctance to adopt new practices, all adding layers of complexity to addressing OD challenges. Successful interventions require a holistic approach that transcends mere toilet provision to tackle the deeper cultural, social, and economic influences shaping sanitation behaviors. Embracing community-driven initiatives, establishing gender-inclusive sanitation facilities, and implementing policies that combat caste-based biases are indispensable for fostering lasting transformations and realizing defecation-free environments.

2.8 Economic Determinants of Sanitation Practices

Sanitation practices, encompassing toilet usage and the upkeep of hygienic facilities, are intricately connected to economic considerations. While public health initiatives frequently highlight the health advantages of enhanced sanitation, the economic aspects of sanitation practices are equally pivotal. Factors like income, affordability, resource accessibility, household spending, and economic disparities significantly influence the adoption and continuity of improved sanitation practices by individuals and communities. This review delves into the economic determinants of sanitation practices, examining empirical research and theoretical models that establish links between economic circumstances and sanitation results.

2.8.1 Income and Affordability

One of the fundamental economic factors influencing sanitation practices is household income. Research indicates that lower-income households tend to have limited access to proper



sanitation facilities, such as toilets or latrines, and are more inclined to resort to open defecation (Coffey et al., 2017). The financial constraint of not being able to afford essential sanitation infrastructure like toilets, septic tanks, or water connections acts as a significant barrier to adopting better sanitation practices. According to Hutton and Chase (2016), the expense associated with building a basic toilet can be unaffordable for impoverished households, especially in rural areas where incomes are meager, and construction materials may be costly or scarce. Their research on sanitation funding in India highlighted that even with available subsidies to assist in toilet construction costs, many impoverished households still struggle to cover additional expenses like maintenance and repairs. This emphasizes the critical role of affordability in shaping sanitation behaviors. Household income also influences spending priorities and patterns. Families with limited financial means often face tough decisions on how to distribute their income, typically prioritizing basic needs such as food, housing, and healthcare over sanitation (Jenkins & Scott, 2007). Consequently, investments in sanitation infrastructure may be postponed or ignored, especially when the immediate benefits of improved sanitation are not clearly evident. In urban settings, the correlation between income and sanitation practices is often influenced by access to infrastructure and services. Impoverished households in informal urban areas may lack essential amenities like piped water, sewage systems, or waste management services, leading to challenges in maintaining proper hygiene standards even if they have toilets (Thys et al., 2015). In these instances, sanitation concerns are not solely about income but are also intertwined with broader economic policies centered on urban development and infrastructure enhancements.



2.8.2 Access to Financial Resources and Credit

Access to financial resources and credit is vital for households, in addition to income, enabling them to invest in sanitation infrastructure. Many low-income households struggle to save enough money for constructing or upgrading sanitation facilities, especially when costs are high. Credit access, whether through formal or informal financial channels, can help overcome this challenge and support households in making sanitation improvements. Research by Pattanayak et al., (2009) in Cambodia revealed that households with access to microfinance were more inclined to build toilets and enhance sanitation facilities. The availability of low-interest loans enabled these households to manage the expenses of toilet construction gradually, increasing affordability. Conversely, households lacking credit access were less likely to invest in sanitation, despite recognizing the health advantages of better sanitation. However, credit accessibility is often uneven, particularly in rural areas where financial services may be limited. In regions like sub-Saharan Africa, studies highlight that rural households encounter obstacles in obtaining credit, restricting their capacity to invest in sanitation infrastructure (Nyoka et al., 2017). Furthermore, in many low-income nations, financial institutions may not prioritize loans for sanitation-related ventures, further limiting households' ability to enhance their sanitation amenities (Hanchett et al., 2011).

2.8.3 Economic Inequality and Social Disparities

Economic inequality, both within and among communities, plays a significant role in shaping sanitation practices. Disparities in income, wealth, and resource accessibility lead to unequal sanitation conditions, with disadvantaged households and marginalized groups bearing a disproportionate burden of inadequate sanitation facilities. Coffey et al. (2014) emphasize the impact of economic inequality on perpetuating open defecation in India, where caste and class

distinctions hinder the poorest households' access to sanitation amenities. Affluent households are more likely to possess private toilets and piped water, while lower-income households in rural or informal areas often rely on communal or public facilities that may be substandard or hard to reach. These disparities are exacerbated by social issues like caste prejudices, which bar lower-caste families from using shared sanitation facilities in certain regions (Tiwari et al., 2020). Moreover, economic disparities influence communities' capacity to gather resources for collective sanitation enhancements. In impoverished areas with limited financial means, organizing collective efforts to construct or upkeep communal sanitation infrastructure can be challenging. Conversely, more affluent neighborhoods may consolidate resources or attract external financing for sanitation initiatives, leading to improved outcomes (Pattanayak et al., 2009). The convergence of economic inequality and sanitation practices underscores the necessity of policies targeting not only individual household behaviors but also systemic determinants of unequal sanitation access. Tailored subsidies, public investments in sanitation infrastructure, and initiatives prioritizing marginalized populations are crucial in mitigating disparities in sanitation accessibility and results (Hutton & Varughese, 2016).

2.8.4 Government Policies and Subsidies

Government policies, especially those concerning subsidies and public investments, play a vital role in shaping the economic landscape for sanitation practices. Subsidies allocated to toilet construction, water supply, and sanitation infrastructure can alleviate financial barriers, making improved sanitation more accessible to low-income households. Nonetheless, the efficacy of these policies hinges on their design and execution. In India, the Swachh Bharat Mission (SBM) represents a significant government effort directed at eradicating open defecation by offering subsidies for building toilets in rural areas. While the program has made some progress in



expanding toilet coverage, its impact has been constrained by challenges such as subsidy distribution, corruption, and inadequate subsidy levels (Hueso & Bell, 2013). Many households still struggle to meet the additional costs of materials, labor, and upkeep, despite government assistance. It is imperative that sanitation subsidies are appropriately targeted to reach the most vulnerable households. Research indicates that poorly structured subsidy schemes can disproportionately favor wealthier households, leaving the economically disadvantaged segments underserved (Duflo et al., 2015). For instance, in Tanzania, a sanitation voucher initiative aimed at low-income households observed that higher-income families were utilizing the vouchers due to their better ability to navigate the bureaucratic procedures required to access the subsidies (Whittington et al., 2012). Furthermore, government strategies that prioritize public investments in sanitation infrastructure, particularly in rural and marginalized regions, are pivotal for enhancing sanitation conditions. Many economically challenged nations face inadequate public investments in sanitation, placing the onus on households to fund their own sanitation upgrades. This becomes especially problematic in areas with high sanitation infrastructure costs resulting from limited access to materials, labor, or water resources (Hutton & Varughese, 2016). Augmented public investment in sanitation infrastructure can alleviate the financial burden on households and enhance their access to sanitation facilities.

2.8.5 Cost-Benefit Perceptions and Behavior Change

Economic factors play a significant role in shaping sanitation practices within households, influencing their decisions based on the perceived costs and benefits of embracing enhanced sanitation facilities. Household willingness to invest in sanitation infrastructure is often influenced by whether they believe the costs outweigh the benefits. This is particularly evident when the health advantages of improved sanitation are not immediately apparent or when

alternative practices like open defecation are viewed as cost-effective (Coffey et al., 2014). The field of behavioral economics offers valuable insights into how households evaluate the costs and benefits of sanitation investments. Research indicates that households are more inclined to adopt improved sanitation practices when they deem the benefits, such as enhanced health, social status, or convenience, as justifying the expenses associated with constructing and maintaining sanitation facilities (Whittington et al., 2012). On the contrary, when households perceive the benefits of sanitation upgrades as uncertain or distant, they may postpone or forego sanitation investments, especially when faced with competing urgent needs. To drive changes in sanitation behaviors, interventions need to confront these cost-benefit assessments by highlighting the advantages of improved sanitation and reducing the perceived costs of adopting new practices. For instance, sanitation marketing initiatives that underscore the social and economic advantages of toilets, such as increased privacy, convenience, and safety, have proven effective in motivating households to enhance their sanitation facilities (Jenkins & Scott, 2007).

2.8.6 Conclusion

Sanitation practices depend significantly on economic determinants and whether households adopt, maintain or forego the use of improved sanitation facilities. Role of Household income, access to financial resources, economic inequality, government policies and cost benefits perceptions in determining sanitation behavior: Addressing the economic barriers to Sanitation requires a composite approach that includes targeted subsidies, better access to credit services, large scale public investments in infrastructure and catalytic behaviour change interventions which are contextualized within household economic realities.

Sanitation policy is required that ensures the poorest and more marginalized heads of household can affordably access sustainable sanitation solutions. If policymakers address the economic

underpinnings of a sanitation solution set, they can offer improved scenarios for more widespread adoption and contribute to higher health, environmental, and social benefits as well.

2.9 Impact of Education and Awareness on Sanitation Behavior

Sanitation holds a pivotal role in public health, with enhanced sanitation practices playing a vital role in mitigating diseases arising from substandard hygiene and improper waste disposal. Education and awareness are key determinants influencing sanitation behavior by shaping people's understanding, attitudes, and habits. By conducting educational campaigns, both individuals and communities can grasp the health hazards linked to inadequate sanitation and thereby embrace cleaner practices. This review delves into the effects of education and awareness initiatives on sanitation behavior, delving into empirical data, theoretical models, and case analyses across diverse geographical areas.

2.9.1 Role of Education in Influencing Sanitation Behavior

Education plays a vital role in shaping health behaviors, particularly regarding sanitation practices. Research indicates that individuals with higher levels of formal education are more inclined to embrace improved sanitation habits, such as utilizing toilets or latrines, practicing handwashing with soap, and efficiently managing waste. Formal education equips individuals with the cognitive abilities needed to comprehend the health advantages of proper sanitation and the risks associated with unhygienic practices. Jenkins and Curtis (2005) emphasize that educated individuals are better able to grasp the connections between sanitation and health, influencing their decisions to invest in sanitation infrastructure. Their research in Ghana revealed that households with higher education levels were more inclined to install toilets and uphold regular handwashing practices. The scholars argue that education enhances individuals' capacity to process information related to hygiene and sanitation, leading to informed choices



regarding sanitation practices. Moreover, formal education impacts sanitation behavior through its influence on socio-economic status. Educated individuals typically enjoy higher incomes, enabling them to afford sanitation facilities and hygiene products. A study by Sclar et al. (2018) conducted in sub-Saharan Africa observed that households led by educated individuals were more likely to access improved sanitation facilities. The researchers highlighted that education not only enhances knowledge of sanitation but also empowers individuals economically to adopt better sanitation practices. Notably, the influence of education on sanitation practices extends beyond formal schooling. Informal education, such as health education offered through community programs or awareness campaigns, can also play a significant role in shaping sanitation behaviors. For example, a study by Cameron et al. (2019) in India demonstrated that community-based sanitation education programs effectively reduced open defecation and promoted toilet usage. The researchers concluded that informal education initiatives, particularly those involving local communities, are essential for enhancing sanitation practices in regions with low literacy rates.

2.9.2 Awareness Campaigns and Behavior Change

Awareness campaigns play a crucial role in promoting behavior change related to sanitation, especially in areas with inadequate sanitation infrastructure. These campaigns are designed to increase awareness of the health risks associated with poor sanitation and to encourage the adoption of better sanitation practices like toilet use, handwashing, and waste disposal. One notable sanitation awareness campaign is the Swachh Bharat Mission (Clean India Mission) in India, initiated in 2014. This campaign aimed to eradicate open defecation by 2019 by focusing on both infrastructure development and communication strategies to change behaviors. Research by Gupta et al. (2020) indicated that the campaign effectively influenced sanitation



behaviors, particularly in rural regions. The authors attributed this success to the campaign's emphasis on social norms and public awareness, which enhanced the perceived importance of proper toilet use and hygiene practices. Similarly, the Community-Led Total Sanitation (CLTS) approach, pioneered in Bangladesh, has garnered recognition for its efficacy in promoting sanitation behavior change through community involvement and awareness-raising. CLTS revolves around fostering collective action to eliminate open defecation by highlighting the health and social repercussions of unsanitary behaviors. According to Kar and Chambers (2008), interventions based on CLTS have led to significant enhancements in sanitation practices within rural communities across Asia and Africa. The authors underscored the approach's success in instilling a sense of urgency and communal responsibility for sanitation improvements, motivating individuals to embrace better sanitation habits. In addition to general sanitation practices, awareness campaigns can also target specific hygienic behaviors like handwashing. The Global Handwashing Day campaign, initiated by the Global Handwashing Partnership, represents a global initiative to underscore the significance of handwashing with soap. Research, such as the study conducted by Freeman et al. (2014) in Kenya, has demonstrated that handwashing promotion campaigns, when paired with the provision of soap and water, can sustainably improve handwashing behaviors among individuals of all age groups. The authors stressed the necessity of integrating awareness campaigns with tangible interventions to facilitate enduring changes in behavior.

2.9.3 Education and Hygiene Promotion

Health education serves as a crucial element in sanitation interventions, especially in regions where sanitation-related illnesses like diarrhea and cholera are prevalent. The primary goal of health education programs is to enhance individuals' comprehension of the causes and



prevention of these diseases, encouraging hygienic practices to mitigate the risk of infections. In many low-income settings, health education is disseminated through various channels such as schools, community health workers, and mass media campaigns. For instance, a study conducted by Biran et al. (2012) in India explored the effects of a school-based hygiene education initiative on sanitation practices among children. The findings revealed that children who received hygiene education demonstrated a higher tendency to wash their hands with soap post toilet use and prior to meals. Moreover, the study indicated that children exposed to hygiene education at school influenced the behavior of their family members, underscoring the community-wide impact of health education. Apart from school-driven programs, community health workers play a pivotal role in delivering health education to households in rural and underserved regions. In Ethiopia, the Health Extension Program has been pivotal in fostering sanitation and hygiene practices through personalized health education at households (Tadesse et al., 2018). This program equips community health workers to enlighten households on the significance of toilet usage, handwashing, and safe water handling. An evaluation of the program revealed that households visited by health workers exhibited a higher inclination towards adopting improved sanitation practices, particularly concerning toilet facilities. Furthermore, mass media campaigns serve as a significant mechanism for instigating behavior change towards sanitation practices. Radio, television, and social media platforms are leveraged to disseminate health education messages to broad audiences. A study by Galiani et al. (2015) in Peru assessed the efficacy of a mass media campaign advocating handwashing with soap. The research indicated a notable increase in the frequency of handwashing, especially among women and children, due to the campaign. This underscores the potency of mass media

campaigns in reaching large populations and fostering behavior modifications, especially when complemented with localized educational endeavors.

2.9.4 Knowledge, Attitudes, and Practices (KAP) Framework

The Knowledge, Attitudes, and Practices (KAP) framework serves as a common tool for evaluating the influence of education and awareness on sanitation behavior. According to this framework, individuals' sanitation practices are shaped by their understanding of sanitation-related health risks, their attitudes towards sanitation, and their practical capacity to embrace improved behaviors. Educational initiatives typically target enhancing knowledge, shifting attitudes, and empowering individuals to adopt new sanitary practices. A study conducted by Rheinländer et al. (2013) in Ghana utilized the KAP framework to assess the outcomes of a sanitation education program on household behaviors. The study revealed that households with a better grasp of sanitation risks were more inclined to use toilets and adhere to regular handwashing. Nonetheless, the authors highlighted that knowledge alone was not adequate to induce behavior change; attitudes towards sanitation, particularly influenced by social norms and convenience perceptions, played a pivotal role in determining the adoption of enhanced sanitation practices. Cultural beliefs and social norms significantly shape attitudes towards sanitation, either facilitating or impeding behavior modification. For instance, in various rural settings, open defecation may be culturally acceptable and perceived as more convenient or natural compared to toilet usage (Coffey et al., 2014). Therefore, education campaigns should address not only knowledge deficiencies but also cultural beliefs and social standards that perpetuate inadequate sanitation practices. This necessitates promoting positive attitudes towards toilets and hygiene through role models, peer influence, and community leaders. Apart from knowledge and attitudes, practical obstacles to behavior change, like access to sanitation





facilities and water, must be tackled. A study by Dreibelbis et al. (2016) in Bangladesh highlighted that while educational programs increased handwashing awareness, the absence of water and soap in schools and households hindered individuals from practicing regular handwashing. The researchers stressed the importance of combining education and awareness with interventions that enhance access to sanitation resources to ensure sustainable behavior transformation.

2.9.5 Challenges in Education and Awareness Interventions

Education and awareness play a crucial role in influencing sanitation behavior, yet various challenges hinder the efficacy of these efforts. One key obstacle lies in maintaining behavioral changes over time, as studies indicate that while initial education initiatives can yield short-term advancements, ensuring lasting transformations proves challenging (Cameron et al., 2019). Sustaining altered behaviors typically demands continuous reinforcement; without ongoing educational support, individuals may regress to previous unhygienic practices. Moreover, another significant hurdle involves reaching marginalized and vulnerable communities, often disproportionately impacted by poor sanitation conditions. Frequently, education campaigns fall short in extending their reach to remote or underserved populations owing to logistical constraints like inadequate infrastructure, linguistic disparities, or a scarcity of trained healthcare personnel (Nygren et al., 2018). Ensuring that educational endeavors are inclusive and accessible across all demographic segments is essential for achieving comprehensive enhancements in sanitation standards. Furthermore, solely focusing on education and awareness proves inadequate in tackling the systemic barriers obstructing advancements in sanitation. As highlighted by Hutton and Varughese (2016), educational initiatives must be complemented by substantial investments in sanitation infrastructure and

services. In the absence of fundamental amenities such as toilets, clean water, and waste management systems, individuals are unlikely to embrace and uphold improved sanitation practices, irrespective of their educational background or level of awareness.

2.9.6 Conclusion

Education and awareness play crucial roles in driving changes in sanitation behavior by shaping individuals' knowledge, attitudes, and practices regarding hygiene and waste management. Both formal education, informal programs, awareness campaigns, and health education efforts are instrumental in promoting enhanced sanitation practices. However, for sustained behavior modification, educational initiatives must be accompanied by practical interventions that target obstacles like limited access to toilets, water, and hygiene products. Furthermore, it is essential to address cultural beliefs and societal norms to overcome resistance to change and ensure the effectiveness of sanitation interventions. To effectively advance toward achieving the Sustainable Development Goals for sanitation, a holistic approach integrating education, awareness, infrastructure development, and supportive policies is vital to enhance sanitation behaviors and public health outcomes.

2.10 Health Risks Associated with Open Defecation

Open defecation remains prevalent in many developing countries, particularly in rural areas where adequate sanitation infrastructure is lacking. According to the World Health Organization (WHO, 2018), approximately 1 billion people worldwide still practice open defecation, leading to significant health risks and substantial public health challenges. This literature review explores the health dangers associated with open defecation, highlighting its impact on infectious diseases, environmental quality, and socio-economic ramifications. Understanding



these threats can aid public health efforts in addressing the core issues surrounding open defecation and promoting improved sanitation practices.

2.10.1 Infectious Diseases and Open Defecation

Open defecation plays a significant role in the spread of infectious diseases. This practice poses a risk to communities as it leads to the contamination of water sources, soil, and food through fecal matter. Diarrheal diseases, caused by bacteria, viruses, and parasites, are particularly prevalent in areas where open defecation is practiced and can have severe health implications.

2.10.2 Diarrheal Diseases

Diarrheal diseases pose a significant burden in terms of illness and death, especially affecting children under five years old. According to the WHO (2020), around 525,000 deaths occur annually among this age group due to diarrhea. The transmission of pathogens like *Escherichia coli*, rotavirus, and *Shigella*, which cause diarrhea, is facilitated by open defecation. Research conducted by Clasen et al. (2014) reveals that communities engaging in open defecation experience higher rates of diarrheal diseases compared to those with access to better sanitation facilities. This study underscores the link between open defecation practices and heightened fecal contamination in water sources, underscoring the importance of enhanced sanitation measures to address these health risks.

2.10.3 Parasitic Infections

In addition to bacterial and viral pathogens, open defecation is linked to parasitic infections, particularly soil-transmitted helminths (STH), such as roundworms, hookworms, and whipworms. These parasites are transmitted through contaminated soil, commonly in regions where open defecation is prevalent. According to a systematic review conducted by Pullan et al. (2014), an estimated 1.5 billion individuals worldwide are afflicted with STH, with the most



significant burden evident in areas with inadequate sanitation. The authors emphasize the significance of enhancing sanitation and hygiene practices to decrease the prevalence of these infections.

2.10.4 Environmental Health Risks

The repercussions of open defecation on the environment go beyond personal health consequences. The contamination of water sources and soil with fecal matter presents substantial hazards to both public health and the ecosystem.

2.10.5 Water Quality

Open defecation can result in the pollution of drinking water sources, worsening waterborne illnesses. According to a study conducted by Bartram and Cairncross (2010), insufficient sanitation practices, including open defecation, play a substantial role in contaminating water sources, thereby increasing the prevalence of diseases such as cholera and dysentery. The researchers advocate for enhancing sanitation infrastructure as a crucial measure to protect water purity and public health.

2.10.6 Soil Contamination

Open defecation can result in the pollution of drinking water sources, worsening waterborne illnesses. According to a study conducted by Bartram and Cairncross (2010), insufficient sanitation practices, including open defecation, play a substantial role in contaminating water sources, thereby increasing the prevalence of diseases such as cholera and dysentery. The researchers advocate for enhancing sanitation infrastructure as a crucial measure to protect water purity and public health.





2.10.7 Socio-Economic Consequences

Open defecation has extensive socio-economic ramifications that may impede development initiatives and worsen poverty. The health hazards linked to open defecation perpetuate a cycle of sickness and poverty, diminishing individuals' productivity and economic welfare.

2.10.8 Economic Burden of Diseases

The economic impact of diseases resulting from open defecation is substantial, causing a rise in healthcare expenses and productivity losses. According to a study conducted by Hutton and Haller (2004), the financial toll of insufficient sanitation, encompassing healthcare expenditures and decreased productivity stemming from illness, reaches billions of dollars on a yearly basis. The researchers advocate for prioritizing investments in sanitation facilities as a means to generate significant economic gains through the reduction of healthcare costs and enhancement of productivity levels.

2.10.9 Impact on Education

Open defecation has detrimental effects on education, especially impacting girls. The absence of adequate sanitation facilities in schools frequently results in higher rates of absenteeism, particularly during menstruation. Sommer et al., (2016) conducted research showing that insufficient sanitation facilities disproportionately impact girls, resulting in elevated dropout rates and impeding their access to education. The authors recommend enhancing sanitation facilities in schools to support gender equality and improve educational achievements.

2.11 Public Health Interventions and Strategies

When tackling the health hazards linked to open defecation, it is essential to implement thorough public health initiatives and plans that emphasize sanitation and hygiene.

2.11.1 Community-Led Total Sanitation (CLTS)

An impactful strategy for curbing open defecation is the Community-Led Total Sanitation (CLTS) model, prioritizing community involvement and responsibility in sanitation projects. Kar and Chambers (2008) have noted the effectiveness of CLTS in mobilizing communities to eradicate open defecation through health risk awareness and fostering joint efforts. They emphasize the significance of challenging cultural customs and societal conventions that sustain open defecation behaviors.

2.11.2 Behavioral Change Communication

Behavior change communication plays a crucial role in advocating sanitation practices and increasing awareness of the health hazards linked to open defecation. An investigation by Dreibelbis et al. (2013) underscores the significance of proficient communication tactics in advocating handwashing and safe sanitation practices. The researchers contend that incorporating behavior change communication within sanitation initiatives can notably enhance hygiene behaviors and lessen the occurrence of sanitation-related illnesses.

2.11.3 Investment in Sanitation Infrastructure

Enhancing sanitation infrastructure is paramount in mitigating the health hazards linked to open defecation. Governments and international entities should allocate resources towards enhancing sanitation facilities, especially in rural and marginalized regions. A WHO and UNICEF report from 2019 highlights the critical need to expand the availability of upgraded sanitation amenities to alleviate the challenges posed by open defecation and its health consequences. The report stresses that investments in sanitation infrastructure not only enhance health metrics but also foster economic progress and societal welfare.





2. 11.4 Conclusion

Open defecation presents substantial health hazards, facilitating the spread of infectious diseases, environmental pollution, and socio-economic difficulties. The data underscores the critical necessity for holistic approaches to combat open defecation, encompassing community involvement, communication to drive behavioral changes, and the development of sanitation facilities. Emphasizing sanitation and hygiene in public health programs can significantly mitigate the health hazards linked to open defecation and enhance the well-being of communities grappling with these challenges.

2.12 Barriers to Latrine Adoption and Use

Despite the global focus on enhancing sanitation and hygiene practices, particularly through the adoption of latrines, substantial obstacles to latrine adoption and utilization persist in numerous communities, notably in developing nations. As reported by the World Health Organization (WHO, 2019), an estimated 4.2 billion individuals lack access to safely managed sanitation services, with many still resorting to open defecation. Understanding the impediments to latrine adoption and usage is crucial for formulating effective interventions that bolster sanitation practices and enhance public health outcomes. This literature review delves into the intricate barriers to latrine adoption, encompassing socio-cultural, economic, environmental, and infrastructural factors.

2.12.1 Socio-Cultural Barriers

Socio-cultural elements significantly influence individuals' perspectives on latrine adoption and usage. Cultural beliefs, social norms, and behaviors can either facilitate or impede the acceptance of latrines within communities.



2.12.2 Cultural Beliefs and Practices

Traditional beliefs and practices related to sanitation hold sway over the acceptance of latrines in many societies. Research by Wutich et al. (2016) indicates that cultural notions of cleanliness and purity exert a considerable influence on latrine usage in rural settings. The study underscores that in certain cultures, open defecation is deemed more natural or socially acceptable than using latrines, which may be perceived as unhygienic or shameful. Such cultural perceptions can engender resistance to adopting latrine facilities, thereby impeding sanitation promotion efforts.

2.12.3 Social Norms and Peer Influence

Social norms and peer behaviors also shape latrine adoption. According to a study by Aunger et al. (2016), social dynamics significantly affect sanitation practices, with individuals more inclined to adopt latrine usage when they observe peers doing the same. Conversely, in communities where open defecation prevails, individuals might hesitate to embrace latrines due to concerns about social stigma or mockery. This peer pressure poses a barrier to altering sanitation behaviors.

2.12.4 Economic Barriers

Economic considerations stand as a key determinant of latrine adoption and usage, with many households in low-income contexts grappling with financial constraints that impede investments in sanitation infrastructure.

2.12.5 Cost of Latrine Construction

The initial expenses associated with constructing latrines can prove prohibitive for low-income households. According to Hutton and Haller (2004), the financial burden of latrine construction often dissuades families from pursuing sanitation facilities. The lack of affordable and

accessible latrine options significantly contributes to the perpetuation of open defecation practices. Moreover, ongoing maintenance costs present financial obstacles, dissuading consistent latrine usage

2.12.6 Opportunity Costs

In numerous instances, families prioritize immediate needs over long-term sanitation investments. Research by Coffey et al. (2017) highlights that households may opt to allocate limited resources to essentials like food, education, or healthcare instead of latrine construction. This focus on short-term necessities can lead to the neglect of sanitation facilities, posing barriers to latrine adoption and utilization.

2.12.7 Environmental Barriers

Environmental factors, such as geographic constraints and climate variability, can hinder the adoption and use of latrines.

2.12.8 Geographic Constraints

In regions with challenging soil, topography, or water availability, building safe latrines may be difficult, leading to concerns about water contamination. Similarly, heavy rainfall and flooding can render latrines unusable during certain periods, discouraging their adoption. Additionally, inadequate sanitation infrastructure, including limited access to facilities and poor maintenance services, can impede latrine use.

2.12.9 Climate and Seasonal Variability

Seasonal fluctuations and climate variability play a significant role in latrine utilization as noted in a research study conducted by Mertens et al. (2017). The study highlighted that intense rainfall and flooding in specific areas result in the submersion of latrines, rendering them unusable for a period of time. This inaccessibility can discourage the adoption of latrines, as



households might opt for open defecation as an alternative during unfavorable weather circumstances.

2.12.10 Infrastructural Barriers

Insufficient sanitation infrastructure and services pose a significant obstacle to the acceptance and utilization of latrines. The absence of supportive systems may lead to situations where latrines are not fully utilized or eventually left unused.

2.12.11 Availability of Sanitation Facilities

The presence of latrine facilities within a community significantly impacts the choices individuals make concerning latrine usage. Research conducted by Baker et al. (2015) indicates that communities facing restricted latrine availability demonstrate lower tendencies to embrace proper sanitation measures. The study underscores the significance of enhancing sanitation structures and promoting fair distribution of latrines to stimulate broad adoption rates.

2.12.12 Maintenance and Service Provision

Maintenance and service provision play a crucial role in guaranteeing the functionality and usability of latrines. According to a study conducted by Hutton et al. (2014), insufficient maintenance of latrines frequently results in disuse and eventual abandonment. In the absence of routine cleaning and repairs, latrines can deteriorate, making them unhygienic and deterring individuals from their use. The researchers emphasize the importance of sustainable sanitation services, encompassing regular maintenance, to encourage the widespread adoption of latrine

2.12.13 Policy and Governance Barriers

Robust policies and governance structures play a critical role in overcoming obstacles to the acceptance and utilization of latrines. Poor implementation of policies and governance mechanisms may impede advancements in enhancing sanitation practices.





2.12.14 Lack of Supportive Policies

In multiple nations, the lack of effective sanitation policies can hinder the widespread adoption of latrines. Dasgupta et al. (2015) conducted a study emphasizing that inadequate policy structures frequently result in limited financial support and insufficient resources for sanitation projects. The researchers contend that it is essential for governments to give precedence to sanitation in their development strategies to foster a conducive setting for the acceptance of latrines.

2.13 Community Engagement and Participation

Engaging communities in the decision-making process is crucial to drive latrine adoption. Hossain et al. (2016) conducted a study indicating that incorporating community members in the planning and execution of sanitation projects boosts the sense of ownership and approval of latrine facilities. The study underscores the significance of participatory methods in surmounting obstacles to latrine adoption and securing the endurance of sanitation interventions.

2.14 Conclusion

Barriers to the adoption and utilization of latrines are numerous and diverse, spanning socio-cultural, economic, environmental, infrastructural, and policy dimensions. It is imperative to grasp these obstacles comprehensively to devise impactful strategies that encourage latrine adoption and enhance public health outcomes. Mitigating cultural influences, alleviating financial limitations, enhancing sanitation infrastructure, and reinforcing policy structures are fundamental measures to surmount these challenges effectively. Through a holistic strategy, public health campaigns can facilitate latrine adoption and play a significant role in advancing global sanitation objectives.



2.15 Gender Dynamics in Sanitation Practices

Sanitation practices play a crucial role in promoting human health and well-being, with safe and hygienic facilities being of utmost importance. Nevertheless, challenges in sanitation disproportionately impact women and girls due to gender-related factors that influence access, behavior, and decision-making in this area. Gender disparities in sanitation can result in negative health outcomes, compromised safety, and limited educational and economic opportunities, especially in low- and middle-income nations. This review delves into the gender-specific aspects of sanitation practices, focusing on aspects such as access, safety, cultural norms, and the effects of menstruation on women's sanitation requirements. By analyzing research across different settings, it highlights how gender considerations shape sanitation practices and the broader implications for achieving gender equality.

2.15.1 Access to Sanitation: Gender Disparities

The availability of sanitation facilities plays a crucial role in determining access for both men and women. However, women often encounter specific challenges that impede their access to these facilities. Studies indicate that in many communities, public latrines are insufficient or non-existent, leaving women with no choice but to resort to open defecation or shared facilities. Unfortunately, both options pose significant health and safety risks (Sommer et al., 2015). Research conducted by Caruso et al. (2017) found that inadequate sanitation facilities in schools disproportionately affect girls, resulting in higher rates of absenteeism during menstruation. This study underscores the fact that the absence of gender-sensitive facilities, including privacy and resources for managing menstrual hygiene, exacerbates gender disparities in sanitation access.



2.15.2 Household Decision-Making and Gendered Control Over Resources

In numerous patriarchal societies, men typically hold the authority to decide on household expenses, including investments in sanitation amenities. This unequal distribution of decision-making power can influence the emphasis placed on sanitation enhancements. Research conducted by O'Reilly (2016) in India revealed that despite women being the primary users and beneficiaries of household sanitation facilities, financial decisions are often controlled by men. Such gendered control of resources can impede the installation of latrines, resulting in inadequate sanitation options for women. The study underscores the importance of implementing initiatives that encourage women's participation in decisions related to sanitation.

2.16 Safety and Security Concerns for Women and Girls

2.16.1 Vulnerability to Gender-Based Violence

One of the most significant challenges related to gender in sanitation is the heightened vulnerability of women and girls to gender-based violence (GBV). Women forced to defecate in open spaces or use shared public toilets late at night are at an increased risk of experiencing sexual harassment, assault, or rape (Sommer et al., 2015). Research by Sahoo et al. (2015) in Odisha, India, revealed that women expressed fear and anxiety regarding defecating in the fields due to the risk of violence. This fear may compel women to adopt unsafe practices, such as limiting fluid intake to avoid using toilets at night, potentially leading to dehydration and urinary tract infections (UTIs)

2.17 Privacy and Dignity

The necessity for women to have privacy when utilizing sanitation facilities stands out as a crucial concern. The deficiency of private and secure sanitation amenities in schools, workplaces, and public areas not only compromises women's dignity but also restricts their

engagement in social, educational, and economic endeavors (Jasper et al., 2012). Women and girls necessitate safe and secluded environments for both defecation and menstrual hygiene management (MHM); however, these requirements are frequently disregarded in sanitation strategies. The lack of gender-sensitive sanitation facilities not only jeopardize women's well-being and security but also reinforces societal and economic disparities.

2.18 Cultural Norms and Sanitation Practices

2.18.1 Gendered Social Norms Around Open Defecation

Cultural norms related to open defecation and sanitation exhibit varying expectations for men and women, with women facing more significant constraints and social stigma. In several societies, open defecation reflects entrenched social norms, especially for men who may perceive it as a representation of liberty or masculinity (Coffey et al., 2017). Conversely, women are typically required to uphold modesty and seek privacy. The absence of private restroom facilities compels them to defecate during nighttime or in secluded areas, heightening their exposure to issues such as violence and health hazards.

2.18.2 Menstrual Taboos and Sanitation

Menstruation continues to be a culturally sensitive and frequently stigmatized subject in numerous societies, and these taboos carry considerable implications for women's sanitation practices. A study conducted by Hennegan et al. (2018) revealed that menstrual taboos, notably prevalent in South Asia, constrain women's access to sanitation facilities during menstruation. In certain societies, women who are menstruating are deemed impure and are prohibited from utilizing shared latrines, compelling them to opt for alternative, frequently hazardous sanitation solutions. These cultural norms not only jeopardize women's health and dignity but also perpetuate gender disparities.





2.19 Menstrual Hygiene Management (MHM) and Sanitation

2.19.1 The Impact of Inadequate MHM on Women's Health

Managing menstrual hygiene (MHM) stands as a pivotal component of sanitation specifically tailored for women and girls; nevertheless, it tends to be substantially overlooked in global sanitation endeavors. Deficient MHM practices can trigger an array of health complications, encompassing reproductive tract infections (RTIs), urinary tract infections (UTIs), and adverse mental health consequences. Research conducted by Phillips-Howard and colleagues (2016) in Kenya demonstrated that females lacking access to appropriate menstrual products and sanitation amenities face an elevated susceptibility to developing infections. Moreover, the research underscores the psychological pressure and shame encountered by women as a consequence of inadequate MHM resources, impacting their self-assurance and engagement in everyday tasks.

2.20 The Role of Schools in Promoting MHM

Schools play a crucial role in promoting Menstrual Hygiene Management (MHM) and enhancing sanitation for adolescent girls. However, in many developing countries, schools lack the necessary infrastructure to support MHM, such as private toilets, water, and proper disposal facilities for menstrual products (Sommer et al., 2015). The absence of these facilities results in girls missing school days during menstruation, which in turn has a detrimental impact on their education. Research conducted by Mason et al. (2013) revealed that girls in rural Uganda were absent for up to 25% of school days due to insufficient MHM facilities. The authors emphasize that establishing gender-sensitive sanitation amenities in schools is imperative for promoting girls' educational success and long-term empowerment.



2.21 Gender and Sanitation in Emergencies

2.21.1 Sanitation Challenges in Humanitarian Settings

In times of humanitarian crises, women and girls encounter distinct obstacles in obtaining safe and hygienic sanitation facilities. Natural disasters or conflicts can lead to the deterioration of sanitation infrastructure, impacting women more significantly as they have specific sanitation and MHM (Menstrual Hygiene Management) requirements. Research conducted by Schmitt et al. (2017) regarding sanitation practices in refugee camps revealed that women frequently faced restricted access to toilets, especially during nighttime, citing safety apprehensions. This study underscores the necessity for gender-sensitive sanitation measures in humanitarian situations to safeguard the well-being and security of women and girls.

2.22 Gender-Responsive Sanitation Solutions

Gender-responsive sanitation solutions are crucial to meeting the specific requirements of women and girls in emergency situations. These solutions encompass the provision of secure and confidential sanitation facilities, the integration of Menstrual Hygiene Management (MHM) into emergency sanitation programs, and the active participation of women and girls in the planning and administration of sanitation facilities (Schmitt et al., 2017). Implementing gender-responsive sanitation interventions not only enhance health results but also advances gender equality and fosters the empowerment of women in challenging environments.

2.23 Policy and Governance in Gendered Sanitation

2.23.1 Gender Mainstreaming in Sanitation Policy

While acknowledging the existence of gender discrepancies in sanitation, numerous national sanitation policies overlook the distinct requirements of women and girls. Dery et al. (2019) conducted a study on sanitation policies in sub-Saharan Africa, revealing that although gender

is frequently referenced in policy papers, the actual execution of gender-sensitive sanitation approaches remain limited. The researchers advocate for gender mainstreaming, which involves integrating a gender lens across all phases of policy formulation and execution, as crucial for meeting the sanitation requirements of women and girls. Achieving this goal entails heightened political commitment, allocation of resources, and establishment of accountability mechanisms to ensure that gender considerations are adequately incorporated into sanitation initiatives.

2.23.2 The Role of International Organizations and NGOs

International organizations and NGOs are essential in advocating for gender-sensitive sanitation practices. The United Nations' Sustainable Development Goal (SDG) 6 acknowledges the significance of addressing gender disparities in sanitation. NGOs like WaterAid and WASH United have played a key role in increasing awareness about the gendered aspects of sanitation and promoting gender-sensitive approaches to planning and implementing sanitation initiatives. These organizations highlight the importance of community engagement, particularly the involvement of women, in designing and managing sanitation facilities to ensure that their specific requirements are met.

2.24 Conclusion

Gender dynamics play a pivotal role in comprehending the hindrances and prospects for enhancing sanitation practices. Women and girls encounter distinct hurdles in reaching and utilizing sanitation facilities, stemming from societal norms, cultural traditions, and infrastructure shortcomings. Resolving these obstacles necessitates gender-inclusive sanitation measures and actions that underline the requirements of women and girls, especially concerning safety, privacy, and menstrual hygiene upkeep. By infusing a gender lens into sanitation



initiatives and regulations, authorities, global entities, and NGOs can foster gender parity and enhance well-being, security, and respect for women and girls on a global scale.

2.25 Case Studies of Sanitation Interventions in Ghana

Access to improved sanitation plays a pivotal role in promoting public health, fostering environmental sustainability, and driving economic development. Within Ghana, the absence of adequate sanitation infrastructure, compounded by behavioral and cultural obstacles, poses significant public health risks. In response to these challenges, diverse sanitation interventions have been deployed by governmental entities, non-governmental organizations (NGOs), and international entities. This comprehensive literature review delves into sanitation interventions in Ghana, leveraging case studies to scrutinize the efficacy of these measures, the hurdles faced, and the valuable insights gained. The review encompasses a spectrum of interventions, such as community-led total sanitation (CLTS), school-centered sanitation initiatives, and urban sanitation endeavors.

2.25.1 Community-Led Total Sanitation (CLTS) in Rural Ghana

CLTS Implementation and Approach

CLTS, a widely adopted sanitation intervention in rural Ghana, was developed in the early 2000s by Kamal Kar. This approach emphasizes community-driven actions to eradicate open defecation by constructing latrines and fostering behavioral change without external subsidies (Kar & Chambers, 2008). Successful implementations of CLTS have been observed in various Ghanaian regions, especially in rural areas like the Northern and Upper East regions, characterized by high rates of open defecation (Venkataramanan et al., 2018). The program includes initiating community dialogues to raise awareness about the risks associated with open defecation, often resulting in the establishment of individual and shared latrines.





2.25.2 Success and Challenges of CLTS in Ghana

In a case study analyzing the implementation of Community-Led Total Sanitation (CLTS) in the Upper East Region, Toubkiss (2017) discovered that communities embracing CLTS fully managed to attain open defecation-free (ODF) status within a period ranging from six months to one-year post-implementation. The accomplishment was ascribed to robust community mobilization endeavors and the incorporation of local leadership within the intervention framework. Nonetheless, persisting challenges like the longevity of ODF status and the standard of latrines constructed by households posed significant issues. According to a study by Cavill, Chambers, and Vernon (2015), some households regressed to open defecation post ODF achievement due to latrine collapse or abandonment, underscoring the necessity for post-assessment and continual maintenance support. Furthermore, resistance to CLTS has emerged in certain communities due to deep-rooted cultural norms and beliefs regarding sanitation. For instance, in specific communities, open defecation is perceived as a natural or customary behavior, complicating behavioral transformations (Jenkins & Scott, 2007). Additional obstacles encompass the initial expenses associated with latrine construction, as several households grapple with the financial burdens despite the non-subsidized approach of CLTS (Venkataramanan et al., 2018). Mitigating these hurdles demands the implementation of more adaptable and context-specific strategies that account for local traditions and economic circumstances.

2.25.3 Lessons Learned from CLTS

Key insights gleaned from the application of CLTS in Ghana underscore the significance of indigenous leadership and communal stewardship in upholding the longevity of sanitation initiatives. Engaging local chiefs and influential figures has proven pivotal in rallying

communities and instigating transformative behavioral shifts (Toubkiss, 2017). Equally important is the imperative for ongoing supervision and assistance following ODF accreditation to thwart regression to open defecation practices. Furthermore, incorporating hygiene advocacy and educational components into CLTS programs has demonstrated efficacy in bolstering favorable sanitation practices (Kar & Chambers, 2008).

2.26 Urban Sanitation Interventions: Accra and Kumasi

Urban Sanitation Challenges in Ghana

Urban centers in Ghana, notably the metropolises of Accra and Kumasi, encounter substantial sanitation hurdles attributed to swift population expansion, insufficient infrastructure, and constrained financial means. Notably, in Accra, more than 60% of residences depend on communal or communal facilities, with numerous communities grappling with subpar waste disposal practices and open defecation issues (Amoah et al., 2017). The prevalence of informal settlements exacerbates the challenge of delivering proper sanitation amenities due to space constraints hindering the installation of latrines or sewer systems.

Accra Sewerage Improvement Project (ASIP)

One major sanitation initiative in urban Ghana is the Accra Sewerage Improvement Project (ASIP), a venture launched by the government in collaboration with global partners like the World Bank. Commencing in 2006, the project aimed to modernize Accra's obsolete sewerage network, upgrade wastewater treatment plants, and enhance sanitation services access in low-income areas (World Bank, 2009). A study conducted by Scott et al. (2013) outlined key outcomes of the ASIP, including the establishment of new sewage treatment facilities and the extension of sewer systems to underserved regions. Nevertheless, the project encountered several hurdles, such as implementation delays, budget overruns, and challenges in acquiring





land for new infrastructural developments (World Bank, 2009). Additionally, criticism was directed towards the project for its emphasis on sewerage infrastructure without adequately meeting the needs of informal settlements, where residents commonly depend on on-site sanitation options like pit latrines (Amoah et al., 2017). Despite these obstacles, the ASIP has enhanced sanitation coverage in specific areas of Accra and played a role in diminishing waterborne diseases like cholera (Scott et al., 2013).

Kumasi Sanitation and Waste Management Project

In Kumasi, the Kumasi Metropolitan Assembly (KMA) has implemented several sanitation initiatives aimed at enhancing waste management and decreasing open defecation. One significant intervention is the Kumasi Sanitation and Waste Management Project, which concentrates on enhancing solid waste collection, expanding toilet facilities in public areas, and promoting hygiene education (KMA, 2016). Collaborating with private sector entities, the project offers door-to-door waste collection services and has invested in constructing public toilets in markets and bus terminals. A case study conducted by Danso-Boateng (2018) on Kumasi's sanitation project revealed that the introduction of waste collection services and public toilets had a positive effect on reducing indiscriminate dumping and open defecation in the city. Nevertheless, the study identified challenges such as insufficient funding, weak enforcement of sanitation regulations, and limited public awareness of appropriate waste disposal practices. The project's dependence on private contractors for waste collection has resulted in service delivery inconsistencies, notably in low-income areas where collections are less frequent (Danso-Boateng, 2018).



Lessons Learned from Urban Sanitation Interventions

Urban sanitation initiatives in Ghana have underscored the significance of merging infrastructure enhancements with behavior change communication and public awareness campaigns. Projects in Accra and Kumasi have revealed that integrating the establishment of sanitation facilities with hygiene promotion efforts led to greater success in fostering lasting behavioral changes (Amoah et al., 2017). Moreover, engaging private sector entities in waste management and sanitation services has proven beneficial in enhancing service delivery. However, the establishment of robust regulatory frameworks is essential to guarantee fairness and uniformity in service provision (Danso-Boateng, 2018).

2.27 School-Based Sanitation Interventions

2.27.1 Importance of School Sanitation

Sanitation in educational institutions plays a critical role in improving cleanliness and preventing the spread of illnesses among students. In Ghana, significant initiatives have focused on improving sanitation facilities in schools, particularly in rural and peri-urban areas. One notable effort is the introduction of the Water, Sanitation, and Hygiene (WASH) in Schools program, a collaborative initiative involving the government, UNICEF, and WaterAid (Adams et al., 2009). This project aims to provide schools with reliable water sources, improved sanitation facilities, and promote hygiene education.

2.27.2 Case Study of WASH in Schools

A study conducted by Adams et al. (2009) focusing on the WASH in Schools initiative in the Ashanti and Northern regions of Ghana discovered a favorable impact on students' well-being and attendance. The introduction of latrines and handwashing facilities in schools led to a reduction in cases of diarrhea and waterborne diseases, with hygiene education fostering



enduring sanitary behaviors among students. Despite these advantages, issues such as the inadequate upkeep of sanitation infrastructure and a lack of menstrual hygiene management (MHM) resources for girls were identified as key challenges. Menstrual hygiene emerges as a crucial concern in school sanitation, as many girls encounter obstacles in effectively managing their menstrual cycles, resulting in absenteeism during menstruation (Sommer et al., 2015). The WASH in Schools program has taken steps to address this issue by establishing separate facilities for girls and ensuring schools are equipped with essential water and sanitation supplies. Nevertheless, additional measures are essential to ensure all schools have an ample supply of MHM resources and to provide thorough menstrual health education to girls (Sommer et al., 2015).

2.27.3 Lessons Learned from School-Based Sanitation Interventions

School-based sanitation interventions in Ghana have highlighted the significance of combining sanitation enhancements with health education and gender-sensitive strategies. To sustain these interventions effectively, continuous facility maintenance and the integration of hygiene education into school curricula are essential (Adams et al., 2009). Moreover, catering to the unique sanitation requirements of girls, specifically by offering Menstrual Hygiene Management (MHM) resources, plays a pivotal role in enhancing school attendance and academic achievements (Sommer et al., 2015).

2.28 NGO-Led Sanitation Interventions

2.28.1 WaterAid's Sanitation Programs in Ghana

WaterAid, a global non-governmental organization (NGO), has played a pivotal role in advancing enhanced sanitation practices in Ghana. Across its diverse initiatives, WaterAid has focused on enhancing the availability of safe water and sanitation amenities, especially in rural



areas. Among its notable projects is the \Sustainable Water, Sanitation, and Hygiene for All\ initiative, designed to enhance sanitation inclusivity and foster hygiene enlightenment in the Northern, Upper East, and Upper West regions of Ghana (WaterAid, 2014).

2.28.2 Impact of WaterAid's Interventions

A study carried out by WaterAid (2014) in the Upper West Region revealed that implementing household latrine construction alongside hygiene education initiatives notably decreased the occurrence of open defecation and waterborne diseases in selected communities. Additionally, the initiative aimed to empower women and marginalized communities to spearhead sanitation management, enhancing the longevity of the project impact. Nonetheless, obstacles like inadequate financial support for latrine construction and the necessity for increased government engagement to expand successful programs were underscored in the research.

2.28.3 Lessons Learned from NGO-Led Interventions

NGO-led sanitation initiatives in Ghana underscore the vital role of community engagement and the empowerment of local leaders in ensuring the effectiveness of sanitation programs. WaterAid's strategy, as highlighted in 2014, integrates infrastructure enhancement with behavior change communication, demonstrating success in fostering enduring sanitation practices. Yet, to engender lasting effects, fostering heightened partnerships among NGOs, local authorities, and communities is imperative to uphold the maintenance of sanitation facilities and the continuity of hygiene education.

2.28.4 Conclusion

Sanitation interventions in Ghana have shown considerable advancements in enhancing access to safe water, sanitation facilities, and hygiene education. Progress has been notable across rural community-led efforts like CLTS, urban infrastructure schemes, and school-based programs,

effectively tackling diverse sanitation obstacles. Nonetheless, the durability of these interventions is a pressing issue, with challenges like facility upkeep, behavior modification, and financial limitations impeding sustained advancements. Future sanitation endeavors in Ghana should prioritize enhancing local ownership, expanding financial access, and incorporating gender-sensitive strategies to guarantee enduring effectiveness.

2.29 Cultural Sensitivity in Sanitation Programs

Cultural sensitivity in sanitation programs is gaining acknowledgment as a pivotal element in the effectiveness and continuity of sanitation interventions. It is imperative to grasp the socio-cultural backdrop within which these programs function to facilitate behavioral shifts, secure community acceptance, and surmount obstacles to utilization. This review of literature delves into diverse facets of cultural sensitivity within sanitation programs, emphasizing the significance of incorporating indigenous traditions, beliefs, and customs into program development and execution. Various case studies from different regions, especially in low- and middle-income nations, are scrutinized to demonstrate the impact of cultural sensitivity on sanitation results.

2.29.1 The Importance of Cultural Sensitivity in Sanitation Programs

2.29.2 Definition and Significance

Cultural sensitivity in sanitation involves taking into account the local cultural norms, values, traditions, and practices when developing and executing sanitation projects. This approach requires a deep understanding of how a community's beliefs and customs influence their views on sanitation facilities, hygiene behaviors, and waste disposal systems (Jenkins & Curtis, 2005). By integrating cultural perspectives, sanitation initiatives are more likely to promote changes in behavior and attain sustainable outcomes. Programs that disregard cultural considerations





often encounter opposition from the community. Narayan (2016) notes that many sanitation projects fail because they impose outside solutions that do not harmonize with local customs and beliefs. For instance, implementing latrines in areas where open defecation is culturally accepted may face resistance unless there is an appreciation of the socio-cultural factors underpinning such behaviors (Chambers, 2009).

2.29.3 Behavioral Change and Cultural Norms

Cultural sensitivity plays a significant role in promoting changes in behavior. In numerous societies, practices related to sanitation, such as open defecation, are deeply rooted in local traditions. Therefore, effective sanitation initiatives must encompass more than just infrastructure provision; they should also address the cultural and social aspects influencing hygiene practices (Cavill, Chambers, & Vernon, 2015). Social standards regarding cleanliness, privacy, and purity significantly impact the acceptance and utilization of sanitation facilities, underscoring the importance of programs aligning with these values to enhance effectiveness. For example, research conducted in rural India by Coffey et al. (2014) revealed that open defecation stemmed not only from economic challenges but also from cultural beliefs about purity and pollution. Many community members viewed having a toilet indoors as impure, leading them to continue open defecation practices. Sanitation interventions that disregarded these cultural norms faced difficulties in promoting lasting latrine use, emphasizing the necessity of tailored approaches that respect cultural nuances.

2.29.4 Integration of Cultural Practices in Sanitation Programs

2.29.4.1 Designing Sanitation Facilities with Cultural Sensitivity

When it comes to creating sanitation facilities, ensuring cultural appropriateness is essential for their acceptance and utilization. Organizations like the World Health Organization (WHO) and



UNICEF stress the significance of integrating local traditions and preferences into sanitation system designs, especially in rural settings where traditional practices can differ significantly from urban standards (WHO & UNICEF, 2020). Design considerations should encompass aspects such as gender dynamics, privacy issues, and religious convictions when developing latrines and other sanitation amenities. For instance, within many Islamic societies, the religious mandate for water-based purification post-defecation necessitates the availability of water for cleansing in sanitation schemes to prevent underutilization of the facilities (Shah, 2013). Similarly, in certain African cultures, the cultural norms advocating modesty and privacy require separate sanitation facilities for men and women (Jewitt, 2011). Initiatives that neglect to offer gender-segregated amenities may face opposition from women who may be reluctant to use shared latrines, feeling uneasy or unsafe in such settings.

2.29.5 Involvement of Local Leaders and Cultural Brokers

Engaging local leaders and cultural brokers is pivotal in fostering cultural sensitivity within sanitation programs. These influential figures hold the key to shaping community perspectives and behaviors. Traditional leaders, elders, and religious figures often wield substantial influence in many communities and can serve as drivers of change. By actively involving them in both the design and advocacy of sanitation initiatives, implementers can enhance community receptiveness and active participation. A compelling case study from Ethiopia underlines the significance of integrating local religious leaders into sanitation campaigns. As highlighted by Terefe et al. (2015), religious leaders in rural Ethiopian settings played a crucial role in championing hygiene and sanitation practices, leveraging their trusted status as information sources. By portraying sanitation as a moral and religious duty, these leaders effectively reshaped community norms and promoted latrine usage. Similarly, the Community-Led Total

Sanitation (CLTS) strategy has proven successful in advancing sanitation practices across various nations by enlisting the collaboration of local leaders in driving behavioral transformations. Through participatory techniques, CLTS instigates communal efforts and fosters a collective sense of responsibility towards sanitation enhancements. By encouraging communities to confront the adverse effects of open defecation and take united action against it, CLTS has garnered notable achievements in curbing open defecation rates in countries like Bangladesh, Nepal, and Ghana, as documented by Venkataramanan et al. (2018).

2.29.6 Barriers to Culturally Sensitive Sanitation Programs

One of the key challenges in implementing culturally sensitive sanitation programs is the reluctance to embrace change. In various societies, sanitation practices are deeply intertwined with long-standing beliefs and customs, posing obstacles to the adoption of new behaviors and technologies. For instance, certain South Asian communities exhibit a strong cultural inclination towards open defecation, viewing it as a more natural and environmentally friendly practice compared to using enclosed facilities like latrines (Coffey et al., 2014). Initiatives aiming to introduce latrines in such areas need to confront these cultural norms through extensive behavior change initiatives involving community dialogue and self-reflection. In West Africa, the integration of pit latrines in rural settings has encountered resistance stemming from traditional perceptions of waste management. In some cultural contexts, human waste is regarded as a hazard or impurity, rendering the concept of storing waste near residential areas in latrines culturally unacceptable (Jewitt, 2011). Addressing these entrenched beliefs is crucial to prevent community alienation and to sustain the effectiveness of sanitation programs.



2.29.6 Case Studies of Culturally Sensitive Sanitation Programs

Gender dynamics play a pivotal role in sanitation practices, particularly within societies where women and girls encounter additional obstacles related to privacy, safety, and menstrual hygiene management (MHM). In numerous communities, women bear the responsibility of overseeing household sanitation; however, they may have limited authority in determining the design and placement of sanitation facilities (Sommer, Kjellén, & Pensulo, 2015). This unequal distribution of power can lead to the creation of facilities that do not adequately cater to women's needs, such as distant latrines that are challenging or unsafe to access. Effectively addressing gender-specific barriers necessitates a nuanced comprehension of local power dynamics and an inclusive approach to program development. Research conducted in Kenya by Greed (2019) revealed that sanitation initiatives involving women in decision-making processes were more successful in catering to the community's overall requirements. The inclusion of women ensured that facilities were tailored to meet their distinct needs, such as the provision of sufficient lighting and secure locks on latrine doors. Conversely, programs that overlooked gender dynamics often struggled to gain widespread acceptance, as women felt vulnerable or uneasy utilizing the facilities.

2.29.7 The CLTS Approach in Ghana

Community-Led Total Sanitation (CLTS) is a well-recognized strategy for promoting sanitation in rural areas using culturally appropriate methods. In Ghana, several regions have adopted CLTS to motivate communities to discontinue open defecation and construct latrines (Kar & Chambers, 2008). The effectiveness of this approach lies in its community engagement, empowering them to acknowledge their sanitation challenges and collaborate on solutions. The CLTS method is extremely participatory, highlighting the crucial role of local leaders in



instigating change. Through involving chiefs, elders, and community members in dialogues regarding the risks of open defecation, CLTS fosters a sense of ownership and accountability for sanitation enhancement (Venkataramanan et al., 2018). Moreover, the approach values and integrates local traditions and beliefs, ensuring that sanitation interventions resonate with community preferences and behaviors.

2.26.8 WaterAid’s Sanitation Programs in Mali

WaterAid has implemented culturally sensitive sanitation programs in Mali, where traditional beliefs and practices concerning water and hygiene significantly influence community behaviors. Collaborating with local leaders and cultural institutions, WaterAid aims to enhance the utilization of latrines and elevate hygiene standards (WaterAid, 2018). Recognizing the pivotal role of cultural norms in sanitation practices, the organization underscores the necessity of overcoming cultural impediments for successful sanitation improvements. WaterAid’s initiative in Mali underscores the importance of integrating gender-sensitive approaches. Women and girls encounter substantial obstacles in managing menstrual hygiene due to cultural stigmas and limited access to private sanitation facilities (WaterAid, 2018). By targeting these cultural and gender-specific challenges, WaterAid has effectively enhanced sanitation results and fostered lasting behavioral transformations.

2.28.9 Strategies for Enhancing Cultural Sensitivity in Sanitation Programs

One key strategy for promoting cultural sensitivity in sanitation initiatives is through the adoption of participatory methods. Engaging community members in the planning, design, and execution of sanitation endeavors ensures that indigenous customs and practices are respected. Utilizing participatory approaches like community workshops, focus groups, and behavior change campaigns enables a more profound grasp of cultural traditions and principles (Cavill



et al., 2015). Moreover, these methodologies cultivate a feeling of ownership and accountability for sanitation enhancements, enhancing the prospects of lasting utilization. Capacity enhancement represents a pivotal approach to fostering cultural sensitivity within sanitation initiatives. Through the education of indigenous leaders, healthcare professionals, and community members regarding culturally relevant sanitation protocols, initiatives can guarantee the widespread dissemination of knowledge and competencies across the community (Terefe et al., 2015). This methodology not only amplifies the impact of sanitation efforts but also empowers local stakeholders to spearhead behavior modification and enhance sanitation results.

Cultural sensitivity plays a pivotal role in the effectiveness and durability of sanitation programs. By incorporating indigenous customs, values, and beliefs into program planning and execution, sanitation efforts can promote changes in behavior, enhance community acceptance, and address challenges related to accessibility and utilization. Examples from Ghana, Mali, and various nations underscore the significance of customized strategies that honor local traditions and involve community influencers. As sanitation initiatives progress, the integration of cultural awareness will remain indispensable for realizing sustained advancements in sanitation worldwide.

2.29 Measuring and monitoring open defecation rates

Open defecation (OD) remains a pressing public health issue, especially in developing nations, carrying significant health risks, worsening poverty levels, and perpetuating socio-economic disparities. The United Nations (UN) acknowledges sanitation as a fundamental human right, with concerted efforts to eradicate open defecation pivotal to achieving the Sustainable Development Goals (SDGs), notably SDG 6, which strives for universal access to clean water



and sanitation. Regularly tracking open defecation rates is crucial for gauging progress towards these objectives and pinpointing areas requiring intervention. This review delves into diverse methodologies for assessing open defecation, the challenges linked to data collection, and the pivotal role of precise monitoring in sanitation initiatives.

The global aim to eradicate open defecation is set out in SDG 6.2, with a target to achieve sufficient and fair sanitation for all by 2030. Precise measurement of open defecation rates is crucial for monitoring progress towards this objective, enabling governments and international bodies to evaluate the efficacy of sanitation initiatives and allocate resources appropriately (WHO & UNICEF, 2020). Monitoring open defecation also assists in identifying disadvantaged populations in need of additional assistance, such as those in rural areas, informal settlements, and marginalized communities. Accurate data on open defecation rates plays a pivotal role in guiding evidence-based policy decisions and interventions. In the absence of dependable data, evaluating the impact of sanitation infrastructure investments on reducing open defecation or the effectiveness of behavior change campaigns becomes challenging (UNICEF, 2019). Furthermore, comprehending the prevalence and regional distribution of open defecation can aid policymakers in prioritizing regions where the health hazards associated with inadequate sanitation pose the most significant risks (Chambers, 2009).

Open defecation has serious public health outcomes, including waterborne diseases which may cause diarrhea, cholera and typhoid (Mara 2016). This contributes to child malnutrition and stunting because the use of these sources is contaminated by faeces resulting in an increased susceptibility to infection (Coffey et al., 2014). Tracking OD rates is imperative to gauge the effectiveness of sanitation programs in improving public health outcomes and decreasing incidences of these diseases. Studies have indicated that a 1% decrease in OD is enough to cut



by more than half the prevalence of diarrhea among children under five (Spears, 2013). Additionally, the surveillance of open defecation may well contribute to identifying hotspots where environmental contamination and outbreaks risks are likely higher. Specifically, in areas where safe water and sanitation are scarce, OD can have the additional pernicious effect of contaminating open water sources which would lead to a higher potential for transmission of diseases (Cairncross & Valdmanis, 2006). Methods for Measuring Open Defecation include;

1. **Household Surveys:** Household surveys represent the most prevalent approach for assessing open defecation rates. These surveys commonly entail in-person interviews with household members, querying their sanitation behaviors, such as toilet usage or open defecation practices (UNICEF, 2019). Key global surveys like the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS) play a crucial role in gathering data on open defecation at national and subnational levels (WHO & UNICEF, 2020). One notable advantage of household surveys is their ability to offer comprehensive insights into individual and household sanitation habits, encompassing various forms of sanitation facilities and preferences regarding defecation practices. Nonetheless, it is important to acknowledge that self-reported data might be influenced by social desirability bias. In certain circumstances, respondents may be hesitant to confess to engaging in open defecation, particularly in regions where initiatives to eradicate such practices are actively implemented (Coffey et al., 2014).
2. **Observational Methods:** In certain instances, researchers resort to direct observation to measure Open Defecation (OD) rates. This method involves researchers physically visiting communities and observing defecation practices firsthand. Although this approach yields accurate data, it is labor-intensive, intrusive, and logistically

challenging, particularly in large populations. Additionally, the presence of researchers may influence behavior, as individuals might change their defecation practices when aware of being observed (Cavill et al., 2015). Observational methods are often employed alongside other data collection techniques, such as household surveys, to validate self-reported information and obtain a more comprehensive understanding of sanitation behaviors. For instance, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) endorse the use of observational methods as a supplementary tool for confirming the existence of sanitation infrastructure and usage patterns in both rural and urban areas (WHO & UNICEF, 2020).

3. **Satellite and Remote Sensing Technologies:** Advances in satellite and remote sensing technologies have introduced new opportunities for monitoring open defecation rates. These technologies have the capability to identify physical signs of open defecation, such as the presence of human waste in open environments. Remote sensing becomes particularly valuable in monitoring open defecation in challenging locations like informal settlements and rural areas (Soriano, 2018). Despite the potential benefits, using satellite technology for open defecation monitoring is still in its nascent phase, encountering obstacles related to resolution, data interpretation, and cost considerations (Fredericks et al., 2015). Remote sensing approaches provide the advantage of gathering extensive data without the necessity of conducting ground surveys, offering a cost-effective solution for monitoring open defecation across large geographical regions. Nonetheless, the effectiveness of these methods relies on the quality of satellite images and the algorithms employed to detect indicators of open defecation. With ongoing



technological advancements, satellite-based monitoring is anticipated to assume a more prominent role in gathering sanitation data (Soriano, 2018).

4. **Community-Led Monitoring:** Community-driven surveillance entails training local community members to monitor open defecation rates within their communities. This strategy is frequently employed alongside Community-Led Total Sanitation (CLTS) initiatives, urging communities to eradicate open defecation through collective behavioral shifts (Kar & Chambers, 2008). Community-led monitoring emerges as a cost-effective and empowering method to monitor open defecation, engaging local stakeholders in data collection and instilling a sense of responsibility for sanitation enhancements (Venkataramanan et al., 2018). The flexibility and adaptability of community-led monitoring are notable benefits, as community members possess a deeper understanding of the specific challenges and cultural norms prevalent in their regions. Nonetheless, the accuracy of data gathered through community-led monitoring may vary based on the extent of training provided to community monitors and the consistency of data collection endeavors (Cavill et al., 2015).
5. **Mobile and Digital Data Collection Tools:** The utilization of mobile and digital technologies for data collection has seen a surge in recent years. Mobile phones have become valuable tools for conducting surveys, gathering geospatial data, and monitoring sanitation behaviors in real time. These technological solutions have found application in various contexts to monitor Open Defecation (OD) rates and evaluate the effectiveness of sanitation initiatives (Fredericks et al., 2015). Mobile data collection brings numerous benefits, such as expedited data gathering at a reduced cost compared to traditional survey approaches. Moreover, mobile platforms enable the collection of



more frequent and detailed data, allowing for the immediate tracking of sanitation practices. For instance, the Sanitation Tracker app, developed by UNICEF, empowers field workers to map sanitation facilities and record patterns of usage within communities (UNICEF, 2019). Nonetheless, the success of mobile data collection hinges on the accessibility of technology and network connectivity in the target regions, as well as the willingness of individuals to engage in surveys conducted through mobile devices.

In situations where open defecation (OD) is socially stigmatized or efforts to eradicate it are actively pursued, individuals may tend to underreport their engagement in OD practices in fear of societal judgment or shame, leading to a potential bias in self-reported data (Coffey et al., 2014). Consequently, there is a risk of underestimated OD rates, posing challenges in precisely gauging the prevalence of this behavior. To address this challenge, researchers have explored various strategies to enhance the reliability of OD data collection. These include employing indirect questioning techniques or enabling anonymous reporting to encourage more candid responses (Spears, 2013). Additionally, complementary approaches such as observational methodologies or the use of satellite data have been investigated to validate self-reported data and yield more precise estimations of OD prevalence (Fredericks et al., 2015). Another challenge in assessing OD rates lies in the geographical and demographic coverage, especially in rural and remote areas. Sanitation initiatives and surveys primarily focus on urban settings due to better infrastructure and easier data collection, leading to a dearth of information on OD in rural areas where the practice is more common (UN-Habitat, 2016). Additionally, populations like those in informal settlements or nomadic communities pose challenges for conventional





data collection methods, often resulting in their exclusion from national surveys, thus providing an incomplete understanding of OD prevalence and sanitation accessibility (Chambers, 2009). To bridge this gap, innovative data collection approaches such as remote sensing or community-driven monitoring are essential to ensure the inclusion of all population segments.

Ensuring the sustainability of monitoring systems presents a critical hurdle in sanitation programs. Monitoring OD rates necessitates continuous data collection and analysis to monitor progress and pinpoint areas for enhancement. Nevertheless, many sanitation programs encounter resource limitations that hinder their capacity to sustain long-term monitoring endeavors (Venkataramanan et al., 2018). This predicament can lead to data discrepancies and gaps, posing challenges in evaluating the actual effectiveness of sanitation interventions. To tackle this issue, governments and organizations need to allocate resources towards durable monitoring systems that can be seamlessly integrated into existing health and sanitation frameworks. This involves bolstering the capabilities of local institutions in data collection and analysis while ensuring the adaptability of monitoring systems to evolving circumstances and emerging technologies (Kar & Chambers, 2008).

In the end, measuring and monitoring open defecation rates remain an indispensable tool for reaching global sanitation goals and improving the public health situation. Different measures have been taken to measure OD through household surveys, observational methods, remote sensing technologies, community-led monitoring, and mobile data collection tools, all of which have different advantages and varying challenges. Yet progress in methodologies faces persistent challenges related to social desirability bias, geographic gaps in coverage, and sustainability of monitoring systems. These are challenges that require continued innovation, investment, and coordination at the levels of governments, international organizations, and

local communities if they are to be overcome. Indeed, proper monitoring ensures accuracy and reliability in sanitation programs so as to effectively reach the neediest populations and contribute toward the global effort of reducing open defecation.

2.31 Future directions for policy, practice and research

Open defecation (OD) persists as a notable challenge in numerous developing nations, including Ghana. Apart from infrastructural hindrances like the absence of latrines, socio-cultural aspects also exert a pivotal influence on OD prevalence. Within the Kintampo North Municipality, socio-cultural elements such as indigenous beliefs, taboos, and communal customs wield a significant impact on sanitation practices. Grasping these dynamics is paramount for devising effective strategies to combat OD. This review delves into the prospective avenues for policy, practical interventions, and scholarly inquiries concerning the socio-cultural influencers on OD in the Kintampo North Municipality, drawing insights from the broader spectrum of sanitation literature.

In many rural areas, such as Kintampo North, traditional beliefs and taboos regarding defecation strongly influence sanitation practices. Certain communities view human excreta as sacred, advocating for separate disposal to maintain purity, resulting in a tendency to defecate in secluded locations (Jenkins & Curtis, 2005). These customs are deeply ingrained in the cultural and spiritual aspects of rural life, creating resistance to change. Effectively addressing these entrenched beliefs necessitates approaches that are culturally sensitive and considerate of local spiritual and traditional norms. Additionally, open defecation is sometimes normalized or even encouraged in certain communities, particularly those near vast open spaces (Coffey et al., 2014). In such contexts, open defecation may be perceived as natural and beneficial, rendering toilet construction unnecessary. In regions like Kintampo North, where traditional customs





prevail, efforts to improve sanitation must involve collaboration with religious and community leaders to integrate education initiatives (Chambers & Myers, 2016).

Access to sanitation facilities is often dictated by gender dynamics, with cultural norms considering it inappropriate to share the same toilets between men and women or for women to use public toilets. This results in OD rates being higher among the female population, who would rather be in isolation than defy custom and personal modesty. This can be addressed by constructing separate latrines for males and females in Kintampo North, as this has been suggested to help reduce open defecation rates among women and girls. Another concern is the safety of women, especially in rural areas where facilities in the public domain are minimal. Many women are vulnerable to sexual violence or harassment whenever they have to go out to defecate, especially at night. Sommer et al. (2016) state that such situations put them at risk. Any future programs on sanitation in Kintampo North should focus on the construction of well-lit, safe, and private latrines for women and girls to guarantee safety and dignity while conducting their defecation activities.

The collective nature of rural communities often implies that individual behaviors are informed by peers' actions and social norms. For instance, in a situation where a good number of people in a particular community continue to openly defecate, such practice is said to be socially acceptable behavior. This has been documented in parts of Ghana, where community norms either help or hinder the process of eliminating OD altogether. Interventions in Kintampo North will be involved in the shifting of collective norms through peer-to-peer education and community-led approaches such as CLTS. Community-led total sanitation has been proven to alter social norms and reduce OD through convincing community members to collectively take responsibility for good sanitation



practices. Therefore, future research should capture specific community dynamics of the Kintampo North, inclusive of the degree at which local influencers and leaders promote or discourage OD.

In various regions of Ghana, including Kintampo North, the practices of open defecation (OD) exhibit variability based on seasonal changes or specific ceremonial occasions. For instance, during times of mourning or festive events, certain societies may partake in OD as a component of their customary rituals (Chambers, 2009). In the context of Kintampo North, it becomes imperative to delineate these cyclic trends and formulate interventions that honor indigenous customs while advocating for continuous utilization of enhanced sanitation amenities throughout the year. There is a crucial need for research to delve into the intricate dynamics between ritualistic or seasonal behaviors and sanitation habits within the community of Kintampo North. Initiatives focused on sanitation should steer clear of estranging the local populace by enforcing practices that clash with their heritage. Rather, the approach should align with the cultural ethos, fostering gradual shifts in behavior that integrate modern sanitation practices with traditional customs.

2.32 Future Directions for Policy

To effectively tackle the socio-cultural determinants of Open Defecation (OD) in Kintampo North, it is imperative to transition from a universal approach to one that is culturally attuned. Sanitation policies need to acknowledge and respect the varied cultural norms prevalent in the region, adjusting interventions accordingly. For instance, the implementation of rural sanitation policies by the Ghanaian government could involve strategies that involve traditional leaders, faith-based groups, and local influencers to advocate for toilet usage (Ministry of Sanitation and Water Resources, 2018). Furthermore, policies should take into account the specific needs



of different genders and address the obstacles hindering women and girls' access to sanitation facilities. This may involve ensuring gender-specific restrooms in public areas, educational institutions, and healthcare facilities. Emphasizing community-engaged sanitation initiatives that are inclusive and responsive to local dynamics is crucial for effectively combating OD in culturally intricate areas like Kintampo North (Greed, 2019).

Effective sanitation programs necessitate robust local governance structures capable of implementing and enforcing sanitation regulations. In Kintampo North, incorporating traditional governance systems like chieftaincies and community elders into sanitation program planning and execution is essential. Empowering local governance structures through policies can yield more sustainable and locally-driven results (Kar & Chambers, 2008). To bolster sanitation efforts, local governments in the area must have sufficient resources to enforce sanitation laws, including penalties for open defecation and incentives for constructing latrines. Collaboration among governmental bodies, non-governmental organizations, and local leadership is crucial for fostering behavioral changes in sanitation practices by establishing a supportive environment.

Policies should prioritize behavior change communication (BCC) strategies that target the underlying socio-cultural drivers of open defecation (OD). BCC campaigns must utilize language, imagery, and communication channels that deeply resonate with the local population. In Kintampo North, this approach may involve creating radio dramas, community theater productions, and outreach programs in local dialects that effectively tackle the prevailing myths and taboos related to OD. BCC interventions should also emphasize instilling pride and a sense of ownership regarding sanitation practices. Initiatives such as Community-Led Total Sanitation (CLTS), which emphasize community empowerment and collective action, have

demonstrated that reshaping social norms can result in the swift abandonment of OD (Venkataramanan et al., 2018). Policies supporting the expansion of CLTS and similar community-driven strategies will play a pivotal role in diminishing OD prevalence, especially in culturally diverse regions.

2.33. Future Directions for Practice

In rural areas such as Kintampo North, traditional leaders and elders play a vital role in shaping social norms and behaviors. It is crucial for implementers to actively involve these influential figures in sanitation initiatives to ensure the acceptance and uptake of interventions within the community. The elders can set an example by highlighting the significance of utilizing latrines, thereby advocating for health and hygiene practices (Jenkins & Curtis, 2005). Furthermore, collaborating with religious and spiritual leaders can help dismantle cultural taboos that hinder toilet usage. For instance, in certain areas, religious leaders have played a pivotal role in dispelling misconceptions surrounding the containment of human waste within households (Coffey et al., 2014). Engaging these influential leaders is key to promoting behavioral changes and encouraging the sustained adoption of enhanced sanitation practices.

In Kintampo North, embracing a participatory strategy is fundamental for the development of sanitation infrastructure. It is imperative that communities engage in every phase of the project, ranging from initial planning and design to construction and ongoing maintenance. This inclusive approach cultivates a sense of ownership and guarantees that sanitation facilities align with the cultural and practical requirements of the community (Chambers & Myers, 2016). Furthermore, it is essential that sanitation facilities are both cost-effective and easily accessible to all community members, especially those with limited financial resources. Subsidies, microfinance initiatives, and revolving funds can facilitate households in covering the expenses



associated with constructing latrines. It is also crucial for implementers to prioritize the provision of economical, resilient, and culturally suitable sanitation solutions.

Sanitation interventions should be harmoniously integrated into health and education programs to foster a comprehensive approach to behavior modification. For instance, sanitation initiatives implemented in schools can educate children on the significance of hygiene and proper latrine usage, contributing to the gradual transformation of societal norms over time (Sommer et al., 2016). Likewise, the amalgamation of sanitation practices with maternal and child health initiatives can empower mothers to embrace and instill healthy sanitation behaviors within their households. Health outreach workers, such as community health nurses and traditional birth attendants, should undergo training to disseminate sanitation-related information during their regular visits. These frontline workers can act as reliable sources of guidance, particularly for women, enhancing the likelihood of adopting new practices when consistently exposed to culturally sensitive messaging from healthcare providers.

2.34. Future Directions for Research

Future research in Kintampo North ought to delve into the intricate belief systems that impact OD behaviors. Anthropological inquiries focusing on delineating local taboos, rituals, and spiritual customs concerning sanitation can offer profound insights for crafting interventions that align with the cultural context (Jenkins & Curtis, 2005). Furthermore, studies should investigate the role of gender, age, and social standing in shaping sanitation practices within households. Grasping these dynamics can assist in tailoring interventions towards distinct demographics like women, youth, or elders, who may exhibit distinct sanitation requirements and choices.



In order to effectively address socio-cultural barriers to latrine adoption in Kintampo North, it is important to conduct rigorous evaluations of sanitation interventions. This evaluation should aim to determine the effectiveness of different interventions, such as Community-Led Total Sanitation (CLTS), Behavior Change Communication (BCC) campaigns, and infrastructure projects. To assess the impact of these interventions, a variety of research methods can be employed. Randomized controlled trials (RCTs) can provide valuable insights into the effectiveness of specific interventions, while qualitative case studies allow for in-depth analysis of the socio-cultural factors influencing latrine adoption. Additionally, participatory research methods can involve local communities in the evaluation process, ensuring their perspectives and experiences are taken into account. It is also crucial to investigate the long-term sustainability of sanitation interventions, especially in rural and culturally diverse settings. This involves examining how well communities maintain and use sanitation facilities over time, as well as studying whether social norms surrounding open defecation permanently change. By conducting rigorous evaluations and understanding the long-term sustainability of interventions, researchers can contribute to the development of effective strategies for improving sanitation practices in Kintampo North. Behavior change in sanitation represents a gradual transformation that typically necessitates continuous interventions spanning multiple years. Longitudinal studies monitoring sanitation behaviors longitudinally can offer valuable perspectives on the efficacy of diverse interventions and pinpoint elements conducive to enduring behavior modification (Chambers & Myers, 2016). Research should further target the impact of external disruptions, like economic downturns or natural calamities, on shaping sanitation practices. Comprehending community responses to evolving situations can aid in crafting robust sanitation initiatives capable of enduring forthcoming adversities.

When tackling the issue of open defecation in Kintampo North, a comprehensive strategy blending policy, implementation, and research is crucial. This entails culturally attuned sanitation policies, community-led infrastructure initiatives, and focused campaigns to drive behavioral change, all pivotal in encouraging the uptake of enhanced sanitation practices. Involving customary leaders, addressing gender nuances, and dedicating resources to long-term studies enable the development of sustainable sanitation schemes that align with local beliefs. Moving forward, efforts in policy, implementation, and research should delve deeper into the intricate socio-cultural elements influencing sanitation habits in rural Ghana, ensuring interventions are not only impactful but also culturally sensitive



CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

In this chapter, the methods used in carrying out the study are outlined and the justification for the use of these methods is provided. The chapter entails the study design, sampling methods, data collection instruments, procedure and management, data analysis, interpretation and reporting. It explains how the aforementioned components of research were executed to answer objectives of the study on the socio-cultural determinants of open defecation among households in the Kintampo North Municipality of the Bono East Region of Ghana.

3.2 Background to the Study Area

The Bono East Region is currently one of the sixteen Regions in Ghana and forms part of the six newly created Regions out of the previous ten Regions of Ghana. It was carved out of the Brong Ahafo region or created on the 13th of February, 2019 with the Constitutional Instrument (C.I) 113 after the people within the catchment area of the new region on 27th December, 2018 voted YES for the creation of the Bono East region with 525,275 out of the 448,545 voters who cast their ballot in the referendum (Annual Health Report, Bono East Region, 2018). Its capital is Techiman. The Bono East Region covers a total land area of 39,557km² and borders on the north by the Savannah Region, on the west by the Bono Region, on the south by the Ashanti region and on the east by the Volta Lake. With the population of 104,212 people as of 2013, the region has eleven Municipal and District Assemblies (MDAs) under its jurisdiction (<https://www.ghanadistricts.com/Home/Region/11>).



The MDAs in the region are Atebubu-Amantan Municipality, Kintampo Municipality, Kintampo South District, Nkoranza North District, Nkoranza South Municipality, Pru East District, Pru West District, Sene East District, Sene West District, Techiman North District and the Techiman Municipal Assemblies (<https://www.ghanadistricts.com/Home/Region/11>).

The Bono East region is part of the vegetative belt of Ghana, where the climatic condition is always conducive. The vegetation consists predominantly of forest and fertile soils. Between December and April is the dry season. Sometimes the wet season spans between about July and November with an average annual rainfall of 750 to 1050 mm (30 to 40 inches). The highest temperatures are reached at the end of the dry season, the lowest in December and January. However, the hot Harmattan winds from the Sahara blows frequently between December and the beginning of February which is dry and hot. The temperatures can vary between 14 °C (59 °F) at night and 40 °C (104 °F) during the day. The map of the Bono East Region of Ghana is shown in figure 3.



Figure 3.1 Map of the Bono East Region

Source: <https://lgs.gov.gh/bono-east-2/>

The Kintampo North Municipality is one of the eleven districts in the Bono East Region of Ghana. Originally it was part of the then-larger Kintampo District until the southern part of the district was split to create the Kintampo South District on 12 November 2003 and the remaining part renamed as Kintampo North District, which was later elevated to the status of a municipality on 1 November 2007 to become Kintampo North Municipal Assembly. The



municipality is located in the northern part of Bono East Region and has Kintampo as its capital town. The population of Kintampo Municipality, according to the 2010 Population and Housing Census, was 95,480 representing 4.1 percent of the region's total population. Males constitute 49.6 percent and females represent 50.4 percent. The population of the district was estimated at about 163,816 as at December 2019 (KHRC Report, 2020). About 56.8 percent of the population live in urban localities. The total age dependency ratio for the Municipality is 88.2 (GSS Report, 2010). The Municipality has a household population of 94,479 with a total number of 19,330 households. The average household size in the Municipality is 4.9 persons per household. Children constitute the largest proportion of the household composition accounting for 45.0 percent. Spouses form about 10.2 percent while other relatives constitute 8.0 percent.

Of the employed population, about 54.2 percent are engaged as skilled agricultural, forestry and fishery workers, 18.7 percent in service and sales and 10.8 percent in craft and related trade. About 7.3 percent are engaged as managers, professionals, and technicians (GSS Report 2010). In the Municipality, 60.2 percent of households are engaged in agriculture. Most households in the Municipality (91.4%) are involved in crop farming with chicken as the dominant animal reared in the Municipality (GSS Report 2010).

The four main sources of water in the Municipality are protected well, borehole and pipe-born outside dwelling. About one quarter of households (35.1%) drink water from protected wells. More households (40.3%) do not have toilet facilities in their homes and therefore resort to bushes/beaches/fields for defecation. For the few households that use toilet facilities, the commonly used type of toilet facility in the Municipality is public toilets (water closet (WC), KVIP, Pit, Pan) representing 37.1 percent (GSS Report 2014). Most households



(45.8%) dump their solid waste in a public dump (open space). Another 29.3 percent dispose their solid waste by public dump in a container. House to house waste collection accounts for 2.3 percent. For liquid waste disposal, throwing waste onto the street (39.1%) and onto the compound (49.8%) are the two most common methods used by households in the Municipality (GSS Report, 2014).

The Kintampo Municipality has a number of health facilities manned by both the public and private sector operators. Notable among them are the Kintampo Municipal Hospital, six (6) known private health facilities, three (3) herbal centres, and twenty-four (24) Community-based Health Planning and Services (CHPS) Compounds. The Doctor to patient Ratio is 1:57,24 (KMA, 2019). The Kintampo-North Municipality (KNM) is strategically located at the Centre of Ghana and serves as the transit point between the northern and southern sectors of the country. It lies between Latitudes 8°45'N and 7°45'N and Longitudes 1°20'W and 2°1'E and shares boundaries with five districts in the Country namely; Central Gonja District to the North; Bole District to the West; East Gonja Municipal to the North-East (all in the savannah Region). Kintampo - South District to the South; and Pru East District to the South-East (all in the Bono East Region). Kintampo North Municipality has a surface area of about 5,108km² (Ghana Districts, Kintampo North Municipal, 2019; GSS, 2013).

According to the Ghana Statistical Service (GSS), (2021) Population and Housing Census recorded for the Municipality a total population of 139,508 inhabitants, of which 69,520 (49.8%) are males and 69,988 (50.2%) are females.

Mean annual rainfall between 1000mm and 1200mm and occurs in two seasons: Major season is May to August and the Minor season is between September to October (Aabeyir et al., 2017). The mean monthly temperature ranges from March (30°C) to August (24 °C), relative humidity

(90%- 95%) and (75%-80%) in the rainy and dry seasons respectively. An agrarian society, majority of the inhabitants (70%) are engaged in farming and fossil fuel (charcoal) production while the women mostly engaged in trading activities (Ghana Districts, Kintampo North Municipal, 2019). The map of the Kintampo North Municipality is depicted in figure 3.2.

Figure 1.1: Relief map of Kintampo North Municipal



Source: Ghana Statistical Service, (GIS)

Figure 3.2: Map of the Kintampo North Municipality

Source: 2010 Population and Housing Census, District Analytical Report, Kintampo North Municipality (www.statsghana.gov.gh.)

Kintampo is considered the geographical center of the Republic of Ghana. As such, Kintampo on a daily basis, sees so many people from all walks of life; both Ghanaians and foreigners in transit to and from Ghana. Aside being the geographical center, Kintampo is also home to a couple tourist sides including the Kintampo waterfalls, the fuller falls, the Kintampo canopy walkway and the Bono Manso slave market. Such a unique status in a Municipality such as Kintampo calls for cleanliness and sanitation practices so as to keep the environment beautiful to attract tourists to the area and bolster Ghana's image as a beautiful country.





However, during both day and night time, residents are seen defecating around houses, in open spaces, in bushes, in premises of public toilets as well as in backyards. Some residents defecate in polythene bags and they throw it where ever they like. This phenomenon of open defecation in the Kintampo North Municipality is not only shameful but unacceptable in these modern times as it has dire consequences spelt out in this thesis for several facets of human life. Come to think of it, cleanliness and good sanitation is not just good for foreigners but inhabitants of the Municipality as well, as it has health implications for, they themselves. Thus, study sought to proffer evidence-based recommendations in order to deal with the cancer of open defecation.

3.3 Study Design

A cross-sectional design was employed in this study. A cross-sectional study is a type of observational study. It is observational because for one reason or the other, the independent variable is not under the control of the researcher. Thus, the researcher, just observes the phenomena that occurs and collects data to make inferences. According to Gordis, (2009), in cross-sectional studies, both exposure and outcome of interest are determined simultaneously for each study participant. Here, data is collected at one specific point in time. It is like taking a snapshot of a population at that point in time. This data is then analysed and interpreted and meaning is made out of it. A cross-sectional study design is well-suited for investigating the socio-cultural determinants of open defecation due to its ability to provide a comprehensive snapshot of the variables of interest within a defined population at a single point in time (Levin, 2006). This design allows for the simultaneous collection of data on multiple factors, such as attitudes, beliefs, practices, and socio-demographic characteristics, which are critical to understanding the socio-cultural drivers of open defecation behavior (Setia, 2016).

3.4 Study Population

The study population included community members. Specifically, these included both male and female heads of households, women with children, male and female adolescents, other male and female young adults, leaders of communities (community leadership), environmental health officers, officers of Zoomlion Waste Management Company limited, members of the Municipal Assembly and members of the Kintampo Municipal Health Directorate.

3.4.1 Inclusion Criteria

In order to be included in the study:

1. Individuals should have been members of communities within the Kintampo North Municipality.
2. Community members should have been staying in the community for at least the last one year and be accustomed to the terrain of the area.
3. Community members should have been above 18years of age, the decision -making age in Ghana.

3.4.2 Exclusion Criteria

In order to be excluded from the study:

1. Community members should have been children or minors who could not and therefore did not make decisions by themselves as to where to defecate.
2. Individuals should have been non-residents or visitors sojourning in the Kintampo North Municipality.

3.5 Sampling Methods and Sample Size Determination

Systematic Random Sampling (SRS) was employed in sampling houses for data collection. This is a probability sampling method used to select a representative sample from a population. In



using this method, a sampling frame of houses was obtained from the Kintampo Health Research Centre. The sampling size was determined and the sample interval (n) calculated. The first house was randomly selected and every nth selected from the sampling frame. This method was employed because it is reliable and efficient and give equal chance to the study population to be selected despite the large population.

3.6 Sample Size Determination

To determine the sample size using Cochran's formula, the following assumptions are made: Desired confidence level: 92.6% (Z-score = 1.789), desired margin of error: 4% (E = 0.04), Estimated proportion of the population with the characteristic of interest: 0.5 (p = 0.5) and Population size: 111,122 (N = 111,122)

Cochran's Formula

$$n = \frac{(Z^2 \times p \times q)}{E^2}$$

Calculations

$$n = \frac{(1.789)^2 \times 0.5 \times 0.5}{(0.04)^2}$$

$$n = (3.200521 \times 0.25) / 0.0016$$

$$n = 0.800130 / 0.0016$$

$$n \approx 500.0$$

Therefore, using Cochran's formula, the sample size of the study is 500 respondents

3.7 Study Variables

A variable may be defined as some population characteristic that can vary over a range of values. In other words, it is some particular characteristic of a subject that can assume one or more different values (Lehman et al., 2005). Usually, this characteristic can either be



quantitative or qualitative in nature (Lehman et al., 2005). According to Walliman, (2011), variables are actually the measurable components of indicators. They are the measurable factors in any research, drive the research process, give it a focus and guide researchers to pursue their research with maximum curiosity.

Two main variables were investigated: open defecation, the outcome, response or dependent variable and other independent variables including age, sex, educational level, occupation, religion, ethnicity, marital status, social norms and cultural practices, which formed the predictor, main effect, or independent variables.

3.8 Data Collection Instruments

Data collection instruments used in this study included focus group discussion (FGD) guide, key informant (KI) interview guide, structured questionnaire and checklist for latrine observations.

3.8.1 Key Informant Interview Guide

In-depth interview guide was developed based on the objectives of the study and also in the context of open defecation. Questions collected data on background socio-demographic characteristics of respondents and also elicited data on open defecation practices, perceptions and reasons why people defecate in the open rather than using toilet facilities. Questions particularly explored cultural and social norms regarding open defecation, previous interventions on open defecation, laws and regulations on open defecation and recommendations on how to end open defecation in the municipality. See appendix 2 for in-depth interview guide.



3.8.3 Checklist

An observation checklist was developed in order to observe latrines in the Municipality in order to assess whether they met international standards for latrines.

3.8.4 Questionnaire

A Structured questionnaire was also developed based on the study objectives and used for data collection in this study. Questionnaire structured into five main sections: Section A: collected data on the Socio-demographic Characteristics of Household Heads, Other Men and Women with Children, and these had 18 questions in all. Section B collected data on the Community Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine Use, Section C: collected data on the Community Social Norms, Cultural practices, Open Defecation and Latrine Use, Section D collected data on the Sanitation-related Knowledge and risk awareness associated with open defecation and Section E collected data on How Emotional and Physical Experiences, Conveniences, and Discomforts shape Defecation Practices. Structured questionnaire had 46 questions in all. See appendix 3, for structured questionnaire.

3.8.5 Focus Group Discussion Guide

A focused group discussion (FGD) guide was developed and used to conduct focused group discussions in order to examine community attitudes, beliefs and perceptions regarding open defecation and latrine use. These FGD's was segregated by gender, age, and community leadership. See appendix 1 for FGD guide.

Focus Group Discussions (FGDs) are a valuable qualitative method often employed to explore complex socio-cultural factors influencing behaviors like open defecation (OD). In studies focused on OD, FGDs facilitate an understanding of local beliefs, attitudes, and social norms that may encourage or discourage sanitation practices (Kumar, 2019). This method is



particularly effective in capturing community perspectives, as it allows participants to share experiences, challenge assumptions, and discuss collectively held norms around sanitation (Harter et al., 2018).

3.9 Data Collection Procedure

Face - to – face (interviewer-administered) structured interviews and key informant interviews were conducted with various stakeholders described under study population (section 3.5). Focused Group Discussions (FGD's) were conducted with adolescents, women with children and men. In all three Focus Group Discussions was held across the Kintampo North Municipality. For the qualitative data, ninety-nine (99%) of interviews were audio-taped with informed consent. Written notes were also taken in addition to audio-recorded interviews.

For structured questionnaire, data collection was done by the Computer Assisted Personnel Interviewing (CAPI) technique with household heads, other men and mothers with children. CAPI is an interviewing technique in which the interviewer uses an electronic device with a mobile data collection application to administer questionnaire. The mobile data collection application used in this study was Kobo Collect. Data collected was stored on a cloud server (server space). After data collection, the mass of data was downloaded from the cloud server using STATA version 16.0 and analysed.

Primary data was mainly collected in this study and both qualitative and quantitative methods of data collection were employed in view of the wide range of issues explored. Secondary data collection involves gathering information from pre-existing sources to provide context, support findings, or refine research questions in a study. For this study, secondary data sources included governmental reports, previous studies, and publications from international organizations and NGOs focused on sanitation and public health.



3.10 Data Quality Control

To ensure the accuracy and validity of data collected in this study, the following measure were put in place:

1. Pre-test: Pretesting of all questionnaire used in this study was done. Pre-testing was done in communities other than the study communities.
2. Training of data collectors: data collectors who assisted in the data collection process were trained on how to collect data using the tools designed for data collection. Training ensured that data collectors practiced interviewing in pairs and become accustomed to data collection tools and the data collection process. Data collectors were experienced individuals who had prior data collections knowledge and skills and this made training much easier.
3. Monitoring of data collection process: As data collectors went about collecting data, the principal investigator periodically went around households and other venues of data collection to monitor the data collection process. This ensured that the collection process was properly done.
4. Data source triangulation: data was collected from a variety of sources (triangulation). This ensured credibility of data was enhanced. Transcription of focus group discussions (FGD's) was done not later than 72hours after data collection.
5. Data was safely and securely stored on my personal computer. No other person (s) got access to the data for possible distortion or manipulation. Questionnaire, field notes, transcriptions, pictures and supporting documentary material that pertain to the study were stored under lock and key in a filing cabinet in the principal investigator's office.
6. Data cleaning (cleansing or scrubbing): Prior to data analysis, data cleaning was done in order to get a data set that was sufficiently consistent to permit for precise analysis. According



to (Willes, 2018), data cleaning refers to the process “of detecting and modifying, replacing, or deleting incomplete, incorrect, improperly formatted, duplicated, or irrelevant records, otherwise referred to as “dirty data,” within a database”.

3.12 Ethical Consideration

Ethical approval was obtained from the Institutional Review Board (IRB) of the University for Development Studies (UDS) prior to data collection with ethical approval number UDS/IRB/225/24. Written permission was additionally obtained from the Regional Health Directorate of the Bono East Region as well the Municipal Health Directorate of the Kintampo Municipality. The Kintampo Municipal Assembly was additionally informed about this study. See appendix 5 for ethical approval letter granted by the University for Development Studies.

3.13 Informed consent

Informed consent was obtained from study subjects who were recruited to participate in the study. Study subjects who were recruited to participate in the study were required to read, understand and sign consent forms designed for the study.

For study participants who could not read, study information was read and explained to them and they were given the opportunity to raise issues of concern and ask questions for clarification. They were required to thump print on the consent form in the presence of a witness to indicate acceptance to participate in the study. See appendix 3 for informed consent form.

3.14 Data Analysis

Data analysis has been described by (Marshall and Rossman (1999:150) as “*the process of bringing order, structure and meaning to the mass of collected data*”. It forms a crucial part of the research continuum as it sets the stage for interpreting and making sense of collected data, without which the whole essence of research would be meaningless.





In view of the mixed methods approach to research that were used in this study, both qualitative and quantitative data analysis techniques were employed. Qualitative data were mainly analyzed using thematic analysis while quantitative data were analyzed using binary logistic regression analysis.

The quantitative study comprised 497 Households in the Kintampo North Municipality in the Bono East Region of Ghana. Descriptive and inferential statistical techniques were employed in the study. To determine whether there was a significant difference between Open Defecation and other sociodemographic variables, descriptive statistics and the chi-square tests were computed. Only significant variables from chi-square test were moved to the binary logistic regression model.

Data analysis was done in accordance with the objectives of the study:

3.14.1 Data Analysis for Objective One

Objective one sought to examine community attitudes, beliefs and perceptions regarding open defecation and latrine use through FGD's. Because qualitative data were collected, thematic analysis was used to analyze transcribed texts. Braun & Clarke (2006) outlined six guiding phases in thematic analysis. Following the six-phase approach, data was transcribed verbatim in the English Language and proofread severally to ensure accuracy. Data was analyzed and themes that emerged were summarized. Quotes were provided to corroborate the themes that emerged.

3.14.2 Data Analysis for Objective Two

Objective two sought to analyze how social norms and cultural practices relate to sustaining open defecation and hindering latrine adoption/use. Here both quantitative and qualitative

data were collected. Qualitative data was analyzed using thematic analysis approach by Braun & Clarke (2006) while quantitative data was analyzed using logistic regression.

3.14.3 Data Analysis for Objective Three

Objective three assessed the levels of sanitation-related knowledge and risk awareness associated with open defecation across communities with differing access to sanitation facilities using structured questionnaire. Logistic regression was used to analyze data here. Qualitative was also collected about this objective and themes were also presented.

3.14.4 Data Analysis for Objective Four

Objective four sought to determine how emotional and physical experiences, conveniences, and discomforts shape defecation practices through in-depth interviews and latrine observations. Here both quantitative and qualitative data were collected. Qualitative data was analyzed using thematic analysis approach by Braun & Clarke (2006) while quantitative data was analyzed using logistic regression.



CHAPTER FOUR

4.0 RESULTS OF THE STUDY

4.1 Introduction

Findings of the study are presented in this chapter in accordance with the objectives of the study. Findings are the evidence generated for the study objectives. All socio-demographic characteristics of study participants are presented in one section. Findings are presented in descriptive/narratives as well as tables, deemed appropriate to facilitate understanding. For each objective, both quantitative and qualitative data are presented.

4.2 Socio-Demographic Characteristics of Study Population

In all 538 subjects formed the study population. 340 of these were male heads of households while 157 were female heads of households. 24 were adolescents while 12 were women with children and five were key informants.

4.2.1 Socio-Demographic Characteristics of Household Heads, Other Men and Women with Children

The socio-demographic characteristics of household heads, other men and women with children are presented in Table 4.1. On this table, majority of respondents were male (68.4%) and majority of household heads (43.7%) were in the aged category of 50+years. More than half (61.2%) of respondents had no formal education while fifteen percent less of hundred of them (85.1%) were married. Nearly seventy percent of respondents 342 (68.8%) were Christian and close to forty percent 198 (39.2%) were of the Bono tribe. Additionally, 65.2% of respondents occupationally were farmers. Majority of respondents (33.4%) earned a monthly income of between 1500-2000 Ghana Cedis and majority of households had between 4-6 household members. About 56.3% of respondents had only one toilet facility in their community while



60.2% of respondents reported that they had no toilet facility of any kind in their households. Most latrines as revealed by responses from the study population were the squat type of toilets (76.5%).

Table 4.1: Socio-demographic Characteristics of Household Heads, Other Men and Women with Children (N=497)

Variable	Frequency	Percent (%)
Sex		
Male	340	68.4
Female	157	31.6
Age		
15-24	16	3.2
25-34	51	10.3
35-49	213	42.9
50+	217	43.7
Education		
No formal Education	304	61.2
Primary Education	35	7.0
Junior High School (JHS)	40	8.0
Senior High School (SHS)	68	13.7
Tertiary	50	10.1
TVET	9	1.8
Marital Status		
Married	423	85.1
Single/Never Married	28	5.6
Divorced/Separated	24	4.8
Widowed	14	2.8
Cohabitation	8	1.6
Religion		
Christian	342	68.8
Moslem	144	29.0
African Traditional Religion	11	2.2
Ethnicity		
Twi	61	12.3
Bono	198	39.8
Gonja	100	20.1





Frafra	37	7.4
Dagaati	25	5.0
Kassena	75	15.1
Dagomba	1	0.2
Occupation		
Trader	88	17.7
Farmer	324	65.2
Nurse	22	4.4
Others	63	12.7
Socio-economic status		
500-1000	118	23.7
1000-1500	53	10.7
1500-2000	166	33.4
2000-2500	86	17.3
2500-3000	51	10.3
3500 and above	23	4.6
Total number of Public Toilets in the Municipality		
0	121	24.3
1	280	56.3
2	92	18.5
3	4	0.8
Household size		
1 to 3	123	24.74
4 to 6	225	45.27
7+	149	29.97
Presence of a toilet facility in the household		
Yes	198	39.8
No	299	60.2
Type_of_toilet_facility		
Pit Latrine with cover	49	9.9
Pit Latrine without cover	26	5.2
Flush toilets (e.g. water closet)	18	3.6
Squat toilets	380	76.5
	24	4.8
Others		

Source: Field Survey, 2024

4.2.2 Socio-Demographic Characteristics of Focus Group Discussants

Three FGD's of twelve (12) participants each were organized. Two FGD's were held with male and female adolescents while one was held with women with children. The socio-demographic characteristics of participants in the FGD's are presented in table 4.2:

Table 4.2: Socio-demographic Characteristics of Adolescents

Variable	Frequency	Percent (%)
Sex		
Male	12	100
Age		
10-14	5	41.6
15-19	7	58.3
Education		
No formal Education	7	58.3
Primary Education	3	25.0
Junior High School (JHS)	2	16.6
Marital Status		
Married		
Single/Never Married	12	100
Religion		
Christian	8	66.6
Moslem	3	25.0
African Traditional Religion	2	16.6
Ethnicity		
Twi	3	25
Bono	5	41.6
Gonja	3	25
Frafra	1	8.3
Occupation		
Jobless/menial trade	12	100

Source: Field Survey, 2024





4.3 Communities' Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine use

Through a quantitative structured survey, household heads, other men and women with children responded to questionnaire on community attitudes, beliefs and perceptions regarding open defecation and latrine use. Results of this survey are presented in table 4.4.

From the results, 57.9% of the respondents were of the opinion that the sanitation situation in their communities was very bad with others having varying degrees of opinion about their sanitation situation as depicted on the table. About 41.1% are of the view that latrine use prevents contamination of the environment and reduces the risks of spreading diseases in people. Majority of the respondents, (57.9%) intimated that a big challenge associated with latrine use was the possibility of a foul odour emanating from pits.

Cultural beliefs, norms or traditions related to open defecation practices in study communities included when the latrines face the direction of Mecca, faeces are not good things to be kept in homes/in toilets in the house, girls who are in their menstrual periods are not supposed to defecate in the toilet, children can defecate in the open since their faces are considered harmless and defecating in the toilet can cause one to be possessed by evil spirits.

Table 4.3: Community Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine Use

Variable	Frequency	Percent (%)
Current sanitation practices		
Very good	7	1.4
Good	38	7.6
Fair	33	6.6
Bad	131	26.4
Very Bad	288	57.9
Benefits of using a latrine for defecation		



Promote health because they allow people to dispose of their waste appropriately	185	37.2
Prevents contamination of their environment	206	41.4
Reduces the risks of spreading diseases and conditions to people	106	21.3
Drawbacks or challenges associated with using a latrine		
There may be a foul odour from the pit	288	57.9
They can be a favorable place for the breeding of flies and mosquitoes	145	29.2
They can be susceptible to failure/overflowing during floods	63	12.7
Perceptions about defecating in the open in your community		
Favorable	58	11.7
Unfavorable	406	81.7
Neutral	33	6.6
Are there differences in how open defecation is viewed across different groups		
Yes	198	39.8
No	245	49.3
Don't Know	52	10.5
Cultural beliefs, norms or tradition related to defecation practices in your community		
When the latrines face the direction of Mecca	50	10.1
Faeces are not good things to be kept in homes/in toilets in the house	149	30.0
Girls who are in their menstrual periods are not supposed to defecate in the toilet	90	18.1
Children can defecate in the open since their faces are considered harmless	239	48.1
Defecating in toilet lead one to be possessed by evil spirits	177	35.6
Values around privacy, dignity, social status with OD and latrine use		
Defecating in the open is an affront to human dignity	257	51.7
Privacy – OD provides a greater privacy and freedom.	123	24.7
Social status - owning and using a private latrine is associated with higher social class and status.	384	77.3
Purity - Latrines are considered polluting and contaminating, while OD promotes cleanliness and purity.	61	12.3
Gender norms - latrines lack safety and privacy for women due to inadequate locks, lighting or separation from men.	171	34.4
Open defecation impacts women and girls in your community specifically		
Women and girls face greater risks of harassment, assault, and rape because they walk long distances to practice OD.	377	75.9
lack of privacy and proper menstrual hygiene management	218	43.9
Time and energy spent OD reduces women and girls' education and economic opportunities	169	34.0
Women and girls face more health risks due to unsanitary defecation practices.	314	63.2

Responsibilities for cleaning young children and managing open defecation sites fall disproportionately on women.	204	41.0
Taboos around handling human fecal waste		
Handling human waste makes one impure	402	80.9
None	95	19.1
barriers to adopting latrine use and ending open defecation in your community?		
Inadequate space	90	18.1
High cost of building an improved toilet/latrine	471	94.8
Cost of maintaining latrines	370	74.4
Not a priority	46	9.3
Suggestions for shifting community attitudes and norms to favor latrine use over open defecation		
Public education about open defecation and latrine use	417	83.9
Implementation of bye-laws	399	80.3
Building of latrines	394	79.3

Source: Field Survey, 2024

4.3.1 Qualitative Results for Communities' Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine use

From FDG's and Key informant interviews a couple of themes emerged regarding general sanitation and specifically open defecation. The themes and quotes that emerged concerning community attitudes, beliefs and perceptions are presented as follows:

The major themes that emerged from the study included:

1. Knowledge about Cleanliness
2. Monitoring and Implementation of Sanitation related policies and laws
3. Poor Sewage System
4. Lack/inadequate toilet facilities
5. With or without toilets people still defecate
6. State of toilets facilities
7. Practice of open defecation
8. Impact of open defecation on human health





Lack of/ Inadequate Toilet Facilities

Whereas some community's members said they did not have even a single public toilet facility, others lamented that, compared to their population, the number of toilet facilities were woefully inadequate. Many houses did also have toilet facilities. The following quotes support these assertions:

Quote 1:

“The problem is that we don't have toilets and because of that we free ourselves anywhere “(FGD/MEN/1).

Quote 2:

“What I want to say is because there is no toilet, someone might want to free him or herself and shit inside a rubber, tire it and throw it away but wouldn't know the person” (FGD/WOMEN/3).

The above quotes were corroborated by other respondents who emphasized that most people in the community engage in Open defecation.

Quote 3:

” If you come here, you'll observe that those who shit in the bush are plenty. The reason why I am saying this is that if you look at our side, before you'll see a toilet facility you have to pass about ten (10) houses. And when you get to the toilet you can look inside and everywhere is full already with people. So, you'll look left and right if no one is around you will just shit in the bush or around the facility. The toilets are not plenty so if you come and it's full, you'll just have to shit in the bush” (FGD/ADOL/MALE/3).

This was confirmed by other respondents.

Quote 4:

“So just look at Babato, is only one toilet and even that toilet there are only three rooms with three seaters and it’s not even clean. You can even go there and you would have to take a broom and sweep around before you can free yourself. If you look at the whole Babato, we have a problem. Because of that reason we are not happy here and sicknesses are rampant. Meanwhile this town you can find everything” (FGD/EHO/FEMALE/3).

Practice of Open Defecation: Past and Present

Nealy all respondents agreed that they had ever engaged in open defecation and some further agreed that they currently practice it. The quotes that follow are evidence of the above claim:

Quote 1:

”We all, is the bush we all free ourselves. If we want to count those that do not go to the bush is not going to be plenty. If they categorize us into those that are into open defecation and those that are not into open defecation it won’t even come closer. So, it’s a very big problem for us. So may God provide us with someone who would give us a toilet because is a very big issue for us” (FGD/FEMALE/9)

Quote 2:

“Some of the old women, for them to go to toilet it’s very difficult for them. This is because they do not have toilets and they go to the bush. The bush too, they have to cross a river before they get to the bush. And if rain falls heavily, they can’t cross. That is when you’ll see people shitting inside rubbers and throwing it behind people houses. Is not like they will throw it in the bush. Some will even throw it on roads and until a motor comes and step on it and it burst (laughs) and you’ll start to smell it and definitely this has nothing to do with cleanliness” (FGD/FEMALE/12).

Community Attitudes, Beliefs And Perceptions



From FGD's and Key informant interviews, it was revealed that people in the Kintampo North Municipality exhibited various attitudes, beliefs and perceptions in relation to open defecation.

These attitudes, beliefs and perceptions are epitomized in the following quotes:

Quote 1:

“When men and women come together to free themselves, they all use the same toilet. So normally when the women use the toilet, we are normally unclean, some men feel reluctant eating food cooked by the women since they see them entering the toilet because of the things they see inside the toilet” (FGD/FEMALE/12)

Quote 2:

“there's shyness, even if you look at things you can be shitting and meet a grown-up woman passing, as she is passing and sees you or I see her, I have to hide myself because we both have something to hide. So, if she sees me naked, any time I see her or she sees me we will be shy of each other. So, it's not nice for men and women to be going to the bush” (FGD/MALE/9).

Quote 3:

“Yes, some people to go shit in the toilets they leave it very dirty and a lot of people associate them with dirt. And some people just refuse to go anywhere to shit but prefer to shit in a rubber and throw it anywhere “(FGD/FEMALE//12)



Quote 4:

“Even me, I’m not going to lie to you. I have done it before and I just do it and I feel it’s nothing. Even though I have a toilet at home but sometimes I just feel like doing it. So just feel free and talk” (CHIEF/BABATOKUMA).

4.4 The role of Social Norms and Cultural Practices in Sustaining open defecation and hindering latrine adoption/use?

Regarding social norms and cultural practices and its influence in sustaining open defecation, respondents answered questionnaire and the results are presented in table 4.5. Prominent among the traditional norms, in the study area, majority of the people (40.6%) said that faeces were not things to be kept in homes/ in toilets in houses and that children could defecate in the open since their faeces were considered harmless (30.1%).

Type of superstition that emerged from the structured questionnaire included, defaecating in toilet causes one to be possessed by evil spirits, shared toilets are associated with evil spirits and therefore should avoided, using same toilet with people in the other houses causes one to lose his/her. About 40.24% of respondents who formed the majority were of the view that defaecating in toilets causes one to be possessed by evil spirits.

Table 4.4 Community Social Norms, Cultural practices, Open Defecation and Latrine Use

Variable	Frequency	Percent (%)
Traditional Norms		
Faeces are not things to be kept in homes/ in toilets in houses.	202	40.6
Girl who are in their menstrual periods are not supposed to defecate in toilet	100	20.1
Children can defecate in the open since their feces are considered harmless.	150	30.1
Father-in-laws and daughters-in-law cannot use the same toilet	45	9.0
Superstition		
Defaecating in toilet causes one to be possessed by evil spirits.	200	40.24



Shared toilets are associated with evil spirits and therefore should avoided.	157	31.58
Using same toilet with people in other houses causes one to lose his/her social status.	139	28.0
Traditional Values		
Defaecating in the open (bush, beaches) signifies continuation of ancestor's way of life.	454	91.3
Don't know	43	8.5

Source: Field Survey, 2024

4.4.1 Qualitative Results for the role of Social Norms and Cultural Practices in Sustaining open defecation and hindering latrine adoption/use

Social norms and cultural practices indeed play a role in perpetuating open defecation. The quotes that follow back this statement:

Quote 1:

“What they will tell you is that our fore forefathers have been defecating in the bush kraa they lived longer than we who claim we are going to toilet today because live expectancy rate is decreasing. So, they will people will associate even traditional believes, our culture, traditional believes” (EHO/FEMALE/6)

Quote 2:

“There are some people in a community who doesn't even want to see toilet with their eye so they will not go to public toilet. Some even believe that he cannot defecate on somebody's toilet” (EHO/FEMALE/3).

Quote 3:

“These believes some of them, you know, you see, when you go into these you will be, things that will be revealed, some people even he went maybe the daughter is sick, the son is sick, or he want to he wants to his h,e he has gone to these people that okay erh, I need the medicine that can protect my



family. And well, they prepare a concoction for you and every concoction has rules and re... they will tell you that this medicine I'm giving to you, one, you cannot defecate on, they day you defecate on somebody's toilet the whole thing will not work anymore" (FGD/MALE/1)

4.5 Levels of Sanitation-related Knowledge and Risk awareness associated with Open Defecation

The levels of sanitation related knowledge and risk awareness associated with open defecation is presented on table 4.6. Close ninety five percent 469 (94.4%) of respondents knew that open defecation is unhygienic and spreads diseases. Again 94.1 % of respondents agreed that human faeces could contaminated drinking water and food

Table 4.5 Sanitation-related Knowledge and risk awareness associated with open defecation

Variable	Frequency	Percent (%)
Awareness of Health Risks from Open Defecation:		
Open defecation is unhygienic and spreads diseases	469	94.4
Open defecation spreads diseases like diarrhea, intestinal worms, cholera, typhoid, hepatitis	15	3
Open defecation poses severe threats to entire ecosystems and the environment	13	2.6
Knowledge of Fecal-Oral Transmission Routes:		
Contamination of food with human faeces	436	87.7
Contamination of water with human faeces	32	6.4
Direct human contact with faeces or contaminated body parts	29	5.8
Safe Child Faeces Disposal Knowledge:		
Children's feces/diapers can be left in the open as they are not hazardous	40	8.0
Children's faeces are harmless and cannot transmit disease	156	31.4
Children can defecate in the open just like adults because their faeces are pure	53	10.7
Burn diapers	247	49.7
Environmental Contamination Awareness:		
Open defecation contaminates drinking water sources	220	44.3
Open defecation contaminates the environment	220	44.3
Open defecation only contaminates immediate defecation areas	29	5.8
Open defecation does not contaminate the environment	28	5.6

Source: Field Survey, 2024





4.5.1 Qualitative Results for Levels of Sanitation-related Knowledge and Risk awareness associated with Open Defecation

The quotes below demonstrate that respondents in the Kintampo North Municipality are able to relate poor sanitation to ill-health and the spread of diseases.

Quote 1:

*“So... he is trying to talk about faeco-oral transmission that if you defecate and flies purge on it and the same flies will come if your food is left uncovered, they will settle on it, thereby causing diseases”
(EHO/MALE/10/Lingoro)*

Quote 2:

*“So, to her understanding, once it is toilet, toilet is not something that human being want to see. So, if you are defecating in your yard, people will even see you that you are a dirty person by nature”
(FGD/FEMALE/10/GURMA)*

Quote 4:

Open defecation can lead to typhoid, urmm... imagine defecating around let's say in the bush, if it rains, the... erosion can wash into our water bodies and that place too we drink from the water bodies and definitely you will get typhoid from the water (FGD/EHO/5/ABENKWA).

4.6 The Influence of Emotional and Physical Experiences, Conveniences, and Discomforts on Open Defecation Practices

The table below presents results regarding emotional, physical and other experiences and their influence on open defecation practice.

Table 4. 6How Emotional and Physical Experiences, Conveniences, and Discomforts shape Defecation

Practices Variable	Frequency	Percent
Factor that plays a significant role in shaping defecation practices		
Social media influence	19	3.8
Emotional and physical experiences	462	93.0
Political climate	14	2.8
Fashion trends	2	0.4
Factors likely to influence an individual's defecation practices the most		
Economic status	93	18.7
Physical health	23	4.6
Educational background	380	76.5
Musical preferences	1	0.2
In the context of defecation practices, what is considered a convenience?		
Access to high-speed internet	24	4.8
Availability of scented candles	14	2.8
Adequate toilet facilities	439	88.3
Smartphone brand	20	4.0
Emotional experiences impact defecation practices		
Influence of popular culture	70	14.1
Stress levels and mental well-being	447	89.9
Political ideologies	23	4.6
Preferred choice of clothing	2	0.4
Discomfort most likely to shape an individual's defecation habits		
Uncomfortable furniture	7	1.4
Lack of entertainment options	7	1.4
Inadequate sanitation facilities	483	97.2
key determinant of defecation practices according to the question		
Weather conditions	49	9.9
Emotional and physical experiences	427	85.9
Distance from shopping malls	15	3.0
Social media engagement	6	1.2
Essential factor for comfortable defecation		
Personal taste in art	6	1.2
Proximity to a fitness center	488	98.2
Adequate and hygienic toilet facilities	3	0.6



Individual's defecation practices		
Community traditions	28	5.6
Emotional experiences	89	17.9
Breakfast choices	103	20.7
Political affiliations	277	55.7
Role that conveniences play in shaping defecation practices		
Minimizing stress and discomfort	477	96.0
Encouraging political activism	6	1.2
Determining fashion trends	10	2.0
Influencing culinary preference	4	0.8
Factor is more likely to be associated with defecation practices		
Preferred mode of transportation	8	1.6
Emotional and physical well-being	474	95.4
Favorite television shows	11	2.2
Social media following	4	0.8

Source: Field Survey, 2024

4.7 Further Analysis of Quantitative Survey

The study identified that age of respondents, sex, educational level, socio-economic status, marital status, religion, occupation, household size, presence of toilet facility in the household, and current sanitation practices were statistically significant for the practice of open defecation.

Table 4.7: Associations Between Open Defecation and Sociodemographic factors

Variable	Open Defecation		X (P-value)
	No	Yes	
Age			19.02 (<0.001)
15-24	1 (6.3)	15 (93.8)	
25-34	18 (35.3)	33 (64.7)	
35-49	96 (45.1)	117 (54.9)	
50+	62 (28.6)	155 (71.4)	
Sex			4.99 (0.025)
Male	110 (32.4)	230 (67.6)	
Female	67 (42.7)	90 (57.3)	
			30.90 (<0.001)
Educational Level			
No formal Education	106 (34.9)	198 (65.1)	
Primary Education	9 (34.6)	17 (65.4)	
Junior High School (JHS)	10 (25.0)	30 (75.0)	
Senior High School (SHS)	14 (20.1)	54 (79.4)	

Tertiary	31 (62.0)	19 (38.0)	
TVET	7 (77.8)	2 (22.2)	
Marital Status			13.67 (0.008)
Married	151 (35.7)	272 (64.3)	
Single/Never Married	7 (25.0)	21 (75.0)	
Divorced/Separated	9 (37.5)	15 (62.5)	
Widowed	10 (71.4)	4 (28.6)	
Cohabitation	0 (0.0)	8 (100.0)	
Religion			14.69 (<0.001)
Christian	103 (30.1)	239 (69.9)	
Moslem	68 (47.2)	76 (52.8)	
African Traditional Religion	6 (54.5)	5 (45.5)	
Occupation			56.65 (<0.001)
Trader	36 (41.4)	51 (58.6)	
Farmer	84 (25.9)	240 (74.1)	
Nurse	9 (40.9)	13 (59.1)	
Others	47 (74.6)	16 (25.4)	
Socio_economic			72.19 (<0.001)
1	33 (28.0)	85 (72.0)	
2	17 (30.9)	38 (69.1)	
3	39 (23.5)	127 (76.5)	
4	32 (36.8)	55 (63.2)	
5	40 (78.4)	11 (21.6)	
6	16 (80.0)	4 (20.0)	
Household_size			46.87 (<0.001)
1 to 3	74 (60.2)	49 (39.8)	
4 to 6	53 (23.6)	172 (76.4)	
7+	50 (33.6)	99 (66.4)	
Presence of a toilet facility			319.96 (<0.001)
Yes	164 (82.8)	34 (17.2)	
No	13 (4.3)	286 (95.7)	
Current sanitation practices			79.71 (<0.001)
Very good	3 (42.9)	4 (57.1)	
Good	12 (31.6)	26 (68.4)	
Fair	9 (27.3)	24 (72.7)	
Bad	88 (67.2)	43 (32.8)	
Very Bad	65 (22.6)	223 (77.4)	

Source: Field Survey, 2014

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction to the Discussion

In this chapter I discuss results of the study. The discussion aims to interpret and describe the meaning of findings and its implication for interventions to curb the socio-cultural determinants of open defecation among inhabitants of the Kintampo Municipality of the Bono East Region of Ghana.

5.2 Socio-demographic Characteristics of the Study Population

The socio-demographic characteristics of the study population reflects the fact that the population was fairly represented by the youth (0-49) years as well as the aged (50+). This was very important in eliciting unbiased data on the socio-cultural determinants of open defecation. This fairness ensured that, findings of the study represented the entire municipality and not just a section of it. There was also fairness in the sex distribution of respondents in terms of male and female in order to also elicit varied as well as practical views so that practical recommendation could be made. The ethnic distribution of the respondents also showed inclusiveness for the major tribes so that various traditions, norms and practices was captured. Respondents also reported low educational levels with majority not attaining formal education at all. This educational state of respondents reflected in some their responses, practices and understanding of the concept of open defecation. Majority of the respondents were averagely in the in the low-income earning brackets of people. Majority of respondents 342(68.8%) were Christian, yet they not live according to the adage, ‘cleanliness is next to Godliness’.



5.3 Communities' Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine use

Undeniably, communities' attitudes, beliefs and perceptions exert a great influence on practice of open defecation. To begin with, nearly all respondents acknowledged that there was poor sanitation in their environs or neighborhood and that this did not augur well for their well-being. From the analysis of both quantitative and qualitative data collected from the study, the practice of open defecation is sustained in the Kintampo North Municipality principally because of the lack or inadequate number of both private and public toilet facilities, poor knowledge of the effect of open defecation on health and deeply ingrained attitudes, beliefs and perception of the cancer. A study conducted by Coffey et al., (2014) in rural African contexts indicates that the prevalence of open defecation cannot solely be attributed to poverty; rather, it is often a conscious decision influenced by established practices and habits. Again, a study by Kar (2015) demonstrated that open defecation was a norm in some communities. Some respondents in this study associated latrine use to impurity and uncleanness of both people who use it as well settings where latrines are situated. Studies by Vyas & Spears (2018) and Gupta et al 2016) revealed similar findings in rural India, where open defecation still persists.

Some respondents insinuated that they didn't have toilets in their various houses because of poverty. The monthly earnings of this population demonstrates that many of them are poor people, see Table 4.1. This means they did not have the economic wherewithal to build toilets in their houses. The norm is that in Ghana, many individuals have to eventually build their own houses in order to get a place to lay their heads. Again, the practice is that, many Ghanaians usually have to save money over time from their meagre salaries in order to eventually build and this is often stressful to them given the fact that human needs are insatiable and the fact





also that there are often competing needs for this same meagre salary. Thus, most landlords and land ladies are unable to include toilets in their buildings and that explains why many houses across Ghana in its entirety and also in the Kintampo North Municipality do not have toilets. Studies have firmly linked the income to provision of latrines in houses. Coffey et al., (2017) showed that low-income households tend to have limited access to proper sanitation facilities, such as toilets or latrines, and were more inclined to resort to open defecation. The financial constraint of not being able to afford essential sanitation infrastructure like toilets, septic tanks, or water connections acts as a significant barrier to adopting better sanitation practices. According to Hutton and Chase (2016), the expense associated with building a basic toilet can be unaffordable for impoverished households, especially in rural areas where incomes are meager, and construction materials may be costly or scarce. Their research on sanitation funding in India highlighted that even with available subsidies to assist in toilet construction costs, many impoverished households still struggle to cover additional expenses like maintenance and repairs. This emphasizes the critical role of affordability in shaping sanitation behaviors. Household income also influences spending priorities and patterns. Families with limited financial means often face tough decisions on how to distribute their income, typically prioritizing basic needs such as food, housing, and healthcare over sanitation (Jenkins & Scott, 2007). Consequently, investments in sanitation infrastructure may be postponed or ignored, especially when the immediate benefits of improved sanitation are not clearly evident. In urban settings, the correlation between income and sanitation practices is often influenced by access to infrastructure and services. Impoverished households in informal urban areas may lack essential amenities like piped water, sewage systems, or waste management services, leading to challenges in maintaining proper hygiene standards even if they have toilets (Thys et al.,

2015). In these instances, sanitation concerns are not solely about income but are also intertwined with broader economic policies centered on urban development and infrastructure enhancements.

5.4 The role of Social Norms and Cultural Practices in Sustaining open defecation and hindering latrine adoption/use

Social norms and cultural practices definitely have a bearing on latrine use or otherwise. Some of the social norms that emerged from the study included: Faeces are not things to be kept in homes/ in toilets in houses, Girl who are in their menstrual periods are not supposed to defecate in toilet, children can defecate in the open since their feces are considered harmless, Father-in-laws and daughters-in-law cannot use the same toilet. Additionally, latrine use was also associated with possessing evil spirits, loss of one's social status and open defecation signifies continuation of ancestral way of life. Many of these norms are backed by literature. According to Jenkins & Curtis, (2005), certain communities view human excreta as sacred, advocating for separate disposal to maintain purity, resulting in a tendency to defecate in secluded locations. These customs are deeply deep-rooted in the cultural and spiritual aspects of rural life, creating resistance to change. Effectively addressing these entrenched beliefs necessitates approaches that are culturally sensitive and considerate of local spiritual and traditional norms. Additionally, open defecation is sometimes normalized or even encouraged in certain communities, particularly those near vast open spaces (Coffey et al., 2014). In such contexts, open defecation may be perceived as natural and beneficial, rendering toilet construction unnecessary. Findings also exposed that girls who were in their menstrual periods were not supposed to defecate in toilets, bringing in gender dynamics. Access to sanitation facilities is often dictated by gender dynamics, with cultural norms considering it inappropriate to share



the same toilets between men and women or for women to use public toilets. This results in OD rates being higher among the female population, who would rather be in isolation than defy custom and personal modesty. This can be addressed by constructing separate latrines for males and females in Kintampo North, as this has been suggested to help reduce open defecation rates among women and girls. Another concern is the safety of women, especially in rural areas where facilities in the public domain are minimal. Many women are vulnerable to sexual violence or harassment whenever they have to go out to defecate, especially at night. Sommer et al. (2016) state that such situations put them at risk. Any future programs on sanitation in Kintampo North should focus on the construction of well-lit, safe, and private latrines for women and girls to guarantee safety and dignity while conducting their defecation activities.

5.4 Levels of Sanitation-related Knowledge and Risk awareness associated with Open Defecation

“Knowledge, they say is power” and it has proven to be a key influencer in behavioral patterns, including sanitation behaviour such the practice or otherwise of open defecation. Open defecation presents health risks to human beings, including infectious diseases, environmental degradation and socio-economic consequences. Understanding these risks could help population disengage in open defecation. Diarrheal diseases pose a significant burden in terms of illness and death, especially affecting children under five years old. According to the WHO (2020), around 525,000 deaths occur annually among this age group due to diarrhea. The transmission of pathogens like *Escherichia coli*, rotavirus, and *Shigella*, which cause diarrhea, is facilitated by open defecation. Research conducted by Clasen et al. (2014) reveals that communities engaging in open defecation experience higher rates of diarrheal diseases





compared to those with access to better sanitation facilities. In addition to bacterial and viral pathogens, open defecation is linked to parasitic infections, particularly soil-transmitted helminths (STH), such as roundworms, hookworms, and whipworms. These parasites are transmitted through contaminated soil, commonly in regions where open defecation is prevalent. According to a systematic review conducted by Pullan et al. (2014), an estimated 1.5 billion individuals worldwide are afflicted with STH, with the most significant burden evident in areas with inadequate sanitation. The repercussions of open defecation on the environment go beyond personal health consequences. The contamination of water sources and soil with fecal matter presents substantial hazards to both public health and the ecosystem. Open defecation can result in the pollution of drinking water sources, worsening waterborne illnesses. According to a study conducted by Bartram and Cairncross (2010), insufficient sanitation practices, including open defecation, play a substantial role in contaminating water sources, thereby increasing the prevalence of diseases such as cholera and dysentery. The researchers advocate for enhancing sanitation infrastructure as a crucial measure to protect water purity and public health. Open defecation has extensive socio-economic ramifications that may impede development initiatives and worsen poverty. The health hazards linked to open defecation perpetuate a cycle of sickness and poverty, diminishing individuals' productivity and economic welfare. Again, the economic impact of diseases resulting from open defecation is substantial, causing a rise in healthcare expenses and productivity losses. According to a study conducted by Hutton and Haller (2004), the financial toll of insufficient sanitation, encompassing healthcare expenditures and decreased productivity stemming from illness, reaches billions of dollars on a yearly basis. The researchers advocate for prioritizing investments in sanitation



facilities as a means to generate significant economic gains through the reduction of healthcare costs and enhancement of productivity levels.

Some respondents in this study demonstrated some amount of sanitation related knowledge and risk awareness. For those respondents who were able to link open defecation with contamination of food, water sources, the environment and spread of diseases, that was impressive. Since knowledge is a great influencer towards behaviour change, if these respondents were well resourced, they could avoid open defecation. Nonetheless, the issue is that, even with the well-educated citizens, they are often powerless because they are unable to practice what they know because of lack of resources and the fact that, most systems do not work in our part of the world. Thus, when community members possess a certain kind of knowledge that cannot be put to good use, it is often as good as having no knowledge at all.

One issue of great concern was the fact that some respondents were of the view that children's faeces are harmless and cannot transmit disease, insinuating that faeces from kids are pure. Because of this notion, respondents said children could defecate in the open because their excrete was not hazardous. Stemming from this erroneous notion, as many as 247 (49.7%) of respondents from the quantitative survey said children's diapers were burned after use or left in the open after use. But the truth is that, faeces is faeces, be from adults or children, they can the same potential of causing harm to human being and the environment at large.

The antidote to this mistaken notion is extensive education and advocacy on general sanitation, hygiene and good environmental practices, including latrine use and maintenance. In fact, sanitation programs need to be developed and integrated in school curricula for continuous knowledge dissemination. Jenkins and Curtis (2005) emphasize that educated individuals are



better able to grasp the connections between sanitation and health, influencing their decisions to invest in sanitation infrastructure. Their research in Ghana revealed that households with higher education levels were more inclined to install toilets and uphold regular handwashing practices. The scholars argue that education enhances individuals' capacity to process information related to hygiene and sanitation, leading to informed choices regarding sanitation practices. Moreover, formal education impacts sanitation behavior through its influence on socio-economic status. Educated individuals typically enjoy higher incomes, enabling them to afford sanitation facilities and hygiene products. A study by Sclar et al. (2018) conducted in sub-Saharan Africa observed that households led by educated individuals were more likely to access improved sanitation facilities. The researchers highlighted that education not only enhances knowledge of sanitation but also empowers individuals economically to adopt better sanitation practices. Notably, the influence of education on sanitation practices extends beyond formal schooling. Informal education, such as health education offered through community programs or awareness campaigns, can also play a significant role in shaping sanitation behaviors. For example, a study by Cameron et al. (2019) in India demonstrated that community-based sanitation education programs effectively reduced open defecation and promoted toilet usage. The researchers concluded that informal education initiatives, particularly those involving local communities, are essential for enhancing sanitation practices in regions with low literacy rates.

CHAPTER SIX

6.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The conclusion and recommendations are presented in this chapter. Here, the very essence of this study is presented concisely.

6.2 Summary of Findings

The study explored the socio-demographic, cultural, and environmental determinants of open defecation and latrine use, focusing on sanitation behaviors in the study area. Key findings are summarized as follows:

1. Socio-Demographic Characteristics

The study involved 538 participants, comprising 68.4% male household heads and 31.6% female household heads. Most participants (61.2%) had no formal education, and 65.2% were farmers. Nearly 60.2% of households lacked toilet facilities, with squat toilets being the most common type (76.5%) among those with facilities. Public toilets were limited, with over 56% of respondents reporting only one public toilet in their communities.

2. Attitudes, Beliefs, and Perceptions about Sanitation

Sanitation Practices: The majority of respondents (57.9%) rated sanitation in their communities as "very bad." **Perceptions of Open Defecation (OD):** While 81.7% viewed OD as unfavourable, it persisted due to cultural norms, lack of facilities, and social acceptance. **Cultural Norms and Beliefs:** Practices such as viewing feces as impure, beliefs that defecating in toilets can attract evil spirits, and allowances for children to defecate openly were prevalent. **Gender Issues:**



Women faced unique challenges, including safety risks, inadequate facilities, and societal stigma around latrine use.

3. Barriers to Latrine Use

1. **Economic Constraints:** High costs of constructing and maintaining latrines were reported by 94.8% and 74.4% of respondents, respectively.
2. **Physical and Logistical Issues:** Limited space for constructing toilets and the perception of foul odors from pit latrines deterred usage.
3. **Social Norms:** Shared toilets were often avoided due to privacy concerns, cultural taboos, and beliefs that they lead to contamination or loss of social status

4. Sanitation-Related Knowledge and Risk Awareness

Awareness of the health risks of OD was high, with 94.4% of respondents recognizing its role in spreading diseases like diarrhoea and cholera. However, misconceptions persisted, such as the belief that children's feces are harmless (31.4%).

5. Emotional and Physical Experiences

1. **Conveniences:** Availability of adequate toilet facilities (88.3%) was identified as a key factor influencing sanitation practices.
2. **Discomforts:** The lack of proper sanitation facilities (97.2%) caused significant physical and emotional discomfort, particularly for women.

6. Influence of Social Norms and Cultural Practices

Traditional practices, such as associating OD with ancestral customs (91.3%), reinforced the continuation of OD. Beliefs about spiritual contamination discouraged the use of shared or public toilets. These findings highlight the interplay between socio-cultural factors, economic constraints, and knowledge gaps in sustaining open defecation. The study underscores the need



for culturally sensitive interventions, enhanced infrastructure, and community engagement to promote the adoption of latrines and improve sanitation

6.3 Conclusion

Open defecation, underpinned by socio-cultural factors is a pervasive practice in the Kintampo North Municipality of the Bono East Region of Ghana with far-reaching consequences on the social, cultural, economic, environmental, health and general well-being of the people. Also open defecation is a serious sanitation situation in most communities in the municipality. It is believed that human faeces could contaminated drinking water and food but children's faeces are harmless and cannot transmit disease, insinuating that faeces from kids are pure. Addressing these associations would require law and legislative enforcement, visionary and selfless leadership, community engagement, including engaging traditional leaders and elders, implementing culturally sensitive sanitation policies, strengthening local governance, implementing community driven infrastructure, engaging in education and advocacy as well as behaviour change communication on ending open defecation.

6.4 Recommendations

In view of the above conclusion, the following recommendations are made:

1. The Kintampo North Municipal Assembly and relevant institutions that give building permits should ensure that henceforth, individuals who intend to build must include appropriate toilets befitting of the type of building in their building plans and actually follow through to ensure these toilets are built as planned.
2. Environmental sanitation officers should resume their erstwhile practice of inspection of houses and communities in order to enforce sanitation in the Kintampo North Municipality.



3. The government of Ghana, chiefs, elders, politicians and people with power should refrain from interfering in the work of environmental health officers who are supposed to enforce by-laws on sanitation. Punitive measures meted out to people who flout sanitation laws would serve as a deterrent to disobedient citizens.
4. The Kintampo North Municipal Assembly as well as the Health Directorate together with development partners who may be local or international NGOs should as a matter of urgency roll out an extensive community education and advocacy program on open defecation and its health effects. This would take care of community members who are ignorant about the effects of open defecation.
5. The government of Ghana should endeavour to strengthen the local governance structures all over the country through fair resource allocation and capacity building to ensure they are able to implement and enforce sanitation regulations. The Kintampo North Municipality would benefit from this



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APPENDICES

Appendix A: Focus Group Discussion Guide

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH



The Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana.

Questionnaire to assess “The Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”

Background to the Study:

I am ABDUL-KARIM ABDUL-MUMIN, a Master of Public Health (MPH) student from the Department of Environmental and Occupational Health, School of Public Health, University for Development Studies, Tamale. I am conducting a study on the “The Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”.

Purpose and Significance of Research.

The purpose of the study is to examine the “Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”. In





pursuance of this, i would examine the “The Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”. The study also seeks to identify the various barriers associated with the use of toilet facilities in the Kintampo North Municipality.

This would assist the appropriate authorities to design evidence-based programs to address any issues arising from the study. This research is purely for academic purposes. It is in partial fulfillment of the requirements for the award of a Master of Public Health Degree from the University for Development Studies.

Anonymity and Confidentiality.

All data gotten from you will be treated with complete confidentiality and your identity will not be known or revealed to anyone.

We will require that, you use about 30 minutes of your time to answer the following questionnaire.

Voluntary Participation / Withdrawal.

Your participation in this study is completely voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you would be asked to sign a consent form. You are at liberty to withdraw from this study at any time.

Thank you for choosing to participate in this study.

If you have any questions in the future, you may contact any of the following individuals below for further information.

Who to Contact for More Information

1. Vivian Kapio Abem (PhD)

University for Development Studies (UDS)

Department of Global and International Health

School of Public Health

P. O. Box TL 1350, Tamale Campus, Tamale. Ghana

Tel: +233 0242215665/+233 0500067850]

2. Abdul Karim Abdul Mumin (Principal Investigator)

Abdul-Karim Abdul-Mumin

Tamale Technical University

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QUESTIONS FOR FOCUSED GROUP DISCUSSIONS (FGD's)

Explain purpose of discussion

Establish ground rules

Address confidentiality

Members introduce themselves

Key questions for Focused Group Discussions (FGD)

(To examine community attitudes, beliefs and perceptions regarding open defecation and latrine use)

1. How would you describe the current sanitation practices in your community?
2. Have you ever defecated in the open?
3. Do you still practice open defecation, currently?
4. What is open defecation/what is the meaning of open defecation?
5. Is open defecation harmful to human health?
6. What are the harmful effects of open defecation on human health?
7. Do you each have latrines in your homes?
8. What type of latrines are they?
9. Do you use them or do you defecate in the open?
10. What are the common beliefs around open defecation and latrine use in your community?
11. What attitudes or perceptions exist around defecating in the open versus using a latrine?
12. Are there any cultural norms, traditions, or taboos related to sanitation practices that you could share?
13. What values around privacy, dignity, social status, or purity underlie people's sanitation



behaviors here?

14. Are there differences across gender, age, ethnicity or other groups when it comes to defecation practices?
15. How do you think sanitation practices relate to people's sense of identity in your community?
16. What are views on managing child feces versus adult feces? And handling children's sanitation needs?
17. How do you think open defecation impacts women and girls specifically?
18. What are some of the reasons or motivations you hear from people for practicing open defecation in your community? (e.g. convenience, habit, preference).
19. How do people talk about the risks or impacts of open defecation? What specific concerns are raised?
20. What are the common views around cleanliness or disgust related to defecation practices here?
21. How do perceptions of privacy, dignity or social status factor into sanitation practices in your experience?
22. What are the greatest barriers you see for people adopting regular latrine use? (e.g. accessibility, maintenance, cultural attitudes).
23. How do you think open defecation practices relate to people's sense of pride or shame?
24. Does anyone face social stigma for using a latrine or not using one? How does this manifest?
25. How do you think collectivism and shared norms influence sanitation behaviors in your community?





26. What role do you see leadership playing in influencing attitudes and practices around open defecation?
27. How receptive do you think the community would be to ideas for changing sanitation behaviors that challenge existing norms and beliefs?
28. Who in the community do you think can serve as role models or champions for positive sanitation behaviors and practices?
29. How conducive do you feel the physical environment is for using latrines consistently? What changes could help?
30. What are some positive motivations we could emphasize to encourage latrine use over open defecation?
31. How can we appeal to people's values around family, responsibility, and community wellbeing to change sanitation behaviors?
32. If children grow up seeing open defecation as the norm, how can this cycle be shifted for the next generation?
33. What concerns do you have about not been able to change attitudes and norms related to open defecation in your community?
34. What gives you hope that mindsets and behaviors around sanitation can change for the better here?

Closing questions:

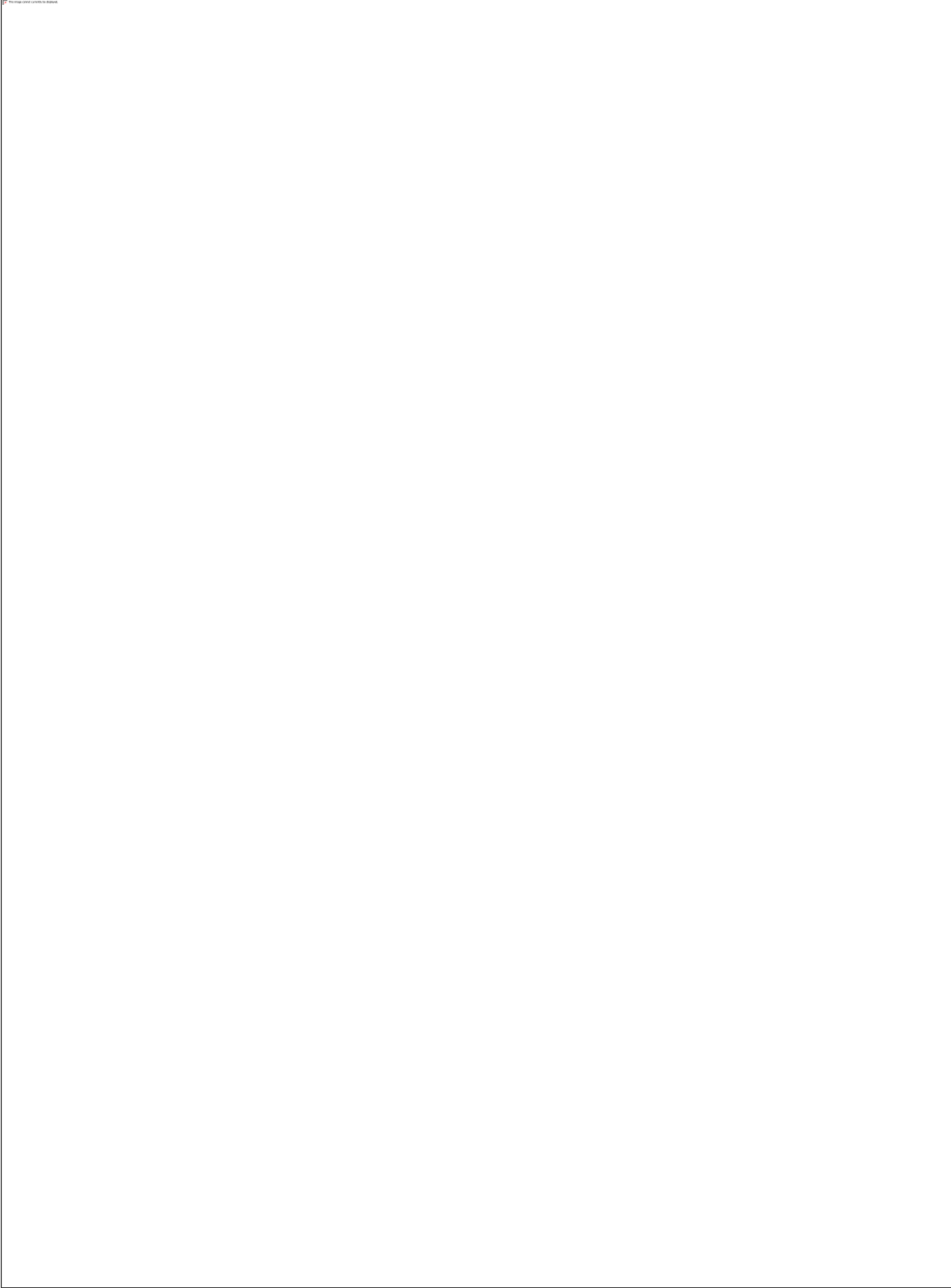
What changes would need to happen around sanitation attitudes and beliefs here for open defecation to end?

Is there anything else important we should know about perspectives on sanitation in your community?

Thank you very much for your participation in this this discussion.

Appendix B - Key Informant Interview Guide





Appendix C: Structured Questionnaire

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH



The Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana.

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Purpose and Significance of Research.



The purpose of the study is to examine the “Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”. In pursuance of this, i would examine the “Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”. The study also seeks to identify the various barriers associated with the use of toilet facilities in the Kintampo North Municipality.

This would assist the appropriate authorities to design evidence-based programs to address any issues arising from the study. This research is purely for academic purposes. It is in partial fulfillment of the requirements for the award of a Master of Public Health Degree from the University for Development Studies.

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We will require that, you use about 30 minutes of your time to answer the following questionnaire.

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Your participation in this study is completely voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you would be asked to sign a consent form. You are at liberty to withdraw from this study at any time.

Thank you for choosing to participate in this study.

If you have any questions in the future, you may contact any of the following individuals below for further information.

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2. Abdul Karim Abdul Mumin (Principal Investigator)

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Appendix D - INFORMED CONSENT FORM

Informed Consent Form for “Socio-Cultural Determinants of Open Defecation among Households in the Kintampo North Municipality in the Bono East Region of Ghana”.

I,.....have read

the above participant information given to me/the information has been read to me. My concerns/questions about this study have been accordingly addressed. I now voluntarily do

hereby agree to participate in this study.

Signature/Thumbprint of Respondent.....Date.....



Appendix E - QUESTIONNAIRE FOR HOUSEHOLD HEADS, OTHER MEN AND

WOMEN WITH CHILDREN

Section A: Socio-demographic Characteristics of Household Heads, Other Men and

Women with Children

This section seeks to collect background information about healthcare workers.

- 1. Respondent ID.....
- 2. Date of interview.....
- 3. Sub-Municipal Area.....
- 4. Age (in years) of respondent.....
- 5. Sex of respondent: 1. Male 2. Female
- 6. Educational Level: 1. No formal Education 2. Primary Education Junior High School (JHS) Senior High School (SHS) 5. Tertiary 6. Others, please specify
- 7. Highest educational level: 1. Doctorate 2. Masters 3. Degree 4. Diplomatic 5. Certificat 6. Others, please specify
- 8. Specific discipline for highest educational level completed above.....
- 9. Marital Status: 1. Married 2. Single/Never Married 3. Divorced/Separated 4. Widowed 5. Cohabitation 6. Other, please specify
- 10. Religion: 1. Christian 2. Moslem 3. Other, please specify
- 11. Ethnicity/tribe 1. Twi 2. Bono 3. Gonja 4. Frafra 5. Dagaati 6. Kassena 7. Others (please specify)
- 12. Occupation: 1. Trader 2. Farmer 3. Nurse 4. Doctor 5. Midwife 6. Others, please specify
- 13. Socio-economic status (monthly income range in cedis) 1. 500-1000 2. 10-15000 3. 1500-2000 4. 2000-25000 5. 2500-3000 6. 3500 and above
- 14. Total number of public toilets in the Municipality.....
- 15. Household size.....
- 16. Presence of a toilet facility in the household 1. Yes 2. No
- 17. Type of toilet facility: 1. Pit Latrine with cover 2. Pit Latrine without cover 3. Flush toilets (e.g. water closet) 4. Squat toilets 5. Others, please specify
- 18. If yes, features of the latrine include: 1.

Section B: Community Attitudes, Beliefs and Perceptions regarding Open Defecation and Latrine Use

- 19. How would you describe the current sanitation practices in your community?
 - 1. Very good
 - 2. Good
 - 3. Fair
 - 4. Bad
 - 5. Very Bad





6. Others, please specify.....
7. What are the main benefits of using a latrine for defecation?
 1. Promote health because they allow people to dispose of their waste appropriately
 2. Prevents contamination of their environment
 3. Reduces the risks of spreading diseases and conditions to people
 4. Others, please specify.....
8. What are some of the drawbacks or challenges associated with using a latrine?
 1. There may be a foul odour from the pit
 2. They can be a favourable place for the breeding of flies and mosquitoes
 3. They can be susceptible to failure/overflowing during floods
 4. Others, please specify.....
9. How would you describe the common perceptions about defecating in the open in your community? Is it generally viewed a
 1. Favorable
 2. Unfavorable
 3. Neutral
 4. Others, please specify.....
6. Are there differences in how open defecation is viewed across different groups (age, gender, social status etc.) in the community?
 1. Yes
 1. No
 2. Don't Know
 3. Others, please specify.....
10. Can you describe any cultural beliefs, norms or traditions related to defecation practices in your community?
 1. When the latrines face the direction of Mecca
 2. Faeces are not good things to be kept in homes/in toilets in the house
 3. Girls who are in their menstrual periods are not supposed to defecate in the toilet
 4. Children can defecate in the open since their faces are considered harmless
 5. Defecating in the toilet can cause one to be possessed by evil spirits
 6. Others, please specify.....
7. What values around privacy, dignity, social status or purity underlie community perspectives on open defecation and latrine use?
 1. Defecating in the open is an affront to human dignity
 2. Privacy - Open defecation often provides a greater sense of privacy and freedom compared to using communal latrines which can lack walls, doors, or gender separation.
 3. Social status - owning and using a private household latrine is associated with higher social class and status.
 4. Purity - Notions of ritual purity and pollution determine beliefs around latrine use and open defecation in some communities. Latrines are considered polluting and contaminating, while the practice of open defecation is seen as promoting cleanliness and purity according to cultural concepts



5. Gender norms - Women may prefer open defecation to maintain traditions of modesty linked to female purity, or because latrines lack safety and privacy for women due to inadequate locks, lighting or separation from men.
6. Others, please specify.....
8. How do you think open defecation impacts women and girls in your community specifically?
 1. A) Women and girls face greater risks of harassment, assault, and rape due to the need to find isolated areas and walk long distances for open defecation.
 2. The lack of privacy and proper menstrual hygiene management related to open defecation undermines the dignity of women and girls.
 3. Time and energy spent locating areas for open defecation reduces women and girls' education and economic opportunities
 4. Women and girls face additional health risks like urinary tract infections and adverse pregnancy outcomes due to unsanitary defecation practices.
 5. Responsibilities for cleaning young children and managing open defecation sites fall disproportionately on women, increasing their burdens.
 6. Others, please specify.....
9. Are there any taboos around handling human fecal waste? Does this differ between adult and child feces?
 1. Handling human waste makes one impure
 2. Others, please specify.....
10. What are the main barriers to adopting latrine use and ending open defecation in your community?
 1. Inadequate space
 2. High cost of building an improved toilet/latrine
 3. Cost of maintain latrines
 4. Not a priority
 5. Others, please specify.....
11. What suggestions would you have for shifting community attitudes and norms to favor latrine use over open defecation?
 1. Public education about open defecation and latrine use
 2. Implementation of bye-laws
 3. Building of latrines
 4. Others, please specify.....

Section C: Community Social Norms, Cultural practices, Open Defecation and Latrine Use

5. **Traditional Norms**
 1. Faeces are not things to be kept in homes/ in toilet in the house.
 2. Girl who are in their menstrual periods are not supposed to defecate in toilet
 3. Children can defecate in the open since their feces are considered harmless.
 4. Father-in-laws and daughters-in-law cannot use the same toilet
 5. Others, please specify.....
6. **Superstition**
 1. Defaecating in toilet causes one to be possessed by evil spirits.

- 2. Shared toilets are associated with evil spirits and therefore should avoided.
- 3. Using same toilet with people in the other houses causes one to lose his/her social status.
- 4. social status.
- 5. Others, please specify.....

6. Traditional Value

1. Defaecating in the open (bush, beaches) signifies continuation of ancestor’s way of life.

2. Others, please specify.....

Section D: Sanitation-related Knowledge and risk awareness associated with open defecation

Awareness of Health Risks from Open Defecation:

- 7. What are the health risks associated with open defecation?
 - 1. open defecation is unhygienic and spread diseases
 - 2. Open defecation spreads diseases like diarrhea, intestinal worms, cholera, typhoid, hepatitis
 - 3. Open defecation poses severe threats to entire ecosystems and the environment
 - 4. Others, please specify.....

Knowledge of Fecal-Oral Transmission Routes:

- 5. Open defecation spreads diseases through:
 - 1. Contamination of food with human faeces
 - 2. Contamination of water with human faeces
 - 3. Direct human contact with faeces or contaminated body parts
 - 4. Others, please specify.....

Safe Child Faeces Disposal Knowledge:

- 5. How should children’s faeces be handled?
 - 1. Children’s feces/diapers can be left in the open as they are not hazardous
 - 2. Children’s faeces are harmless and cannot transmit disease
 - 3. Children can defecate in the open just like adults because their faeces are pure
 - 4. Others, please specify.....

Environmental Contamination Awareness:

- 5. How does open defecation affect the physical environment?
 - 1. Open defecation contaminates drinking water sources
 - 2. Open defecation contaminates the environment
 - 3. Open defecation only contaminates immediate defecation areas
 - 4. Open defecation does not contaminate the environment
 - 5. Others, please specify.....

Section E: How Emotional and Physical Experiences, Conveniences, and Discomforts shape Defecation Practices

- 6. What factor plays a significant role in shaping defecation practices?
 - 1. Social media influence
 - 2. Emotional and physical experiences



3. Political climate
4. Fashion trends
5. Which aspect is likely to influence an individual's defecation practices the most?
 1. Economic status
 2. Physical health
 3. Educational background
 4. Musical preferences
5. In the context of defecation practices, what is considered a convenience?
 1. Access to high-speed internet
 2. Availability of scented candles
 3. Adequate toilet facilities
 4. Smartphone brand
5. How might emotional experiences impact defecation practices?
 1. Influence of popular culture
 2. Stress levels and mental well-being
 3. Political ideologies
 4. Preferred choice of clothing
5. Which discomfort is most likely to shape an individual's defecation habits?
 1. Uncomfortable furniture
 2. Lack of entertainment options
 3. Inadequate sanitation facilities
 4. Limited wardrobe choices
42. What is a key determinant of defecation practices according to the question?
 1. Weather conditions
 2. Emotional and physical experiences
 3. Distance from shopping malls
 4. Social media engagement
43. In the given context, what is considered an essential factor for comfortable defecation?
 1. Personal taste in art
 2. Proximity to a fitness center
 3. Adequate and hygienic toilet facilities
 4. Choice of favorite color
44. Which of the following is least likely to influence an individual's defecation practices?
 1. Community traditions
 2. Emotional experiences
 3. Breakfast choices
 4. Political affiliations
45. What role do conveniences play in shaping defecation practices?
 1. Minimizing stress and discomfort
 2. Encouraging political activism
 3. Determining fashion trends
 4. Influencing culinary preferences
46. Which factor is more likely to be associated with defecation practices based on the question?
 1. Preferred mode of transportation
 2. Emotional and physical well-being
 3. Favorite television shows

4. Social media following

Thank you very much for taking time to answer this questionnaire



UNIVERSITY FOR DEVELOPMENT STUDIES
(School of Public Health)



P.O. Box 1883
Tamale, Ghana

August 15, 2024

Our Ref:
Your Ref:

Department of Global and International Health

The Municipal Chief Executive
Kintampo North Municipal
Bono-East Region
Kintampo

Dear Sir/Madam,

REQUEST TO COLLECT DATA FOR FINAL YEAR THESIS - ABDUL KARIM
ABDUL-MUMIN

I request permission for Abdul Karim Abdul-Mumin a final year Master of Public Health student (Environmental Health Track) of the Department of Environmental and Occupational Health, School of Public Health to collect data from the Kintampo North Municipality.

As part of the requirements for graduation, the student is undertaking a study titled "SOCIO-CULTURAL DETERMINANTS OF OPEN DEFECATION AMONGST HOUSEHOLDS IN THE KINTAMPO MUNICIPALITY". The school would be very grateful if you could grant him the necessary support to facilitate the research process.

Thank you for your cooperation.

Yours Faithfully,


Head of Environmental & Occupational Health
SCHOOL OF PUBLIC HEALTH
UDS-TAMALE

Dr. Dennis Chirawurah, MPH, PHD
(Head of Department)

Appendix G: Ethical Approval Letter for the Study



UNIVERSITY FOR DEVELOPMENT STUDIES

Tel: 03720-93382/26634/22078

Email: ethicsboard@uds.edu.gh

Website: www.uds.edu.gh

Our Ref: *UDS/IRB/225/24*



P. O. Box TL 1350
Tamale-Ghana

Your Ref:

UDS - INSTITUTIONAL REVIEW BOARD

12TH AUGUST, 2024.
Date

ABDUL-MUMIN ABDUL-KARIM,
UNIVERSITY FOR DEVELOPMENT STUDIES,
TAMALE.

ETHICAL APPROVAL NOTIFICATION

With reference to your request for ethical clearance on the research proposal titled “**Socio-cultural determinants of open defecation amongst households in the Kintampo North Municipality,**” I write to inform you that the University for Development Studies Institutional Review Board (UDSIRB) found your proposal including the consent forms to be satisfactory and have duly approved same. The mandatory period for the approval is six (6) months, starting from 12th August, 2024 to 12th January, 2025.

Subject to this approval, you are please required to observe the following conditions:

1. That the anonymity of the respondents shall be guaranteed as mentioned in the consent forms.
2. That you will acknowledge the source of the data collected in any publication related to this research.
3. That you will submit a field report and a copy of the research report to the UDSIRB.
4. That you may apply to the UDSIRB for any amendments relating to recruiting methods, informed consent procedures, study design and research personnel.
5. That you will strictly abide by the code of conduct of this University.

Please do not hesitate to refer any issue (s) that you may deem necessary for the attention of the Board.

Thank you.

Prof. Nafiu Amidu
Chairman, UDSIRB
Cc: file





Abdul-karim Abdul-mumin

**SOCIO-CULTURAL DETERMINANTS OF OPEN DEFECATION
AMONG HOUSEHOLDS IN THE KINTAMPO NORTH MUNICIPA...**

- Quick Submit
- Quick Submit
- University for Development Studies

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Appendix I: Socio-Demographic Characteristics of Key Informants

4.2.3 Socio-Demographic Characteristics of Key Informants

Table 4.3

Variable	Frequency	Percent (%)
Sex		
Male	12	100
Age		
10-14	5	41.6
15-19	7	58.3
Education		
No formal Education	7	58.3
Primary Education	3	25.0
Junior High School (JHS)	2	16.6

Source: Field Survey, 2024



Appendix J: Pictures of Data Collection with Study Population







