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FACTORS INFLUENCING OPEN DEFECATION AMONG SLUM DWELLERS IN ASHAIMAN MUNICIPALITY

BY

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DECLARATION

I, hereby declare that this dissertation is my own original work. It has not been submitted to any other institution for any award of either another degree or any other qualifications, in what so ever nature either in full or part.

…… ……..

Flavia Abidaru Date

(Student)

…… …….

Dr. Emmanuel Asampong Date

(Academic Supervisor)

DEDICATION

I dedicate this dissertation to the Almighty God for this Ebenezer. To my wonderful parents, siblings, and all my loved ones for their support during my entire Master Programme.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DALY	Disability Adjusted Life Years
DFID	Department For International Development
EA	Enumeration Area
FDREMOH	Federal Democratic Republic of Ethiopia Ministry of Health
GSS	Ghana Statistical Service
HIV	Human Immune Virus
HH	House Hold
JMP	Joint Monitoring Program
LMICs	Low Middle Income Countries
OD	Open Defecation
RIPS	Regional Institute of Population studies
SDGs	Sustainable Development Goals
TB	Tuberculosis
TPB	Theory of Planned Behavior
UNICEF	United Nations International Children‟s Emergency Fund
UN	United Nation
US	United States
VIP	Ventilated Improved Pit
WASH	Water And Sanitation Health
WHO	World Health Organization

DEFFINITION OF TERMS

Sanitation: The provision of facilities and services for proper disposal of human waste (urine and faeces).

Open defecation: Disposal of human faeces in fields, forests, bushes, bodies of water or other open spaces.

Latrine: Facilities used for the safe disposal of human faeces and urine.

Latrine Coverage: Proportion of households having ownership of an improved latrine facility.

Improved latrines: Facilities that ensure hygienic separation of human excreta from human contact. The different categories of improved latrine facilities are provided in *Appendix 1.*

Unimproved latrines: Facilities that do not ensure hygienic separation of human excreta from human contact. The different categories of unimproved latrine facilities are provided in *Appendix 1.*

Shared latrines: Sanitation facilities of an otherwise acceptable type shared between two or more households. Shared facilities include public toilets.

ABSTRACT

Background

Open Defecation remains a very big health and environmental hazard in many developing countries in Africa. About 2.4 billion people globally still lack access to improved sanitation and about 946 million practice open defecation, meanwhile in Ghana 27% of the Ghanaians engage in open defecation due to lack of latrines and many share sanitation facilities leading to prevalence of diseases related to sanitation such as diarrhea, literature reflects gaps in. This study therefore sought to explore the factors that influence open defecation among slum dwellers in Ashaiman Municipality.

Method

A descriptive cross sectional study design was used for the study. Ashaiman Municipality was purposively selected based on the low coverage of latrines at household level and public latrines and it being an urban area with a lot of slum areas. Simple Random Sampling was used to select 5 Enumeration Areas in the slum for the study and these included; Base Health Center, Solidarity International School, Camusco School, Stream of Life School, Allied Oil, God"s Mercy Academy and Agyiri Nyarko School Complex. Quantitative data will be collected from 281 household heads who will fill the structured questionnaire and qualitative data will be collected through in-depth interview to complement the household survey. All the filled and completed questionnaire were first checked for completeness, coded, entered into SPSS and then cleaned before data analysis. Descriptive findings were presented as numerical summaries, tables, meanwhile inferential statistics was made use of Chi-square and binary logistics regression and correlation were used to measure the relationship between the dependent and independent variables and thematic analysis was carried for the qualitative part of the study.

measure the relationship between the dependent and independent variables and thematic analysis was carried for the qualitative part of the study.

Results

In general the slum dwellers displayed both the use of improved and unimproved latrine usage, however less than half of the slum dwellers practiced open defecation (9.2%). Majority of the slum dwellers either shared latrines among the households (29.7%) or used public latrines (49.8%). There was significant relationship between knowledge on open defecation and the practice of open defecation at (mean difference= -0.168, p= 0.005).

Conclusion

The study revealed that open defecation was higher among households that did not own latrine facilities. Majority of the community household members either used public latrines or used shared latrines among the households. More Government and Landlords efforts needs to be geared towards scaling up latrine ownership and use at households and construction of more public latrines in the study area must be undertaken to end open defecation.

CHAPTER ONE

INTRODUCTION

1.1. Background

Hygienic sanitation amenities to human population are considered a necessity worldwide to promote healthy sanitation. According to the WHO, 2007, sanitation generally refers to the provision of facilities and services for proper disposal of human waste (urine and faeces). The World Health Organization further commends good sanitation as attainable by the availability of adequate facilities and services for the safe excreta and urine disposal; garbage collection and availability of safe disposal of wastewater are inclusive (WHO/UNICEF, 2013). The World Health Organization estimates about 2.4 billion people worldwide as still lacking access to improved sanitation globally and about 946 million as practicing open defecation (UNICEF & WHO, 2015).

Open defecation considered as practice of defecation without any kind of sanitation system has generally accepted to lead to health problems. Open defecation perpetuates a vicious cycle of disease and poverty. The countries where open defection is most widespread have the highest number of deaths of children under 5 years of age as well as the highest levels of malnutrition and poverty, and big disparities of wealth (WHO/UNICEF JMP, 2010).

With all its known consequences, open defecation has been regarded as a significant global health problem (Sahoo et al., 2015; Spears, Ghosh, & Cumming, 2013). The United Nations reaffirmed the importance of sanitation by including it in the Sustainable Development Goals (SDGs), which calls for ending open defecation and universal access to adequate and equitable

sanitation (UN General Assembly, 2015). Approximately 215 million people participate in Open Defecation in Sub-Saharan Africa (Njuguna BMC Public Health (2016).

The practice of open defecation has progressively been reducing from the year 2000 to 2015 where the total population practicing open defecation dropped from 1,229 to 892 million, meaning there has been reduction by 22 million persons annually. The Sustainable Development Goal (SDG) report reflects an overall decrease in the population engaged in open defecation from all regions apart from Sub-Saharan Africa where open defecation engagement had been noted with increasing from 204 million to 220 million showing open defecation rise from 1 to 1.3 million. The SDG aim of ending open defecation by 2030 needs extensive speed in the present of progress specifically in Sub-Saharan Africa (UNICEF/WHO 2016).

More than half of Ghanaian people share sanitation facilities and still 27% of the population engage (WHO/UNICEF 2012), meanwhile 22.9% of the population lack access to sanitation such as latrines and the best option is open defecation and 15% own and use improved sanitation and not shared (UNICEF, 2015).

1.2. Problem Statement

The practice of open defecation in Ghana is still alarmingly high, with current data suggesting at least 21% of the Ghanaian population do not still have or use latrine facilities (GSS, 2014). Even when high latrine coverage levels are achieved, open defecation is often still practiced (Barnard et al., 2013). Ghana‟s efforts at achieving the SDGs on sanitation and water may be affected by the problem on open defecation.

Open defecation is usually regarded as an individual problem, following decision of whether to build and/or use a toilet or not. Users may still choose to openly defecate, and that decision is likely influenced by a number of technological and behavioral factors (Coffey, et al., 2014; Hulland et al., 2015; Routray et al., 2015).

Whereas many studies have focused on the latrine coverage levels, there is limited information on latrine not much is known on the practice of open defecation and associated factors influencing the practice of open defecation among others. The need to study these factors is critical if policy is to be informed adequately. It is particularly not clear as to which factors promote the practice of open defecation among the peri urban community such as Ashaiman.

Ashaiman is a sprawling "urban settlement", parts of which exhibit characteristics of a slum. Ashaiman hosts migrants from all over the country and beyond; many people settle in the area in search of jobs and for relatively less expensive accommodation as compared to Accra and Tema. Public toilet is reported as the most dominant toilet facility in the Municipality (63.5%); Bucket/pan and no facility (open defecation) together account for less than five percent (GSS, 2010).

An understanding of practice of open defecation is essential in order to implement policy related decisions towards the Sustainable Development Goal. And in a longer run be able to lay a foundation of an effective sanitation strategy.

This study therefore will find out the factors that are still making people of Ashaiman show unwillingness to stop open defecation despite the existing latrines or toilets.

1.3 Justification

Ghana has been documented to have made significant progress towards community access to improved water sources. Access to clean water benefits up to 80% of the population. However, despite these successes, more than 4,000 Ghanaian children are reported to die annually from diarrhea related causes. One in five Ghanaians defecate openly reported as with no access to a toilet. However access to toilet facility varies greatly by group, region with open defecation rates of over 70% in Northern Ghana, reflecting significant national inequalities (UNICEF, 2010).

Five million Ghanaians still use water from unsafe sources (REF) and the Demographic Health Survey reports over 5 million Ghanaians as known to defecate in the open (GSS, 2014). Despite all these, Ghana has also been ranked seventh as the country with the lowest sanitation coverage and is hence considered as having a very serious environmental health crisis. The issue of sanitation is alarming public health problem, one of the most pressing concerns in the country.

It is clear that sanitation coverage is therefore critical in the country, thus compelling a more focused attention on sanitation and more particularly in the slum areas known to host a lot of persons. It is in response to this compelling situation that this study is being undertaken.

Increased use of pit latrines and toilets will hopefully contribute to a great achievement of health, social and sustainable development outcomes (WHO, 2012a). The research will hopefully in a longer run contribute to the world wide call of achieving the UN Sustainable development goals (SDGs) particularly SDG 6 which calls for an investment of adequate infrastructure, provision of sanitation facilities, and encouraging hygiene at every level (WHO and UNICEF, 2013).

The proposed study is hoped to add to the existing body of knowledge or literature both in academic and technical or professional fields on water and sanitation sector. By enriching the available evidence, the study aims at generating further interest in sanitation services delivery especially among researchers as well as other related studies. It can further provide a useful academic and professional substantial reference for future studies.

The data reported in this proposed study will contribute towards bridging the knowledge gap on the status of sanitation among the peri-urban community especially slum dwellers in sub-Saharan Africa and the developing world at large. The results of this study therefore have relevance for our understanding of the sanitation related practices of these groups, the open defecation behavior and factors encouraging the practice in Ghana and beyond

1.4 Conceptual Frameworks

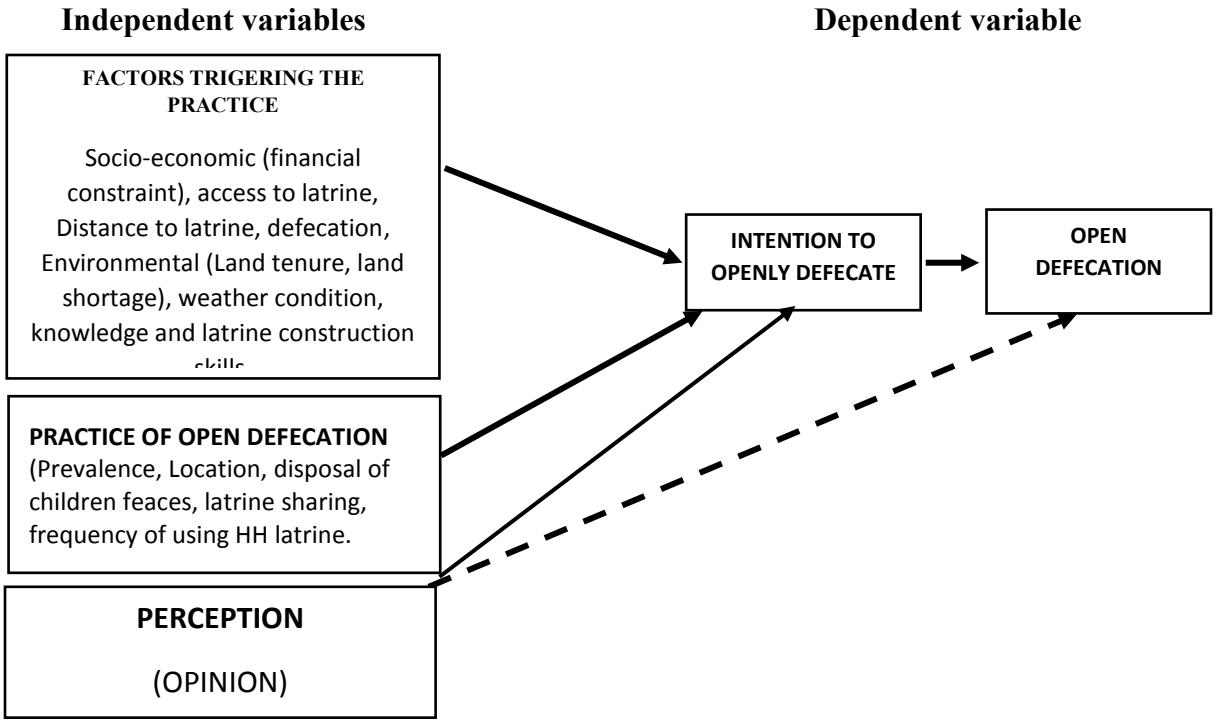


Figure 1: Conceptual framework. Factors Influencing Open Defecation.

Narrative Explanation

The conceptual framework for open defecation practice in this study is grounded on the concept that the behavior to engage in open defecation by the individual is influenced by certain key factors in the individual or community.

The conceptual framework was derived basing on the Theory of Planned Behavior (TPB) which allows the examination of open defecation by individual and explores the factors that inhibit this behavior. The theory of Reasoned Action (attitude, subjective norms) that led to development of the theory of planned behaviors is composed of attitude toward certain behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and behaviors.

An adaptation of the theory has however been made by the author to include background characteristics of the Participants following a realization that the additional attributes of perceived behavioral control explain better the situation at hand with other additional predictors (Ajzen, 1991). The researcher has also adopted the theory of planed behavior to explain the concept of "open defecation practice" as a dependent variable by looking at a number of independent variables as factors responsible for the practice in the study.

The model predicts that the intention to perform a behavior such as opting for open defecation is a result of strong beliefs in most of the communities where some individuals think that a child"s faecal matter does not go to main latrine and since most of it is always embedded in their clothes and after washing they just pour anywhere in their compounds or gutters.

Perceived behavioral control where many individuals are seeing open defecation as a normal practice with no health implications this has contributed to many individuals to continuously indulge into such behaviors since no one takes it as strange and this puts the health of individuals at risk of developing diarrhea diseases such as cholera.

Among other factors that contribute to the practice of open defecation include local acceptance of open lack of infrastructure, social norms, social acceptance, and distance to latrine defecation area from the residential house are also explaining why individuals do open defecation and these are taken as socioeconomic factors (Ajzen, & Madden., 1986).

The Theory of Planned Behavior as explained above provides a considerable analysis of the independent variables as they account for the individual behaviors as in relation to open defecation in this context.

1.5. Research Questions

What is the perception of the community on open defecation in Ashaiman?

What practices of open defecation exist among the slum dwellers in Ashaiman?

What factors trigger pre-disposition of open defecation among slum dwellers?

1.6. Objectives

1.6.1 General Objectives

To explore factors that influences Open Defecation among slum dwellers in Ashaiman.

1.6.2 Specific Objectives

1. To describe the practices of open defecation among the slum dwellers in Ashaiman.

2. To identify the factors that trigger pre-disposition of open defecation among slum dwellers in Ashaiman.
3. To explore the perception of slum dwellers on open defecation in Ashaiman.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter provides the documents literature related to the study and particularly focused open defecation practice, perceptions and factors influencing it practice among households and communities. Areas that would be covered include determinants of open defecation; latrine ownership and use; attitudes towards open defecation; beliefs and perfections on open defecation and the effects of open defecation.

About 2.9 billion people or 39% of the world population are reported to have used own (unshared) toilet or improved latrine facilities with proper excreta disposal or treatment also referred to as safely managed sanitation facilities in 2015 and 68% having at least basic facilities. Of 2.3 billion people who still do not have the basic sanitation facilities such as toilets or latrines, 892 million are reported to still defecate openly world over. These among others includes defecation in the bushes, street gutters, or openly in water bodies (WHO & UNICEF, 2017).

2.2 Overview of Sanitation

Sanitation according to the Millennium Development Goals (MDGs) as “access to facilities that hygienically separate human excreta from human, animal and insect contact. Facilities such as sewers or septic tanks, pour-flush latrines and simple pit or ventilated improved pit latrines are assumed to be adequate, provided that they are not public.” (UN, 2003). In 2005, the MDG Task Force on Water and Sanitation provided the following working definition of “basic sanitation” as “the lowest cost option for securing sustainable access to safe, hygienic and convenient facilities for excreta and silage disposal that provide privacy and dignity while ensuring a clean and

healthful living environment both at home and in the neighborhood of users" (Lenton, Wright, & Lewis, 2005).

Also, in 2010, the United Nations documented the right to safe sanitation as a human right issue and therefore defined it as "access to, and use of, excreta and wastewater facilities and services that ensure privacy and dignity, ensuring a clean and healthy living environment for all" (WHO-UNICEF, 2015). COHRE, UN-HABITAT, SDC & WATERAID, (2008) added that these facilities and services must be safe, physically accessible, affordable and culturally acceptable. The Sustainable Development Goals has added further on this by looking to achieve "progressive realization" of the Human Right to Water and Sanitation by extending access to the "unserved", "moving people up the service ladder" and "progressively eliminating inequalities in access" (WHO-UNICEF, 2015).

The Community Water and Sanitation Agency (CWSA) also defines sanitation as hygiene promotion and the disposal of faecal matter and solid waste. The provision and use of latrines is an important component of the strategy for breaking the cycle of transmission of excreta-related diseases. Sanitation interventions search for ways to promote improvements in environmental sanitation and living conditions of people so as to improve health and productivity of the people and the community at large (CWSA, 2004). People must be provided with toilet facilities that eliminates their contact with human excreta and wastewater by making available toilets that are convenient, clean, easily accessible and affordable by all. Meeting these basic needs and thus reducing the burden of disease related to their insufficiency should be the focus of raising the health status of vulnerable groups (UN-Habitat, 2003). Sanitation ladder is a new way of analyzing sanitation practices that highlights ways in using improved, shared, and unimproved sanitation facilities and the trend in open defecation.

Poor sanitation contributes to 88% of diarrhea incidences globally (Pruss-Ustun et al., 2008). Diarrheal diseases as a second leading contributor of global burden of diseases measured by the use of Disability adjusted Life Years (DALY) continuous to lead as a major cause of childhood death and illnesses (Black et al., 2010; Liu et al., 2012). It is being estimated that 1.5 million to 2.2 million persons die of diseases associated with diarrhea and mainly the children (Robert et al., 2009). In Africa, many children have lost lives to diarrhea and it is the chief source of demise in children universally (DFID, 2013; UNICEF, 2012).

Toilet facility coverage is an indicator for improved sanitation and coverage. It is not the same everywhere and every time, that is to say toilet facility coverage changes through time and space. As reported by WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation in 2008, 62% of the world‟s population have access to improved toilet facility, 8% share an improved toilet facility with one or more households, and another 12% use an unimproved toilet facility, whilst the rest (18%) of the people practice open defecation (WHO/UNICEF, 2008).

2.3 Global burden of Open Defecation

Open defecation is the practice whereby people go out in fields, bushes, forests, open bodies of water, or other open spaces rather than using the toilet to defecate (Gupta el at, 2015). Two and a half billion people live without access to improved sanitation and hygiene facilities resulting in 1 billion (15%) people worldwide defecating in the open. Open defecation continues a vicious cycle of disease and poverty making sanitation and hygiene among the most important drivers of health, social and economic environments (Gupta el at, 2015).

The practice of open defecation adds more burden to the already strained health system. Poor sanitation is known to be associated with a number of disease transmission, these include cholera, diarrhea, dysentery, hepatitis A, typhoid and polio (WHO & UNICEF, 2017). Open

defecation is responsible for about 58% of all diarrheal deaths. Up to about 842, 000 persons in Low middle Income Countries (LMICs) are reported to die due to inadequate water, sanitation, and hygiene annually

The United Nations call to action on sanitation included the elimination of open defecation (OD) by 2025 (UN, March 2013). The need to address this issue comes from the fact that "open defecation constitutes a health and human capital crisis" (Coffey et al., 2014) with implications that "keep(s) women under the threat of harassment, violence and rape. It forces girls to abandon education at puberty. It contributes to a cost of $260bn a year through death, ill health and loss of productivity." (Excerpt from United Nations Deputy Secretary-General Jan Eliason"s address at the campaign launch to end open defecation, May 28, 2014).

The global trends on open defection rates shows a declined from 24% in 1990 to 13% in 2015 (WHO/UNICEF, 2015). It has also been estimated that sixteen countries have reduced open defecation rates by at least 25 percentage points during the MDG period, with India (highest in the world) recording a sharp decline of 31% (WHO-UNICEF, 2015). However, a previous Joint Monitoring Program (JMP) estimate on "unfinished business" of the MDGs may offer some viewpoint on these gains. It proposed that until 2014, India was home to 597 million people practicing open defecation, making it the country with the highest number of open defecators globally (WHO-UNICEF, 2014).

Many countries have accomplished great progress in tackling the open defecation issues. For instance, in Vietnam and Bangladesh more than one in three people relieved themselves in the open in 1990, virtually engraved themselves out the practice entirely by 2012. This led to a decrease in the global number from 1.3 billion in 1990 to 1 billion today. 90% of societies living in rural country side still engage in open defecation. The practice is on the rise in 26 countries in

Sub-Saharan Africa, with Nigeria the least compliant. Open defecation has risen in the Sub-Saharan region from 23 million in 1990 to 39 million in 2012 and 42 million in 2015 (Conant, 2005; WHO, 2012).

2.3.2 The practice of Open Defecation

Most of the open defecation practices are being carried out in rural settings by openly excreting in the open grounds, jungles, bushes and water bodies and it is mostly countries that earn low income. This is mostly associated with rural communities not having access to adequate sanitation (Robert et al, 2009).

Open defecation among children is a norm in most Asian countries (Bangladesh, Philippines, Indonesia, Sri-Lanka), and south east American country (Peru) and some African countries (Burkina Faso). The common practice of open defecation is by washing the faeces of babies in water bases such as river, canal and ponds. It is a tradition that babies are to defecate in beds, on the laps of their mothers such that the faeces can be absorbed in the clothes which later is to be washed. The faeces of the children are collected or picked using paper, straws, leaves and hoes (Sultana et al, 2013; Alam, et al., 2008; Majorin et al., 2014; Zeitlyn & Islam, 1991; Aulia et al., 1994; Tessema, 2017).

Open defecation in Ethiopia has significantly decreased from 1990 to 2015 that is 92% (44.3 million) to 29% (28.3 million) (Greeley; UNICEF, 2016) meanwhile large percentage still are involved in practicing open defecation (UNICEF; WHO, 2015). However, approaches like Community based participatory approach such as Community Led Total Sanitation have been put in place in order to fight diseases that result due to poor sanitation (Araya; UNICEF, 2016). This aims at empowering the community to take control of their own sanitation issues and its effects on open defecation (Robert, 2009).

In 2015, the UN general assembly recognized access to safe water and sanitation and sound management of freshwater ecosystems as essential to human right and to environmental sustainability for economic growth. Achieving the universal access to basic sanitation and ending the unsafe practice of open defecation will require substantial acceleration of progress (UN, 2017).

With Shared latrines as a contentious discussion area, LMICs have a bigger proportion of 16% for people sharing their toilet facilities with the highest in sub-Saharan Africa, where 19% of the population depends on shared sanitation with the rates of shared facilities increasing generally particularly in urban based environments, up to 33% in urban populations in the sub-Saharan (WHO, 2014). This situation is not any different in the four Asian countries namely Bangladesh, China, Mongolia and the Philippines, with over 15% of the population depending on shared sanitation.

2.4 Open Defecation in Ghana

Access to proper sanitation is poor among many communities in Ghana. Report by Ghana Water Sector Restructuring Secretariat (WSRS) in 2005 put the percentage of the population with access to improved toilet facilities at approximately 40 percent in urban areas and 35 percent in rural areas. The country has also been performing poorly with sanitation coverage of only 15 percent, making the practice of open defecation a key sanitation challenge because people do not have access to key basic facilities (Connell et al. 2014).

Open defecation issues in Ghana is alarming and Ghana had been ranked second after Sudan in Africa for open defecation, with five million Ghanaians not having access to any toilet facility. The Chief Officer at the Water, Sanitation and Hygiene, WASH, Unit of UNICEF Ghana, David Duncan, notes that in the last 25 years, Ghana made one percent progress at eliminating the

practice. According to him, though the current pace is nothing to write home about, he was hopeful Ghana could achieve an Open Defecation Free society within the four-year national target if actions are expedited on all fronts (www.pulse.com.gh-19/04/2018).

In has been highly argued that the use of shared sanitation should be regarded as unimproved. These are still a few steps away towards the achievement of access to private and improved sanitation. However, it‟s important to provide a sub-classification to way sharing is carried. Where household shared (sharing with a specific household number who are related in a way or know each other), public toilets (primarily intended for fleeting population, but most often the main facility used by poor neighborhood) and institutional toilets (school, church, workplaces, markets etc. (WHO, 2014).

About 60.6% of Ghanaians live in compound houses rather than self-contained houses; characterized by several households sharing an open area or yard hence share all utilities including water, electricity and sanitation. Originally, traditional living style common in rural but now in urban and peri urban settings (GSS, 2014).

It‟s however essential to interpret individually depending on each context studied, whether culturally acceptable or not for example experiences from Ghana and other sub-Saharan African countries illustrate how household shared sanitation may well fit with the sanitation choices of the households. A shared sanitation is considered as being at some point away from open defecation in the sanitation ladder. It contributed to a greater extent to the current achievements in sanitation in recent years. The use of shared sanitation increased from 29% in 1999 to 59% in 2012. About 19% of the population in Ghana still practices open defecation and the overall rate of improved sanitation use still stands at a low level of 14%, leaving Ghana far from reaching sustainable development goals target of ending of open defecation (WHO, 2014).

2.5 Factors contributing to Open Defecation

A number of factors have been found to contribute to the menace of open defecation. There are factors such as lack access to toilets and some toilets are weakly constructed and there are many blocked toilets. But the main issue is the mentality of the people both in the urban and rural areas. For example, parents and grandparents are seen by their children defecating openly and so they do. It is also a belief among the farmers that defecating in the gardens provides natural fertility to the soil and refreshes their minds. (WHO/UNICEF 2014).

Factors such as absence of money, shortage of land, tenants living in the houses of the landlords and intentional refusal to build latrines or toilets is a very huge promotion of open defecation. In a study conducted by Geeta (2014), these factors led to 33.1% of the people involved themselves in defecating in open meanwhile 62.5% used their household toilets and 4.3% used public toilets, (Geeta, 2014).

Globally there has been reduction in the percentage of open defecation performance from 1990 to 2008 that is from 25% to 17%. For the case of Sub-Saharan Africa, it was by 25% that open defecation practices dropped and in total the people performing open defecation rose from 1880 million in 1990 to 2008. Meanwhile in southern Asia, the number decreased from 66% to 44% from 1990 to 2008 (WHO/UNICEFJMP, 2010). According to Anata (2013), the total number of people who still cannot afford to access toilets or latrines is 2.5billion particularly in third world countries and out of this figure 1 billion go for open defecation. At least in four persons, one goes for open defecation which later leads to poverty and incapability to construct the toilets.

A study conducted in Odisha indicated accepting latrine use is poor and this is due to a number of factors such as rituals, gender differences, and the age of the people, marital status, social ways of living and the lifestyle of the people.

One third of population from Peri-urban communities in southern Ghana are reported to prefer the use of shared toilets compared to ownership of one due to issues related to land tenure, affordability of one as well as other biological and physical related barriers towards the ownership of a household toilet (GSS, 2008; Keraita et al., 2013; Spencer, 2012).

Issues related to Land and its tenure are particularly well-known barriers to achieve a required sanitation in many sub-Saharan Africa, those who do not own land legally including tenants and some traditional unclear ownerships have often to depend on the instructions of the right full land owner or care taker before building private toilets on land. Urban settings even find it more difficult to settle since such settlements are often temporary and the owners‟ plans may not necessarily include constructing a private latrine as rents are often income generating in nature (Spencer, 2012).

Proper disposal of faeces in their right places that is the toilet or latrine and adequate sanitation brings about significant changes in the area of health (Mara et al, 2010; Spears et al, 2013) and this leads to remarkable socio-environmental change (Pearson et al 2008; Jewitt et al, 2011; Kar et al, 2012; O‟Relly, 2014). However, in 2015 it was approximated that 2.4 billion persons did not have access to adequate sanitation and about 1 billion of the population do open defecation, the biggest number living in Sub-Saharan Africa and South Asia (WHO/UNICEF 2015).

Policy negotiations and media interpretations of open defecation in rural areas attribute lack of using latrine to inadequate access to water. This is due to the big quantity of water that is needed for better latrine maintenance (Coffey el at., 2014). However, with the current data, water is not an obstacle to adequate use of latrine. According to the India Human Development Survey in 2015, reports indicated rural homes that own piped water are just 9%, contributing to the percentage of reduction in open defecation compared to those who do not totally have piped

water. The dissimilarity can entirely be accounted for statistically by feeding, earnings, household dimensions, and knowledge, proposing that purely reveals a false correlation with socio economic status, and is not a true effect of access to water on open defecation (Coffey el at., 2014). According to the SQUAT analysis outcomes, less than 1% of males and 5% of females who practice open is due to them not having access to water latrine use. Another connected study piloted on sanitation favorites and views in rural India and Nepal, water was hardly elevated as a limitation on latrine use in 99 in-depth semi-structured interviews (Coffey el at, 2014; Tarraf, 2016). Open defecation provisional on latrine possession paths the form of intra-household status.

Age and gender of people who practice open defecation is found by many studies to be associated with the habit of open defecation. Coffey el at, (2014) reported that excluding for among young children, it is mostly men who openly defecate compared to the women. It was also identified that throughout late infancy and youth years, there is lessening of open defecation in young females with entree to latrines. Two motives were given for the variances between females and males. First, a preference among young women to use latrines, or a north Indian cultural norm that keeps women in their reproductive years inside the home. Similar differences in open defecation was accounted among older people. Most people in the adult age range, open defecation increases with age. This perhaps mirrors mature persons, on typical and are capable of moving further easily than at homes and to endorse their favorites. Secondly, the study also indicated that, grown-up individuals are associates of previous cohorts, born into past years when defecating openly was common than it is today. However, open defecation falls faster among the oldest household members in the sample (Coffey, el at., 2014)

2.6 Attitudes towards open defecation

Open defecation and human excreta is regarded in difference ways by different cultures and it is interesting to know. Some tolerate it to a certain extend while for others the sooner it is out of sight, the better. Some cultures regard it as extremely repulsive and disgusting while others have tolerated the handling of human waste. In some parts of urban China, night soil workers cart away human waste in "honey carts" and in Vietnam there has been a long tradition of fertilizing rice fields with fresh human feces. (Jewitt, 2013). In many cultures, management of human excrete is regarded as unmentionable hence designated it as the work of the lower social status people (Mozaffar, 2014). It is interesting to note here how the indifference to public dirt and filth is contradicted with private cleanliness, emphasis being placed on the purity of the body. Therefore, "when waste is taken out of the home compound, it becomes "public" dominion, so everyone is fit to scrapheap garbage as well defecate in it" (Jewitt, 2013). Similarly, it is paradoxical how Indians are very particular about the removal of filth from their homes but indifferent to what happens to it afterwards (Mozaffar, 2014).

2.7 Beliefs and perceptions on open defecation

A study conducted in India found that of people who might offer their descriptions of good and bad regarding defecating openly and use of latrine. 47% of those who openly defecate say it"s for pleasurable, provides comfort and for convenience. Those who openly defecate even though they are able to have latrine facility at their homes, at least 74% of them cited unchanged explanations (Coffey el at., 2014). In that same study, other Participants stated that open defecation provides them a chance walking in the morning, visit their gardens and enjoy the cool air which is fresh in the morning. A study conducted established universally-believed views on the paybacks of open

defecation, noticeably related to what is reported above (Jenkins & Curtis, 2005). A number of individuals look at open defecation as part of good, healthy and worthy life.

2.8 Effects of Open defecation

Open defecation in whichever way and form, its practice poses significantly some adverse effects on the people and on the environment.

2.8.1 Health effect

The practice of open defecation adds more burden to the already strained health system. Poor sanitation is known to be associated with a number of disease transmission, these include cholera, diarrhea, dysentery, hepatitis A, typhoid and polio (WHO & UNICEF, 2017). Open defecation is responsible for about 58% of all diarrheal deaths. Up to about 842, 000 persons in Low middle Income Countries (LMICs) are reported to die due to inadequate water, sanitation, and hygiene annually.

Deadly diarrhea is basically as a result of open defecation and it is estimated around 2000 children under the age of five are victims of this and in every 40 seconds they die (WHO 2014), this is something that is avoidable and is mostly in densely populated countries like India (Vyas et al.2014). Children at this age don‟t differentiate between the good and bad things and everything in meant for them to be put in the mouth. In the rural areas where open defecation is rampant by both human beings and animals. Children end up eating them and bacteria, viruses and parasites find comfortable residence starts infecting their intestines resulting to diarrhea (Ngure et al., 2014). Open defecation poses a serious public health threat to children and is one of the biggest obstacles to meeting the Millennium Development Goals (MDGs). The faecal oral route is the cause of diarrheal disease as well as infection. It also increases pathways for polio transmission and many other diseases such as cholera, giardiasis, and Hepatitis A (Taraf, 2016).

Open defecation regarded as unsafe disposal of feces among other methods increases the risk of disease transmission. This behavior enables the spread of pathogens and its practice is related to most cases of diarrhea. All this is as a result of open defecation, improper latrine or toilet facilities, unsafe water and unhygienic practices (Robert et al., 2009).

The practice is the main reason for diarrheal deaths in children under five years, resulting in approximately 1,600 children dying every day (UNICEF-WHO, 2008). About 43% of children in India suffer from malnutrition, affecting school-age children and hindering their learning abilities (JMP, 2012). A recent study by Dean Spears from the Centre for Development Economics, along with Oliver Cumming of the London School of Hygiene and Tropical Medicine in Delhi, found that a 10% increase in open defecation was associated with a 0.7 per cent increase in both stunting and severe stunting (Thomson, 2015). According to UNICEF (2012), 1.7 billion diarrhea cases are reported annually with about 800,000 losses of lives of children under the age of 5 years globally. It is being projected that 1.1 billion persons 15% worldwide still practice Open defecation.

In Sub-Saharan Africa, from 1990 to 2010 the act of open defecation had decreased by 11%, however, the total population of persons doing open defecation has been reported to have a 33 million increase in the same period as a result of population increase. In this period, the practice of open defecation exercise was still more reported in rural areas (35%) compared to urban areas (8%) in 2010 (WHO/UNICEF, 2012).

World Health Organization reported that sanitation involves a number of practices and among all open-air defecation has been rated the most threatening. India leads in open defecation globally with 60% of the people practicing open defecation. There is high rate of diseases and deaths because of improper waste disposal especially human waste, unclean drinking water and untidy

hygiene. Of the diseases, diarrhea is the chief reason for demise in the young ones. The poor hygiene is also associated with schistosomiasis, helminth contaminations, enteric fever and trachoma. The poor sanitation use apart from diseases also causes other significances not related to health especially to the girls and women such as safety and confidentiality and absenteeism in school (WHO, 2014; WHO/UNICEF, 2013).

The United Nation hopes to meet the Sustainable Development Goals (SDG 6 target 2) of ensuring that by 2030 open defecation is ended with an indication everyone gets access to suitable and justifiable sanitation and cleanliness taking in to consideration the girls and women who are the most exposed to these conditions (David & Macharia, 2015).

In Ethiopia, most Public Health problems are as a result of poor sanitation and children are the ones greatly affected (Ayalew et al, 2008). Communicable infections have been reported to be 60% to 80% of health complications in Ethiopia and these problems are due to unclean water, insufficient sanitation and poor hygiene (FDREMOH, 2011; Thewodros, 2016).

Sanitation activities are time and again not motivated by health in other countries: for instance, in countryside Benin, Jenkins and Curtis (2005) found out that well-being benefits were not an essential characteristic stirring latrine acceptance. Equally, open defecation is not extensively acknowledged amongst rural north Indians as a danger to health. Again, in a study by Coffey el at (2014), Participants were asked to two villages, one in which everyone is involved in defecating openly and one where nobody openly defecates: 43% of all Participants reported that open defecation is good for children other than going to defecate in latrine for their health. This figure even takes in to account of many Participants who actually are using latrines. Among those who defecate in the open, fully 51% report that widespread open defecation would be at least as good for child health as latrine use by everyone in the village. In another survey, the

researchers asked an open-ended question about the possible benefits of latrine use and open defecation. Amongst those who defecate in the open, only 26% mention health perfections from using latrine as an advantage that possibly will effect from putting up a latrine; additionally, those who regularly talk about the convenience of having a latrine for people who already have stomach ailments. In that same study, further open-ended question about why children get diarrhoea. Only 26% responded with an answer that displays an understanding of any possible infectious causes of diarrhoeal disease (Taraf, 2016).

2.8.2 Effect on women

Time spent collecting water is substantial and is mostly a household chore of the women (Okun, 1988). In most societies, it is the woman‟s primary responsibility for the management of household sanitation and health. Inadequate water and sanitation causes increases in time, health, and care-giving burdens on women (Ngorima et al., 2008). For millions of women across the world inadequate access is a source of shame, physical discomfort and insecurity. There is also loss of dignity associated with a lack of privacy in sanitation accesses (UNDP, 2006).

Open defecation puts women‟s dignity and safety at risk. Many women feel constrained to relieve themselves in the dark for reasons of privacy, thus exposing them to rape and sexual assault (Tarraf, 2016). Furthermore, Taraf (2016) added that 30% of marginalized women are violently assaulted every year as the lack of basic sanitation forces them to travel long distances to meet their needs. 24% of girls drop out of school, as many facilities do not have toilets – this problem is exacerbated when they reach menarche (Tom, 2015). A recent research has established a statistically significant association between open defecation and pregnancy outcomes. According to Pinaki Panigrahi, a professor of epidemiology at the University of Nebraska Medical Centre, open defecation could have an effect on women‟s genito-urinary tract

due to the proximity of the vagina and the anus, which resulted in a correlation between high numbers of stillborn, preterm births and spontaneous abortions (Mukunth, 2015).

2.8.3 Poverty

Inadequate water supplies are both a cause and an effect of poverty and their effects exacerbate the poverty trap (Sullivan et al, 2003). Poverty compounds the issue of water scarcity in many regions of the world causing a vicious cycle (Amokrane et al., 2007). Today, many of the 10 million childhood deaths each year are caused by diseases of poverty, diarrhea and pneumonia (Burström et al., 2005).

Improper sanitation and open defecation indirectly contribute to poverty as they lead to contaminated water sources, soil and land. Once ruined by disease, children are unable to complete their formal education, and are later hindered in their capacities to work, provide for themselves and educate their children. Illness within the community‟s senior population represents a significant drain on family budgets and healthcare resources. These factors only perpetuate the poverty cycle. (Kundan & Pandey, 2013; Tarraf, 2016).

3.8.4 The Economy

Beyond the human waste and suffering, the global deficit in water and sanitation is undermining prosperity and retarding economic growth (UNDP, 2006). Poor sanitation has many actual or potential negative effects on populations in a country (Kov et al., 2008). Productivity losses linked to that deficit are blunting the efforts of millions of the world „s poorest people to work their way out of poverty and holding back whole countries.

Poor sanitation practices have negative effects on the economy and national development as they cripple workers‟ productivity, their longevity, and their ability to invest and save. The economic

impact of inadequate sanitation is about $38.4 million in most developing nations, or 6.4 % of India‟s gross domestic product (Shivakumar &Girija, 2013).

Open defecation has greatly affected the economic status of the people especially those with poor sanitation. In Kenya Poor sanitation is reported to cost up to US$ 324 million with open defecation accounting for up to US$ 88 million annually. These expenses are mainly due to the resultant deaths or ill-health from diarrhea and other diseases associated with sanitation which accounts for about US$244 million. In Kenya it is the poor population that mostly engage in open defecation that is about 270 times practicing open defecation than the rich. However open defecation also has some social expenses like losing dignity and safety and this mostly affects girls (school going) and women (disabled) as well as gender violence to the women especially at night when going to look for where to defecate (Water and Sanitation Program, 2014).

CHAPTER THREE

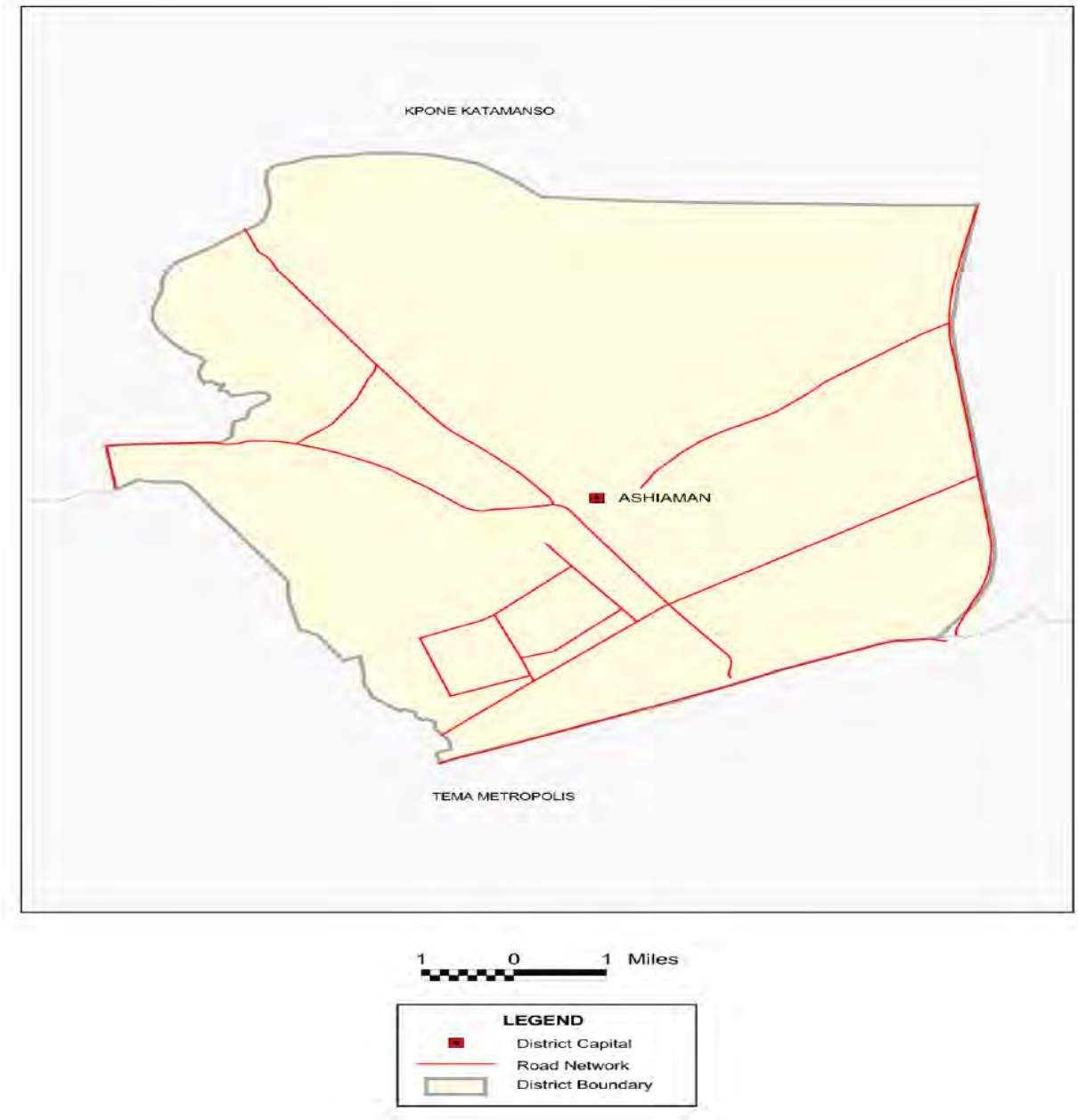
METHODS

Introduction

This chapter gives summary of the methodological details that was suitable for the study. These included; Study area, study population, data collection process, data collection tools, pretesting, data quality control, data analysis, sampling, sample size, inclusion criteria, exclusion criteria and ethical considerations.

3.1 Area of Study

The study was conducted in Ashaiman Municipality. Ashaiman is one of the ten (10) districts in Greater Accra Region of South Ghana created in 2008. Ashaiman Municipality District is located approximately 4km along North of Tema and 30km from Accra-Ghana. Tema is found on the Greenwich Meridian on the latitude of 0 0 and Ashaiman lies within the Latitude of 5 degree to 42 degree North and Longitude of 0 degree 01 degree west (Weeks et al., 2012). Ashaiman is bordered by North and East with Kpone-Katamanso District and to the South and West with Tema Metropolis. Majority of occupants of Ashaiman are engaged in service and sales work (36.5%), 22.0% do craft and trade related activities. Other occupation include agricultural activities, fishing, forestry and a few are professional workers.



(Source: Ghana statistical service, GIS)

Figure 2: Map of the study area

3.2 Study Design

Descriptive cross sectional study was conducted to study the factors influencing open defecation among the slum dwellers in Ashaiman Municipality. The study collected both qualitative and quantitative data on the factors that influence open defecation. It explored the common practices of open defecation by the slum dwellers and the factors that trigger pre-disposition of open defecation and looked at the perception of the community on open defecation using questionnaire and in-depth interview was conducted.

3.3 Study Population

The population targeted for this study included household heads and the family members in every house hold (women, men and children) in Ashaiman.

3.4 Sample Size Determination

The population of Ashaiman community is 190, 972 and the total number of households is 49,936 (GSS, 2014). Considering the largeness of this community‟s population size, a sample was drawn to enable the study to reach adequate number of households as well as help draw relevant conclusion. In determining the sample size, a 95% confidence interval and a 5% margin of error was applied. Based on the prevalence of open defecation of 21%, as per Ghana Demographic Health Survey 2014. According to Leslie Kish‟s, (1979) formulae the sample size will be

$$n = z^2 \frac{pq}{d^2} =$$

$$= z^2 \frac{p(1-p)}{d^2}$$

$$= 1.96^2 X \frac{0.21(1-0.79)}{0.05^2}$$

$$= 255$$

Where = d is margin of error, p = prevalence q= (1-p), n is sample size. The sample size will be 255 households. With 10% non-response rate the total sample size is estimated at **281**

3.5 Sampling Procedure

The researcher selected 5 enumeration areas in Ashaiman using a simple random strategy. Using maps from Regional Institute of Population studies (RIPS)-University of Ghana, was able to map the households for conducting interviews in Ashaiman. All households in the selected Enumeration areas were eligible for the study. Questionnaires were filled for all consented HH within each selected EA.

3.6. Inclusion and Exclusion Criteria

3.6.1 Inclusion

The household heads, mothers, adults and children from the age of 6 years and above were included in the study.

3.6.2 Exclusion

The household members who are deaf, dumb and children from the age five years and below were excluded from the study.

3.7. Variables

3.7.1 Dependent variable

Dependent variable for the study was open defecation which is defined as the practice of removing waste from the body through the anus; outside in and around one‟s local community or public as a result of no access to toilets, latrines or any kind of improved sanitation.

3.7.2 Independent variable

1. Practices of open defecation include; location of the defecation site (improved latrine, unimproved latrine, bush/field, polythene bag, and rubbish dump), disposal of children faeces, latrine sharing, and defecation while out of home, and frequency of using household latrine while at home.
2. Factors that trigger the practice of open defecation include; environmental factors like land tenure and poor soil, socio-economic factors (financial constraints), lack of access to latrines, distance from latrines, knowledge, weather condition, socio-demographic factors (age, sex, and education).

Qualitative

- Perception-Opinion on open defecation

3.8. Data Collection Process

Data entry was started immediately after the completion of data collection. The data collected was checked upon collection and verified by another person before entry. Only fully completed questionnaires were entered in to the computer for analysis. Data was entered in to SPSS 22.0, cleaned before final analysis.

3.9. Data Collection Tools

For qualitative data, Key Informant Interviews were used and for quantitative data questionnaires were used to collect data. The household heads and the some other adults in the households were interviewed.

3.10. Pretesting

A pretest of the research instruments was undertaken in Kisseman village since it has some slum areas where open defecation is also carried out though not at the same rate as compared to that as

anticipated in the study area so as to check the consistency, clarity and the relevance of the questions in relation to the justification of the study and also to see if the questions prompted the kind of responses expected from the participants. Ten percent of the household questionnaires were used and in-depth interview were pretested and the results of the pretest were used to correct the unclear ideas, questions and statements in the data collection tools.

3.11. Data Quality Control

The questionnaire were pretested on 20 participants in Kisseman village to see whether the questions were appropriate to answer specific objectives. Then the necessary corrections were made to those unclear questions in a questionnaire before it was administered to the Participants. A pilot study was also be carried out in Ashaiman village to a certain the possibility or feasibility of the study in that area.

The two research assistants were trained on how to use the questionnaire and they were expected to be well conversant with the local language and all the questionnaires were checked by the researcher on daily basis to check for the completeness.

3.12 Validity

Validity considerations were made to ensure that the research truly measured what it was intended to measure. Content validity was enhanced by referring to the people who reviewed the content of the research collection instruments in line with the study objectives. The random sampling technique was to ensure external validity and the pretesting tools was also to improve validity. Internal validity was supported by limiting the study to household residents.

3.13 Reliability

All questions were asked if not well understood in local language to ensure that the research instruments used for data collection were reliable for reliable results and observations. Operational terms were defined through training of translators, pre-testing of data collection tools, field meetings with research assistants and close observation undertaken by the principle investigator to further safeguard the reliability of the data collected. Questionnaires were re-checked to ensure completeness and errors were corrected immediately.

3.14 Data Analysis

All the field questionnaires collected were checked to see if all the questions were completed, they were checked, coded and entered in the computer using SPSS version 22 and cleaned and it was only the fully completed questionnaires that were entered in to the computer for analysis. Descriptive statistics of the data collected were done for the variables in the study using statistical parameters: frequencies and percentages. Cross tabulations and chi-squared tests (5% significance level) was used to check which variables associated with dependent variable.

The descriptive findings for the study were presented in numerical summaries, charts and tables. The inferential findings that were made used Chi-square to measure the relationship between the dependent and independent variables with p values less than or equal to 0.05 to consider the statistical significance.

3.15 Ethical Considerations

The study focused on open defecation and the factors that influence its continuous existence despite the ongoing efforts put to stop it. Permission to conduct the study was obtained from University of Ghana and the department of Social and Behavioral Sciences and Ethical clearance was obtained from Ghana Health Services Ethical Review Committee.

Privacy

The researcher ensured that the interview was conducted in a secure place free from interaction of other ongoing activities. Preferably the interviews were conducted at the home on the respondent such as under a shade. The participation to these interviews were voluntary with a free will from the participants. Participants were additionally able to opt out at any point of the interview without any implications of their decision.

Informed consent

Consent of the participants was got before data was collected. Individual household head selected gave a written or verbal consent if they agreed to participate.

Anonymity and Confidentiality

Measures were put in place to maintain total confidentiality in the study. The participants were assured that their names and all possible research content that can identify them apart from basic information was consciously thought through and if possible not indicated in the study instruments. These included questionnaires, interview guides etc.

The researcher was only able to identify the questionnaires and linked it to the participants through the use of numbers and codes that do not directly link to the participants but only known to the researcher. All questionnaires and other instruments filled by the research assistants were collected and locked to a location only accessed by the researcher. Questionnaires will be destroyed after three years of the study.

Risk and benefits of the study

This research was health promotional in nature and had no risks to the participants apart from social related risks and shame associated with the non-use of pit latrine or the practice of open defecation. However participants were assured of the other ethical principles of confidentiality and anonymity as discussed earlier.

Participants were not paid for direct involvement in the research since this could be regarded as an incentive.

3.16 Dissemination Plan

The research report will be disseminated to the University of Ghana school of Public Health, main library (Balme library), the leaders of Ashaiman municipality and publications when need arises.

CHAPTER FOUR

RESULTS

4.0 Introduction

This Chapter provides the details of the descriptive and inferential findings from the study. This study was set to explore the factors influencing Open Defecation among Slum Dwellers in Ashaiman Municipality in Greater Accra.

The study intended to answer specific objectives such as; exploring the practices of open defecation, factors that trigger pre-disposition of open defecation among slum dwellers and the perception and knowledge of the slum dwellers on open defecation. Data collection which achieved a 100% response rate was carried out by trained research assistants who completed questionnaires at household level.

4.1 Socio-demographic characteristics of the Participants

The study first sought to seek the socio demographic characteristics of the respondent. Each respondent was asked their main occupation, the education level of the household head, and the average income per month of the head, other demographic information such as age and sex of the Participants were also noted. Table 4.1 provides a summary of the background characteristics of the household heads. Two third (2/3) of the Participants (66.5%) were male. Majority of the Participants who were mainly household heads were aged between 39-48 years (27.1%) while 12.1% were older than 59 years and 7.1% did not know their age.

Regarding occupation, nearly two third (2/3) of the Participants (65.1%) were more involved in trading/ business activities as the main source of income of the household. Concerning education level, the Participants were mainly literate with a literacy level of 74.7% with the main level being an attained secondary education level for up to 32.4% of the Participants.

On their income level, 33.6% of the Participants earn small income which lies between GHC 0-500. Most of the Participants were residence of Stream of life (enumeration area) with 21.4% living in the area.

Table 1: Socio-demographic characteristics of the household heads. (N=281)

Characteristic	Frequency (N=281)	Percent (%)
Sex		
Male	187	66.5
Female	94	33.5
Age group (years)		
18-28	38	13.5
29-38	67	23.8
39-48	76	27.1
49-58	46	16.4
59+	34	12.1
Don't know	20	7.1
Occupation		
Trading/Business	183	65.1
Informal employment	47	16.7
Formal employment	27	9.61
Livestock	15	5.3
Agriculture	9	3.2
Education level		
Secondary	91	32.4
Primary	90	32.0
No Formal Education	74	26.3
Tertiary	26	9.3
Income level		
0-500	95	33.6
501-1000	75	26.5
1001-1500	9	3.2
15001-2000	2	0.7
2001-2500	1	0.4
2501-3000	1	0.4
3000+	1	0.4
Others	97	35
Total	**281**	**100.0**

Defecation Practices

This objective explores the ways through which open defecation is practiced and these included; the location area of defecation whether improved and unimproved latrine facilities, disposal of children faeces, it further evaluates the sharing habits of latrine facilities, defecation while out of home and frequency of using household latrine**.**

4.2. Location of defecation site

A greater percentage 48.4% of the Participants defecate in flush or pour flush toilet/latrine facility which are shared among households. However, 8.1% of the households reported that they do not have toilets/latrines and so they defecate either in the fields or bush, which accounts for open defecation practiced by the household members. Meanwhile a few of the households use other types of toilet/latrine facilities such as bucket latrines 1.1%.

Table 2. Types of toilet and the Prevalence of Open defecation

Latrine type	Frequency (N=281)	Percentage (%)
Flush or pour flush to elsewhere shared facilities to any type.	137	48.4
Ventilated Improved Pit Latrine	71	25.6
Flush or Pour-flush toilet/latrine	40	14.1
No latrines or toilets, Field, Water bodies or bush	23	8.1
Pit Latrine with slab	4	1.4
Bucket latrines	3	1.1
Pit latrines without a slab or platform that is open pit	2	0.8
Hanging latrines or toilets	1	0.5
Total	**281**	**100.0**

The practice of Open defecation in the community is common in certain communities than in others. The practice can been carried out in any open environment rather than in a latrine. Among other places the locations may be extended into the fields, bushes or even in forests,

sometimes in the trenches, commonly also by the road side particularly inside abandoned houses among. To obtain further information on this practice an in-depth interview was conducted among the slum dwellers in Ashaiman. The in-depth interview revealed the various sites or location of open defecation which also supports the above household survey findings.

Bush used as defecation site.

Bush was a common term that referred to by most local members of the community to „A clump of shrub" with various length where one can hide so that he or she is seen by other. Many people go and defecate in the bush as a convenient place to relieve them self. Some Participants seem to attribute an increase of the practice to

"Many people defecate in the bush, since most of them don't have money to pay for the public toilet, they go to the bush or rubbish dam and they are not caught". Participant 6

Use of Polythene bags (Rubber) for defecation.

Polythene bags commonly referred to as „rubber" by the community in this study are plastics that are used for packaging. Reports from the Participants through the in-depth interview indicated that people use polythene bags or rubber to defecate in and later throw the polythene together with rubbish. This is supported by the statement made by one of the respondent shown below.

"Even here I live people defect in a plastic rubber in their room and tie it when they are done and throw it at the back so when am sweeping, I gather it with the rubbish and give to the children to put it rubbish dam. A man can come to mine shower and defect in there so I have to sweep it and dump into the rubbish dam" Participant 5

Use of latrine for defecation

Much as a number of participants in the households reported to be openly defecating, a significant proportion still defecated in the latrines. Latrines are pits with a superstructure. The results from the interviews indicated that majority of the Participants did not own their personal or household latrines, so they use public latrines.

"They have built new one with tiles, it's nice, and the price is ghc1. It's cool. It is better than the one that has mice". Participant 2:

A participant acknowledged the increasing use of latrines particularly public toilets also noting a reduction of the practice of open defecation in favor of public toilets which are constantly increasing in the community. She therefore attributed the reduction of open defecation to the increasing numbers of public toilets.

"Formally people in area go to the bush but they have been stopped so they don't go there again. Now we have public toilet where people go and free themselves there". Participant 4

"I normally go to the public toilet" Participant 6

"Ooh am not talking for myself. Me at first I use to go to the bush but now we have the public toilet I use it. In this area we used to go to the bush and do it but since we have public toilet we don't go to the bush". Participant 8

"Open defecation is not fine, at first they used to do it but now since they have built public toilets, one at the top side of the area ,one at the west side of the area and also one at south side of the area. Since I don't see such things occurring in the bush and open areas I think they have stopped". Participant 4

Use of Rubbish ground or pit for defecation

This is either the ground or the pit where wastes are disposed. Regarding this with confirmation from the in-depth with the Participants, people go to defecate where rubbish is dumped.

"They defecate on the rubbish dam and even going to the public toilet there are mice and mosquitos so if someone goes there and a bite the person can get sickness. So as me in a short while I will relocate". Participant 2:

4.3. Disposal of children stool/faeces.

The researcher sought to study on how children"s faeces were collected or disposed since these have been known to contribute to the practice of open defecation creating an issue even in households with the best practices of sanitation facilities. From the study findings, majority 42% of the Participants reported having to wash children"s faeces and pour the water on ground or into the gutters especially when the children defecate in cloths. A significant proportion of 40 % practiced acts that seemed to promote open defecation practice, they either threw the faeces of children in the garbage together with the rubbish and there are those who bury the stool or faeces and those who leave the stool in the open to be washed by the rain or dry up by the sun. Meanwhile 12.4% of the children use latrines, as well as 8.8% of the Participants rinsing the faeces of the children and pouring the water in the latrine.

Table 3. Ways of disposal of Children stool/faeces

	Frequency (N=281)	Percentage (%)
Washed and poured on ground	119	42.0
Thrown in to garbage	59	20.8
Child used latrine	35	12.4
Put or rinsed in to toilet or latrine	25	8.8
Buried	17	6.0
Left in the open	12	4.2
Others	14	5.7
Total	**281**	**100.0**

4.4 Sharing of latrine facilities by categories

The behavior of sharing toilets was evaluated among the slum dwellers in Ashaiman. In each household the participants were asked whether the latrine they had was shared with other households or else privately and exclusively used by the household. The study findings half of the households were using public toilets to defecate. However interestingly about 30% of all the participant households reported to have private latrines but share them among households due to many household rent conditions.

Table 4. Category of toilet/latrine shared by the households

	Frequency (N=281)	Percentage (%)
Public	141	49.8
Private Shared	82	29.7
Private Non shared	35	12.4
Bush	23	8.1
Total	**281**	**99.3**

4.5. Open defecation practice while not at home

The practice of open defecation may be carried elsewhere apart from being carried at home. The researcher sought to know whether or not they used latrines or toilets the last time they defecated

while not at home. This would help there were instances of open defecation practiced by the household while not at home. Based on the study, majority 85.9% of the Participants reported latrine use while not at home, either they were traveling, at a neighbors‟, went to the market or walking in the community. However interestingly, 14.1% did not use toilet or latrine facility during the last time of their defecation while not at home. This contributes to the open defecation practice while not at home either in the nearby villages, traveling or at work place. Such a behavior commonly occurs due to no access to latrines in the community and at work places.

Table 5. Whether the participant used latrine the last time of defecation while not at home

	Frequency (N=281)	Percentage (%)
Yes	243	85.9
No	38	14.1
Total	**281**	**100.0**

4.6. Frequency of using household latrine while at home

With regard to defecation using household latrine a week prior to the study, the study in response to the Participants indicated that majority of the Participants 43.8% never defecated in their household, 29.7% most of the time used household latrine, some rarely defecated in the household toilet/latrine, others sometimes used household latrine facility, meanwhile a few of the Participants defecated in the household latrine while at home in the last one week.

Table 6. How often the Participants defecated in the household latrine a week prior to the study.

	Frequency (N=281)	Percentage (%)
Never	123	43.8
Most of the time	84	29.7
Rarely	38	13.5
Sometimes	21	7.6
Always	15	5.4
Total	**281**	**100.0**

The researcher sought to establish the relationship between the qualities of defecation sites and the practice of open defecation among the slum dwellers in Ashaiman. A logistic regression was performed to study this relationship.

Table 7. Logistic regression showing Association between the qualities of defecation sites and open defecation practice.

Quality of latrine		B	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
						Lower	Upper
Step 1[a]	Improved latrine	1					
	Unimproved	-1.325	1	.000	0.266	0.130	0.543
	Constant	1.307	1	.191	3.694		

A binary logistic regression was conducted to establish the association between the qualities of defecation sites and open defecation of the slum dwellers. The Hosmer and Lemeshow for testing the model fit for the data was significant at 0.787 showing the model fits the data. The beta coefficient of unimproved latrine was significant at -1.325. Implying an inverse association between unimproved latrine and open defecation. Exp (B)/OR=0.266; 95% CI 0.130-0.543, $p<0.05$. While controlling for all other variables, the odds of having open defecation is decreased by 74 % with the case of an unimproved latrine or toilet among the slum dwellers who openly defecate as compared to those with improved latrine.

This is possibly due to the fact that much as the latrines or toilets are not meeting the standards, slum dwellers opt to use them the way they are since it can provide some degree of privacy and affordable in terms of costs.

A Pearson‟s correlation test was carried out to establish the relationship between open defecation and its practices. There is statistical significance between the quality of latrine and open defecation (mean difference= -0.421, p=0.001).

Table 8. Correlation showing relationship between open defecation practice and behavior

		Open defecation achieved
Open defecation achieved	Pearson Correlation	1
	Sig. (2-tailed)	
Overall practice score	Pearson Correlation	-.421**
	Sig. (2-tailed)	.000
	N	**184**

Factors that trigger pre-disposition of open defecation

The objective explored the factors that trigger open defecation by looking at the factors that included; obstacles to latrine ownership, persons responsible for latrine construction, reasons for absence of latrine at households, knowledge on open defecation (benefits of latrine use, risk of getting diarrhea if neighbor does not use latrine, effects of open defecation and causes of diarrhea), average income of household heads and occupation of household heads.

4.7 Obstacles to latrine ownership

In trying to understand the factors that contributed to open defecation at household level, latrine ownership was evaluated. The researcher sought to know the obstacles towards latrine or toilet ownership. During the study, it was found out that open defecation comes as a result of households not having their own toilet or latrine facilities due to a number of reasons as seen in the table 4.7. Financial challenges accounted for more than half (54.7) of the obstacles

mentioned towards latrine ownership. While interestingly a few 2 (0.7%) reported culture as being an obstacle to them not owning latrine.

Table 9. Factors that are obstacles to households owning latrines.

	Frequency (N=281)	Percentage (%)
Finances	153	54.7
Lack of land/space	71	25.2
Unsuitable conditions	30	10.6
Don't know	15	5.3
Lack of skills/knowledge	10	3.5
Culture	2	0.7
Total	**281**	**100.0**

4.8 Responsibility for latrine construction

Among the households that had latrines, majority of the Participants reported that it is the responsibility of the men to construct latrines (96.8) compared to responsibility of women to construct latrines/toilet facilities in the community they live in as shown in the table below.

Table 10. Person responsible for constructing latrine at household

	Frequency (N=281)	Percentage (%)
Men	274	96.8
Women	7	2.5
Total	**281**	**99.3**

4.9 Reasons for Absence of latrine at household

As presented in the table below, household heads gave reasons as to why their households do not have latrines, which triggers open defecation practices and these included the following, some families do not have their own land where they can construct latrine (27.3%), financial challenges to facilitate the costs of constructing latrine (22.6%). Other reasons were latrine not being a priority, not knowing how to construct, terrain not being appropriate for latrine construction, latrine not being part of their culture, lack of construction materials and some Participants reported that they lack knowledge and skills on how to construct and use latrines.

Table 11. The reasons why households do not have latrine.

	Frequency (N=281)	Percentage (%)
Don't want one	46	14.6
The family does not own the land	87	27.3
Don't have enough money	71	22.6
Don't have enough physical space	32	10.0
It is not a priority	9	2.9
Don't know how to construct	19	17.0
Terrain is not appropriate	3	1.9
It"s not part of our culture	2	0.7
Lack of construction materials	8	2.8
Lack of knowledge / skills on how to construct or use it.	4	1.8
Total	**281**	**101.4**

The in-depth interview confirmed more of the factors and reasons as to why households do not have latrines similar to the above findings.

Financial constraints

Payments for receiving and providing services. The amounts of money paid to use public latrines were expensive for them, so they prefer going for open defecation which is free. This is supported by the following people in their comments made bellow.

"Money is my problem to pay to defecate, me sometimes I go to the rubbish dump sometimes public toilet if today I don't have money I go the bush". Participant 1

"Yes prices are high. Some charge 50perwas, 1cedis, 30perwas.30perwas one you can't use because they have defect all around. So people cannot pay for the 1cedis will rather defect in a rubber and throw it in gutter or bush but if they have some in their homes that one they won't be worried much". Participant 6

"Like I have already said some people cannot afford to pay 50 pesewas in public toilets, they prefer using for something else to defecate in". Participant 7

"Some people lack of money to go to public toilet, so they go to defecate in the rubbish ground. Because before you go there, you have to pay some money before you go in". Participant 10

Distance to and fro the latrine

An estimate of how far an object or something is like space between household and latrine facility. The distance from the house to the latrine facility influences open defecation especially when it"s far from the house, as a result people end up using other means to ease themselves.

Below is the statement by a respondent that supports this finding.

"At night when someone has some problem with the stomach since the place is far will rather do it in a rubber and throw in somewhere also if someone else is going work early in the morning

step on it which can be a problem to the person. The one down there is not good at all even passing it the scent is a worry". Participant 9.

Parents' influence on children to openly defecate.

This includes the effects of parents on children leading to open defecation. It was found out from the interview that open defecation by children to some extent is supported by the parents because they do give them money to go to the public latrines which the household uses.

This is supported by the statement made by one of the Participants below.

"The price is low to me I can easily go there but the children instead of their parents giving them money for the facility, they will rather tell them go to the bush. You see the kids one can go to a corner and do it there, it's not nice. I blame the parents because instead of them giving the children money they refuse so it creates all this problems". Participant 9

Weather condition influencing open defecation.

This is the state of the atmosphere for example rainy, wet, stormy, dry among others. Through the interview carried out with the household heads, it was found out that when it rains, people do not want to move to the latrine as a result use polythene bags or rubber to defecate and later throw it in the open.

"When it rains they can't go out and don't have toilet facility so they just do in a rubber and throw it away". Participant 10

Absence of latrine at households.

Non-existence of latrine facility. Another reason why open defecation is seen in Ashaiman is because of the households lacking latrines.

The following lines captured from the in-depth interview support the above findings.

"Me and my neighbors don't have our own toilets for our family so we go to the public toilets, I sometimes see people defecate behind the house at night and in rubber and throw early in the morning with rubbish". Participant 10

"Ooh it's not everybody here who own toilet, the majority go to the public toilet. For me it's only two houses have toilet facilities that I have seen. If it is possible those in authority can come to our aid and build toilet facility in our homes, I think it will help". Participant 2

Land shortage for latrine construction.

Inability to obtain land for constructing latrine facility. Most of the Participants are tenants who do not have space to construct latrines, as a result open defecation in the outcome.

"There is no land space. If the landlord wants to build a toilet facility for his tenants, he cannot. So that's the problem now". Participant 3

4.10 knowledge on Open Defecation

4.10.1 Benefits of latrine use

As shown in the table below, majority of the Participants 39.2% reported that the main benefit of using latrine is disease prevention followed by providing convenience 34.3%, however there are other benefits such as privacy 9.9%, status or prestige 4.2% and some see no benefits in latrine use 3.2%.

Table 12. Respondent knowledge on benefits of latrine use

	Frequency (N=281)	Percentage (%)
Disease Prevention	112	39.2
Convenience	97	34.3
Privacy	28	9.9
Don't know	23	8.1
Status or prestige	12	4.2
No Benefit	9	3.2
Total	**281**	**100.0**

4.10.2: Risk of getting diarrhea if neighbor does not use latrine.

As presented in the table below, nearly all Participants 95.8% know that I their neighbor does not use latrine and openly defecates, they are at the risk of getting diarrhea compared to 3.5% who still do not know that they are at the risk of getting diarrhea if their neighbor does not use latrine or toilet facility.

Table 13. Participant Perception and knowledge on risk of getting diarrhea if neighbor does not use latrine.

	Frequency (N=281)	Percentage (%)
Yes	271	95.8
No	10	3.5
Total	**281**	**99.3**

4.10.3: Effects of open defecation

As reported in the table below, majority of the Participants are knowledgeable that open defecation has negative effects on them. 89.8% of the Participants are aware that open defecation causes diseases.

Table 14. Participant knowledge on the effects of open defecation

	Frequency (N=281)	Percentage (%)
causes disease	254	89.8
causes shame	21	7.4
Don't know	6	2.1
Total	**281**	**99.3**

The in-depth interview confirms the above and can be seen in the excerpt below by a respondent.

Knowledge on Open defecation

Environment Pollution due to open defecation.

This is an environment that contains harmful substances which affects human health. Based on the interview reports, Participants have the knowledge on how open defecation can cause discomfort to the environment and the people.

"Open defection is an eye saw and also form of pollution. It should be abolished that can be done by providing public toilet". Participant 7

4.10.4: Causes of diarrhea

96.1% of the Participants reported that human faeces was the principal source of diarrhea.

Table 15. Respondent knowledge on the causes of diarrhea

	Frequency (N=281)	Percentage (%)
Yes	272	96.1
No	5	1.8
Don't know	4	1.4
Total	**281**	**99.3**

The following were captured from the in-depth interview in support with the above finding.

Diseases due to Open Defecation

Diseases are conditions as related to open defecation, open defecation results to diseases such as diarrhea, cholera and among others.

"Open defection is not good, it brings diseases to our children. It brings cholera. That's what I know". Participant 6

"It is a bad thing because if someone comes and defecates near where I sell my credit and me eating a housefly can come and settle on my food who knows if that housefly has settle on where the defecation is, I can get cholera, it will affect me". Participant 10

4.11. Association between income level and Open Defecation

As presented in the table below, majority of the household heads earn monthly income of less than GCH 500 compared to others who get more than 500 Cedis per month but less number of people. This indicates that the majority of the Participants are poor, as shown by their response in the questionnaire filled during data collection. However Open Defecation practices are seen among the households that earn less than 500 Cedis in a month, with 7.4%.

Table 16. Cross tabulation showing Association between Average income level and Open defecation.

HH Average Income Level	No open Freq (percent)	Yes Open defecation Freq (Percent)	Total Freq (Percent)	X^2	P-value
0-500	88(92.6)	7(7.4)	95(100.0)	11.75	0.190
501-1000	75(100.0)	0(0.0)	75(100.0)		
1001-1500	9(100.0)	0(0.0)	9(100.0)		
1501-2000	2(100.0)	0(0.0)	2(100.0)		
2001-2500	1(100.0)	0(0.0)	1(100.0)		
2501-3000	1(100.0)	0(0.0)	1(100.0)		
3000+	1(100.0)	0(0.0)	1(100.0)		
Total	**177(96.2)**	**7(3.8)**	**184 (100.0)**		

X^2 (N=155) = 11.75, p=0.190, Φ=0.192

A Pearson‟s correlation test was carried out to establish the relationship between open defecation and household average income.

Household average income and open defecation was not statistically significant (mean difference= -088, p=0.237).

Household average income and quality of latrine was statistically significant (mean difference= 0.264, p=0.001). However it was not significant with knowledge on open defecation (mean difference= 0.044, p=0.557.

Table: 17 Correlation showing Association between HH Average income and Open Defecation.

		Open defecation achieved	HH Average income
Open defecation achieved	Pearson Correlation	1	
	Sig. (2-tailed)		
HH Average income	Pearson Correlation	-.088	1
	Sig. (2-tailed)	.237	
	N	**184**	**184**

4.12. Association between Occupations of the household heads.

As presented on the table below, the occupation of the household heads are trading or business, livestock, agriculture, formal employment and informal employment. However, open defecation practice is more among those in formal employment (7.4%), followed by trading/ business (6.4%) and then those in informal employment (6.4%).

Table: 18 Cross tabulation showing Association between HH Average income and Open Defecation.

	Cross tabs Open defecation achieved		Total	Test Results		
	No open	Yes Open defecation		X^2	Phi	P-value
Occupation of the respondent	**Freq (percent)**	**Freq (Percent)**	**Freq (Percent)**			
Trading/Business	171(93.4)	12(6.6)	183(100.0)	0.777	0.078	0.786
Informal employment	44(93.6)	3(6.4)	47(100.0)			
Formal employment	25(92.6)	2(7.4)	27(100.0)			
Livestock	15(100.0)	0(0.0)	15(100.0)			
Agriculture	9(100.0)	0(0.0)	9(100.0)			
Total	**264(94.0)**	**17(6.0)**	**281(100.0)**			

Fishers exact: X^2 = (N=281) =0.777, p=0.786, Φ=0.078

A binary logistic regression was conducted to establish the association between knowledge and open defecation among the slum dwellers. The beta coefficient of knowledge was significant with at -420. This indicates an inverse association between knowledge and open defecation. Exp (B)/OR=0.657; 95% CI 0.479-0.901, $p<0.05$. While controlling for all other variables, the odds of having open defecation is decreased by 74 % with presence of knowledge among the slum dwellers who openly defecate as compared to those with improved latrine.

Table 19.Logistic regression showing Association between knowledge and open defecation practice.

Variables in the Equation									
								95% C.I. for EXP (B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Knowledge composite	-.420	.161	6.803	1	.009	0.657	.479	.901
	Constant	.185	1.106	.028	1	.867	1.203		

a. Variable(s) entered on step 1: Knowledge composite.

A Pearson‟s correlation test was carried out to establish the relationship between open defecation practices, knowledge on open defecation and household average income.

Knowledge on open defecation effects among the slum dwellers was significantly higher compared to open defecation (mean difference=-0.168, p=0.005).

Knowledge and quality of latrine was not statistically significant, though the difference shows that quality of latrine had a higher score compared to the of knowledge (mean difference= 0.028, p=0.642).

Table 20. Correlation showing Association between Knowledge and Open defecation

		Open defecation achieved	Overall knowledge score
Open defecation achieved	Pearson Correlation Sig. (2-tailed)	1	
Overall knowledge score	Pearson Correlation Sig. (2-tailed)	-.168** .005	1
	N	**184**	**184**

This study has explored the common practices of open defecation among slum dwellers, the factors that trigger the practices of open defecation, as well as their perception on open defecation which are significant to public health policy. The findings of this study can be of use and importance for future research in Ashaiman and Ghana as a whole. Providing adequate attention to ending open defecation is very crucial to promote good sanitation and hygiene practices, environment and public health practices.

CHAPTER FIVE

DISCUSSION

Introduction

This cross-sectional study was conducted in Ashaiman municipality based on the questionnaire and the interview guide to explore the factors that influence open defecation among slum dwellers. A total of 281 household heads completed the questionnaire concerning the common practices of open defecation and the factors that trigger open defection and out of them 10 were interviewed on their perception on open defecation.

5.1 Background characteristics of the household heads.

The participants from the study were between the age of 18 to 59 years and above, with the majority between the ages of 29 to 38 years of age. Male participants formed the majority of the household heads indicating male dominance in the study. The dominant occupation of the household heads was trading or business, majority at least attained secondary level of education and the biggest number of the household heads earn less than GHS 500.

5.2 Open defecation Practices

Access to enhanced sanitation is a significant preventive measure, though not often prioritized by most households. The present study shows a relatively lower prevalence of 9.2% compared to earlier results among slum dwellers in the country of 21% in 2009 and 19% in 2015 (UNICEF & WHO, 2015). Hopefully this reflects some improvement in the sanitation practice in this slum. Nevertheless, while fully aware of the study limitations of the current study. The slums are often known to be regarded as informal and usually with congested settlements often poorly constructed with inadequate sanitation facilities for most slum households (Graf, et al., 2008; Govender, et al., 2011).

Nearly half of the slum dwellers in this study had access to improved latrine facilities, yet mostly shared with a number of households. The practice of renting seemed to worsen the sharing practice since some rentals did not have their own latrines. Significantly as noted by Baker, et al. (2014) and WHO, (2014), the public used "shared facilities" in the community. The sharing behavior is particularly common with large population yet few latrines available particularly with crowded and congested communities as noted in the current study paving way for sharing of the latrine facilities, which was the option for the household members to well dispose their faeces.

Just like many studies in the Sub-Saharan Africa, in this study it was noted sharing latrine facilities among slum households has contributed to sanitation challenges. Those using private facilities shared them among the households especially those living in rentals.

As noted by UNICEF and WHO 2012, the current study notes financial constraint and lack of space for construction of latrines as some challenges. The study found almost half 49.8% of the households used public latrines and more than a third of the households shared the latrine facilities.

However sharing of these latrine facilities to some extent positively affected the household heads in lowering the costs and expenses on going to public toilets which was paid for. Sharing of the latrine and toilet facilities also contributed to reduction in open defecation.

However the presence of public latrines in the community has helped so much reduced on the practice of open defecation. Those who initially used to go to the bush or fields started using the public latrines. This finding is similar to the findings by WHO/UNICEF, (2008), that indicated that more than half of the population globally use improved latrine facility some of which are

shared among households, meanwhile some percentage still use unimproved latrine facility. However there are others who also still go for open defecation just as found in the current study.

Children faeces are a great threat to environment and humans because they as well just like adult faeces contain pathogens that contribute to oral diseases like diarrhea and also sanitation challenges. In this study the participants engaged in the practice of open defecation by disposing children faeces in garbage, leaving it in the open and also washing in clothes and pouring the water on the ground. Similar report by Geetha et al, (2015) found out that children faeces have significantly contributed to open defecation, by the household members not carefully disposing it in the latrines especially when washed in clothes and pour the water on open bear ground and collecting and throwing the faeces together with rubbish. This observation is similar to the findings of Sultana et al, 2013; Alam, et al., 2008; Majorin et al., 2014; Zeitlyn & Islam, 1991; Aulia et al., 1994; Tessema, 2017 , where they found out that the common practices of open defecation regarding children faeces is by washing them from clothes and pouring on bear ground, gutters. In a study conducted by Routray et al, (2015), similar findings were reported on the disposal of children faeces, common practices being rinsing watery faeces with cloths in water and some disposed in garbage.

5.2.3 Factors that trigger open defecation

More than half of the households did not have their own latrines that they would not share with other households and this could be attributed to their living conditions. Majority of these households live in the rentals where there are either common latrine facility that were shared by the tenants or they did not have and used public latrines.

Similarly GSS, (2008); Keraita et al. (2013); Spencer. (2012) found out that many urban settlers do not own latrines at their households due to reasons such as not having their own land and

more so most of them are tenants who are living in rentals which are not permanent. Other reasons cited for not owning latrines for majority were financial constraints and lack of latrine construction skills. This finding is also similar to that of Geetha et al. (2015) where the reasons for not owning latrine in the households was attributed to lack of latrine construction skills, not space for latrine construction and financial challenges.

Acquisition of appropriate skills for latrine construction is essential if latrine facility is to be persistently used. This current study noted that some of the participants never had the basic skills of latrine construction. The lack of latrine construction skills mainly could obstruct households from building their latrines as a number of them would choose to be minus latrine, this might affect the sustainability of upcoming latrine ventures to end open defecation. As noted by Water Sanitation Programme (2004), on a study carried out found out that lack of knowledge on how to construct latrines was a key obstacle to increase latrine use and end open defecation. An implication that there was pressing need for capacities building of the slum dwellers to acquire skills in latrine construction in order to scale up latrine use to stop open defecation.

The study noted a number of factors that contributed to the households not having latrines. Financial problem still remains a very big reason as to why many households lack latrine facilities at their homes. Participants further emphasized during the in-depth interview how financial problems have made them not have a latrine facilities in their households. This finding is similar to that by Gupta el at, (2015), indicating that due to poverty and financial challenges more than half of the world population do not have latrine facilities. This implies that even some people cannot afford to pay for the public toilets where they charge 50 pesewas, 30 pesewas and 1 Cedis, which leads them to look for other options like going to defecate in the bush, rubbish ground and use of polythene bags commonly known as „rubber" where they defecate and tie and

throw it together with the rubbish. Many participants revealed that they did not have or never had enough space or land to put up a structure for latrine facility. In relation to not having land, the terrain of the land is not also appropriate for constructing the facility. Lack of materials for constructing the latrine facility was also found to be another reason as to why some households did not have the latrines; meanwhile others reported that they did not know how to construct the facilities especially the female headed households. Interestingly, some participants said having latrines is not a priority to them because they have public toilets that they can use to ease themselves when nature calls for. A few of the participants reported that not having a latrine facility is part of their culture.

Weather condition together with the to and fro distance between the household and latrine facility is found to be a contributing factor to open defecation in the slum in this study. Rainy and cold weather suggests options for openly defecating. As reported by Routray, (2015), the distance and the cold atmosphere brings reluctance in to people to move and so prefer finding an option of defecating in a nearby location to them.

The findings of the study showed high knowledge of the participants on open defecation. The participants were able to link the benefit of latrine use and open defecation to diarrheal diseases, that through latrine there is prevention and open defecation causing diarrheal diseases. They also reported other benefits of latrine use as providing convenience and privacy. The participants know that when a neighbor does not use latrine and practices open defecation one is at a risk of getting diarrhea and they associated open defecation with diarrhea diseases more so in children. A similar finding by Robert et al., (2009), DFID (2013); UNICEF (2012) and WHO & UNICEF (2017). Other than knowing that open defecation causes diarrheal diseases, they also know that open defecation pollutes the environment with harmful substances which affects human health.

Many households took advantage of public toilets and also sharing household latrines to avoid open defecation. This study contrasts with the Water sanitation Program (2004) findings which indicated that due to lack of awareness on sanitation and hygiene were a difficulty to increasing latrine use as this established that people actually exhibited high knowledge on latrine use and open defecation.

This study thus entails that even though the participants in the community revealed greater level of knowledge related to latrine use, open defecation and diarrheal diseases, the knowledge was yet to transform in to practice among the slum dwellers in the study area. This shows an outward gap in knowledge, practice and awareness that needs to be bridged in future by inspiring the slum dwellers to fit their knowledge and awareness heights in to the practice of building more latrines/toilets, use of public latrines/toilets and stopping open defecation.

Numerous studies done have shown that slum dwellers in different settlement areas have similar practices regarding open defecation and factors that trigger open defecation. The practices and factors explored in these studies point out that slum dwellers have similar characteristics of their ways of living and standards. The studies also indicate that the slum dwellers can perform good sanitation practices especially if the issue of good hygiene practices are stressed among them.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

This chapter basically centers on the overall overview of the study together with the conclusion and the recommendations which will be for future studies or research. The main purpose of the study was to explore the factors that influence open defecation among slum dwellers in Ashaiman Municipality. This main objective was to find out the common practices of open defecation, the factors that trigger open defecation and the perception on open defecation.

6.1 CONCLUSION

The study sought to explore the factors that influence open defecation among the slum dwellers in Ashaiman Municipality, Ghana. Based on the findings, conclusion can be made that open defecation is one of the major sanitation challenge. 9.2% of the households practice open defecation and the practice is found to be more among households that do not own latrine facilities. The immediate causes are financial constraints, lack of land or space for latrine construction, lack of skills or knowledge on latrine construction, lack of construction materials, the distance to and from the latrine and the household and weather condition.

The study explored that the main sites for open defecation as the bush or field, polythene bags commonly known as „rubber" in the community, rubbish dump, especially by the households that do not own latrine facilities, those sharing and those using public latrines. Sharing of latrines was a common practice in the community due to the nature of their settlement such as living as tenants in rentals where all households under ownership of one Landlord share the same latrines.

6.2 RECOMMENDATION

In regard to the findings of the study, the following have been recommended to be taken in to consideration by all the concerned stakeholders about proper sanitation and hygiene especially taking in to account open defecation issue in Ashaiman Municipality.

- The government should ensure construction of more decent public latrine facilities in the Municipality to end open defecation practices.
- The landlords should also be given a must task of ensuring that every rentals they have should contain latrine facilities.
- The cost of using the public latrines/toilet facilities should be at a subsidized price that everyone who do not have these facilities at their households or any other person can afford to pay and at least the usage of the facilities should be made free for children and the aged.
- The government with the help of Non- Governmental Organizations and other agencies should create more awareness, education and sensitization of the community on proper sanitation management especially on latrine use and consequences of open defecation.
- The local government should put laws in place against those who openly defecate to promote suitable behavioral practices in the community and discourage unhealthy existences.
- Lastly, the local community leaders and the community members should be fully involved in the process of planning, developing and implementing policies regarding the proper sanitation and hygiene in the community.

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APPENDICES

APPENDIX 1: PARTICIPANT'S CONSENT FORM

Introduction

Good morning/Afternoon. Thank you for allowing me to speak to you.
My name is **Samson/Patrick/……..** a Research Assistant to Student **Abidaru Flavia,** a graduate student of University of Ghana, School of Public Health located at Legon. I am requesting you to participate in this study that is establishing the "**Factors Influencing Open defecation among Slum Dwellers in Ashaiman".** You will be asked some questions concerning you.
Procedures for the study: This questionnaire will take between about 10 minutes. No Names will be required for the purposes of the study; however I will use a code for the Questionnaires and Interview Guide.
Benefits: There are no immediate and direct benefits to you as a person that will accrue from your participation in the study. However this study will help in designing interventions so as to improve on excreta disposal thus promoting the health of the community members in Ashaiman municipality.
Confidentiality: Any information given will remain confidential and will be used for the purpose of this study only. The answers will be treated in confidence and the findings of the study will be generalized and not attributed to a single individual. Codes will be used instead of names to enhance confidentiality of the information provided.
Voluntary consent: You are free to choose whether to take part in this study or not, and you are free to withdraw at any time at your own discretion. Feel free to ask any questions before or after the interview.
Potential risks- There are no potential risks in the study.
If you have any questions please contact me as the principal investigator (**Abidaru Flavia**) on Tel number +233552364747, email flaviaabidaru@gmail.com **Or** please contact my supervisor **Dr. Emmanuel Asampong** at email –asampong2000@yahoo.com **Phone +233244278453**
Or GHS-ERC Administrator Ms Hannah Frimpong at email address hanna.frimpong@ghsmail.org Tel. No. +233(0)243235225 or 0507041223, or office No. +233302681109.

I have read the consent above and understood that it will be my decision to either participate or not to will be on voluntary basis and there will be no financial benefits for my involvement in the study.

Please fill the following sub-section (If yes, proceed to Q1, if No, terminate session by thanking the community:

Yes, I have agreed to participate: …… ……..

Signature/thumb print Date

Administering Consent: I…….., confirms that the above onset was read and signed in my presence…… ……

Signature/thumb print Date

HOUSEHOLD QUESTIONNAIRE

Interviewer Initials		Date	
Household Number		Questionnaire Co No	
Sub Location		Village	

SECTION A: BACKGROUND INFORMATION

1. Sex of the Household head is

Male	Female

2. Age of household head…….....

3. What is the occupation of the household head?

Formal Employment	1
Informal Employment	2
Trading/Business	3
Agriculture	4
Livestock keeping	5
Other (Specify)	

4. What is the highest level of education of the household head?

No Formal Education	0
Primary	1
Secondary	2
Tertiary	3

5. What is the Household‟s average income per month in Ghana Cedis……

6. How many people in total live permanently in this household?: Always live here most of their time including those who are in boarding schools excluding visitors?

Children ..... Adults.....

SECTION B: LATRINE USE

7. Where do you defecate? (Observe and confirm if the household has and uses latrine or toilet facility?

Improved Latrine/Toilet Facility		Unimproved Latrine/ Toilet facilities	
Ventilated Improve Pit (VIP) Latrine	1	Pit latrines without a slab or platform that is open pit	6
Pit Latrine with slab	2	Hanging latrines or toilets	7
Composting toilet	3	Bucket latrines	8
Flush or Pour- flush toilet/latrine to Either; • Piped Sewer system • Septic tank	4	Flush or pour flush to elsewhere (that is, not to piped sewer system, septic tank or pit latrine) Shared Facilities of any type	9

• Pit latrine			
Pit latrines without a slab or platform that is open pit	5	No latrines or toilets, Field, Water bodies or Bush	10
Other (s) Specify			

8. Do you share this latrine with other Households?

No	0	Yes	1

9. What type of the latrine do you share

Private	1
Not private	2
Public	3

10. How many Households share this same latrine? ☐

11. How do you dispose off the stool of children below the age of 3 years old?

Children used latrine	1
Put or rinsed in the latrine	2
Thrown in to the garbage	3
Buried	4
Left in the open	5

12. Who is responsible for constructing latrines in your household?

Men	1	Women	2

13. If your household does not have latrine or toilet, what are the main reasons why your household does not have latrines? (Please tick the main 3 if applicable)

Don‟t want one	1	The family does not own the land	7
It is not a priority	2	Terrain is not appropriate	8
Don‟t have enough money	3	It‟s not part of our culture	9
Don‟t know how to construct	4	Lack of knowledge/skills on how to construct/use it	10
Don‟t have enough physical space	5	Lack of construction materials	11
Not Applicable	6	**Others (Specify)**	12

			Type of Latrine		
14. The last time you defecated, did you use a latrine?	NO (0)	YES (1)	If so what type (Please refer to Qn 7 for type)		
15. The last time you defecated while Not at home (Either you were traveling, at a neighbors, went to the market, walking in the village, did you use a latrine?	NO (0)	YES (1)	If so what type (Please refer to Qn 7 for type)		
16. The last time you defecated at home, did you use a latrine?	NO (0)	YES (1)	If so what type (Please refer to Qn 7 for type)		
17. In the last week, when you defecated at home, how often did you use your household latrine? Interviewer read out responses. One response only	NEVER (1)	RARELY (2)	SOMETIMES (3)	MOST OF THE TIME (4)	ALWAYS (5)

Section C: **The following questions are for households with or without latrines/toilets facility.**

18. What do you consider to be the main benefits of using a latrine/toilets (Probe, do not Prompt?

No Benefit	**0**	Status or prestige	**4**
Privacy	**1**	Don't Know	**5**
Convenience	**2**		
Disease prevention	**3**		
Others (Specify)			

19. Who are some of the people who promote construction and use of latrine/toilet in your community?

None	1	Local Leaders	5
Neighbor	2	NGOs	6
Community Volunteers	3	Don't know	7
Government	4		
Others (Specify)			

20. What are the major obstacles to latrine/toilet ownership in your community?

Culture	**1**	Lack of Skills/Knowledge	**4**
Finances	**2**	Lack of land/Space	**5**
Unsuitable conditions	3	Don't know	6
Others (Specify)			

21. Do you think you are at the risk of getting diarrhea if your neighbor does not use a latrine/toilet and is practicing open defecation?

No	0	Yes	1

22. In your view what could be the effect of open defecation?

Causes diseases	1
Causes shame	2
Don‟t know	3
Others (Specify)	

23. Do you think children‟s feaces can cause diarrhea?

No	0	Yes	1	Don‟t know	2

24. Do you think human feaces are principle sources of diarrhea?

No	0	Yes	1	Don‟t know	2

25. Do you think washing your hands with soap and water could prevent diarrhea?

No	0	Yes	1	Don‟t	2

26. In your own opinion what problems could be attributed to lack of latrine/toilet facilities in your community?

None	**0**	Absenteeism from school	**6**
Diseases	**1**	Smell	**7**
Stigma	**2**	Flies	**8**
Indignity	**3**	Loss of productive time	9
Shame	4	Don‟t know	10
Medical Expense	5	Others (Specify)	

27. Which diseases have members of your household suffered from in the past two weeks?

Malaria	**1**	Eye infections	**4**
Diarrheal diseases	**2**	Respiratory Tract Infections	**5**
Skin related diseases	**3**	TB, HIV and AIDS	**6**
Others (Specify)			

THANK YOU

IN-DEPTH INTERVIEW GUIDE

IN-DEPTH INTERVIEW GUIDE FOR HOUSEHOLD HEADS IN ASHAIMAN

Topic: Factors influencing Open Defecation among slum dwellers in Ashaiman.

Date: _____ Name of interviewer: _____

Name of scribe: _____

Start time (in 24hrs): _____ End time (in 24hrs): _____

Duration of Interview: _____

Hello, my name is _____ and my colleague is _____. We are conducting a study about Influence of Open Defecation among slum dwellers in Ashaiman-Ghana. We have asked you to participate in this interview because you can be directly affected by open defecation when even you are not practicing it and you could be having different opinion on open defecation. The information you provide will help tell us find out the factors that influence open defecation and how it can be stopped in your community. We want to know your perception on open defecation.

Your participation in this interview is very important because you are the community expert. Your insights will help us to find out the challenges community is facing with open defecation and see how the community can be helped concerning sanitation issues.

Your participation in this interview is voluntary. You may skip any or all questions you do not want to answer. Although we will record your name, it will not be published in any reports or presentations. The interview should take from about 45 minutes to an hour. I will be asking you questions and my colleague will be taking notes of our discussion. We are also taping the interview to make sure the notes are accurate and that we correctly write down what you say.

Now that I have described the interview process do you have any questions? **[Once questions, if any, have been answered, begin the interview]**

Before we begin, I would like to obtain your consent **[Make sure you give each participant a copy of the Participant Information Sheet and the Consent form and get participant signature on the Consent Form.]**

Demographic information

I‟d like to start by asking you some questions about yourself.

Age: _____

Education level: _____

Occupation: _____

1. What is your opinion regarding open defecation?
2. What is your knowledge on open defecation?
3. What is the general perception of your community on open defecation?
4. Does every household in your community have latrine or toilet?
5. Do you share latrine or toilet facility with other households?

Suggested ways of stopping open defecation

6. What do you think could be done to end open defecation?
7. What else do you have to say concerning open defecation?

Before we end, do you have any questions for me?

*****Thank you very much for your participation in this interview*****