



**EXPLORING THE USE AND ADOPTION OF URINE DIVERTING
DEHYDRATION TOILETS IN UMGABABA COMMUNITY IN ETHEKWINI
MUNICIPALITY: THE EXPERIENCES OF COMMUNITY MEMBERS AND
LEADERS**

By

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DECLARATION

I hereby declare that this dissertation is my entirely my original work. Unless otherwise indicated in the text. All citation, references and borrowed ideas have been duly acknowledged. This dissertation has not been submitted to any other University for any degree or examination purposes.

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DEDICATION

To begin with, I want to dedicate this research to God, my guiding light, and the only one who provided me with a clear vision along my personal, professional, and academic path. God, you have done it again, and again. In many ways you have showed me that You are truly the God of endless possibilities. Lord you have been the torch that direct my path. You always helped me when I needed it the most. Therefore, I give You all the Glory.

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ABSTRACT

Sanitation is the safe treatment and disposal of human faeces. Ensuring availability and sustainable management of sanitation for all is part of sustainable development goals- agenda 2030. Even though the adoption and use of UDDTs is low in eThekweni Municipality, most of these studies are quantitative in nature and have not been conducted in UMgababa community. Therefore, this study aimed at employing qualitative methods with the aim of exploring the problems associated with the adoption and use of UDDTs in UMgababa community from the perspective of community members and leaders. There were 15 participants in the study. All participants were chosen purposively. They were accessed using snowball sampling a technique that uses referrals. Semi- structured interviews and observations were utilized to get data from all participants. All interviews were guided by interview guide with open ended questions. The findings show that there was blame game regarding the installation of UDDTs by Ward councilor and area coordinators. Community members did not have an idea who was responsible for installing of the UDDTs Instead they linked such developments to the ANC which is a leading political party in South Africa. They also mention that they were not consulted about the UDDTs instead the development came as an announcement from the municipality. Training received regarding the use of UDDTs lasted for five minutes.

Community members resent the UDDTs adoption and use of UDDTs by community members. These results show that the government uses the top-down approach in designing interventions for the communities. These findings are important for policy makers to conduct an impact assessment and calls for prompt action to be taken to help address the lack of adequate adoption and use of UDDTs by the community members and ultimately improve the wellbeing of the people.

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LIST OF ACRONYMES AND ABBREVIATIONS

UDDTS	Diverting Dry Toilets
ANC	African National Congress
WHO	World Health Organization
UNICEF	United Nation Children's Fund
JMP	Joint Monitoring Programme
FBSAN	Free Basic Sanitation
EWS	eThekwini Water and Sanitation
CAB	Community Ablution Blocks
VIPS	Ventilated Improved Pit Latrines -
DWAF	White Paper on Basic Households' Sanitation
EST	Ecological Systems Theory

CHAPTER ONE

INTRODUCTION OF THE STUDY

1.1 Introduction and background to the study

Sanitation is the safe treatment and disposal of human faeces (Jarquin et al, 2016). Ensuring availability and sustainable management of sanitation for all is part of sustainable development goals agenda 2030 (WHO & UNICEF, 2017). According to a report by World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) Joint Monitoring Programme (2019), 6.6 billion people of the world's population, lack safely managed sanitation services. Sub-Saharan Africa is the mostly affected region. 31% of its population still using basic sanitation facilities such as flush or pour flush toilets/latrines to a piped sewer system, septic a pit latrine. 31% use unimproved sanitation facilities such as flush/pour flush to elsewhere (not into septic tank or sewer). Some still using pit latrines without slab, buckets, hanging toilet or hanging latrine, shared facilities. Moreover, some are still practicing open defecation (McMichael, 2017; WHO & UNICEF, 2020; Lancet, 2020; World Bank, 2020; Evans, Hueso, Johnston, Norman, Perez, Slay maker & Tremolet, 2017).

In South Africa 9.2 million households do not have access to improved sanitation and KwaZulu-Natal has the highest number of municipalities (mostly rural) without improved sanitation (Mudombi, 2020; Statistics South Africa, 2017). Furthermore, of all municipalities in the country, eThekweni Municipality has the second largest percentage of households without improved sanitation at 36% (Mudombi, 2020). To solve the sanitation crisis, the free sanitation policy mandates the government to provide free sanitation facilities to those who cannot afford (Tissington & Kate, 2011). Basic Sanitation in South Africa: A Guide to Legislation, Policy and Practice. Thus, the Urine Diverting Dehydrating Toilets (UDDTs) are the most affordable sanitation technologies that have been provided for free to households who live in peri- urban and rural communities. The UDDTs do not use any water and the faecal sludge recovered can be used for agriculture (Okem, Xulu, Tilley, Buckley, and Roma, 2013; Uddin, Muhandiki, Fukuda, Nakamura, and Sakai, 2012). This study aimed at exploring the problems associated with adoption and use of UDDTs in uMgababa community from the perspective of community members and leaders.

1.2 Problem statement

Adequate sanitation prevents the transmission of diseases such as diarrhea (Mara, Lane, Scott & Trouba, 2010), cholera, dysentery, hepatitis A, Typhoid, polio, (WHO & UNICEF, 2017; Roche, Bain, & Cumming, 2017), trachoma, soil transmitted helminthiasis and schistosomiasis (WHO & Asante, 2021; Melese et al, 2008; Cook, 2008; Roma & Pugh, 2012). However, the adoption and the use of UDDTs is low in KwaZulu-Natal province particularly in eThekweni municipality due to lack of adequate knowledge about the use of urine and faecal sludge for agricultural purposes (Okem, Xulu, Tilley, Buckley & Roma, 2013). There is a lack of incentives obtained for harvesting urine and faecal sludge (Tilley, 2016). UDDTs are known to produce vaulting smells and they usually have malfunctioning pedestals (Roma, Philip, Buckley, Xulu, Scott, 2013). Additionally, the UDDTs fail to meet the social status of the users, and as such, households complain that they are culturally repulsive to use (Mkhize, Tailor, Udert, Gounden, & Buckley, 2017). Even though the adoption and use of UDDTs is low in eThekweni Municipality, most of these studies are quantitative in nature and have not been conducted in UMgababa community. Therefore, this study aimed at employing qualitative methods with the aim of exploring the problems associated with the adoption and use of UDDTs in UMgababa community from the perspective of community members and leaders. The findings from this study are a contribution to the body of literature on sanitation in low and middle-income countries. Furthermore, the findings are appropriate for policy makers who are responsible for implementing sanitation facilities within rural communities in South Africa.

1.3 Purpose of the Study and Research Questions

The main objective of this study is to explore the experiences of community members and leaders regarding the adoption and use of UDDTs in uMgababa community.

1.4 The Objectives of the study:

1. To explore the experiences of community members and leaders regarding the adoption and use of UDDTs in uMgababa community.
2. To understand the barriers and facilitators regarding the adoption and use of UDDTs in UMgababa community.

3. To determine the causes of the barriers and facilitators regarding the adoption and use of UDDTs in uMgababa community.
4. To explore how the barriers are addressed regarding the adoption and use of UDDTs in uMgababa community.

1.5 The research questions

1. What are experiences of community members and leaders regarding the adoption and use of UDDTs in uMgababa?
2. What are the barriers and facilitators regarding the adoption and use of UDDTs in uMgababa community?
3. What are the causes of the barriers and facilitators regarding the adoption and use of UDDTs in uMgababa community?
4. How are the barriers addressed regarding the adoption and use of UDDTs in uMgababa community?

1.6 Structure of dissertation

This dissertation is divided in to six chapters.

Chapter one: introduces the study. Relevant study background information is provided. Outlines the research problem. The purpose and objectives of the research is stated, and the significance of the study is summarized.

Chapter two: Relevant literature to this study was reviewed.

Chapter three: outlines the study methodology. The sample, data collection, procedures, data analysis, and ethical considerations will be discussed in this chapter.

Chapter four: provides the findings of the study from the semi structured interviews and observations. These Semi structured interviews and observations are analyzed. And five steps of framework analysis by Ritchie & Spencer, 1994 was used to guide data analysis.

Chapter five: discussions of the results will be provided using the ecological system theory.

Chapter six: concludes this study discussing considerations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This study reviews the literature on sanitation starting by giving the sanitation prevalence: the importance of Sanitation, waterless sanitation systems, the history of UDDTs in South Africa, and the facilitators and barriers to the adoption and use of UDDTs prevalence.

2.2 Sanitation prevalence

Sanitation is the safe treatment and disposal of human faeces (Jarquin, Arnold, Munoz, Lopez, Cruellar, Thornton, & McCracken, 2016). Ensuring availability and sustainable management of sanitation for all is part of the sustainable developmental goals agenda 2030. According to the recent report by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) Joint Monitoring Programme (2019), 6.6 billion people of the world's population lack safely managed sanitation services. Of the 6.6 billion people, only 2.4 billion have access to basic improved sanitation (facilities which are not shared or are used by one household). Examples of such facilities include flush toilets, piped water sewer systems, septic tanks, flush/pour flush to pit latrine, ventilated improved pit latrines (VIPs), pit latrine with slab and composting toilets (WHO & UNICEF, 2019; Evans, Hueso, Jonhston, Norman, Perez, Slaymaker & Tremolet, 2017). Although 2.4 billion people have access to basic improved sanitation facilities, about 5.5 billion have sanitation facilities that are shared by more than one person. Furthermore, 2.0 billion people still lack basic sanitation facilities such as flush/pour flush to elsewhere (not into septic tank or sewer), pit latrine without slab, buckets, hanging toilet or hanging latrine, shared facilities, and open defecation (World Health Organization, 2019; McMichael, 2017). For example, it is reported that 673 million people still practice open defecation particularly in rural areas. Sub-Saharan Africa is the mostly affected region with 31% of its population still using basic sanitation facilities such as flush or pour flush toilets/latrines to a piped sewer system; septic tank or a pit latrine and 31% with unimproved sanitation facilities (WHO & UNICEF/ JMP 2019).

In South Africa, 76% of households nationally have access to improved sanitation. For example, 53% of households with improved sanitation use flush toilets that are either connected to the public sewerage or a local septic tank system, 15% of households use pit

toilets with ventilation pipe while 8% mainly use a combination of sanitation facilities such as the ecological and urine diversion toilets (WHO/UNICEF, 2019). Although there seems to be progress with sanitation in the country, there is still 4.1million households that do not have access to improved sanitation. For instance, 13.7% of households use pit latrines without ventilation pipes, 2.2% use the bucket system and 2.4% households do not have access to sanitation at all. Additionally, it is reported that, among the top 20 municipalities that are ranked with the highest and lowest access to improved sanitation in the country, 11 municipalities with the lowest number of households who have access to unimproved sanitation are in Kwa-Zulu Natal. In terms of the municipality categories such as Metro (A), secondary city (B1), large town (B3) and rural municipalities (B4) in the country, the rural municipalities (B4) are the most affected with 50.6% of households without improved sanitation and of all these municipalities, eThekweni municipality has the largest percentage of households without improved sanitation at 22.7%.

2.3 The importance of sanitation

Poor sanitation practices are responsible for transmitting diseases such as diarrhea. For example, it is estimated that 280 000 deaths resulting from diarrheal diseases are recorded annually (Mara, Lane, Scott, & Trouba, 2010). Additionally, poor sanitation practices also cause diseases such as cholera, dysentery, hepatitis A, typhoid, and polio (WHO & UNICEF, 2017; Roche, Bain, & Cumming, 2017). Furthermore, poor sanitation practices are responsible for high prevalence of tropical diseases such as trachoma, soil transmitted helminthiasis and schistosomiasis which are transmitted through the oral faecal route (WHO & UNICEF, 2021; Asante, 2021; Roma & Pugh, 2012). Trachoma is an infection of the eyes which causes blindness (Phiri et al, 2017) while soil transmitted helminthiasis is responsible for causing decreased and stunting growth in children (Albonico et al, 2006) and schistosomiasis causes cancer of the bladder (Hotez et al., 2006; Gall et al., 2017).

In South Africa, it is reported that 5.2 million people have schistosomiasis while those that have soil transmitted helminths are unknown. Nevertheless, approximately 3.2 million children require treatment for soil transmitted helminths (Molvik, Heiland, Zulu, Kleppa, Lillebo, Gounderson, & Venner, 2017). Adequate sanitation can decrease diarrhoea by 28% (Wolf, Ustun, Cumming, Bartram, Bonour, Cairncross & Fewtrell, 2014) and prevents the spread of diseases, improves the quality of life, and prevents mortalities particularly in children (Mara et al., 2010; Norman, Pedley & Takkouche 2010; Grimes et al., 2014). To

ensure adequate sanitation in low and middle-income countries including in South Africa, waterless sanitation systems are widely used to cater for the less privileged communities (Uddin, Muhandiki, Fukuda, Nakamura, and Sakai, 2012).

2.4 Waterless Sanitation Systems

The ventilated improved pit latrines (VIP) and the Urine Diversion Dehydration toilets (UDDTs) are the most common waterless sanitation systems in low- and middle-income countries that are provided to poor households who live in peri urban and rural communities (Uddin et al, 2012). The VIPs are made of a solid top structure above the reinforced pit. The pit fills in about 12 to 16 years and the contents are removed either by households or by the sanitation sector (Chunga et al, 2016). In South Africa, VIPs are emptied by the municipality using the following methods: on-site disposal in a hole near the existing VIP only if there is sufficient ground space adjacent to the pit; using deep row entrenchment; using lime stabilization and disposal to solid landfill site; discharge into wastewater treatment/sewer or transportation to a specially developed process for dehydration and pasteurization. There are on-going pit emptying programmes by the municipality which allows for emptying of the VIPs every 5 years of which the contents/sludge are used as an agricultural soil remediant while households are responsible for operation and maintenance (Milojevik & Kwiatkowska, 2021). To improve on the VIPs, the UDDTs were designed to reduce the cost associated with emptying of the VIPs.

The UDDTs are designed with two separate vaults each with an elevated vent pipe, a cover slab, and a toilet housing with a door. The vaults separate the urine and faeces which makes the pathogens found in faeces inactive because the faeces dry up. The vaults are used one after the other, when one is full, it is covered using sand. The covering of the faeces using sand reduces contact with vectors like flies and rodents that can transmit disease causing pathogens to humans. When the vault is covered, it is then closed to desiccate using any desiccants including ash or dried leaves. Desiccants help to facilitate drying which render the pathogens inactive. The flies are trapped by a fly screen in the vent pipe which allows sunlight. The fly screen also prevents the flies from entering the vaults. The UDDTs take approximately 6 to 12 months to fill up depending on the size of the household. When one vault is closed for desiccation, the other is opened for use. The operation, maintenance and emptying of the desiccated material from the closed vault is the sole responsibility of the households (Tshivhase, 2016). The benefits of using UDDTs is that urine and faecal sludge

recovered can be used for agriculture (Okem, Xulu, Tilley, Buckley, and Roma, 2013). In Kenya, UDDTs have been proven advantageous to households because their products are used as fertilizer on the farmlands (Uddin, Muhandiki, Fukuda, Nakamura and Sakai, 2012).

2.5 The history of UDDTs in South Africa

South Africa in its National Development Plan envisions that all its citizens will have full and affordable access to water and sanitation by 2030. Consequently, it has promised the rollout of the required sanitation infrastructure for the poor households. Furthermore, the white paper on basic household sanitation (DWA, 2001) places emphasis on providing basic sanitation at household level especially in areas that are in need. Moreover, the Strategic Framework for water Services (2003) was committed to providing basic sanitation facilities that are safe, reliable, and private and above all, it is committed to enable safe and appropriate treatment and removal of human waste in an environmentally safe manner. The Department of water and Sanitation (2016) is mandated to regulate the sanitation sector in the country and is responsible for planning, providing regional services and monitoring. Most importantly, the other regulations for sanitation are the White Paper on Water Supply and Sanitation (1994) ; the White Paper on a National Water Policy of South Africa (1997) and the White Paper on Basic Household Sanitation (2001). The goal of the government on sanitation is to increase the percentage of households with access to functional sanitation services to 90% by 2019 and to eliminate bucket sanitation in informal areas (South African statistics, 2017).

The free Basic Sanitation Policy (2000) promoted the provision of affordable sanitation services to households that are unable to pay for it. It also addresses the cost associated with the ongoing operation and maintenance of any type of sanitation system, ensuring ongoing hygiene and education. In support of this policy, the Free Basic Sanitation (FBSan) implementation strategy was adopted in 2009 to implement the policy. In line with the free sanitation policy, the 2016 statistics shows that municipalities around the country provided 10.9 million consumer units of basic indoor sanitation and sewer services and of these units, 3.3 million were free of charge. Despite this success, Tissington (2011) argues that the policy for free basic sanitation service works well for households who have money and are already connected to sewerage networks. This implied that the households in rural areas and informal settlement who could not afford were going to be left out. Because the provision of free sanitation was constraining the government, to make the free basic sanitation policy to work, it requires that the water services authorities ensure that the costs for providing the service are

covered by the local government equitable share or through cross subsidies and that the funds must be paid to the water service provider directly or to the households (Statistics South Africa, 2017). Thus, since 2001, to cater for the households in rural areas and informal settlement, the government provides free and basic sanitation services that are located outside the yards of households and include those that use water and the waterless sanitation. KwaZulu-Natal province has the highest number of municipalities with households whose sanitation facilities are outside the yard. In eThekweni municipality, outside sanitation facilities are provided by the eThekweni Water and Sanitation (EWS) sector.

The most common sanitation technologies that use water within the yards of households are the Community Ablution Blocks (CAB): they are mostly provided to households in informal settlements to cater for 75 dwellings per facility at a radius of 200m. These facilities use water to dispose of urine and faeces. They are connected to the existing sewer lines, and they consist of two modified converted shipping containers of which one is for males and the other for females. These CABs have two showers, three toilets' cubicles (and two urinals for males), two wash basins, two hand basins and two external laundry troughs. The CABs are provided for free and maintained by the municipality, a caretaker is hired and paid to work four hours per day. The municipality also provides toilet paper and all the cleaning materials. Other outside the yard facilities are the VIPs and UDDTs.

2.6 Facilitators and barriers to the adoption and use of UDDTS

It is believed that the main facilitators for adoption and use of specific sanitary facilities or technology are the constant need for its social acceptance and its ability to incorporate local knowledge (Chunga et al, 2016). Most sanitation systems are adopted and used if they meet the needs for privacy for example, Jenkins & Scott, (2007) contend that, most households especially in low-and-middle-income countries adopt sanitation facilities because they want something that is convenient, comfortable and that which protects them from danger such as snakes, pests, or rain. Additionally, Sahoo et al, (2015) found that sanitation facilities within households are known to reduce the risks of rape or attack that is experienced when using public ones, latrines, or the bush. Furthermore, sanitation facilities help the girls to practice adequate hygiene during menstruation and reduces their likelihood to miss school (Crankshaw, Strauss & Gumede, 2020). Knowledge regarding the use of specific sanitation facilities matters for instance, Trimmer et al, (2016) conducted a study in two primary schools in Uganda and found that, increased knowledge among primary school children about

the use and benefits of UDDTs reduced skepticisms and increased their adoption and use (Trimmer et al 2016).

There are various barriers to adoption and use of sanitation facilities including UDDTs for example in Rwanda, adoption, and use of most sanitation facilities in the country have been attributed to lack of faecal sludge management which is caused by the lack of government's ability to prioritise sanitation, lack of clear sanitation policies, unclear responsibilities within the sanitation sector and lack of training for local professionals in this sector (Akumuntu et al, 2017). In South Africa particularly in KwaZuluNatal, the low adoption and usage of the UDDTs are attributed to the lack of adequate knowledge about the use of urine and faecal sludge for agricultural purposes (Okem, Xulu, Tilley, Buckley, and Roma, 2013), the revolting smells and malfunctioning of the pedestals (Roma et al, 2013), and the lack of incentives obtained for harvesting urine and faecal sludge (Tilley, 2016). Furthermore, adoption and use are low because households feel that such structures are built with poor quality materials thus, they are not prestigious compared to the use of flush toilets. Among the elderly populations, there is low use of UDDTs because such populations are traditionally used to using pit toilets and the idea of emptying the toilets is culturally repulsive to them (Mkhize et al, 2017). Furthermore, in a survey on the households that use toilets that are outside their dwelling within municipalities in South Africa, findings revealed that municipalities within KwaZulu-Natal province received the highest dissatisfaction rate. These municipalities include those in eDumbe (51.4%), Thembisile (47.0%), Mtubatuba and KwaDukuza.

2.7 Theoretical framework

This study was guided by the ecological systems theory (EST). This is a community model that was developed by Uri Bronfenbrenner, in 1970 as a theory of personal development. Bronfenbrenner believed that personal development is affected by everything in their surrounding environment (Bronfenbrenner, 1979). The EST has five different levels namely: Micro Systems, Mesosystems, Exosystem, Macro system, and Chronosystem (Bronfenbrenner, et al., 1979).

The microsystem level is a component of ecological environment in which the individual engages in the pattern of relationship and roles. The setting has unique physical characteristics and is proximal to the individual (Bronfenbrenner & Ceci, 1994). The microsystem setting is the direct environment to the individual where he or she has interactions

with family, friends, classmate, neighbors and all the people who have a direct contact with an individual and these are called the social agents. The theory states that the individual is not a mere recipient of the experiences received when socializing with the social agents but, the individual also contributes to the construction of the environment (Bronfenbrenner & Ceci, 1994).

The mesosystem level involves the relationships between the microsystems. This means that the individual's family experience may be related to the school experience. For example, if a child is neglected by his parents, he/she may have a low chance of developing a positive attitude toward the teachers. Also, this child may feel awkward in the presence of others and may resort to withdrawal from a group of classmates. This means that, in mesosystem level, the components of ecological environment represent relationship between two or more setting in which the developing individual engages in activities with others, such as home school, work, and home. The micro system is nested with this mesosystem (Bronfenbrenner et al., 1979).

(i)Exo-system level

This level considers patterns within an environment in which one is not a member and yet he/she is affected by what happens in that environment. This level has a distal causal effect (Bronfenbrenner, 1994). For example, a parent may face retrenchment at work, and this may affect the children's livelihood. For example, if a person lives in a monitored environment with high resources available that person will do well or behave moreover, the person will feel accomplished (Bronfenbrenner, 1994).

(ii) Macro system level

The Macro system setting is the actual culture of an individual, the cultural context involved the socio-economic status of the person and his family. His ethnicity or race and living in a still developing or third world country. For example, being born to a poor family makes a person work harder every day (Bronfenbrenner & Ceci, 1994).

(iii) The Chrono system level

The Chronosystem include the transitions and shifts in one's lifespan. This may also involve the socio-historical context that may influence a person. A classic example of this is how divorce as a major life transition may affect not only the couple's relationship but also their

children 's behavior (Bronfenbrenner & Ceci, 1994). These levels are summarized in figure 1 below.

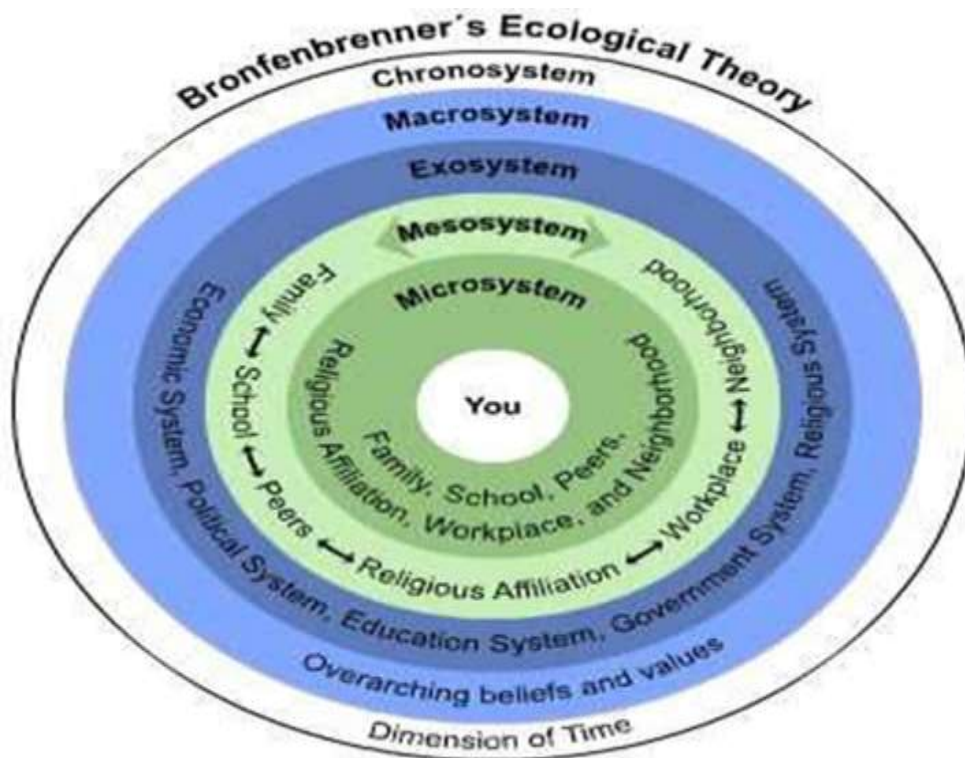


Figure 2. 1: Ecological theory for human development (Bronfenbrenner, 1974)

The ecological system theory has been applied by scholars, professionals, and therapist. They applied it to understand human behavior in different contexts (Bronfenbrenner et al., 1979). for example, Wissel (1996), used ecological system theory to develop a plan that can assist to resolve the stability of words of a person to prevent repetition (Sarkar et al., 2017). The theory has been used by Garvasi, Stephanie; Stephanens, Patric; Hua, Jessica (2015). They used the theory to understand the responses of various hosts of to an emerging pathogen in ecological community.

Furthermore, the EST has been used in Ecological psychology to study the influence of external forces on individuals (Barker,1968; Burke & Barker, 2009). In behavioral health, the EST is used to investigate how contextual determinants of health such as socioeconomic, gender, and other social cultural influences add to individual behavioral health and wellbeing or its absence (Richard, 2011). Moreover, social workers use the theory to correct clinical biases towards individualistic therapeutic intervention (Wakefield, 1996). In Public health, the EST has been used to emphasize the linkages and relationships among multiple factors affecting Health (Sallies & Glanz, 2008; Coady & Lehmann, 2001). Finally, the EST has

been used by feminists to predict patriarchal systems in the community (Cody & Lehmann, 2001).

2.7.1 Levels of the ecological system theory as applied to this study micro-level

This study utilized four levels of influence: the micro, meso, exo and macro-systems levels. The sanitation facilities (the UDDTs) that are used in the community of uMgababa are found in microsystem level. These sanitation facilities within the communities can affect community members either positively or negatively. Hence the experiences regarding the use of UDDTs by community members at the micro-system level were explored.

2.7.1.1 The Meso-system

In relation to the meso-system level, the area coordinators are found on this level. They oversee overseeing community programs. Their experiences regarding the use of UDDTs were also explored.

2.7.1.2 The Exo-system

On the Exo-system level, are Ward councillors who are mediators between the government and the people, and they are also policymakers. Their experiences regarding the choice of sanitation facilities in uMgababa community were explored by asking them about their role and perspectives regarding the uses of UDDTs by community members.

2.7.1.3 The Macro-system

On the macro-system level is the Municipality level. Two officials from the municipality in charge of installation of UDDTs in uMgababa community were interviewed to understand their experiences regarding the adoption and use of UDDTs. All the levels are summarized in Figure 2 below.

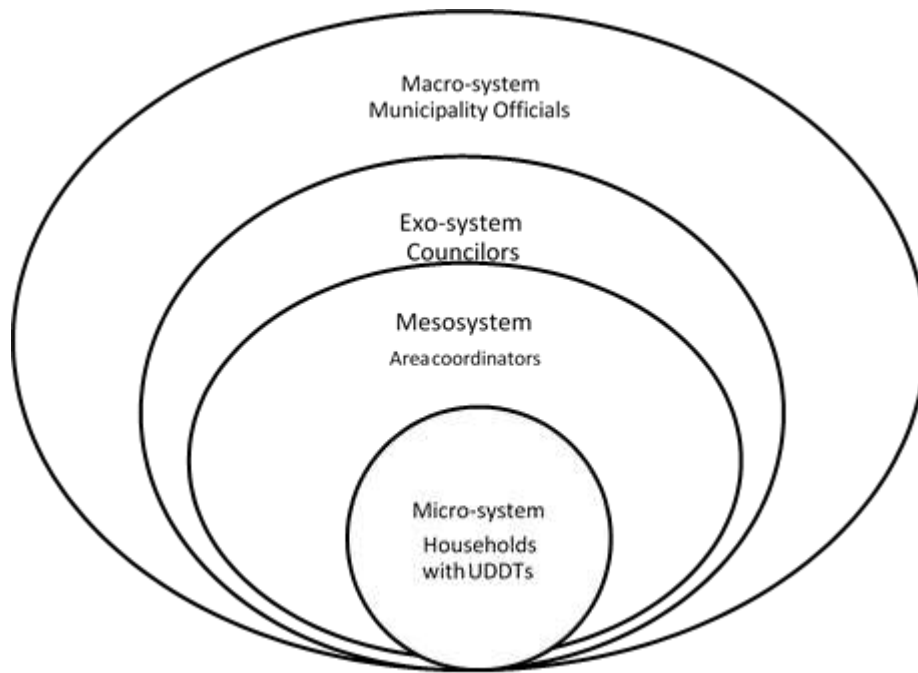


Figure 2.2: Ecological systems theory as applied in this study

CHAPTER THREE

METHODS

3.1 Study design

Qualitative research is a form of enquiry that focusses on the way that people make sense of their experiences and the world in which they live (Creswell, 2014). According to Maxwell (1998), qualitative studies seek to understand: 1) the meaning of life experiences, 2) the context within which people act, and 3) the process by which the events or actions take place. This was an explorative qualitative study which aimed at understanding the meaning that individuals or groups ascribe to be human problems (Creswell, 2014). Thus, this study design was appropriate because it aimed at understanding, describing, and interpreting the phenomena as perceived by individual, group, and cultures. Explorative studies also focus on the “inside” view of the people involved in the research, their perceptions, meanings, interpretations (Holloway & Galvin, 2017) and it examines complex questions that can be impossible with quantitative methods (King, 1994). An explorative design was appropriate to give insights on the experiences of community members and leaders regarding the adoption and use of Urine Diverting Dehydration Toilets in uMgababa community. The explorative qualitative design also allowed the researcher to measure what was said or not said through noticing non-verbal variables like denial, defensiveness and disassociation which are presented unconsciously by the participants (Sansone et al., 2016).

3.2 Study settings

The study was conducted in uMgababa a low resource rural community which is serviced by eThekweni municipality. The residents are Zulu speaking people who survive on selling traditional beads and fruits, such as mangoes, bananas, avocados along the N2 freeway (Hagan, 1999). uMgababa has a river known as uMsimbazi that enters the Indian ocean that makes the whole community a semi -vocational place for tourists. Although people in uMgababa survive by selling fruits, they can send their children to school. The biggest challenge faced by uMgababa is unemployment of both youth and middle-aged residents. Most residents have matric, and some have tertiary qualifications. People at uMgababa lived in formal houses. Houses range from three, RDP Houses, big houses, double story houses and well as mansion houses. This change caused by people who came in numbers from townships and suburbs to uMgababa and built double story houses. Every house in the area has water

tap, electricity, and at least one person is employed in the household. The population number of uMgababa is more than 33,000 people (eThekwini Ward Map, 2017). The community experiences inadequate service delivery especially water and sanitation service. Most community members have illegal water connections as a way of coping with water shortages (eThekwini Ward Map, 2017). uMgababa has one ward, which is ward 98 and it is divided into 38 different tribal areas. The study was conducted in area 35 because it is the area that is mostly visited by the tourists. Area 35 has three high schools, one primary school and one clinic which provides health service the entire ward 98. The waterless sanitation facilities in area 35 are VIPs and UDDTs (eThekwini Ward Map, 2017). This study focused on the adoption and use of UDDTs from the perspective of community members and leaders.

3.3 Study participants and sampling

There were 15 participants in the study, one ward councillor, one official from the municipality in charge of sanitation programs in the community, two area coordinators and eleven community members as shown in Table 3. The ward councillor was chosen as a gatekeeper and provided referrals to the area coordinators. All participants were chosen purposively based on the following individual criteria (1) they were residents of ward 98 and living in area 35 within uMgababa community, (2) if they were residents who lived in the community for 6 months and more because residents with such number of time lived in the community were in a better position to provide more insights into the study about the adoption and use of UDDTs, (3) if residents owned the UDDTs and (4) if they were willing to participate in the study.

Purposive sampling is a sampling technique that qualitative researchers used to recruit participants who can provide a detailed information about the phenomenon under investigation. the researcher decides what need to be known and set out to find the participants who can and willing to provide information by virtue of knowledge or experience. this involved identification and selection of individuals who are proficient and well informed about the phenomenon of interest and willing to participate (Etikan, Abukar, Alkassim, 2016). All participants were accessed using snowball sampling. Snowball sampling is a technique that that uses referrals (Frank & Snijders, 1994). In this case, ward councillor provided list of the area coordinators who also provided list of potential participants.

3.4 Data collection technique and tools

Two data collection techniques were utilized:

3.4.1 Semi structured interviews

Semi- structured interviews were utilized to get data from all participants. Semi- structured interviews were appropriate because they allowed cross references between the interviewer and the participant. According to Welman (2009), semi- structured interviews also offer a flexible way of collecting data because they can be used with all age group and allow in-depth probing on the issues of interest to the researcher. Semi structured interviews were relevant because they allow the researcher to compare the answers that are provided by various participants (Lamont, 2015). Semi- structured interviews also provided a platform for flexibility for original and unexpected issues that arose which the researcher explored in more detail with further questions (Pietkiewicz & Smith, 2014). Interviews were conducted in isiZulu the local language in the study area because this allowed the participants to freely express themselves in their own language (Patton, 2000). All interviews were facilitated by the researcher, a Zulu speaker. All interviews were guided by interview guide with open ended questions. Open-ended questions help with understanding how meaning is attached to processes and practices (McGuirk & O'Neill, 2016). Furthermore, open-ended questions give few fixed response options than close questions that allows respondents to convey understandings, experiences, opinions in their own style (McGuirk & O'Neill, 2016). With open-ended questions, the researcher can observe different themes that may be involved in certain experiences. Furthermore, the researcher can examine not only what the participant is saying but also how it was said (Sansone, Morf, & Panter, 2016). (See Appendix 3).

3.4.2 Observations

Observations were carried out to physically check the conditions of the UDDT's on the premises and the general surroundings of community members that participated in the study. All observations were guided by observation guide which contained a checklist of what was to be observed (see appendix 5). The researcher observed that some of the toilets have fallen doors. Some are without doors at all in such a way that community members used bed sheets to cover to doorway. Some have no roofs people. Others have no vent pipes. While others

have no fly screen on the vent pipe. The uddts have no pedestal cover. They also have a bad smell. They have no washing hand facility.

3.5 Data collection procedure

Prior to conducting the study, gatekeepers' permission was sought to conduct the study in the ward 98 area 35 from the ward councillor (See appendix 1). Ethical approval to conduct the study was already sought and received from the Human Social Sciences Ethics Committee. After the gatekeeper's and ethics approval were granted, area coordinators were identified to participate in the study. Area Coordinators then identified and recruited community members that met the study criteria. Data was collected and semi-structured interviews were used to get data from the participants. Semi- structured interviews were appropriate because they allowed cross references between the interviewer and the community members. Semi-structured interviews offered a flexible way of collecting data because they can be used to with all age group. it allows in dept probing on the issue of the interest to the researcher. Semi-structured interviews allowed the researcher to compare the answers that were provided by the various community members (Lamont, 2015). It provided a platform for flexibility for original and unexpected issues that arose which the researcher explored in more detail with further questions (Pietkiewicz & Smith, 2014).

3.6 Data analysis approach

All recorded data was transcribed from IsiZulu to English by the researcher. Transcribed data was analysed using five stages of framework analysis to describe and interpret what happened in a specific setting (Ritchie &Spencer,1994). These stages are: (a) Familiarization. (b) Identifying themes. (c) indexing. (d) Charting. (e) Mapping and Charting).

Familiarization was the process during which the researcher familiarized with the transcripts of the collected data. This was done for the researcher to gain an insight of the collected data (Ritchie & Spenser). The researcher fascinated in the data by listening to the audiotapes. She then familiarized herself by repeatedly reading the transcript of the data collected. Throughout this process the researcher was able to notice the key ideas and recurrent themes.

Second stage was identifying themes. The identifying stage was the process whereby a researcher allowed the data to dictate the themes and issues. She used the notes taken during familiarization stage to dictate those themes. Thus, allowing themes and the key issues to be dictated by data. The key issues and themes that have been expressed by participants formed

the basis of thematic framework that was used to filter and classify the data (Ritchie & Spencer, 1994).

Third stage was indexing. This was the process by which the researcher identified sections of the data that corresponded to a particular theme. All textual data corresponded to themes were identified. The numerical systems were used for the indexing references and annotated in the margin beside the text (Ritchie & Spencer, 1994).

Fourth stage was charting. Charting was the process whereby the specific piece of data that was indexed in the previous stage arranged in chart of themes. In this stage, the data was lifted from its original textual context and placed in chart that consist of the headings and subheadings that were drawn during thematic framework (Ritchie & Lewis, 1994).

The fifth stage was Mapping and interpretation. This was a process whereby a researcher analyzed the key characteristics as presented in the chart. all data with the same features were put together to shape and interpret the data. All headings and subheadings were arranged in the manner that supposed to be the best in reporting the results of the research (Ritchie & Spencer, 1994).

3.7 Ethical considerations

The permission and ethical clearance for conducting this study was granted by the Ethics Committee of University of Kwa-Zulu Natal (HSS /0153/018M). Permission was obtained from key informants from ward 98 councillor, two area coordinators were contacted before conducting interviews. Participants were informed about the nature of the study. They were informed that participation is voluntary. They were allowed to withdraw at any time if they feel to do so without penalty. They were assured of confidentiality, for example use of pseudonyms. I requested permission to take photographs during the period of data collection. All interviews were conducted at community member's home. The interviews with Ward councillor, eThekweni municipality were conducted in their offices. Except for one coordinator who refused to be interviewed at all. All interviews were conducted in IsiZulu and later translated into English.

3.7.1 Informed consent and confidentiality

The aims of this study were explained to participants when they were approached, and they were asked to participate on a voluntary basis. Participants who were willing to participate were asked to sign an informed consent form. They were also told that they were free to

withdraw should they wish to do so. All participants were assured of confidentiality. This was achieved using pseudonyms and storage of audio recordings in the supervisor's office so that only the researcher, supervisor, and other members of the larger research team could access them if needed. Participants were informed from the beginning that they would not be given any remuneration that this study required their help through their provision of information about their experiences regarding the use and adoption of UDDTs in uMgababa community. Furthermore, they were informed that, the findings of this research could assist policy makers in designing intervention programs aimed at addressing the barriers regarding the use and adoption of UDDTs, infection control in home-based care organizations with HIV/AIDS patients.

3.9 Trustworthiness of the study

Accuracy in this study was achieved through credibility, dependability, confirmability, and transferability (Golafshan, 2003). To achieve dependability, I took careful consideration of the rules and conventions of qualitative methodology for example, all my research questions were clear and in line with the purpose of the research.

3.9.1 Credibility

Credibility means the truth value of this study. This was achieved through the description of rich data which was substantiated with direct quotes from the community members.

3.9.2 Reflexivity

The concept of reflexivity was used to achieve confirmability. This means that I was able to distinguish my own values from those of the community members. By documenting my own assumptions and biases that could influence the interpretation of the data. Thus, I was able to capture the community member's perspectives and experiences.

3.9.3 Transferability

Transferability means that the findings can be transferred to other respondents (Barbie & Mouton, 2004). The findings of this study reflect that the experiences of community members and leaders regarding the adoption and use of UDDTs at the time of the study was conducted. This information was collected from different community members in Ward 98 area 35 in uMgababa. Thus, the findings are an accurate representation of community members and

leaders in the context of the adoption and use of UDDTs. However, careful attention should be paid to contextual factors if the findings are to be transferred.

CHAPTER 4

FINDINGS

4.1 Introduction

The findings are presented under three broad themes identified from the data in response to the objectives. The first theme describes the experiences of community members and leaders regarding the adoption and use of UDDTs in uMgababa. The second theme explains the facilitators and barriers regarding the adoption and use of UDDTs and the third explains how the challenges regarding the adoptions of UDDTs are addresses in uMgababa community. All major themes are presented in bold, sub-themes are italised and the participants, verbatim responses are italised in quotes.

Table 4.1: Participant categories

	Categories	Area	Role in the community	
1	Councilor	Ward 98	To oversee community projects in the community	1
2	Area Coordinators	Ward 98	Overseeing programs and reporting all problems faced by the community to the Ward Councilor and Municipality	2
3	Community members	Ward 98, Area 35	Residents	10
4	eThekwini Municipal	eThekwini Municipal Water and Sanitation Civil Engineering Manager	To oversee water and sanitation projects in the community	2
TOTAL				15

Table 4.2: Socio- demographic characteristics of Community Members

Participant	Gender	Age	Years in occupation	No. of house hold	Occupation	Role in the community
Community member 1.	Male	47 years	2 years	8	Ward 98 Councilor	To oversee community projects in the community
Community member 2.	Male	46 years	9 years	4	eThekwini Municipal engineer	To oversee water and sanitation projects in the community
Community member 3.	Male	43 years	2 years	7	Community coordinator	Overseeing programs and reporting problems faced by the community to the Ward 98 councilor and Municipality
Community member 4.	male	49 years	1 year	8	Community coordinator	Overseeing programs and reporting all problems faced by the community to the Ward 98 Councilor and

						Municipality
Community member 5	Male	43 years	9 years	5	eThekwini Municipality graphic designer	Responsible for designing UDDTs
			Years of residency			Owens a garden
Community member 6.	Female	68 years	30+	7	Pensioner	Yes
Community member 7.	Male	61 years	20 years	6	Pensioner	Yes
Community member 8.	Female	69 years	50+ years	9	Pensioner	Yes
Community member 9.	Male	68 years	30+ years	3	Pensioner	Yes
Community member 10.	Female	45	20+	9	Unemployed	Yes
Community member 11.	Male	59 years	59 years	9	Pensioner	Yes
Community member 12.	Female	42 years	20 years	4	Unemployed	No
Community member 13.	Female	29 years	6 years	12	phlebotomist	No
Community member 14.	Female	33 years	33 years	10	unemployed	No
Community member 15	Male	17 years	30+ years	7	unemployed	No
Total						15

Table 4.3 Summary of the themes and sub-theme

Main theme	Sub-themes
1.Experiences of community members and leaders regarding the adoption and use of	Participants' knowledge of who constructed the UDDTs. Community involvement with the construction of UDDTs Training received regarding the use of UDDTs. Usefulness of the training regarding the use of UDDTs Reality with adoption and use of UDDTs by community members
2. Facilitators regarding the adoption and use of UDDTs	Lack of other options For dignity
3. Barriers to the adoption and use of UDDTs.	The bad design of UDDTs with The stench attracting flies. Poor maintenance Fear of being crime victims. Fear of creepy creatures
4.strategies used to address the barriers regarding the adoption and use of UDDTs in uMgababa community	In frequenting the toilets

4.2 Experiences of community members and leaders regarding the adoption and use of uddts in uMgababa

To understand the experiences of the participants regarding the adoption and use of UDDTs in their community, the community members provided various responses. These responses are grouped into the following sub-themes: Participants' views of who constructed the UDDTs, Community involvement with the construction of UDDTs, Training regarding the use of UDDTs, reality with adoption and use of UDDTs by community members. These themes are discussed in detail below:

4.2.1 Participant's knowledge of who constructed the UDDTs.

As part of South Africa's commitment of providing free and basic sanitation and water to the marginalized communities and prior to the installation of UDDTs in eThekweni municipality, majority of the rural areas were provided with ventilated improved pit latrines (VIPs) and 200-liter water tanks. The increased population within the municipality led to the expansion of the municipal boundaries to include all rural areas that were not previously serviced by the municipality which did not have water and sanitation infrastructure in 2000 (Community member 2, 2021). The expansion caused a sanitation backlog therefore, in the year 2003, the eThekweni Water and Sanitation Unit funded by the municipal infrastructure grant introduced the installation project of UDDTs. The UDDTs were introduced because they were seen as an appropriate and cost-effective technology for the topography of the rural areas within the municipality, to address the politics involved with land ownership that impeded the installation of waterborne sewer systems, and to help reduce the waterborne diseases among the population (Roma and Buckley, 2011).

All Area coordinators and the Ward Councillor confirmed that the municipality was responsible for installing the UDDTs. The ward councilor emphasized that all programs that are implemented in the communities are government funded projects which are implemented by every municipality based on the local budget (Community member 1). On the contrary, when the community members were asked to describe when the toilets were installed and who was responsible for their installation, majority of community members who have been residents in the community for more than ten years could not recall the exact time. Instead, they estimated that they have been in existence for over 15 years. Furthermore, majority of the community members said that they have no idea who was responsible for the project, but

they assumed that the initiation of the project was by the African National Congress (ANC) which is the major ruling party in South Africa. One community member said:

'Even though I'm not certain of the exact time the UDDTs were installed... it has been years since we've had them... legally we know that it is the ANC that installs toilets because it is our party, but we do not know the particular person who initiated the project for sure!' [Community member 6]

4.2.2 Community involvement regarding the construction of the UDDTs

Community members that were present at the time of installation of the UDDTs said that they were not consulted or involved in the decision-making process. The majority said that they just received an announcement from the ward councilor who was serving at the time that their VIPs were going to be upgraded. Based on this announcement, the community members assumed that the upgrade meant the introduction of flush toilets to meet expectations and to address their needs because majority of population in the rural areas are elderly citizens. Unexpectedly, the participants reported that they were not bothered about the lack of participation or consultation with the installation process of UDDTs but instead, they expressed more disappointment in the nature of the upgrade that they received the UDDTs instead of flush toilets. The lack of transparency with the details of the nature of the toilets that the decision makers made to install UDDTs angered the community members. They felt disrespected and uncared for because their expectations were not met. One community member said:

'Most of us that lived here are old people and we cannot move up and down... We thought they were installing toilets that can be flushed...so we will not have to go outside the house to use the toilets...' [Community member 6]

To justify why the UDDTs were the best option for the community, the area coordinators said that they have no influence over the decisions that are made by government it is the Ward Councilors that are involved in the decision-making processes, and they liaise with government on behalf of the community. However, the Ward Councillor emphasized that although they have influence regarding developmental projects that take place in the communities which they serve, the final decision is made by the top government officials, and it is based on the

availability of funding as well as government's priority projects to be implemented. The councillor also explained that although the UDDTs were installed, he was not responsible for their recommendation, but his predecessor could have provided more information in this regard. He said:

'Yes! I am not the one who was serving at the time these toilets were installed but the recommendation was made to government through the municipality that, this community needs toilets. The government made its own decision and sent its own team to install the UDDTs. The job of a Councillor is just to see to it that the project is implemented and completed...we cannot not object...! [Community member1]

4.2.3 Training received regarding the use of UDDTS

The participants provided diverse responses regarding training that they received on how to use UDDTs. Firstly, community members who were already residents of the community and present during the installation reported that they received training. They also reported that the people that installed the UDDTs provided demonstrations that took less than five minutes and without proper details. They said that they were also given metallic buckets for fetching and storing clay as well as a plastic cups to use for pouring the clay into the toilet pot after defecation as shown in the picture



Figure 4.1: A metallic Bucket with sand

More importantly, they said that the installers explained how the toilets should be emptied and emphasized that emptying of the toilets is the responsibility of the municipality. One elderly woman said:

"The installers said that we should not use any newspapers or rags as toilet paper because such materials are not appropriate for such toilets. Then, with the buckets and cups which they gave us... they said that we should only pour a scoop of clay

after defecation to keep flies away and to minimize the odor...they also told us that the municipality officials will be coming frequently to empty the toilets when they are full” [Community Member]

Secondly, the households who were not yet residents of the community at the time the UDDTs were installed said that they learnt how to use the toilets by observing what other residents were doing. A middle-aged participant commented:

“I was not there when they put these toilets, but I have seen how other people are using them, so I have the knowledge and I apply it” [Community member]

On the other hand, the Ward Councillor and Area Coordinators confirmed that all residents that were present at the time when the UDDTs were installed received training.

4.2.4 Usefulness of the training regarding the use of UDDTS

Participants had different perspectives concerning the usefulness of the training regarding the use of UDDTs. The Ward councillor and the area coordinators felt that the training is helping the community members to practice good hygiene and the lack of disease outbreaks in the community is an indicator that the training is useful to the community members. Community member 1 reported:

“I can say that the training is useful, and resident are practicing good hygiene because so far we have never had any disease outbreaks...” [community member 1]

Community members provided expressed their bad feelings. Majority of them felt angry about the nature of the toilets and has caused them to not appreciate the training. They reported that even though the training was provided, they practice good hygiene because it is their obligation, and it is for their own health and safety. One angry community member reported:

“You see! You cannot force something on me and then you claim victory over it... I already know how to practice hygiene!... there is nothing strange about the training that was provided to us...we already know that we must practice good hygiene! They just forced these toilets on us... because we are poor, and we do not have any other choice...what can we do! They just had to do simple demonstrations about these toilets and called it training!!!” [Community member 11]

A few participants emphasized that even though the trainers reported that pouring clay after defecation minimizes the odor, their real experience is different in that, nothing changes, the odor persists and instead the toilets fill up quickly. One of the community members reported:

“...We pour the clay which causes the toilets to fill up easily and the odor still persist...there is nothing good about these toilets” [Community Member]

4.3 Facilitators for the Adoption and Use of UDDTS

4.3.1 of other options and for dignity

While the Ward Councillor and Area Coordinators boast of their ability to mediate between the community and government, they were convinced and feel proud that community members have successfully adopted the UDDTs. On the contrary, these feelings are not mutual with community members. The older population aged between 50 and 70 feel that adopting the UDDTs is inevitable because they do not have other alternatives and they fear encountering snakes or thugs in the bush while practicing open defecation. This population felt that they just use the toilets to maintain their dignity by hiding themselves from the public when defecating and urinating. A community member said:

“.... What can we say? At least we have these toilets to hide ourselves from people even if we do not like them and they are not good at all...” [Older woman aged 67]

The middle-aged respondents aged between 30 and 50 reported that rather than adopting and using the UDDTs, they have found other alter alternatives such as open defecation in the bush or using public toilets which are flushable at the nearest shopping areas.

4.4 The barriers to adoption and use of UDDTs in uMgababa community

4.4.1 Bad design

Most community members are grateful that they have toilets. However, they do not find the design appealing. All community members explained that the pits are too open ‘the holes’ do not hide the faeces after defecating as shown in the pictures below.



Figure 4.2: The side view of a pot & the aerial view of hole of the pot

Such a situation makes the community members felt that their privacy is violated because the next person using the toilet after them can see and smell the faeces. The concerned community members said:

“...We are happy that we had these toilets installed for us, but they are so embarrassing to use because after using them, the next person will know you are from using them because they can see what you have left behind...” [Old woman aged 57]

“But let me say this... besides the fact that we clean them, they also get full very quickly and the seats aren’t very appealing”. [Old Woman aged 67]

Although the design of the toilets was made with good intentions, all community members complain that they are not suitable for children. For instance, the holes are too big, and this makes most of the children not to use the toilets for fear of falling in the hole.

“Aye this toilet is not good for the children. They have big holes children are afraid to use them because the toilet seats are too high, and the toilet seats holes are too big for the children. Children release themselves around the yard”. [middle aged woman 33]

4.4.2 The stench causing the breeding of flies

Besides the repulsive design, all community members complained that the stench from the toilets is very offensive and makes the toilets difficult to use frequently. More so, the stench causes the breeding ground for flies. Because of the stench and flies, majority of the participants explained that they are demotivated to use the toilets and consequently infrequent them. One old woman revealed:

“... I end up not going to the toilet frequently because I get worried that if I go use the toilet, I will come out smelling like the toilet itself, even my clothes will have the smell and my yard and house flooded with flies...” [The old woman aged 59]

4.4.3 Poor maintenance of the toilets

Ideally, all UDDT users are supposed to use plant ash, lime or dry soil/earth as additives also known as bulking agents after defecation lowers the moisture content of the faeces. Particularly, using ash and lime lowers the moisture content enhances the drying process of the faeces, raises the pH and time for the pathogens to die. The used of additives helps to prevent the odor and flies. Considering that most community members are financially constrained to use ash or lime, they used soil/earth as additives and as a result, majority of the participants complained that the toilets fill up quickly and requires more manpower to remove the sludge from the vaults. The participants said that at the time of installation of the UDDTs, the municipality officials promised them that trained workers would be provided upon request to remove the sludge from the vaults for use as manure in their own gardens and to allow all UDDT users to continue to use the toilets. However, the municipality lacks manpower for this exercise to take place as such, the UDDT users are supposed to find their means of removing the sludge from the vaults.

The lack of willingness by the abled men and women in the community to remove the sludge from the vaults is a major setback for adequate maintenance of the UDDTs. Majority of the participants who are old pensioners and heads of their households are the most affected by the lack of manpower to remove the sludge. They explained that their households do not have abled men and women who can remove the sludge from the vaults. They are forced to source for manpower from drug users within the community who are desperate to make money who are willing to remove the sludge at a cost.



Figure 4.3: A man removing the sludge from the vault inside the UDDT without proper PPE



Figure 4.4: A man removing the sludge from the vault the back of the UDDT without proper PPE



Figure 4.5: A man replacing the vault cover after carrying the sludge from the UDDT

To deal with this challenge, the few community members who have decent houses and can afford flushable toilets, have connected flushable toilets within their homes. Unfortunately, the flushable toilets are illegally connected to municipal communal sewer lines which intern block and flood the environment becoming a nuisance in the community. Other community members resort to digging their own shallow pit latrines that are poorly maintained, block roads within the limited spaces in the community. The internal and external appearances are shown below as taken during observations.



Figure 4.6 The external appearance of the pit & the internal appearance of the pit

Most importantly community members who cannot afford flushable toilets nor digging their own pit latrines, they hire young men to dislodge the UDDT or dig pit for the new toilet for them.

4.4.4 Fear of being crime victims

Due to high crime rates in communities that takes even during the day, majority of the elderly women said that they fear using the UDDTs because they are afraid of crime. Considering that the toilets are located outside the house, it is impossible for them to use them in the night. To adapt to this challenge, the participants said that they wait to use the toilet in the morning and alternatively, use buckets to bath and for toileting especially during the night.

“...Nature is what controls us! When it calls, you just must use the toilet...it is bad because we end up waiting till the morning because it is not safe to use these toilets in the night and we use buckets when we are really pressed even during the day...there are some thieves in this community, and they target you when you are going to the toilet...”

4.4.5 Old Infrastructure Harboring Creepy Creatures

All participants complained that the toilets were made with cheap materials and as result, the structures have worn out causing the walls, pots, floor, and roofs to have cracks. The cracks on the roofs and walls cause leakages during rainy seasons and during the sunny seasons, the strong sun rays make the toilets unbearable to use. Furthermore, cracks on the floor harbors rats, creepy insects, and snakes. Below is an example of a structure taken during observations.



Figure 4.7: An old toilet structure for one community member

An old participant said:

“We are having problems..., when we want to use the toilets in the day or at night and decided it is not safe as there are rats which are followed by snakes. I end up not going to the toilets because I get worried and scared that a snake will come out of the hole...” [community member 11.

When asked how they maintain the toilets, they replied that they used to clean the toilet themselves, they used their hoers and shovels or spades when dislodged the UDDT. They used their own equipment when dislodged the UDDTs. However, late in 2017, the municipality came and offloaded in some areas of the community and in certain houses and clean the toilet. Participants indicated they were not sure whether municipal will come and clean again or not.

When asked about their experiences when offloaded the toilet, they mention that it was difficult in such a way that they did not even eat after they have offloaded the UDDT. Some elderly people used to hire some boys to offload for them and pay them.

“It was unpleasant, it was disgusting, and you can’t even eat while they’re cleaning the toilet. I would get sick because the smell would come to me, I would even take a dust mask and cover my face with it and I would put on a rain suit to prevent even a drop from getting onto me, I would work and that would be that. You would take care of your own toilet yourself before people had been hired to clean them.

They reported that the municipality is doing nothing except that they came once and clean the toilets after such a long time. One of the area coordinators confirmed that the municipality came for the first time to clean the toilets and that people were cleaning for themselves for a long time.

Community member 6: aye, the they- you see honestly speaking last year was the first time, it had been the first- time last year. A contract came to clean the toilets and people had been cleaning them themselves once the toilets would fill up, once they were to fill up people would be brave and open the back and clean it themselves.

Community member 14: Aye, (doubting) the municipality only came once “when was that project” (asking herself) maybe it was last year. Municipal cleanse and dislodged all toilets from area.

Participants vary about who was responsible to clean the toilet. Others reported it was the responsibility of the municipality and others said it is their responsibility to clean the toilet. They said they have been cleaning these toilets since they have been installed some may be after six months others after two or three years, they clean it depending on the number of the family members. When the researcher asked the participants about what can be improved about these toilets the participants indicated that they need flushable toilets.

Community member 13: We are appealing to the government to install flushable toilets for us. We need flushable toilets the one which goes together with water, that after defecating it cleans and go.

Community members are not pleased about the UDDTs. When asked where the sludge taken to, they said they dug a hole behind the UDDT, pour sludge inside and close the hole when

they have done. In the situation where the hole is shallow, the chicken came and remove the soil on top of the hole leaving the faeces outside the hole.

“You’ve dug a hole next to the toilet and then you move everything, you move everything, I have been removing waste all the time.” [community member 6].

“I usually dig holes right next to the toilet so that it’ll be closer when I have to offload the faeces, and I would pour it into the hole I dug myself.” [community member 7].

Mmhmmm, then I would bury it with the sand I dug up, and the chickens would search for food and the faeces would resurface (laughing)

When the researcher asked how useful the sludge was the participants reported that it has no use. However, they were aware that it was a manure, but they do not or do not want to eat anything from that manure since they knew and aware that is their faeces.

“Aye my child I don’t know how I would say this is useful, because if crops were to grow from the faecal matter, we wouldn’t eat them as it is in an inappropriate place, it is something... It’s just a place that has no use that is useless (laughing)...” [community member 8]

4.5 Facilitators and barriers regarding the use and adoption of UDDTs and strategies used to deal with the challenges in uMgababa community

For the researcher to explore the facilitators and barriers regarding the use and the adoption of UDDTs and to know the strategies they used to deal with the challenges in uMgababa, the researcher asked the participants about what challenges are they facing when using Urine diverting dry toilets. Participants came up with different perspectives about the use and adoption of the toilets. They said these toilets have bad odor and are easily get full.

Community member 1: sister, the problem we have with these toilets is that they smell.

Community member 9: aye, aye, aye they sometimes smell and you, and you (laughing) and you... can’t even walk in the yard, you can’t even walk in the yard the way it sometimes smells, the way that toilet smells.

Community member 11: the problems I face with these toilets would be the odor which makes.

Others they perceive these toilets as poorly maintained. While others have the challenges of the toilet doors and pipes being stolen. Some participants complained that other community members do not know how to use these toilets.

Community member 14: as I said that its poor maintenance is a challenge, no, it's unclean shame aye.

Community member 15: Sabelo: the challenges are that when it is full is our duty to offload it, even though we are no longer using it.

Some participants complained saying that they are facing challenges of the stilling of the toilet doors. They said the stilling of the doors caused by the urge of buying woonga. The gang still the doors and sell them to the community to get money to buy woonga.

Community member 7: ayyeee.... I would say like the stealing of doors, it's like that you see, they usually steal doors, just like that.

Community member 12: not maybe they do have problems regarding doors, they say the toilet doors never last because they fall off, water goes into the toilets which makes it hard to want to clean the toilet, but the community cleans them regardless

There are participants who were saying that using UDDTs is a problem because if a bypassing person asking to use the toilet it is not easy to always tell the person to use sand because you do not know what he or she is going to do in the toilet. Also, there are some people who do not know how to use these toilets. They defecate in the area where they supposed to urinate on it.

Community member 12: the problem we face is that there are people who still don't know how to use these toilets, these toilets have a defecating seat as well as a urinating seat, others either don't pay attention and they defecate in the urinating seat.

When they were asked what the cause of these challenges is the participants perceive the stilling of the doors to be the lack of finance in the community and the bad odor to be the fact the faeces are loaded there and not been removed while others they are still confused about the course as they said they do not understand what the course is because some days you find toilet smelling on the other day is not smelling.

The participants who were complaining that toilets are smelling they perceived the bad odor as caused by different condition, such as:

Community member 6: it's caused by the fact that faecal matter is not being flushed away, and the smell travels to us.

Community member 14: Is that they don't clean here, what I say is this toilet has not been clean in a right way. The way of desludging is not a good way, or they do not kill it in a right way. The standard of the toilet is very low.

Community member 9: aye, I don't know sister, I wouldn't know (whispering). Some days it smells and others it doesn't (loudly). Some days it gets so bad (disgusted), some days it gets so bad. When you try walk in the yard, it's the only thing that you smell, nothing else

Those who have the challenge of the stealing of the toilet doors and seats argue that this action is cause by lack of finance in the community which lead to gang stars stealing.

Community member 7: the stealing of doors is caused by hobos. Hobos are these kids that smoke 'Woonga', when they want their next fix, they steal the... and including toilet doors, and they sell them to get what they want.

Some participants who were still confused about the cause of the bad odor argue that they are still confused about the course as they said they do not understand what the course is because some days you find toilet smelling on the other day is not smelling.

Community member 9: aye, I do not know sister, I wouldn't know (whispering). Some days it smells and others it doesn't (loudly). Some days it gets so bad (disgusted), some days it gets so bad. When you try walk in the yard, it's the only thing that you smell, nothing else.

When the researcher wanted to know the ways, they normally use to deal with these challenges the participants responded saying that they have accepted the conditions of UDDTs since they have nothing to do about their situations because of different reasons such as:

Community member 6: there's nothing you can do, you take Jay's fluid and dilute it with water and sprinkle it in the toilet just to try tone the smell down, or if you have ash, you pour it in and the smell decreases.

Community member 7: (deep breaths) aye, there is no way, there is no way to deal with these challenges.

There is nothing I can do, what we're told to do is to pour sand, and I keep pouring sand not that this stops the odor, it does not.

When the researcher asked the participants how these challenges could be dealt with the participants answered and say that installing the flushable toilets will resolve the problem of bad odor

Community member 6: these problems would be eradicated by the installation of flushable toilets, yes, the problems would go away

Community member 11: in my own opinion I would say these toilets should fail, all of them should be demolished and we should have new ones installed, flushable ones.

Some they were saying that they need local coordinator who will coordinate between the community and water and sanitation specifically about the toilet problems.

Community member 14: that maybe they must lift their socks on maybe what should we do, or they must send people to coordinate with us to be coordinators like ancestors coordinating between you and God something like that. Since we do not know those who are in high positions, they must have their own assistants to coordinate between us and them and take our complaints that, hey, your people are crying with one, two, and three.

4.6 The barriers and reason for the community using the UDDTs

The researcher continued asking the participants if there are barriers which prevent community members from using the UDDTs, the respondents confirms that yes there are such times when they feel like not going to the toilet even if they are pressed. They fear for their safety. This is because firstly the toilet smells, secondly, it is outside it is not easy to go there especially at night because there are mice, snakes, and thugs. The participant said it is difficult to go to the toilet when it is raining, since some toilets have no doors, no proper roof.

Community member 9: yeah, you would not want to go because you know that if you went there, you would come back smelling like the toilet itself, you see, as if I was sitting in the faeces (laughing) but I was sitting...(laughing) you see what I mean, that's the problem we have, that's the problem we have.

When the researcher asked the participants if any action is there taken to remove the odor all respondents said no action has been taken except that they saw people come in the morning few months ago to offload the toilets which they have no idea whether they will always come, or it was a once off thing.

Community member 9: no, there are no action been taken (angrily)

When the researcher asked the participants how best can these challenges be addressed? The participants replied saying that the best way is for the government to install the flushable toilets.

Community member 10: if the government were to give us flushable toilets, when they install toilets, we would be very grateful. The toilets are a problem, that is where we are still lacking. That is where we are still lacking because when they're flushed you can have water pipes connected to the house either through the back of the house or on the side, and know that your toilet is indoors, finish. You know that you will flush your toilet and that will be that. It would be raining outside, and you still must go outside, do you see, you see, when you come back you smell like a toilet (laughs)

Community member 1: we could have flushable toilets installed for us.

CHAPTER 5

DISCUSSION

5.1 Introduction

This study aimed at understanding the adoption and use of UDDTs in uMgababa community in eThekweni Municipality as experienced by community members and leaders. The study was guided by the Ecological System Theory (EST) of Personal Development by Uri Bronfenbrenner (Bronfenbrenner, 1979). The theory stipulates that, personal development is affected by everything surrounding the environment (Bronfenbrenner, 1979). The EST has five different levels namely: micro systems, mesosystems, Exosystem, macro system, and Chronosystem which are responsible for human or personal development (Bronfenbrenner, et al., 1979). In behavioral health, the EST is used to investigate how contextual determinants of health such as socioeconomic, gender, and other social cultural influences add to individual behavioral health and wellbeing of or its absence (Richard, 2011).

This study utilized four levels of influence of the EST: the micro, meso, exo and macro-systems levels which are discussed in detail in the theoretical framework chapter. As applied to this study, uMgababa community and its members belong to the micro-system level which is the first level of influence in shaping the behavior of people towards the adoption and use of UDDTs as the main sanitation facilities found in uMgababa community. The existence of UDDTs as sanitation facilities within uMgababa community can affect community members either positively by making them to adopt and use them effectively or, negatively the community members may choose not to adopt nor use the UDDTs.

Secondly, the area coordinators have been placed at the meso-system level which is the second level of influence. The area coordinators have been placed on this level because they oversee overseeing community programs hence, they are policy implementers who have power to influence the community members regarding the adoption and use of UDDTs in the community. The experiences area coordinators regarding the adoption and use of UDDTs were also explored.

Thirdly, on the Exo-system level, are Ward councillors are policy makers who mediate between the government and the people of uMgababa community. Their experiences regarding implementing UDDTs as the best choice of sanitation facilities for community members in uMgababa community were explored. Lastly, on the macro-system level are two

officials working at eThekweni Municipality level. The two municipality officials oversaw installing the UDDTs in uMgababa community. They were interviewed to understand their experiences regarding the adoption and use of UDDTs by the community members of uMgababa. Below is a figure that summarizes all level of influence and who is placed at each level.

5.1.1 Experiences of community members and leaders regarding the adoption and use of UDDTs

The micro-level: according to the EST this is the first level of influence of shaping human development or behavior in that, the individual is not a mere recipient of the experiences received when socializing with the social agents but, the individual also contributes to the construction of the environment (Bronfenbrenner & Ceci, 1994). As applied to this study, the community members belong to this level because they are the users of the UDDTs.

The community members revealed that UDDTs were a project initiative of the African National Congress (ANC) which is the ruling party in South Africa. These findings indicate that community members have an idea that government is responsible for community projects. However, it is intriguing that the community members were not consulted about the installation of UDDTs by the government instead, it came to their attention as an announcement. Furthermore, the training about the use of the UDDTs was more of a demonstration which lasted for five minutes. A lack of involvement and inadequate training angers the community members who are the users of the UDDTs and consequently, resent the UDDTs. These findings are consistent with the findings by Trimmer et al (2016) who stated that, when the users of a specific sanitation facility have adequate knowledge about it, they are likely to adopt and use them. Furthermore, Chunga and colleagues (et al, 2016) found that the main facilitators for adoption and use of specific sanitary facilities or technology is the constant need for its social acceptance and its ability to incorporate local knowledge. In this study because the users were not involved in the designing or implementation of the UDDTs, it could mean that UDDTs do not incorporate any local knowledge at all hence the reason why they are being resented by the community members. Resentment of UDDTs by the community members is an impediment to achieving sanitation for all as stipulated by the sustainable development goal number six.

5.1.2 The meso, exo and macro-level: the area coordinators at the meso-level, the ward councilors at the exo-level and the municipality officials at the macro levels are policy implementers who have the power of influence regarding the adoption and use of UDDTs by community members. Yet all these officials claim that they were not involved in the decision-making process for introducing UDDTs as an intervention to address inadequate sanitation in Umgababa. One can conclude that, there is a lack of consultation and engagement from the government and thus the government uses the top-down approach in designing interventions for the communities. Moreover, lack of feedback from the end-users about any intervention shows a lack of transparency on the part municipality. These nuances about the role of policy implementers who are community members, gives a limited picture of what really transpires in policy formulation by the government. These findings call for further exploration to establish the role of community leaders in policy formulation and implementation.

5.2 Facilitators regarding the adoption and use of UDDTs

5.2.1 The micro-level: community members explained that although they resent the UDDTs, they use them for the sake of dignity and for lack of other better options such as flushable toilets which they cannot afford to install by themselves. The issue is that community members need to be involved in decision making about them even though they are poor and have nothing. These findings are consistent with those found by Jenkins, & Scott, (2007) who found that community members from low- and middle-income countries are likely to adopt sanitation facilities for privacy. The use of UDDTs for dignity and lack of better options is an indicative for a need to be involved and be heard.

These findings call for further investigations to understand the exact procedures and how such procedures are followed with issues relating to community engagement when implementing sanitation interventions.

5.2.1.1 The meso, exo and macro-level: the area coordinators at the Meso-level, the ward Councillor at the exo-level and the municipality officials at the macro level attributed the use of UDDTs by the community members to the training that was given to the community members. Such claims from the policy implementers may seem like a positive response to a common eye yet it shows that that there are no mechanisms in place that help to get feedback from the community members about the adoption and use of UDDTs. A lack of consultation

and engagement from the end users of an interventions contributes to wrong policy decisions by the policy makers which defies the processes involved for interventions to work. Moreover, lack of feedback from the end users about any intervention shows lack of transparency on the part of the municipal. Such claimed victories can cause the policy makers to spend money unnecessarily to end up designing interventions that do not address the real and intended health issues within communities.

These findings suggest that there is a need to investigate further on the evaluation processes involved in selection of the specific sanitation interventions such as the UDDTs for communities.

5.3 Barriers to the adoption and use of UDDTs

5.3.1 The micro-level: the finding of this study shows that community members have valid concerns on the quality of sanitation and ablution. Their concerns are very clear as they are expected modern sanitation services. They reject them but use them out of necessity.

More importantly, the training regarding how to use the UDDTs, was only a demonstration of which at the end of it, they were told that all the maintenance and emptying of the sludge was a responsibility of the municipality. Evidently, all the barriers emanate from a lack of involvement by the policy makers to get the buy in of the community members and to establish the social appropriateness of the UDDTs as a technology for Umgababa members. Findings about failure to adequately train the community members about the use of urine and the sludge from the UDDTs, and failure to establish the cultural inappropriateness of sanitation facilities for the users by the policy makers and implementers is consistent with the findings by Akumuntu et al, (2017)

5.3.2 The meso, exo and macro-level: The area coordinators, the ward Councillor and the municipality officials were adamant that the UDDTs have been adopted but they are not liked by community members. It is possible that such claims are because of denial of what is really happening on the ground by community members. Alternatively, these claims could be more political especially that all the positions of these policy implementers have political inclination. It is an area that needs to be investigated further to determine the influence of political inclination and implementation of community interventions.

5.4 Strategies used to address the barriers regarding the adoption and use of UDDTs in UMgababa community

5.4.1 The micro, meso, exo and macro-level: The coping strategies were more on the micro-level by the community members who revealed that despite all the challenges that they face with adopting and using the UDDTs: the bad design of UDDTs; the stench which consequently attract flies; poor maintenance; fear of being victims' crime and fear of creepy creatures like the snakes, they end up paying young men to empty the sludge which is expensive for them. Moreover, because the UDDTs are in bad condition, they are disgusting to use hence majority of the community members do not use the toilets regularly. The finding that community members do not use the toilets regularly is new and have consequences. For example, not using the toilet regularly could cause constipation which consequently cause other health problems. More importantly, this could cause open defecation by community members. We have learned that Access to adequate sanitation prevents various diseases. To mention some; diarrhoea (Mara, Lane, Scott, & Trouba, 2010). Cholera, dysentery, hepatitis A, typhoid, and polio (WHO & UNICEF, 2017; Roche, Bain, & Cumming, 2017). Moreover, that access to sanitation reduce Tropical diseases. Those diseases are transmitted through oral faecal route. These are trachoma. secondly, soil transmitted helminthiases. And thirdly, schistosomiasis (Resnikoff, et al. 2004; Emerson et al., 2004; Melese et al, 2008; Cook, 2008; Roma, E., & Pugh, I. (2012). We also learned that the above diseases cause different sicknesses in people. Trachoma, an infection of the eyes cause blindness (Phiri et al, 2017). Soil transmitted helminthiases is responsible for causing decreased and stunting growth in children (Albonico et al, 2006). And that schistosomiasis cause cancer of the bladder (Hotez et al., 2006; Gall et al., 2017). These findings are important for policy makers to conduct an impact assessment. Therefore, prompt action needs to be taken to help address the lack of adequate adoption and use of UDDTs by the community members and ultimately improve the wellbeing of community members.

CHAPTER SIX

CONCLUSION, RECOMMENDATIONS AND LIMITATION OF THE STUDY

6.1 Recommendations for future study

The issues around UDDTs are varied. To create accurate policy, there is a need to further explore these issues. Further studies could be conducted on the broader aspect of community needs and policy makers with regards sanitation systems. Moreover, specific sanitation system desirable by community members. Therefore, investigations to understand the exact procedures and how such procedures are followed with issues relating to community engagement when implementing sanitation interventions is needed. Furthermore, Mechanisms for engagement from the community members about the use and adoption of UDDTs is also needed. This will help the government to avoid making wrong policy decisions by the policy makers. Moreover, the area needs to be investigated further to determine the influence of political inclination and implementation of community interventions.

6.2 Limitations of this study

The limitation of the study is that this was a qualitative study with the sample of only few community members. Therefore, care should be taken in generalizing these findings to another context. Also, all community members were accessed through snowball sampling, a technique that uses referrals hence create a room for bias in that Ward councilor and area coordinators might have suggested community members they have relationship with.

6.3 Conclusion

Although the area coordinators, the ward Councillor and the Municipality officials are policy implementers who can potentially influence the adoption and use of UDDTs by community members, the fact that all these officials claim that they were not involved in the decision making process for introducing UDDTs in uMgababa, one can conclude that, the government does not take into consideration about the feelings of the end users of interventions These findings call for further investigations to establish the role of community leaders in policy formulation and implementation.

The use of UDDTs for dignity and lack of better options is a cry for help and a need to be involved and be heard. Therefore, investigations to understand the exact procedures and how such procedures are followed with issues relating to community engagement when implementing sanitation interventions is needed. Furthermore, Mechanisms for engagement from the community members about the use and adoption of UDDTS is also needed. This will

help the government to avoid making wrong policy decisions by the policy makers. Besides, lack of feedback from the end users about any intervention shows lack of transparency and unethical breaching the right of citizens to informed consent. Such claimed victories can cause the policy makers to spend money unnecessarily to end up designing interventions that do not address the real and intended health issues within communities. Therefore, a need to investigate further on the evaluation processes involved for specific sanitation interventions such as the UDDTs is necessary.

All the barriers from the findings emanate from a lack of involvement by the policy makers to get the buy in of the community members and to establish the cultural appropriateness of the UDDTs as a technology for Umgababa members. The area coordinators, the ward Councilor and the municipality officials were adamant that the main barrier to low adoption and use of UDDTs in Umgababa is due to bad attitudes of community members. It is possible that such claims are because of denial of what is really happening on the ground by community members. Alternatively, these claims could be more political especially that all the positions of these policy implementers have political inclination. It is an area that needs to be investigated further to determine the influence of political inclination and implementation of community interventions.

These findings are important for policy makers to conduct an impact assessment and calls for prompt action to be taken to help address the lack of adequate adoption and use of UDDTs by the community members and ultimately improve the wellbeing of the people.

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APPENDIX 1: INTRODUCTORY LETTER TO THE PARTICIPANTS



Good morning/afternoon, my name is Thulisile Shange, I am Psychology student at the University of KwaZulu-Natal, 4041, Durban, South Africa. I am conducting a study on Urine Diverting Dehydration Toilets in uMgababa community in eThekweni Municipality: the experiences of community members and leaders. The findings will assist policy makers in designing policies aimed at improving sanitation adoption and use among community members. Professor Akintola Olagoke and Dr Lydia Hangulu are my supervisors.

I would like to speak to you only if you agree to speak to me. The discussion will take about 40 minutes to one hour. You will be asked about the adoption and use of urine diverting dehydration toilets, the challenges, causes and the kinds of strategies that are used to deal with the challenges in uMgababa community. I will need your permission to use audio-tape recorders to capture the discussion. All information that you give will be kept confidential and my supervisor's offices. Information will be used for research purposes only and raw data will be destroyed after five years. Also, we will not use your actual name or designation in reporting the findings of the study but will use disguised names to make sure that no one links the information you will give us to you. You will not be given any monetary payments for participating in the study but your organizations, communities and the government will benefit from this study immensely.

Your participation in this study is voluntary and you have the right not to participate if you do not want to. If you agree to take part in the study, you may sign an informed consent form as an indication that you were not forced to participate in the study. Please note that you will not be at any disadvantage if you choose not to participate in the study. You may also refuse to answer questions if you don't feel comfortable answering them. You may also end the discussion at any time if you feel uncomfortable with the interview. In case you want to

withdraw information that is given after the interview, you can call my supervisor Professor Akintola on email: akintolao@ukzn.ac.za and Dr Hangulu Email me on: Hangulul@ukzn.ac.za

Yours Sincerely,

Thulisile Shange

APPENDIX 2: CONSENT FORM

I have read the information about this study, and I have understood the explanations of it given to me verbally. I have had my questions concerning the study answered and I understand what will be required of me if I take part in this study. I hereby agree to take part in this study.

Signature.....

Date

ZULU VERSION

Incwadi Yemvume

Mina, Sengfundile mayelana nokuqukethweihlolovo noma
ngiyaqondaizincazelozenhlolovonjengobangazisiwe futhi ngachazelwangazo ngomlomo.
Isiphenduliwe imibuzo yami ngalenhlolovo, ngakhongiyagondaukuthiiyiniebhekekekimina
uma ngibayingxenye yalenhlolovu

Signature:

Usuku:.....

APPENDIX 3: INTERVIEW GUIDE FOR THE HOUSEHOLDS

Main questions	Possible questions	Follow up questions	Probe questions	Follow-up Probe questions
Training about the use of UDDTs	What kind of training/education did you receive regarding the use of the toilets	Who provided the training/education?	How long was the training?	
	How do you feel about the presence of UDDTs?	In what ways is the toilet useful to you and your family?	What was covered during the training/education?	
Adoption and use of UDDTs	In what ways have the toilets not assisted you with your family	How are the toilet maintained? What is the role of the Municipality in maintaining the toilet?	How do you feel about the maintenance process of the toilet? What could be improved about the maintenance of the toilet?	How many times is it emptied? Where is the sludge taken to? How useful is the sludge?

<p>2. What are the facilitators and barriers regarding the adoption and use of UDDTs and strategies used to deal with the challenges in Umgababa community?</p>	<p>What challenges do you face with the use of the toilets?</p>	<p>In your opinion, what are the causes of these challenges?</p>	<p>How do you deal with these challenges?</p>	<p>How best could these challenges be dealt with?</p>
<p>3. Barriers and reasons</p>	<p>Are there instances when people opt not to use the toilets?</p> <p>Please narrate stories of how such instances occurred.</p>	<p>What are the main reasons for people not wanting to use the toilets?</p>	<p>What actions have the people taken to address this kind of challenge?</p>	<p>How best can this challenge be addressed?</p>

APPENDIX 4: OBSERVATIONAL GUIDE OF THE UDDTS

1. Do the toilets have a roof?
2. Does the toilet have a door?
3. Do the toilets have a vent pipe?
4. Do the toilets have a fly screen on the vent pipe?

5. Does the toilet have a pedestal cover?
6. Does the toilet have a pedestal cover in place?
7. Does the toilet have covers at the back?
8. Does the toilet have any smell?
9. Do households have where to pour the sludge?
10. How far is the toilet located from the main house?
11. Does a toilet have a hand washing facility?



8 March 2018

Mrs Thulile Shange 216073228
School of Applied Human Sciences
Howard College Campus

Dear Mrs Shange

Protocol reference number: HSS/0153/018M
Project title: Adoption and use of Urine Diverging Dehydration Toilets in Umgababa Community in eThekweni Municipality: Experiences of Community members and leaders

Full Approval – Expedited Application

In response to your application received on 21 February 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Shanika Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor: Dr Dlagoke Akintola & Dr Lydie Hengulu
cc Academic Leader Research: Professor Joan Steyn
cc School Administrator: Ms Ayanda Ntuli

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