FACTORS CONTRIBUTING TO UNINTENDED PREGNANCIES AMONG TEENAGE GIRLS IN THE INFORMAL SETTLEMENT OF MUKURU KWA NJENGA, NAIROBI, KENYA

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DECLARATION AND APPROVAL

Declaration by Candidate:

This thesis is my original work and has not been presented for a degree at any other university.

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DEDICATION

This work is dedicated to my beloved daughter, Winnie Joy Nikita, and my son, Damian Lillard Omugah, who inspire me every day. I also honor my late mother, Winnie Atieno, whose passion for education set a high standard for me. My heartfelt gratitude goes to my uncle, Joshua Amolo, whose unwavering belief and encouragement guided me through challenging times. Finally, I want to acknowledge my cherished sister, whose steadfast support, though it may seem subtle, has been invaluable to me.

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ABSTRACT

Background: Unintended teenage pregnancy is a significant public health issue, particularly in Africa harboring 93% of teenage pregnancies. In Nairobi, 18% of teenage girls are affected, especially in informal settlements like Mukuru Kwa Njenga.

Objectives: The study seeks to explore and analyze underlying contributors to the occurrence of unintended pregnancies among teenage girls living in the informal settlement of Mukuru Kwa Njenga, Nairobi, Kenya. It focuses on key determinants including the level of knowledge and awareness regarding contraceptive methods, the accessibility and access to RHS, prevailing socio-economic conditions, and the influence of substance abuse. By examining these interconnected factors, the study aims to provide a deeper understanding of the drivers behind unintended teenage pregnancies in this informal urban context.

Methods: A cross-sectional mixed methods study was employed, combining quantitative and qualitative approaches. The sample size of 424 adolescent girls was determined using Fisher's formula, accounting for a 10% non-response rate. Data were collected from 311 participants using structured questionnaires, achieving a response rate of 73.3%. Qualitative data were collected through in-depth interviews with teenagers who experienced pregnancies. Quantitative data were analyzed using SPSS Version 24.0, whereas qualitative data were transcribed and coded with NVivo 9 software.

Study Outcomes: The study found that 62.7% of respondents had experienced unintended teenage pregnancies. Logistic regression identified significant predictors, including lack of discussions about protection (OR=0.044), limited contraceptive knowledge (OR=51.731), restricted access to contraceptives (OR=0.106), low household income (OR=31.022), lower parental education, and substance abuse, particularly alcohol use (OR=17.333).

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ABBREVIATIONS

AIDS:	Acquired Immunodeficiency Syndrome
CDC:	Centre of Disease Control
ESRC:	Ethics and Scientific Research Committee
FGDs:	Focus Group Discussions
HIV:	Human Immunodeficiency Virus
KICD:	The Kenya Institute of Curriculum Development
KNBS:	Kenya National Bureau of Statistics
LMICs:	Low- and Middle-Income Countries
MDGs:	Millennium Developmental Goals
MOH:	Ministry of Health
NACADA:	National Authority for the Campaigns Against Alcohol and Drug Use
NGOs:	Non-Governmental Organizations
RH:	Reproductive Health
SPSS:	Statistical Package for Social Science
SRHR:	Sexual and Reproductive Health and Rights
STDs:	Sexually Transmitted Diseases
WHO:	World Health Organization

DEFINITION OF TERMS

Teenager: A teenager is a young person between the ages of 13 and 19.

Pregnancy: The state of carrying a developing embryo or foetus within the female body (Health Topics, n.d.)

Unintended: Mistimed pregnancy that occurs earlier than desired. Between the ages of 13 and 19 years, adolescence is characterised by unique physical, social, psychological, and reproductive health traits.

Teenage Pregnancy: This study defines teenage pregnancy as the stage of gestation experienced by a teen girl, aged 13 to 19 years.

Unintended Pregnancy: An unintended pregnancy is one that occurred when a woman wanted to become pregnant in the future but not at the time she became pregnant ("wanted later") or one that occurred when she did not want to become pregnant then or at any time in the future ("unwanted").

Unintended Teenage Pregnancy: A pregnancy that occurs in a girl aged 13 to 19 and is considered unintended when she either wanted to become pregnant later in life but not at the time she conceived ("wanted later") or did not want to become pregnant at any time in the future ("unwanted").

NOTE: Adolescents and teenager are used interchangeably in this study.

CHAPTER 1: INTRODUCTION

1.1 Overview

This chapter introduces the study by providing background on issue of unintended teenage pregnancies in the informal settlement of Mukuru Kwa Njenga, Nairobi County. It outlines the research problem, objectives, and significance, while also describing the socio-economic context of the study area. It presents the research questions and identifies key factors influencing unintended pregnancies among teenage girls. It sets the foundation for understanding the study's scope and its potential contribution to addressing unintended teenage pregnancies.

1.2 Background

Unintended pregnancy among teenagers remains a significant public health global concern, particularly in developing regions like Sub-Saharan Africa (SSA) (Mumah et al., 2020). Despite declining fertility rates worldwide, teenage pregnancies continue at alarming levels, accounting for approximately 25% of all pregnancies (Birhanu et al., 2019). Most teenage pregnancies often lead to adverse outcomes like disrupted education, enhanced susceptibility to sexually transmitted infections (STIs), and socio-economic hardships that perpetuates cycles of poverty (Akinyi, 2020; Xavier et al., 2018).

In SSA, teenage pregnancy rates are disproportionately high, with over 90% of global cases occurring in the region (Yakubu & Salisu, 2018). The situation is particularly severe in informal settlements, where socio-economic deprivation, limited access to healthcare, and

low levels of education heighten the risk of early and unintended pregnancies. This trend is evident in Kenya, especially in Nairobi's informal settlements like Mukuru Kwa Njenga, where teenage pregnancy rates are significantly high (Mumah et al., 2020). Motherhood has traditionally been viewed as a significant rite of passage across different cultures and genders, marking a crucial transition into nurturing and caregiving roles (Birhanu et al., 2019). However, when this role is assumed by teenagers particularly those living in informal settlements it becomes a major social and public health challenge (Birhanu et al., 2019). Informal settlements, also known as slums or squatter areas, are defined by poor housing conditions, dense population, and lack of access to basic needs, healthcare, and education (Osore, 2016; Edwards et al., 2025). Forty-nine in-depth-interviews were carried out with female adolescents aged 15–19 years. Teenagers of varying sociodemographic characteristics were selected purposively including those who had been pregnant before, married and unmarried. The data from the study was transcribed from the audio recordings, translated verbatim from Kiswahili to English and analyzed thematically based on the issues that were standing out. Results linked unintended pregnancy to sexual violence, inconsistent contraceptive and socio-economic lack use among the teenage girls. Lack of sufficient parental guidance and household conflicts pre-disposed girls to risky sexual behavior and early sexual exposure. The choice of aborting or carrying a pregnancy to term was inspired by concerns about school disruption with low return to school rate after childbirth, shame and stigma and was not dependent on just one single factor. The girls reported that having an unintended pregnancy to term disrupts teenage schooling, with few girls returning to school after childbirth they decide to carry a pregnancy to term, teenagers used several coping strategies like not going outside till delivery, putting the child for

adoption upon delivery and moving away from usual residence. To prevent teenage pregnancy comprehensively, addressing socio-economic lack, knowledge on contraceptives and addressing sexual can help curb unintended pregnancy in adolescents. These environmental and infrastructural deficiencies contribute significantly to the vulnerability of teenage girls to unintended pregnancies. (Edwards et al., 2025).

In Mukuru Kwa Njenga, Nairobi, teenage pregnancy extends beyond health concerns, reflecting a complex web of social issues. Teen girls in this informal settlement face challenges such as poverty, limited education, exposure to violence, and substance abuse factors that lead to early sexual activity and unintended pregnancies. Since 2018, the area has recorded 186 births among girls aged 12–19, along with possible cases of unsafe abortion (Akinyi, 2020). Testimonies from teenage mothers cite drug use, peer pressure, and domestic violence as contributing factors (Akinyi, 2020). These trends mirror broader patterns across SSA, where socio-economic conditions and cultural practices significantly influence adolescent pregnancy rates. Inadequate access to contraceptives and comprehensive sexual education aggravates the issue, rendering teenagers uninformed to make informed reproductive choices (Amoadu et al., 2022). The consequences are severe, often including maternal and infant mortality, school dropout, and the entrenchment of poverty (Nungo et al., 2025)

Knowledge of contraceptives is a crucial factor in preventing unintended teenage pregnancies, yet cultural and social norms often bars discussions on sex education, leading to misinformation among adolescents (Harada et al., 2024). In many African communities, perceptions of contraceptives are shaped by cultural beliefs, such as associating large

families with wealth, and widespread myths about side effects, which reduce uptake (Li et al., 2023a; Sapkota, 2024). In informal settlements like Mukuru Kwa Njenga, limited access to reproductive health services due to inadequate healthcare systems, economic constraints, and unfriendly environments, further exacerbates the problem (Xavier et al., 2018). While efforts such as youth-friendly centers and mobile clinics have been introduced, they remain insufficiently accessible, allowing the cycle of unintended teenage pregnancies and associated socio-economic hardships to persist (WHO, 2024a).

Teenage pregnancies in informal settlements like Mukuru Kwa Njenga are strongly influenced by socio-economic factors, with poverty pushing many adolescent girls into early sexual relationships, often with older men who provide financial support but create power imbalances that limit girls' control over contraceptive use (Bozzini et al., 2020). Additionally, economic hardship compels families to arrange early marriages, forcing girls into motherhood before they are physically or emotionally ready (Cheedalla et al., 2020). These conditions make unintended pregnancies nearly unavoidable and further entrench social and economic marginalization, limiting the prospects of affected teenage girls.

Substance abuse is equally a significant contributor to unintended teenage pregnancies in slum environments, since use of drugs often leads to risky sexual behavior and reduced contraceptive use (WHO, 2024a). In Mukuru Kwa Njenga, rising substance abuse is driven by poverty-related stress, peer pressure, lack of recreational alternatives, and easy access to drugs and alcohol (Mukabana et al., 2024). Addressing this issue through community-based interventions is essential to reducing unintended pregnancies among marginalized youth (Theuri, 2024). Given the high rates of adolescent pregnancies in areas like Mukuru

Kwa Njenga, this study aims to explore the extent and drivers of these outcomes including limited contraceptive knowledge, poor access to reproductive health services, socio-economic hardships, and substance use to inform evidence-based strategies for policymakers and stakeholders.

1.3 Statement of the Problem

Unintended teenage pregnancy is a pressing global public health and socio-economic issue, particularly in developing regions. Worldwide, approximately 25% of adolescent girls experience pregnancy, often leading to adverse outcomes such as unsafe abortions, health complications, school dropouts, and long-term poverty (Bewa, 2021; Birhanu et al., 2019). In Sub-Saharan Africa, the burden is disproportionately high, accounting for over 90% of global teenage pregnancies, with rates reaching 143 per 1,000 girls aged 15–19 (Yakubu & Salisu, 2018). Kenya mirrors this trend, with teenage pregnancy prevalence in Nairobi County at 18%, meaning nearly 1 in 5 girls aged 15–19 are pregnant or already mothers (Bewa, 2021).

Mukuru Kwa Njenga, one of Nairobi's largest informal settlements, presents a unique context for this study due to its dense population, pervasive poverty, and limited access to youth-friendly reproductive health services. These challenges are compounded by high rates of drug and substance abuse, inadequate sex education, and widespread misinformation about contraception (Theuri, 2024; Xavier et al., 2018). While previous studies have examined teenage pregnancy in Kenya broadly, they often overlook the nuanced interplay of socio-economic conditions, cultural factors, and service accessibility in slum settings like Mukuru Kwa Njenga. This knowledge gap hinders the development

of targeted interventions. Without focused research, unintended pregnancies among adolescents in such settings will likely persist, perpetuating cycles of poverty, poor health outcomes, and limited life opportunities.

1.4 Research Questions

1. What is the influence of teenage girls' knowledge of contraceptive methods on the occurrence of unintended pregnancies in Mukuru Kwa Njenga?
2. How does access to reproductive health services influence the occurrence of unintended pregnancies among teenage girls in Mukuru Kwa Njenga?
3. How do socio-economic factors influence the occurrence of unintended pregnancies among teenage girls residing in Mukuru Kwa Njenga?
4. What is the relationship between substance abuse and the occurrence of unintended pregnancies among teenage girls in Mukuru Kwa Njenga?

1.5 Objectives of the Study

1.5.1 General Objective

To investigate the factors contributing to unintended pregnancies among teenage girls aged 13–19 living in Mukuru Kwa Njenga informal settlement, Nairobi County, Kenya.

1.5.2 Specific Objectives

1. To determine the relationship between knowledge on contraceptives methods and the occurrence of unintended pregnancies among teenage girls in Mukuru Kwa Njenga.

2. To examine the influence of accessibility to reproductive health services on the occurrence of unintended pregnancies among teenagers in Mukuru Kwa Njenga.
3. To explore how socio-economic factors, influence the occurrence of unintended pregnancies among teenage girls residing in Mukuru Kwa Njenga.
4. To determine the relationship between substance abuse and the occurrence of unintended pregnancies among teenage girls in the specified locale of Mukuru Kwa Njenga.

1.6 Justification of the Study

Unintended teenage pregnancies come along with very many problems that affect the victims in many ways. The effects have been noted to have physical, emotional, economic, and adverse health effects on their families and themselves. Many girls drop out of school because of a lack of parental support in the informal sector (Hadley, 2018). Others have contracted sexual diseases that have affected their health and that of their children (Maemeko et al., 2018). With this trend, the teenage group faces difficult health issues that might either deplete their numbers or increase suffering for them (Mumah et al., 2020). This is an age whereby they are supposed to be exposed to knowledge and education to help them better their future for the good of posterity. Therefore, the study seeks to investigate the prevalence, pattern, and predisposing factors to unintended teenage pregnancies among girls in the informal settlement Mukuru Kwa Njenga and to devise means through which teenage pregnancies can be mitigated in the area to curb the effects of unintended pregnancies among the teenage mothers.

The number of unintended teenage pregnancies in the country has tremendously increased, thus indicating a substantial social problem within the society that needs to be addressed (Ogutu, 2020). (Mumah et al., 2020). What makes this study different from others that have covered teenage pregnancies is that this study also focuses on depicting the significance of the probable causes associated with unintended teenage pregnancy. This uniqueness adds to the existing body of knowledge by giving the significant factors associated with unintended teenage pregnancy, thus paving the way to the putting forth of recommendations to address the matter. The information acquired on occurrence and effects of teenage pregnancies inform policies which will boost the utilization of reproductive health services in the region as well as curbing further teenage pregnancies.

1.7 Significance of the Study

This study holds significant value for understanding and addressing unintended pregnancies among teenage girls in Mukuru Kwa Njenga. It will generate valuable insights into the key contributing factors such as cultural attitudes, behaviours, reproductive health knowledge, and socio-economic conditions affecting adolescents in this informal settlement. The findings will shape the development of targeted interventions and policies focused on improving access to SRH education, contraception, and support services tailored to the unique needs of teenage girls in similar settings.

This study seeks to identify key gaps in contraceptive knowledge and access among teenage girls, shedding light on areas where sexual and reproductive health education is insufficient. Through addressing these gaps, the findings will support the development of tailored educational campaigns to dispel myths and empower girls to make informed

reproductive choices, thereby reducing unintended pregnancies. Additionally, the study will highlight the barriers teenage girls face in accessing reproductive health services in Mukuru Kwa Njenga such as limited availability, cost, and stigma offering evidence to advocate for youth-friendly health centres and mobile clinics to improve service accessibility.

This study will explore how socioeconomic challenges such as poverty, limited education, and lack of opportunities, contribute to unintended pregnancies among teenage girls in Mukuru Kwa Njenga. By examining these barriers, the research will provide valuable data to inform policies aimed at improving access to education, employment, and social services, thereby empowering girls to make informed reproductive choices. The study also seeks to highlight the link between unintended pregnancies and school dropout, limited career prospects, and the cycle of poverty, offering insights to support interventions that enhance the long-term well-being of adolescent girls. Furthermore, it will lay the groundwork for community-based initiatives tailored to the unique cultural, behavioural, and health dynamics of the area supporting targeted programs such as counselling, mentorship, and improved reproductive healthcare services.

1.8 Scope of the Study

The study focused on teenagers (13 – 19 years) who live in the informal settlement Mukuru Kwa Njenga in Nairobi County, Kenya- married, unmarried, or both, In-school, out of school, or both. The teenagers' knowledge of contraceptives determines pregnancy and childbearing rates. This study also investigated how drug and substance abuse contribute to unintended pregnancy among teenagers. Lastly, the study also investigated how

socioeconomic factors like income, education, employment, and community safety contribute to teenage pregnancies in the informal settlement of Mukuru Kwa Njenga, Nairobi County, Kenya. The research had an objective of exploring the factors associated with the increase in teenage pregnancies in the Mukuru Kwa Njenga informal settlement and coming up with ways of providing solutions to these challenges faced by the teenagers in the informal settlement of Mukuru Kwa Njenga and the country.

1.9 Assumptions of the Study

The derived sample size would accurately represent the perspectives of the overall study population and there was no interference or intimidation to the respondents to give a true reflection of the geographical study area.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter has considered discussion of the probable causes leading to unintended teenage pregnancies among populations. The discussion entails a literature review from other scholars and researchers related to this study on unintended teenage pregnancies in the informal settlement of Mukuru Kwa Njenga.

2.2 Overview of Teenage Pregnancy

With changing times, teenage pregnancy has been observed to have detrimental effects on the victims at global, societal, and even personal levels. Despite having a decreasing fertility rate, there is still a significant 25% of teenage pregnancies occurring worldwide (Birhanu et al., 2019). Teenage pregnancy is seen to disrupt their absorption level of skills and even educational purposes that might otherwise affect their future (Akinyi, 2020). Other than that, there are also issues of contracting STDs that have severe implications on their physical, emotional, and social wellbeing (Sapkota, 2024). Sub-Saharan Africa is indicated to have over 90% of all teenage pregnancies globally (Yakubu & Salisu, 2018).

With the highlighted challenges, it is important to reduce the prevalence of this problem to protect Sub-Saharan Africa from the detrimental effects of teenage pregnancies. Of the forty-seven counties in Kenya, almost all have been hit by the rising trends of unintended teenage pregnancies. Statistics has it that Nairobi count has the highest numbers of 11,795 girls who are between 10-19 years of age between January and May of this year. (Odhiambo, 2020). Focusing on Mukuru Kwa Njenga, teenage pregnancy is a bigger issue

than it seems from the outlook. In 2022, the rate of teenage pregnancy among women aged 15 – 19 in Kenya was 14.8% (Stats Kenya, 2025). Testimonials from these victims are that they either got into drug use, peer pressure, lack basic needs, not getting proper education and some are also escaping domestic violence at home (Akinyi, 2020). With such statistics of known live births, what about the number of teenagers who have managed to carry out abortions on their own.

Teenage pregnancy in Africa constitutes a multifaceted and pressing challenge that has garnered significant attention due to its far-reaching consequences on the lives of young girls, their families, and communities (Osore, 2016; Adolescent Pregnancy, n.d.). Africa, as a continent, grapples with high rates of teenage pregnancies, and the factors contributing to this complex issue are diverse and interconnected. Among the primary drivers of teenage pregnancy in Africa is the limited access to comprehensive sexual education (Ahenda, 2018). Societal taboos, cultural norms, and inadequate educational resources contribute to a lack of knowledge among adolescents about reproductive health and family planning (Edwards et al., 2025). This knowledge gap often results in early and unprotected sexual activity, leading to unintended pregnancies. The absence of open discussions about sex and reproductive health exacerbates the challenges faced by young people in making informed decisions.

Socioeconomic factors play an important role in prevalence of teenage pregnancies (Masresha & Alen, 2021). Poverty, prevalent in many African nations, contributes to limited access to educational opportunities and healthcare services. In impoverished communities, young girls may face heightened vulnerabilities, with early marriages seen

as a means of economic survival. The cycle of poverty intertwines with teenage pregnancies, creating a challenging environment for both the young mothers and their children. Gender inequality is another significant contributing factor (Bozzini et al., 2020). In many African societies, traditional gender roles and expectations persist, often limiting the opportunities for girls and perpetuating early marriages. Gender-based violence, including coerced and non-consensual sexual activity, further adds to the vulnerability of young girls. The power dynamics embedded in these societal structures contribute to the high incidence of teenage pregnancies.

Cultural practices and norms also influence the prevalence of teenage pregnancies in Africa (Cheedalla et al., 2020). Some communities may have customs that encourage early marriages, viewing them as a rite of passage or a way to cement social ties. The persistence of such cultural practices, coupled with a lack of legal frameworks and enforcement, perpetuates the cycle of teenage pregnancies.

Healthcare challenges compound the issue, with limited access to RHS, including contraceptives and FP resources (WHO, 2025). Inadequate healthcare infrastructure and resources contribute to higher maternal and infant mortality rates, adding urgency to addressing teenage pregnancies as a public health concern (Ezeh et al., 2016).

Consequences of teenage pregnancies are profound and multifaceted. Young mothers often face disruptions in their education, limiting their prospects and perpetuating the cycle of poverty (Ganchimeg et al., 2014). The health risks associated with early pregnancies, including higher rates of maternal and infant mortality and complications during childbirth, pose significant challenges to both the physical and mental well-being of teenage girls

(Groenewald et al., 2022). Efforts to address teenage pregnancy in Africa involve a comprehensive and collaborative approach. Initiatives focused on improving access to quality education for girls, implementing comprehensive sexual education programs, and challenging gender norms are critical (Hadley, 2018). Strengthening healthcare infrastructure and reproductive health services, including FP, is essential for mitigating the health risks associated with early pregnancies (Kamenderi et al., 2019). Community-based interventions that engage local leaders, parents, and adolescents in open discussions on how reproductive health contribute to breaking the silence surrounding the issue.

While progress has been made in some regions, the challenge of teenage pregnancy in Africa remains a complex and persistent concern. Sustainable solutions require addressing the underlying factors that contribute to this issue, including poverty, gender inequality, and cultural norms. By investing in education, healthcare, and community engagement, African nations can empower young girls, break the cycle of teenage pregnancies, and create opportunities for a brighter and more equitable future.

2.3 Knowledge on Contraceptives

Contraception refers to the deliberate prevention of pregnancy through either natural or conventional methods. Adequate knowledge of contraceptives enables individuals to make informed choices that safeguard their health and well-being (Shrestha, 2012). However, numerous studies highlight that adolescents in Sub-Saharan Africa often lack adequate understanding of FP and sexual education due to cultural taboos that inhibit open dialogue around these subjects (World Health Organization [WHO], 2012). These norms contribute to parents' reluctance to educate their children on sexual matters, pushing teenagers to seek

information from less reliable sources such as peers, social media, or hearsay channels that are prone to misinformation. This widespread lack of accurate knowledge heightens adolescents' risk of unintended pregnancies and STIs. Adogu et al. (2014) affirm that low awareness of STIs among teenagers contributes to limited use of protection during sex. Similarly, WHO (2012) emphasizes how entrenched cultural beliefs in African communities perpetuate silence around contraception, reinforcing misinformation and widening the gap between trained health educators and the adolescents who need their guidance. Collectively, the literature illustrates that misinformation, limited access to accurate sex education, and cultural barriers interact to compound the risk of early and unintended pregnancies. Thus, comprehensive, culturally sensitive education and outreach programs are essential to breaking this cycle and equipping teenagers with the knowledge and resources to make safe reproductive choices.

A global decline in reproductive health awareness has contributed to approximately 16 million teenage pregnancies annually, significantly impacting adolescents' health, education, and economic opportunities. In Africa, contraceptive use and perception are influenced by cultural, religious, economic, and healthcare-related factors. Despite increased access efforts, family planning remains taboo in many communities where large families are associated with prosperity (Ahenda, 2018). Religious beliefs, especially within Christianity and Islam, often encourage natural methods or abstinence, limiting acceptance of modern contraception (Edwards et al., 2025).

Widespread misconceptions such as fears of infertility or harmful effects are fueled by inadequate information and a lack of formal sex education, leaving adolescents dependent

on unreliable sources like peers or social media (Masresha & Alen, 2021). Gender roles further limit young women's autonomy, particularly in patriarchal societies, reducing their ability to make informed reproductive choices (Bozzini et al., 2020). Additionally, inadequate healthcare access and poor-quality contraceptive supplies in many regions hinder consistent use (Cheedalla et al., 2020). Economic factors also contribute, as large families are often viewed as a source of labor and security in low-income areas (Connery et al., 2014).

While governments and advocacy groups have introduced family planning initiatives, their success depends on cultural sensitivity and community involvement (WHO, 2024a). Encouragingly, trends among urban youth—driven by education, urbanization, and global influence show a growing preference for smaller families and delayed childbearing (Ezeh et al., 2016; Ganchimeg et al., 2014).

In conclusion, addressing contraception perceptions in Africa needs a comprehensive approach that looks into education, gender empowerment, accessible healthcare, and culturally informed policies (Groenewald et al., 2022).

2.4 Access to Reproductive Health Services by Teenagers

Reproductive health services are termed as very key health organisational elements that could influence the occurrence of teenage pregnancy (Shrestha, 2012). There is a clear indication that gives an approximation of 225 million women from third-world states who do not want to have or want to stop bearing children (Xavier et al., 2018). However, they are not seen to use any contraceptives for preventive services. This is because there is very

little or no ease of access to the choices of contraceptives, mainly as seen in the young people residing in informal settlements around the world. This is due to the poor economic level of sustenance in the informal settlements. (WHO, 2015). Pregnancy among teens is a universal educational and social concern to the first class, MLIC around the world. The new trends that the new generation has embraced include sexual literacy and even the availability of all kinds of contraceptives; pregnancy is still a problem still. These only point toward insufficient awareness created to deal with this global issue.

Kenya still, as a developing country, continues to have high records and experiences of pregnancy among teens. Despite its difficulty, the government and other relevant stakeholders are trying to address this. In Kenya, even with the large number of teenage girls coming from informal settlements around the city, there is still a huge problem when it comes to those people accessing any reproductive health services. This causes them to go through difficulties when they return to the normal society where the social determinants of SRH are well established in the aspects of education, social norms, and even the health system, which is different from the harsh environment they resided in before.

2.5 Influence of Socio-economic Factors on Teenage Pregnancy

The study looked into the relationship between teen pregnancies and lower socio-economic status. Does prevention of one unintended behaviour prevent the other? Teen pregnancies are associated with increased economic costs through immediate and long-term effects on teen mothers and their children. Low socio-economic status is a driver to early sexual exposure, and risky behaviours like having multiple sexual partners, drug use and casual sex, among other factors to obtain their basic needs like food, clothes, school expenditures

and even for emotional protection, could be probable leads to unintended pregnancies. Girls living in informal settlements take part in sexual matters quite before their age of maturity, thus they are highly likely to have unprotected sex, sex for benefits and even going ahead and having more than one sexual partner at that young age as compared to their age mates that do not reside in informal settlements.

The average stage for the first sexual participation amongst the young girls in the informal settlement is found to be at 16.3 and 17.4. for the general population (APHRC, 2002). Level of education and attitude towards school: In accordance with (Wondimagegne et al., 2023) the education of a girl should be the most important thing for them since it is a tool of empowerment for the girl to avoid risky decisions and remain vigilant in the fast-changing world of sexual literacy and other societal matters. Such decisions include things like marriage and family planning options. Income: Teenage pregnancy is an unwelcomed occurrence among females who are both economically and educationally disadvantaged. Teenage pregnancies are one of the most pressing issues confronting most of the developing countries today. For instance, in Kenya teenage pregnancy is a huge concern and it is imperative to circle in on its causes.

2.6 Drug and Substance Abuse and Teenage Pregnancy

Alcohol, tobacco, and other drug substances use is another growing problem globally affecting majorly teens and even children. The use and misuse of these substances is a worldwide problem and affects many children and adolescents (WHO, 1969). Early initiation of drug use increases the future risks of drug and substance use and other related use disorders, not withholding other related negative outcomes like early onset of sexual

behaviour and even lower educational achievement. Teens who use drugs are more likely to be sexually active and to engage in risky sexual behaviour, experiencing repercussions of risky sex, including unintended pregnancies, compared to those who do not use and abuse drugs (Hadley, 2018). According to findings from NACADA, (2010), schools in Kenya are not drug-free environments, with alcohol, prescription drugs, and bhang being the most abused substances, despite the Government of Kenya putting regulations and policies in place of not selling drugs and other substances to minors. Drug and substance use among teenagers increase risks of unintended pregnancies which in turn increases the risks of foetal exposure to additives, teratogenic effects (Birhanu et al., 2019). Teenage is a period of self-discovery and major psychological transformation which, when not properly guided by the parents and the guardians of these teenagers, might lead to a flop in their stages of development or even lifetime changes in their lives.

2.7 Theoretical Framework

These are a collection of interrelated ideas on theories, derived from and supported by data or evidence. A theoretical framework attempts to clarify the reason why things are the way they are based on theories (Kombo & Tromp, 2006). The theories discussed herein have been individually discussed to show their association with this study's objectives. The three theories have also been considered due to their point of focus on the matter of unintended teenage pregnancy. Unintended teenage pregnancy is largely influenced by the environment and behaviour to which teenagers are exposed. All three of these theories focus on behaviour learning, change of environment, and observation of teenagers and how they produce effects. The three theories are anchored towards using environment and

behaviour change to instil a positive change in the problem under scrutiny in, this case which is teenage pregnancy.

2.7.1 Bandura's Social Cognitive Theory

The theory states that learning is a cognitive process that happens in a social environment. The theory is divided into three distinct categories: learning can be direct, modelling is indirect and involves viewing the outside world, and knowledge is stored and processed through cognitive functions. The theory postulates a reciprocal deterministic relationship between the person, his or her environment, and the behaviour; all three factors interact with and upon one another in a dynamic manner to determine behaviour as well as provide a basis for prospective behaviour-changing interventions.

The theory is a comprehensive framework that explores how individuals learn and develop behaviours through the interplay of cognitive, behavioural, and environmental factors. At the core of this theory is the concept of observational learning, where individuals obtain new behaviours by looking at others and consequences of those behaviours. Bandura emphasizes the dynamic interaction between personal, behavioural, and environmental factors, shaping individuals' abilities to model and imitate behaviours (Ahenda, 2018).

In applying Bandura's Social Cognitive Theory to real-world scenarios, consider the example of health behaviour (Groenewald et al., 2022). Observing others engaging in healthy behaviours and witnessing positive outcomes can influence an individual's decision to adopt similar habits. Conversely, exposure to negative consequences or observing unhealthy behaviours can be inhibitory factors. The individual's self-efficacy,

influenced by past experiences and observed outcomes, is crucial in their motivation to engage in health-promoting behaviours (Hadley, 2018).

In conclusion, Bandura's Theory offers a comprehensive understanding of how behaviour is learned and influenced by the interplay of cognitive, behavioural, and environmental factors (Kamenderi et al., 2019). Observational learning, cognitive processes, self-efficacy, and reciprocal determinism contribute to human behaviour's complexity. By recognizing the dynamic interaction between these elements, the theory provides insights into how individuals acquire new behaviours, make choices, and navigate their environment's intricate web of influences.

2.7.2 Social Learning Theory

According to the theory, a person's conduct is influenced by their interactions with their environment and other people and their environment. These behaviours may be brought on by traits of a person or an environment and may also be employed to alter those traits or environments (Buss, 1991). As a result, the behaviour is not seen in isolation but rather because of the dynamic interaction between personal and environmental factors. When applying the social learning theory to the factors aggravating teenage pregnancies, Buss (1991) suggests that a key element of modelling is that teenagers mimic behaviour from other people in their environs by observing how they do things. The usefulness of this theory is the acquisition of knowledge from the interaction of their personality with their environment. For instance, peer pressure and cultural factors influence certain outcomes like unintended pregnancies in teenagers hence it's adoption in the study.

Social Learning Theory stresses observational learning, wherein individuals acquire new behaviours by observing others (Masresha & Alen, 2021). This process occurs in various social contexts, ranging from family and peers to media and societal influences. Through observation, individuals witness how others respond to certain stimuli or situations, providing them with a repertoire of behaviours that they can adopt or avoid. This observational learning contributes to the formation and adaptation of personality traits based on the behaviours they have witnessed and internalized. In conclusion, Albert Bandura's Social Learning Theory provides valuable insights into how personality and perception are shaped through the process of observational learning, modelling, and the influence of reinforcement and punishment (Ganchimeg et al., 2014). By recognizing the social context as a significant factor in personality development and perception formation, this theory highlights the dynamic interaction between individuals and their social environments. Social Learning Theory underscores the malleability of personality and perception, emphasizing the ongoing influence of social interactions, observational experiences, and reinforcement mechanisms throughout the lifespan (Groenewald et al., 2022).

2.8 Identification of Knowledge Gap

Teenage pregnancy and the role of research on unintended pregnancies is one of the areas that have received considerable attention from scholars. However, significant gaps remain, especially in places like Mukuru Kwa Njenga. The study thus seeks to fill these gaps through specific objectives such as;

2.8.1 Gaps in Contraceptive Knowledge and Usage Among Teenagers

It has been noted by present research works that, even though contraceptives are critical to prevent unintended pregnancies, there is still a considerable discrepancy between what the teenagers in informal settlements know about the preventive measures as well as their application (Adogu et al., 2014; WHO, 2012). Past studies often generalized findings across larger populations without considering the unique difficulties experienced by adolescents living in shanty townships. Furthermore, they do not address the mythological issues together with cultural barriers that hinder the efficient use of contraceptives. Hence, this paper seeks relatedness between awareness of contraceptives and prevalence unintended pregnancy prevalence among teenage girls from Mukuru Kwa Njenga. This would give rise to more refined insights into barriers encountered while accessing contraceptives among teenage girls living in urban informal settlements.

2.8.2 Accessibility of Reproductive Health Services and Prevalence of Teenage pregnancies

Empirical studies have not targeted slum-dwelling teenagers explicitly, creating an information gap. It is widely acknowledged that access to reproductive health services is key in curbing unintended births; however, very few studies have concentrated on how accessibility to RHS can influence informal settlements' teenage girls. Most studies have been done in rural areas or affluent neighbourhoods, excluding vital issues like socio-economic problems or other necessities required by vulnerable children. Therefore, this paper assesses the availability of reproductive health services offered in the Mukuru Kwa Njenga with a view to establishing whether their availability has any impact on unplanned

pregnancies among slum teenagers aged 13-19 years. The study covers the availability of these services among teenagers and assesses the association between the accessibility of RHS and unintended pregnancies among teenagers living in Mukuru Kwa Njenga.

2.8.3 Influence of Socio-Economic Factors on Prevalence of Teenage Pregnancy

There exists a significant gap in research that explicitly looks at how the socio-economic factors interact in informal settlements. However, the influences on teenage pregnancy are well-documented in the literature. Many studies have not adequately explored how poverty, unemployment, and lack of education come together in a unique way to increase the vulnerability of teenage girls in slums. This study fills this gap by looking at the socio-economic conditions of families in Mukuru Kwa Njenga and their effect on the prevalence of unintended pregnancies among teenage girls, where it is very detailed about how these factors combine with the informal settlement environment and create a high-risk setting for teenage pregnancies.

2.8.4 Impact of Substance Abuse on Prevalence of Teenage Pregnancy

Studies have shown that substance abuse can contribute to unplanned pregnancies, making it a potential risk factor (Hadley, 2018). However, limited research on the specific methods which substance use patterns lead to teenage pregnancies in slum areas such as Mukuru Kwa Njenga in Nairobi County. Previous studies have recurred on teenagers generically without acknowledging that in informal settlements, especially slums, teenagers are more at risk. This study bridges that gap by establishing the correlation between teenage substance abuse patterns and unintended pregnancies in Mukuru Kwa Njenga. It

investigates whether drug and alcohol consumption put teenagers more at risk of getting unintended pregnancies by engaging in unsafe sexual behaviour.

2.9 Efforts to Address the Gap by the Kenyan Government

Kenyan government has taken significant steps to address the challenges of teenage pregnancies through a multi-faceted approach that focuses on both immediate and long-term solutions. Recognizing the complexity of the issue, the government has developed comprehensive strategies to tackle the underlying factors contributing to teenage pregnancies, particularly in informal settlements like Mukuru Kwa Njenga. The government has implemented various policy frameworks, notably the Adolescent Sexual and Reproductive Health (ASRH) Policy, which provides a strategic approach to delivering sexual and SRH to adolescents. This policy stresses the relevance of providing age-appropriate information, empowering young people to make informed choices about their reproductive health (Ahenda, 2018).

To prevent teenage pregnancies, the government has focused on enhancing education and awareness. The Kenya Institute of Curriculum Development (KICD) has developed a curriculum including comprehensive sex education, aiming to educate students on knowledge and skills necessary to make responsible decisions regarding their sexual health. This initiative also seeks to challenge cultural taboos and promote positive attitudes toward reproductive health (Edwards et al., 2025). Community involvement is central to the government's strategy. Collaborating with NGOs and community-based organizations, the government has initiated programs that involve parents, religious leaders, and

community elders to foster open discussions about sexual and reproductive health. These efforts aim to create a supportive environment for adolescents (Masresha & Alen, 2021).

Improving access to youth-friendly healthcare services is another critical component of the government's approach. The Ministry of Health has strengthened healthcare systems to ensure that teenagers have access to contraceptives and counselling services. These services have been integrated into existing healthcare facilities to enhance accessibility for young people (Bozzini et al., 2020). The government has also enacted legal measures, like the Sexual Offences Act, to combat sexual exploitation of children and adolescents. This act provides a framework for prosecuting individuals involved in exploitative behaviours that contribute to teenage pregnancies, thereby protecting the rights of adolescents (Cheedalla et al., 2020).

To address the socioeconomic factors linked to teenage pregnancies, the government has implemented programs like the Youth Enterprise Development Fund and the Uwezo Fund. These initiatives provide financial support and mentorship to young entrepreneurs, aiming to reduce vulnerability and the risk of early pregnancies by creating economic opportunities (Connery et al., 2014). Additionally, the government has campaigned against harmful practices such as Female Genital Mutilation (FGM), recognizing its link to early marriages and pregnancies. These efforts include community sensitization, legal measures, and collaboration with traditional leaders to change societal norms that contribute to the vulnerability of young girls (WHO, 2024a).

Despite these efforts, challenges persist, including limited access to healthcare services in remote areas, cultural barriers, and stigma associated with seeking reproductive health

services. Addressing these issues requires sustained awareness programs, long-term commitment, and collaboration to overcome deeply rooted cultural beliefs (Ezeh et al., 2016; Ganchimeg et al., 2014; Groenewald et al., 2022)

2.10 Conceptual Framework

The framework demonstrates the relationship between independent and dependent variable, which, in this case: unintended teenage pregnancies. Unintended pregnancy is defined as pregnancies that are not planned or desired at the time of conception, and it represents the primary outcome the study aims to explore. Unintended pregnancies among teenagers are influenced by a range of factors, which are categorized as independent variables in this framework.

The independent variables include several key factors that influence the likelihood of unintended pregnancies. Knowledge of contraceptives is one of the primary independent variables. This refers to the awareness and understanding that teenage girls have regarding contraception, including the sources from which they obtain information (such as schools, healthcare providers, or media) and the availability of contraceptive methods in their communities. Access to reliable contraceptive information can significantly impact teenagers' ability to prevent unintended pregnancies. Another important independent variable is access to sexual and reproductive health services (SRHS). This variable looks at how easily teenage girls can access SRHS, which includes factors such as the distance to healthcare facilities, the fear of judgment by healthcare workers, and the attitudes of healthcare providers. These factors can either facilitate or impede teenagers' access to the services they need to prevent unintended pregnancies.

Socioeconomic factors play a crucial role in modelling the likelihood of unintended pregnancies. These factors encompass parental education, income, and occupation. The socioeconomic status of a teenager's family can affect their access to resources, including healthcare, education, and contraception. Teenagers from lower socioeconomic backgrounds may face greater challenges in accessing these resources, which can increase the likelihood of unintended pregnancies. Another critical independent variable is drug and substance abuse, which refers to the use of substances such as alcohol, tobacco, or drugs. The age at which a teenager first uses substances, the type of substances used, and frequency of use can influence sexual decision-making, often leading to riskier sexual behaviour and an increased likelihood of unintended pregnancies.

These independent variables interact with each other and collectively influence the dependent variable, unintended pregnancy. The relationship between these factors is complex, and other variables, such as moderating and intervening variables, may alter the effects of the independent variables on the dependent variable.

Moderating variables are those factors which influence the strength or direction of the relationship between variables. Government policies act as a moderating variable in this framework. Policies that affect access to SRHS and contraceptive education can either facilitate or hinder the effectiveness of the independent variables in reducing unintended pregnancies. For example, policies that provide free contraception or promote sexual health education can strengthen the positive effects of knowledge and access to SRHS, reducing the likelihood of unintended pregnancies.

In addition to the moderating variables, intervening variables such as parental-child communication and sex education also significantly influence the relationship between variables. Effective communication between parents and their teenage children on sexual health can help mitigate the effects of the independent variables, like lack of contraceptive knowledge or limited access to SRHS. Similarly, comprehensive sex education, whether in schools or through other community-based programs, can help teenagers make informed choices about their sexual health, to reduce the potential risk of unintended pregnancies. These intervening variables influence the level of awareness and decision-making among teenagers, either strengthening or weakening the effects of the independent variables on unintended pregnancies.

Together, the independent, moderating, and intervening variables in this framework interact to affect the primary outcome of unintended pregnancy. The relationship between these variables is multifaceted and understanding how they influence each other provides valuable insights to the study.

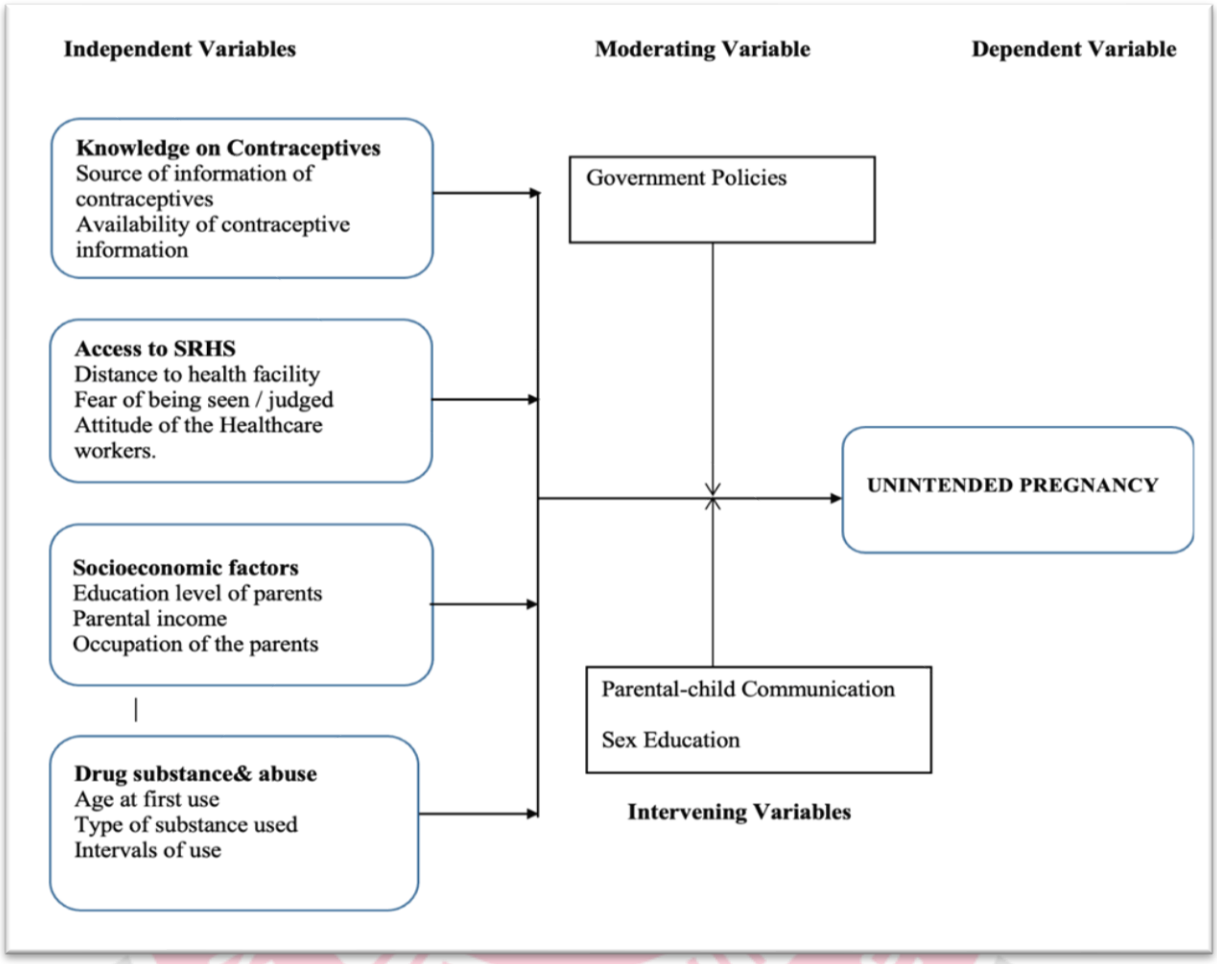

Figure 1: ***Conceptual Framework***

CHAPTER 3: METHODOLOGY

3.1 Introduction

This section discusses research methods, including the study's research design, target population, and accuracy and dependability of the data-gathering tools. Additionally, the operationalization table of the variables, study objectives, relationships between dependent and independent variables, data analysis techniques, and ethical considerations.

3.2 Research Design

To determine the causes of unintended teenage pregnancies in the Nairobi County informal settlement of Mukuru Kwa Njenga, the study implemented a mixed methods approach within a descriptive cross-sectional research design. This design enabled collection of quantitative and qualitative data concurrently, enabling a comprehensive understanding of complex factors contributing to teenage pregnancy. The decision to collect data at the same time was based on need for time and resource efficiency, and to enable the triangulation of findings from both methodological arms.

The quantitative arm of the study aimed to gather numerical data on variables such as number of teenage girls who reported unintended pregnancy, frequency of contraceptive use and household income level. This enabled identification of patterns and prevalence rates across population, aligning with the strengths of a cross-sectional methodology in describing the distribution of characteristics at a specific point in time (Ahenda, 2018; Edwards et al., 2025).

Simultaneously, the qualitative arm explored the contextual and experiential dimensions of teenage pregnancy through open-ended interviews. These provided deeper insights into the beliefs, attitudes, and lived experiences of teenage girls, revealing how cultural, economic and social norms influence their reproductive health choices (Masresha & Alen, 2021; Bozzini et al., 2020).

This mixed methods strategy, supported by the descriptive cross-sectional design, proved effective for this study. It enabled a nuanced exploration of both the measurable and interpretive aspects of the research problem, while also offering a cost-effective and time-efficient means of data collection (Cheedalla et al., 2020). By concurrently collecting both types of data, the study ensured that findings could be compared and validated, enhancing the overall reliability and depth of the analysis. The study further presumed that this approach would effectively highlight the relationships between the independent variables and the core issue of unintended teenage pregnancy (Harada et al., 2024)

3.3 Study Area

Mukuru Kwa Njenga is one of the largest informal settlements in Nairobi, Kenya's capital (Projdoc.Pdf, n.d.). It is located within Embakasi South Constituency, though it extends into parts of Makadara and Starehe constituencies. The settlement is strategically positioned between major infrastructure and landmarks, bordered by the Nairobi Industrial Area to the south, Jomo Kenyatta International Airport to the north, and other growing suburbs such as Donholm in the Embakasi region. The settlement lies on unused land along the Nairobi/Ngong River, flanked by Outer Ring Road, North Airport Road, and Mombasa Road.

Mukuru Kwa Njenga comprises several villages. The population is estimated at approximately 306,287, with the broader Mukuru informal settlement reaching around 380,000 residents according to the 2019 census. Most residents engage in low-income or informal jobs, largely due to widespread poverty and limited access to formal education.

The settlement is characterized by poor housing structures primarily made of wood and iron sheets and inadequate sanitation, resulting from poor drainage and proximity to landfill areas. Health services are mainly provided by the Mukuru Health Centre, supplemented by private and non-profit organizations that occasionally offer medical camps. However, social amenities such as clean water, education, waste disposal, and housing remain underdeveloped due to insufficient urban planning and government support.

Mukuru Kwa Njenga also records one of the highest rates of teenage pregnancies in Nairobi. According to WHO (2024a) over half of all teenage pregnancies reported in Nairobi originated from this settlement. This highlights the urgent need for targeted interventions in reproductive health, education, and social support systems within the area.

3.4 Study Population

The study population consists of teenage girls living in Mukuru Kwa Njenga informal settlement who meet the inclusion criteria. Specifically, the target group includes girls aged 13 to 19 who are either currently pregnant or have already given birth. There's no data indicating the exact number of teenage pregnancies for Mukuru but we can tell that we have young mothers around (Mukuru Youth Initiative, 2022). Based on recent data, an estimated 10,116 girls within this age range in Mukuru Kwa Njenga fall into this category.

This target group is drawn from the broader teenage female population in the area, which is approximately 87,203 girls aged 13 to 19. The study's sample size of 424 participants was calculated using Fisher's formula, with an additional 10% included to account for potential non-responses or attrition. This sample is considered representative of the 10,116 teenage girls who have experienced pregnancy or early motherhood in the settlement.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion Criteria

Participants who were eligible for the study include,

1. Teenagers aged 13–19 years residing in Mukuru Kwa Njenga.
2. Teenagers who are already mothers at the time of study.
3. Teenagers who are currently pregnant.
4. Teenagers (or their guardians, where applicable) who provide informed consent and assent to participate in the study.

3.5.2 The Exclusion Criteria

Participants who were excluded from the study included,

1. Participants not within the target age range (13-19 years)
2. Teenagers (or their parents/guardians, if minors) who refuse or are unable to provide informed consent.
3. Non-residents of Mukuru Kwa Njenga

3.6 Sampling and Sampling Procedures

3.6.1 Sample Size Determination

The Sample size was determined in line with Fishers et al. (1998) (Sampling Techniques and Sample Size Determination, n.d.) formula

$$n = \frac{Z^2_{1-\alpha/2} * P(1-P)}{d^2}$$

Whereby: **n** = the desired sample size (n>10,000)

1. **Z** = the standard deviation at the specific required level of confidence (1.96)
    i. α=0.05, $Z_{1-\alpha/2}$=1.96
2. **p** = **0.5**: Estimated prevalence of teenage pregnancy. Use 50% prevalence of pregnancy in Mukuru Kwa Njenga Nairobi County.
3. **d** = This is the level of statistical significance usually at (0.05)

Therefore: = ($\underline{1.96^2 \text{ x } 0.5 \text{ x} 0.5}$) = 385. Plus 10% for Non-response rate = 424

0.05^2

(10% of the respondents were added to account for non-response).

Fisher's formula was used to calculate the sample size, as the N population exceeds 10,000. To account for potential errors due to poorly filled or incomplete questionnaires, a 10% non-response rate was included. Using a 95% confidence level (Z = 1.96), an estimated prevalence of 50%, and a 5% margin of error, the initial sample size was 385. After

adjusting for non-response, the final sample size was 424, appropriate for an N population of 10,116 teenage girls who are pregnant or already mothers.

3.6.2 Sampling Procedure

The study utilized a combination of purposive and stratified random sampling methods to select participants. Purposive sampling was first used to identify pregnant teenagers and adolescent mothers aged 13–19 in Mukuru Kwa Njenga, through schools and non-profit organizations. With an estimated teenage population of 87,203 and a pregnancy prevalence rate of 116 per 1,000, approximately 10,116 girls were considered eligible. Using Fisher's formula and accounting for a 10% non-response rate, the final sample size was determined to be 424. Stratified random sampling was then employed to ensure proportional representation across eight villages (Riara, Vietnam, Milimani, Wapewape, Motomoto, Sisal, Zone 48, and MCC) which served as the strata. Participants were randomly selected within each stratum based on the estimated number of eligible girls per area. To complement the quantitative data, a qualitative component was included, using purposive sampling to select participants for In-depth interviews providing deeper insight into the factors contributing to unintended teenage pregnancy.

3.7 Description of the Study Variables

3.7.1 Dependent Variable:

Unintended Pregnancy: An unintended pregnancy is one that occurred when a woman wanted to become pregnant in the future but not at the time she became pregnant ("wanted

later") or one that occurred when she did not want to become pregnant then or at any time in the future ("unwanted") (Fb-Unintended-Pregnancy-Us_0.Pdf, n.d.)

3.7.2 Independent Variables:

a. Contraceptive Knowledge and Usage among Teenage Girls:

This variable examines teenage girls' knowledge and use of contraceptives. It considers their awareness of various methods, contraceptive agency and consistency, and the factors influencing their decisions such as partner communication, side effect concerns, access to information, and cultural beliefs offering insight into what shapes their contraceptive behaviour.

b. Accessibility to Reproductive Health Services among Teenage Girls:

This variable assesses the availability and accessibility of reproductive health services, including the availability of contraceptive methods and information at local health facilities. It also considers concerns about community judgment and the impact of healthcare provider attitudes on service utilization.

c. Socio-Economic Status of Parents or Guardians of Teenage Girls Included in the Study:

This includes socio-demographic characteristics like the occupation and education level of parents, household income, and living arrangements. These factors are expected to influence the likelihood of unintended pregnancies among teenage girls.

d. Substance Abuse Status among Teenage Girls:

This variable explores the status of drug and substance abuse among teenage girls, focusing on the types of substances used, age of first exposure, frequency of use, and the extent to which substance use is associated with engagement in sexual activity. It aims to highlight how substance abuse contributes to the occurrence of unintended teenage pregnancies.

3.8 Constitution and Training of the Research Team

3.8.1 Constitution of the Research Team

The research team comprised a Principal Investigator (PI), who oversaw the study and ensured adherence to research protocols and ethical guidelines. Two Data Collection Supervisors coordinated field activities, monitored data collection processes, and ensured data quality. The team also included six Field Enumerators, selected based on their experience and familiarity with the local context, who administered the questionnaires and conducted interviews. Additionally, two Qualitative Researchers with expertise in qualitative methods conducted In-Depth Interviews (IDI)

3.8.2 Training of the Research Team

The research team received adequate training on the study's protocol, methodology, and ethical considerations, with emphasis on accurate data collection, handling sensitive topics, and administering questionnaires. Qualitative researchers were additionally trained in conducting Key Informant Interviews. The training included mock interviews and a questionnaire pre-test to address potential challenges before actual data collection.

3.9 Pretesting of Data Collection Instruments

A pre-test was conducted in Mukuru Kwa Reuben, a community with socio-economic and demographic characteristics like Mukuru Kwa Njenga, including comparable access to healthcare services. The pre-test involved 39 participants, representing 10% of the main study's sample size of 385. Its purpose was multifaceted: to validate the questionnaire by assessing clarity, timing, and content relevance; to test the effectiveness of data collection procedures; to evaluate preparedness of the research team. Feedback from this exercise informed revisions that improved both the questionnaire's structure and the overall data collection process. To assess the internal consistency and reliability of the questionnaire, Cronbach's alpha was calculated using the pre-test responses. This involved statistically analysing the responses to related questionnaire items to determine how well they measured the same underlying construct. A Cronbach's alpha value above the acceptable threshold of 0.7 indicated that the instrument was reliable. This process contributed to ensuring the validity and dependability of the study tools before the full-scale data collection commenced.

3.10 Validity and Reliability

3.10.1 Validity

To ensure validity in this study, structured questionnaires and interview guides were developed based on a thorough literature review to align with the study objectives. Content validity was strengthened through expert review, assessing clarity, relevance, and

coverage. Additionally, a pre-test conducted in Mukuru Kwa Reuben helped identify and correct unclear or inappropriate questions, further enhancing the instruments' validity.

3.10.2 Reliability

Reliability was tested using Cronbach's alpha, calculated from pre-test responses in SPSS, yielding a value of 0.7 inferring acceptable internal consistency. To uphold reliability during data collection, the research team underwent comprehensive training, followed standardized procedures, and used uniform tools, ensuring consistent and reproducible results.

3.11 Data Collection

3.11.1 Quantitative Data Collection

Quantitative data were collected using structured questionnaires designed to capture various aspects, including socio-demographic information such as age, education level, household income, and parental occupation. The questionnaires also explored contraceptive knowledge and use, with questions focusing on awareness of contraceptive methods, discussions with partners, and knowledge of potential side effects. Additionally, questions were included to assess the availability, accessibility, and quality of reproductive health services, as well as substance abuse patterns and their impact on pregnancy outcomes. The questionnaires were administered through face-to-face interviews to ensure clarity and allow participants to ask questions.

3.11.2 Qualitative Data Collection

Qualitative data were collected through 48 IDIs with the teenage girls in Mukuru Kwa Njenga. A semi-structured interview guide focused on themes like contraceptive knowledge, access to health services, and cultural influences. Interviews were conducted in private, safe locations, with informed consent obtained from all participants (including parental consent for minors). Audio recordings and field notes were transcribed, anonymized, and thematically coded. Data validity was ensured through peer checking and peer debriefing to enhance accuracy and minimize bias.

3.12 Data Analysis and Presentation

Before analysis, data was de-identified and cleaned to ensure accuracy. Each questionnaire was reviewed, and any incomplete or incorrectly filled ones were discarded. Interview responses were transcribed and organized in a Microsoft Word document for qualitative data. The data were then categorized into main themes for structured analysis.

Combining quantitative and qualitative data, the study offered a detailed and nuanced understanding of the prevalence and causes of unintended pregnancies among adolescent females in Mukuru Kwa Njenga, Nairobi County, Kenya.

3.12.1 Quantitative Data Analysis

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) version 26, with the analysis structured around the study's specific objectives. Descriptive and inferential statistical methods were utilized to explore the relationships

between key variables and occurrence of unintended pregnancies among teenage girls in Mukuru Kwa Njenga.

Objective 1: Association Between Contraceptive Knowledge and Unintended Pregnancies

Participants' knowledge of contraceptive methods was measured using a Likert scale to assess its association with the occurrence of unintended pregnancies. This scale was based on responses to nine practice-related questions regarding knowledge on contraceptives. Descriptive statistics, including frequencies and percentages, were used to categorize participants into two groups based on their scores on the contraceptive knowledge scale: those scoring above the set threshold were classified as knowledgeable, while those scoring below were classified as having limited knowledge. The distribution of independent variables was presented using counts and percentages.

The Chi-square test was employed to assess the association between contraceptive knowledge and unintended pregnancy, determining whether a statistically significant relationship exists between the two variables among the study participants. To further examine this relationship, a multivariable logistic regression model was applied to estimate the odds ratio (OR) of unintended pregnancy based on varying levels of contraceptive knowledge. The odds ratio quantifies the likelihood of experiencing unintended pregnancy among participants classified as knowledgeable compared to those with limited knowledge. An odds ratio greater than 1 suggests that participants with lower knowledge are more likely to experience unintended pregnancies, while an odds ratio less than 1 indicates that greater knowledge may reduce the likelihood. A p-value of less than 0.05 was considered statistically significant for both the Chi-square test and logistic regression

analysis. Additionally, 95% confidence intervals (CIs) were calculated to assess the precision of the estimates, providing a range within which the true effect is likely to lie.

Objective 2: Influence of Accessibility to Reproductive Health Services on Unintended Pregnancies

The objective assessed how access to reproductive health services, particularly the availability of contraceptives and related information at local health facilities affects unintended teenage pregnancies. Descriptive statistics, including counts and percentages, were used to present participants' levels of access and related trends.

The Chi-square test was used to assess the significance of associations between access to healthcare services and pregnancy outcomes. This was done to identify whether access to services is related to pregnancy outcomes.

A multivariable logistic regression model was then employed to analyse how variations in accessibility influenced the likelihood of unintended pregnancies. The odds ratio (OR), in this case, helps quantify the relationship between access to reproductive health services and unintended pregnancies. An odds ratio greater than 1 suggests that reduced access to services is associated with a higher likelihood of unintended pregnancies. In contrast, an odds ratio less than 1 indicates that increased access to services is associated with a reduced likelihood.

A p-value less than 0.05 was also considered statistically significant for the Chi-square test and the logistic regression analysis, indicating a significant relationship between the predictors (e.g., accessibility to reproductive health services) and the outcome (unintended

pregnancies). The results from the regression analysis were presented as odds ratios (OR), with 95% confidence intervals (CI) to quantify the degree of certainty regarding the relationships.

Objective 3: Association Between Socio-Economic Factors and Unintended Pregnancies

This objective focused on the role of socioeconomic factors in unintended pregnancies. Key variables such as the father's occupation, the mother's education level, and household income were examined in relation to unintended pregnancies. Descriptive statistics were employed to profile the socio-economic features of the study population. The distribution of socio-economic factors was presented in counts and percentages.

Chi-square tests were used to evaluate significance of associations between socioeconomic factors and unintended pregnancies. A p-value less than 0.05 was considered statistically significant for the Chi-square test.

Following this, a multivariable logistic regression model was applied to assess the combined effect of socioeconomic factors on likelihood of unintended pregnancies. The odds ratio (OR) helps measure the relationship between socio-economic variables and the occurrence of unintended pregnancies. The odds ratio indicates the likelihood of unintended pregnancies for individuals with certain socio-economic characteristics, such as lower income or lower education levels, compared to others. An odds ratio greater than 1 would suggest that certain socioeconomic factors increase the likelihood of unintended pregnancies, while an odds ratio less than 1 indicates a protective effect, lowering the possibility.

A p-value less than 0.05 was considered statistically significant for the logistic regression analysis, indicating a significant relationship between socioeconomic factors and unintended pregnancies. The 95% confidence intervals (CI) were calculated to provide insight into precision of the test estimates.

Objective 4: Correlation Between Substance Abuse and Unintended Pregnancies

This objective examined the relationship between substance abuse and unintended pregnancies by analysing participants' patterns of substance use, including the types of substances consumed and the frequency of use. Descriptive statistics were employed to summarize the prevalence of substance use within the study population. The distribution of relevant independent variables was presented using counts and percentages to provide a clear understanding of substance use trends among participants.

The Chi-square test was used to determine whether there was a significant association between substance abuse and unintended pregnancies. A p-value less than 0.05 was considered statistically significant for the Chi-square test. This was followed by a multivariable logistic regression model, which assessed the influence of substance use on the likelihood of unintended pregnancies.

The odds ratio (OR) in this context is used to evaluate how substance use affects the likelihood of unintended pregnancies. If substance use increases the likelihood of unintended pregnancies, the odds ratio will be greater than 1. Conversely, if substance use is associated with a reduced likelihood of unintended pregnancies, the odds ratio will be less than 1. A p-value less than 0.05 was considered statistically significant for the logistic

regression analysis, indicating that the relationship between substance abuse and unintended pregnancies is significant. The 95% confidence intervals (CI) were also calculated to assess the precision of the test estimates.

3.12.2 Qualitative Data Analysis

Qualitative data were analysed using NVivo software for thematic analysis. Key themes were identified from the interview transcripts and categorized according to the study's objectives. Data from IDI were coded to reveal recurring patterns and insights related to the research questions. This analysis aimed to understand trends, beliefs and attitudes influencing unintended pregnancies among adolescents. The findings from the qualitative analysis were integrated with the quantitative results to provide a comprehensive understanding of the factors contributing to unintended pregnancies.

The quantitative and qualitative data analysis plans are summarized in Table 1.

Table 1: ***Data Analysis Plan***

	Method of Data Collection	Method of Data Analysis	Goal
Knowledge on Contraceptives	Survey Interview guides	Chi-square test. Likert Scale	To determine the p-value (0.05) as a cut off and to find significance and association between the study variables.
Access to SRHS	Survey Interview guides	Quantitative analysis Qualitative analysis	To find out the trends and bridge the SRHS gap.
Socio-economic Factors	Survey Interview guides	Quantitative Analysis i.e. Standard Deviation Table of Frequencies & Mean	To examine how socio-economic factors influences unintended teenage pregnancies
Drug and Substance Abuse	Survey Interview guides Journals	Quantitative Analysis Qualitative Analysis	To provide adequate knowledge that informs decision making.

3.12 Ethical Considerations

Ethical approval for this study was obtained from the AMREF Ethics and Scientific Review Committee (ESRC) and the National Commission for Science, Technology, and Innovation (NACOSTI), ensuring that the study adhered to all ethical standards required for research

involving human participants. Additionally, the relevant local authorities in Nairobi County granted permission to conduct the study.

Prior to data collection reason for conducting the study was clearly demonstrated to everyone involved, including teenage girls, and written informed consent was obtained. For minors under the age of 18, additional consent was secured from their parent(s) or legal guardian(s). Participants were informed that participation is voluntary, and they could withdraw from the study at any point without any repercussions. We assured them that the data collected would be used solely for the purposes of this study and would not be shared with third parties without their consent.

To safeguard privacy and confidentiality, no personal identifiers such as names or contact details were collected. Interviews were held in private settings to ensure the confidentiality of responses. All data, including audio recordings and completed questionnaires, were stored securely on password-protected laptops and in locked cabinets, accessible only to authorized research personnel. The principal investigator and all team members signed data confidentiality agreements to uphold data integrity. Upon completion of data analysis, all collected data will be destroyed after one year.

Given the sensitive nature of topics such as teenage pregnancy and sexual health, participants were assured they could skip any questions that made them uncomfortable without consequence. They were also provided with information on available support services, including counselling and healthcare. Special care was taken to protect the safety and well-being of the teenage participants, with potential emotional risks addressed during the informed consent process. The study was designed to minimize harm and contribute

valuable insights that could inform policies and improve reproductive health interventions for adolescent girls.

Potential conflicts of interest were fully disclosed to ensure transparency and uphold the integrity of the research process. The findings will be shared with the Nairobi County Health Management Team and other relevant stakeholders to support local health initiatives. Additionally, the results will be disseminated through academic publications and conference presentations, contributing to the broader body of knowledge in public health and adolescent health interventions

3.13 Study Constraints and Limitations

The speculated study limitation of this study is its reliance on self-reported data, particularly on sensitive topics such as sexual behaviour, contraceptive use, and substance abuse. This may lead to social desirability bias, where participants underreport or misrepresent their experiences due to fear of judgment or stigma. Such bias can affect the accuracy and reliability of the findings. To reduce bias and encourage honest responses, the study employed neutral, non-judgmental language that normalized all possible answers, minimizing feelings of shame or fear. Additionally, trained, age-appropriate, and gender-sensitive interviewers were used to build trust and create a safe, supportive environment for participants.

CHAPTER 4: RESULTS

4.1 Introduction

In this chapter, the study findings are documented including response rate, descriptive statistics and inferential statistics. The results are arranged according to the specific objectives.

4.2 Response Rate

A total of 311 participants out of possible 424 reached out and interviewed using the structured questionnaires. This translates to a response rate of 73.3%, which surpasses the recommended threshold of 70%, ensuring the generalizability of the study's outcomes (Singh & Masuku, 2014). The substantial participation reinforces the credibility of the study, indicating a strong engagement from the target population.

4.3 Prevalence of Unintended Pregnancies

The figure below shows the prevalence of unintended pregnancies in Mukuru Kwa Njenga. The prevalence is expressed as the proportion of the teenage girls with the outcome of interest (i.e., unintended pregnancies). Most of the respondents (62.7%) experienced unintended pregnancies (Figure 1).

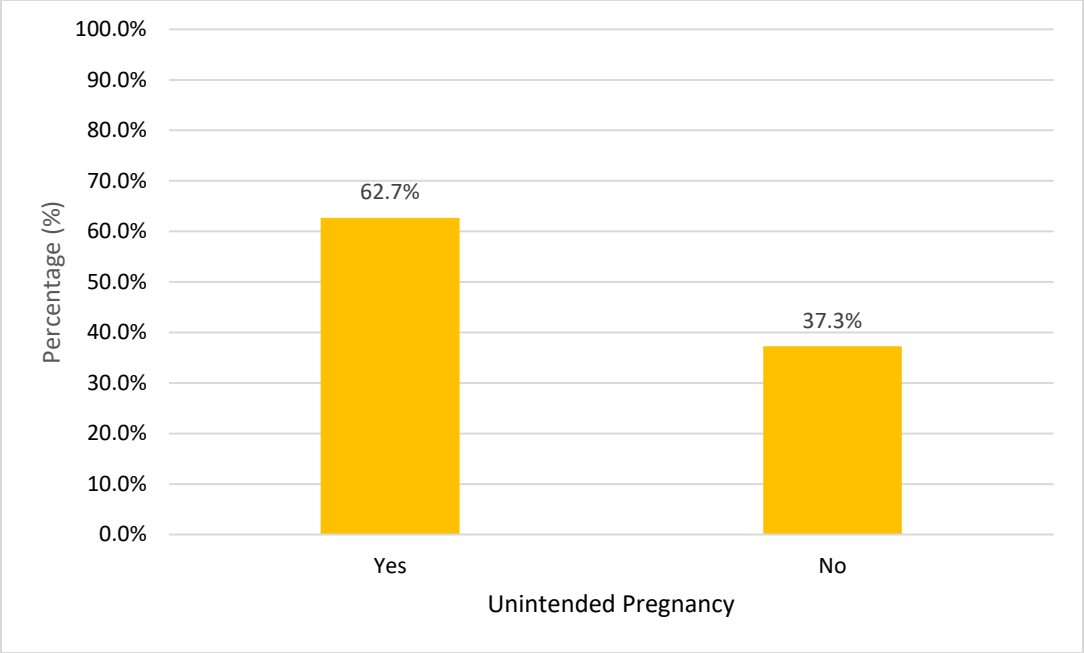

Figure 2: ***Unintended Pregnancy***

4.4 Socio-demographic Characteristics of the Respondents

Most of the fathers to the respondents were employed (32.8 %). More than half of the respondents' mothers were self-employed (60.8%) while only 22.5% were unemployed at the time of this study (Table 2).

In terms of the person the respondent lives with, about 47% lived with both parents, while 20.9% lived with their mothers only (Table 2).

Majority of the fathers to the respondents had completed primary education while 17.4% had secondary education (Table 2). About 33% of the respondents' mothers had no formal education, while 17.4% and 14.8% completed secondary and primary education, respectively (Table 2).

More than one-third of the respondents came from households earning less than Ksh. 10,001 and Ksh 15,000 per month, while 32.5% earned less than Ksh 10,000 (Table 2).

Table 2: Socio-demographic Characteristics of Respondents

Characteristic	Frequency	Percentage
Father's Occupation		
Civil Servant	49	15.8%
Self-employed	53	17%
Unemployed	54	17.4%
Did not respond	155	49.8%
Mother's Occupation		
Civil Servant	23	7.4%
Self-employed	166	53.4%
Unemployed	70	22.5%
Did not respond	52	16.7%
Living with Who		
Mother only	65	20.9%
Both Parents	145	46.6%
Stepmother	18	5.8%
Relatives	28	9%
Stepfather	10	3.2%
Siblings	12	3.9%
Friends	18	5.8%
Father only	15	4.8%
Father's Education		

Characteristic	Frequency	Percentage
University/College	15	4.8%
Secondary	54	17.4%
Primary	65	20.9%
Pre-Primary	4	1.3%
No formal Education	14	4.5%
Did not respond	159	51.1%
Mother's Education		
University/College	23	7.4%
Secondary	33	10.6%
Primary	54	17.4%
Pre-Primary	46	14.8%
No formal Education	103	33.1%
Did not respond	52	16.7%
Average monthly income		
<10,000	101	32.5%
10,001-15,000	103	33.1%
15,001-20,000	47	15.1%
20,001-25,000	43	13.8%
>25,000	17	5.5%

4.5 Relationship Between Knowledge on Contraceptives Methods and the Occurrence of Unintended Pregnancies among Teenage Girls in Mukuru Kwa Njenga

Bivariate Analysis of the Relationship Between Various Knowledge Factors and the Occurrence of an Unintended Pregnancy

Table 3 below represents the crosstabulation of various knowledge factors and the likelihood of having an unintended pregnancy.

Most of the respondents (60.8%) reported not to have ever discussing with their partners about protecting themselves before sex. Of those who reported not to have ever discussed with their partners about protection before sex, 18% reported experiencing an unintended pregnancy. Almost half of the respondents (47%) expressed their knowledge on the side effects of various contraceptive methods. Of those who expressed knowledge on the effects of the side effects of various contraceptive methods, 17% had ended up having unintended pregnancy.

When asked about whether using contraceptives effectively prevents teenagers from getting pregnant, 39% dissented. Of those who dissented, 51% reported experiencing an unintended pregnancy.

More than half of the respondents (54%) reported the unavailability of contraceptive methods to teenagers in nearby health facilities. Of those who reported any stockout, 20.2% % reported experiencing an unintended pregnancy. While stockouts of contraceptive methods was being reported, there was limited access to contraceptive information teenagers at the nearby health facilities (84.2%).

In the bivariate analysis using Chi-square tests of association, talking about protecting oneself with their partner before having sex (P<0.001), knowledge of any side effects of various contraceptive methods (P<0.001), knowledge on whether using contraceptives effectively can prevent teenagers from getting pregnant (P<0.001), availability of contraceptive methods to teenagers in the nearby health facility (P<0.001), availability of contraceptive information for teenagers in the nearby health facilities (P<0.001) and knowledge of what contraceptives are (P<0.001) were found to be significant at 5% level of significance (Table 3 below).

Table 3: Contraceptive Knowledge and the Occurrence of Unintended Teenage Pregnancies

	Total	Intended Pregnancies	Unintended Pregnancies	Chi-Square Significance
Do you talk about protecting yourselves with your partner before having sex?				$X^2(1) = 81.081$, p=0.000
Yes	122(39.2%)	39(32%)	83(68%)	
No	189(60.8%)	156(82.5%)	33(17.5%)	
Do you know any the side effects of various contraceptive methods?				$X^2(2\%) = 50.971$, p=0.000
Yes	146(46.9%)	121(82.9%)	25(17.1%)	
No	116(37.3%)	57(49.1%)	59(50.9%)	
Not Sure	49(15.8%)	17(34.7%)	32(65.3%)	
Does using contraceptives effectively prevent teenagers from getting pregnant?				$X^2(2\%) = 82.748$, p=0.000
Yes	75(24.1%)	24(32%)	51(68%)	
No	121(38.9%)	112(92.6%)	9(7.4%)	
Not Sure	115(37%)	59(51.3%)	56(48.7%)	
Are contraceptive methods available to teenagers in the nearby health facility?				$X^2(2\%) = 61.253$, p=0.000
Yes	49(15.8%)	10(20.4%)	39(79.6%)	
No	168(54%)	134(79.8%)	34(20.2%)	
Not Sure	94(30.2%)	51(54.3%)	43(45.7%)	
Is contraceptive information available for teenagers in the nearby health facilities?				$X^2(2\%) = 109.905$, p=0.000
Yes	39(12.5%)	2(5.1%)	37(94.9%)	
No	101(32.5%)	98(97%)	3(3%)	
Not Sure	171(55%)	95(55.6%)	76(44.4%)	

	Total	Intended Pregnancies	Unintended Pregnancies	Chi-Square Significance
Do you know what contraceptives are?				$X^2(2\%) = 56.357$, p=0.000
Yes	49(15.8%)	8(16.3%)	41(83.7%)	
No	77(24.8%)	61(79.2%)	16(20.8%)	
Not Sure	185(59.5%)	126(68.1%)	59(31.9%)	

Multivariate Analysis of the Relationship Between Various Knowledge Factors and the Occurrence of an Unintended Pregnancy

Table 4 below represents the results from the multivariate logistic regression analysis of the relationship between various knowledge indicators and experience of having a pregnancy (intended or unintended). Pseudo R square indicated that the fitted multivariate model explains approximately 88.4% of the variation in unintended pregnancies among adolescents based on the included factors. The overall fitted model was significant ($P < 0.001$), suggesting that the factors included (discussing protection, knowledge of side effects, beliefs about effectiveness, access to methods and information, and understanding of contraceptives) collectively had a strong association with unintended pregnancies among adolescents.

From the multivariate analysis, there was a statistically significant association between knowledge on contraceptive methods and the occurrence of unintended pregnancies among adolescents.

Discussing about protection with one's partner before engaging in sexual intercourse reduces the likelihood of experiencing an unintended pregnancy by 95.6% (OR= 0.044; 95% CI: 0.011-0.174; P<0.001) compared to those who do not discuss protection.

Those who are aware of the potential side effects of different contraceptive methods are 52 times more likely to get an intended pregnancy (95% CI: 6.869-389.611; P<0.001).

Accessibility of contraceptive methods at local healthcare facilities reduces the chances of unintended pregnancies by around 90% if they are readily available (OR=0.106; 95% CI: 0.014-0.777; P<0.05). Having access to information about contraceptives at nearby healthcare centres results in a nearly 99% decrease the chance of having unintended pregnancies (OR=0.007; 95% CI: 0.00-0.108; P<0.001). Yet, if no such information is available, the chance of unplanned pregnancies skyrockets by over 76 times (OR=76.777; 95% CI: 7.926-743.763; P<0.001). Understanding what contraceptives are decreases the likelihood of unintended pregnancies by almost 97% (OR=0.033; 95% CI: 0.003-0.376; P<0.001).

Table 4: Logistic Regression Analysis on the Association between knowledge on Contraceptive and the Occurrence of Unintended teenage Pregnancies

Factor	Category	OR* (95% CI)	P value
Do you talk about protecting yourselves with your partner before having sex?	Yes	0.044 (0.011-0.174)	.000
	No	Ref	
Do you know any the side effects of various contraceptive methods?	Yes	51.731 (6.869-389.611)	.000
	Not Sure	Ref	
Does using contraceptives effectively prevent teenagers from getting pregnant?	Yes	0.22 (0.055-0.875)	.032
	No	42.935 (7.211-255.645)	.000
	Not Sure	Ref	
Are contraceptive methods available to teenagers in the nearby health facility?	Yes	0.106 (0.014-0.777)	.027
	No	5.239 (1.256-21.852)	.023
	Not Sure	Ref	
Are contraceptives information available for teenagers in the nearby health facilities?	Yes	0.007 (0-0.108)	.000
	No	76.777 (7.926-743.763)	.000
	Not Sure	Ref	
Do you know what contraceptives are?	Yes	0.033 (0.003-0.376)	.006
	Not Sure	Ref	

Qualitative Findings on the Knowledge on Contraceptive Methods and How Participants Perceive the Effect of Knowledge on the Occurrence of Unintended Pregnancies

4.6 Knowledge Gaps and Misconceptions

Most respondents pointed out several gaps in contraceptive method usage. There were also prevalent misconceptions about the side effects and effectiveness of contraceptives, which in turn induced phobia and reluctance to their use.

"*I had heard that people who take pills get ill, so I do not want to use them,*" a 17-year-old she said.

4.6.1 Communication Barriers with Healthcare Providers

When seeking help regarding sexual health as well as the use of contraceptives, the respondents felt discomfort and embarrassment with the health care personnel. There was a strong fear of being stigmatized and keeping things private, which hindered openness and further exacerbated the situation.

"*When I try to ask about some birth control methods, for instance, I feel that the nurse thinks I should not be asking if I want to get pregnant*," explained a 16-year-old girl.

"*I fear that if I ask a lot of questions, then my parents will learn of these inquiries and will be mad at me*."

4.6.2 Importance of Accurate Information

While some participants had reservations at first, recognizing that having access to the correct knowledge of contraceptive methods is vital to control the incidence of unintended pregnancies and STIs. These people made the right move and went looking for information that is factual and indisputable.

"As I continued going there, I started easing up, posing questions, and to this day, I use condoms all the time"

"The fact that I didn't know how to use the contraceptives put me in danger, which is why I started learning from good sources about them."

4.7 The Influence of Accessibility to Reproductive Health Services on The Occurrence of Unintended Pregnancies among Teenagers in Mukuru Kwa Njenga

The second objective examined the perceived impact of accessibility to reproductive health services, as measured by reported patterns of utilisation, on the occurrence of unintended pregnancies among the adolescent female population in Mukuru Kwa Njenga.

Bivariate Analysis of the Relationship Between Accessibility to Reproductive Health Services Factors and the Occurrence of an Unintended Pregnancy

Table 5 below represents results on the impact of accessibility to RHS on the occurrence of unintended pregnancies among the adolescent female population using Pearson Chi-Square tests of association. From the bivariate analysis, there was a significant association ($P<0.001$), indicating that proximity to healthcare facilities influences pregnancy

outcomes. Proximity to healthcare facilities significantly affects pregnancy intentions. Fear of community judgment significantly influences the occurrence of unintended pregnancy (P<0.001). The was also a significant association (P=0.001) between the availability of health facilities and the occurrence of an unintended pregnancy

The Chi-square test also revealed a significant association between resource availability and pregnancy outcomes. The availability of stock and materials for SRHS also significantly influenced pregnancy outcomes (P<0.001).

The bivariate analysis also revealed a significant association between sex education accessibility and pregnancy outcomes (P<0.001).

When assessing the effect of provider attitudes on pregnancy outcomes, this was significant at 5% level (P<0.001).

Table 5: Accessibility to Reproductive Health Services and Occurrence of Unintended Teenage Pregnancies

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
What is the distance between where you live and the nearest health facility or hospital				$X^2(3) = 57.610$, p=0.000
Adjacent	49(15.8%)	21(42.9%)	28(57.1%)	
Slightly far	123(39.5%)	55(44.7%)	68(55.3%)	
Far	91(29.3%)	75(82.4%)	16(17.6%)	
Very far	48(15.4%)	44(91.7%)	4(8.3%)	
Are you worried about people in your community finding out you use contraception				$X^2(1\%) = 81.847$, p=0.000

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Yes	175(56.3%)	148(84.6%)	27(15.4%)	
No	136(43.7%)	47(34.6%)	89(65.4%)	
How often do they open the health facility that you go to?				$X^2(3\%) = 99.067$, p=0.000
Everyday 24 hours	45(14.5%)	13(28.9%)	32(71.1%)	
Every day from 8AM to 5PM	88(28.3%)	29(33%)	59(67%)	
Only on Monday-Friday 8AM to 5PM	131(42.1%)	108(82.4%)	23(17.6%)	
Rarely Open	47(15.1%)	45(95.7%)	2(4.3%)	
Does the health facility you visit have enough stock and materials in relation to SRHS?				$X^2(2\%) = 68.345$, p=0.000
Yes	101(32.5%)	34(33.7%)	67(66.3%)	
No	160(51.4%)	134(83.8%)	26(16.3%)	
Not Sure	50(16.1%)	27(54%)	23(46%)	
How easy is it to access sex education?				$X^2(3\%) = 136.694$, p=0.000
Very easy	35(11.3%)	3(8.6%)	32(91.4%)	
Somewhat easy	91(29.3%)	28(30.8%)	63(69.2%)	
Not easy at all	59(19%)	51(86.4%)	8(13.6%)	
Impossible	126(40.5%)	113(89.7%)	13(10.3%)	
What is the attitude of the healthcare givers at health care facilities?				$X^2(2\%) = 67.779$, p=0.000
Cheerful	124(39.9%)	47(37.9%)	77(62.1%)	
Calm	100(32.2%)	67(67%)	33(33%)	

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Cold	87(28%)	81(93.1%)	6(6.9%)	

Multivariate Analysis of the Relationship Between Accessibility to Reproductive Health Services Factors and the Occurrence of an Unintended Pregnancy

Table 6 below shows the results from the multivariate logistic regression analysis accessibility factors associated with the occurrence of unintended pregnancies. Upon model evaluation, a pseudo-R square of 0.897 and a significant chi-square statistic (X^2 (14) =333.664, P<0.001) suggested that the factors included accounted for a substantial proportion of the variance in unintended pregnancies among adolescents. The overall model was significant (P < 0.001), suggesting that the factors included (distance to health facility, worries about community perceptions, facility opening hours, stock availability, sex education accessibility, and healthcare giver attitudes) collectively had a strong relationship with unintended pregnancies among adolescents.

From the multivariate analysis, there was a statistically significant effect of accessibility to reproductive health services on the occurrence of unintended pregnancies among the adolescent female population (AOR= 0.02; 95% CI: 0.001-0.483; P<0.016). Living farther away from the nearest health facility or hospital increased the likelihood of unintended pregnancies.

Worrying about others discovering one uses contraception leads to increased odds of unintended pregnancies by roughly 18 times (OR=18.355; 95% CI: 4.37-77.086; P<0.001).

Infrequent opening hours of visited healthcare facilities results to elevated risks of unintended pregnancies. When the facility opens every day from 8 AM to 5 PM, the odds drop by approximately 97% (OR=0.036; 95% CI: 0.002-0.663; P= 0.025).

Insufficient stocks and materials at healthcare facilities contribute to higher probabilities of unintended pregnancies. If the facility lacks adequate supplies, the likelihood rises by over thirteenfold (OR=13.724; 95% CI: 1.653-113.919; P= 0.015).

Easy access to sex education correlates negatively with unintended pregnancies. Very easy access reduces the odds by 99.9% (OR=0.001; 95% CI: 0-0.021; P<0.001). Similarly, somewhat easy access decreases the chances by approximately 96% (OR=0.036; 95% CI: 0.007-0.187; P<0.001).

Healthcare providers' attitudes is linked to a high frequency of unintended pregnancies. A cheerful attitude corresponds to reduced odds by 99.5% (OR=0.005; 95% CI: 0-0.085; P<0.001); calm behaviour translates into diminished risks by 98% (OR=0.022; 95% CI: 0.002-0.3; P<0.001). Adolescents who perceive healthcare givers as cheerful or calm have significantly lower odds (OR = 0.005 and OR = 0.022, respectively) of unintended pregnancies compared to those who perceive them as cold.

Table 6: Logistic Regression Analysis of Accessibility to Reproductive Health Services on Occurrence of Unintended Teenage Pregnancies

Factor	Category	OR*(95% CI#)	P value
What is the distance between where you live and the nearest health facility or hospital	Adjacent	0.02 (0.001-0.483)	.016
	Slightly far	0.004 (0-0.081)	.000
	Very far	Ref	
Are you worried about people in your community finding out you use contraception	Yes	18.355 (4.37-77.086)	.000
	No	Ref	
How often do they open the health facility that you go to?	Every day from 8AM to 5PM	0.036 (0.002-0.663)	.025
	Rarely Open	Ref	
Does the health facility you visit have enough stock and materials in relation to SRHS?	No	13.724 (1.653-113.919)	.015
	Not Sure	Ref	
How easy is it to access sex education?	Very easy	0.001 (0-0.021)	.000
	Somewhat easy	0.036 (0.007-0.187)	.000
	Impossible	Ref	
What is the attitude of the healthcare givers at health care facilities?	Cheerful	0.005 (0-0.085)	.000
	Calm	0.022 (0.002-0.3)	.004
	Cold	Ref	

Qualitative Findings on the Accessibility to Reproductive Health Services and Unintended Pregnancies

A qualitative study was also conducted to examine the influence of accessibility to reproductive health services on the occurrence of unintended pregnancies among teenagers in Mukuru Kwa Njenga.

Proximity to Health Facilities

The farther respondents reside from health facilities, the more instances of unintended pregnancies they reported owing to restricted access to contraceptives and reproductive health services.

"*It's expensive to travel such a distance and I can't always afford the fare. Consequently, I do not use any birth control methods*," A 17-year-old girl said.

"*When the closest health facility is a distance that requires walking a lot, I hardly go there, especially if I want to go for one purpose only*."

Availability and Stock Issues

The knowledge and use of contraceptives were hampered by recurrent stock-outs of contraceptives and fundamental reproductive health commodities at the local health facilities as noted by several respondents.

"*At times, the clinic has no condoms or contraceptive pills, and I have to do without them*," narrated a 15-year-old participant.

"*There were weeks in this clinic when contraceptive stocks were over, and I had no idea where else to acquire them for free*."

Healthcare Provider Attitudes

According to the study, adolescents with positive experiences with healthcare experts tended to trust them and use contraceptives more, but negative experiences dissuaded many adolescents from seeking help from these professionals.

"*The nurse was quite nice and explained everything in detail. I was not afraid to ask any questions*," an 18-year-old said.

"*It feels like some doctors are too caught up in other things and don't pay attention to what you have to say, so I do not see the point of seeking assistance*."

Respect and Professionalism among healthcare providers

Healthcare personnel were on average perceived as respectful and courteous, and many praised the interactions that were polite and professional. However, there were isolated cases when the stress or impatience of the staff cut short this courtesy.

"*Staff are generally kind, and they always take their time to assist me*," a 15-year-old girl recounted out.

"*I feel that I am given respect when the nurse allows me to express my worries in her own pace without hurrying me*".

Concerns About Confidentiality and Privacy

Most of the participants believed that their privacy was respected. However, few of them raised the issue of possible confidentiality violations, particularly in cases when there were lots of people or the environment was informal.

"*I am sometimes anxious that people may eavesdrop on my conversation with the nurse*." A 16-year-old in the IDI said this.

"*I get that maintaining confidentiality is imperative but, in most clinics, especially while busy, controls on privacy are difficult to uphold*"

Time and Attention from Healthcare Providers

The duration and focus provided to patients differed, which made some adolescents feel rushed during the consultations affecting the care given.

"*I also feel that at times the doctors appear preoccupied and do not pay much attention*," said an 18-year-old girl.

"*I get good advice when the staff are not in a hurry, as I tend to relax more*."

Effective Communication

The proper understanding and application of contraceptives by the adolescents depend highly on effective communication from health workers. That said, there were variations noted in the effectiveness of communications made to the adolescents.

"*Other times, the way it is explained gets too involved and I am left lost on what to do*."

4.8 The Influence of Socio-Economic Factors on the Occurrence of Unintended Pregnancies among Teenage Girls residing in Mukuru Kwa Njenga

The third objective was to explore the multifaceted ways in which socio-economic factors contribute to the occurrence of unintended pregnancies among teenage girls residing in Mukuru Kwa Njenga. Results from the Pearson Chi-Square tests of association are shown in Table 7.

Bivariate Analysis of the Relationship Between Socio-Economic Factors and the Occurrence of an Unintended Pregnancy

From Table 7 below, father's and mother's occupations, who the teenager lived with, father's and mother's education, and the household's average monthly income were found to be significantly associated with the occurrence of unintended pregnancies (P<.001).

Table 7: Socio-Economic Factors Contribution to the Occurrence of Unintended Pregnancies among Teenage Girls

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Father's Occupation				$X^2(3) = 99.805$, p=0.000
Civil Servant	49(15.8)	4(8.2)	45(91.8)	
Self employed	53(17)	25(47.2)	28(52.8)	
Unemployed	54(17.4)	51(94.4)	3(5.6)	
Did not respond	155(49.8)	115(74.2)	40(25.8)	
Mother's Occupation				$X^2(3) = 18.905$, p=0.000
Civil Servant	23(7.4)	6(26.1)	17(73.9)	

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Self employed	166(53.4)	106(63.9)	60(36.1)	
Unemployed	70(22.5)	53(75.7)	17(24.3)	
Did not respond	52(16.7)	30(57.7)	22(42.3)	
Living with Who				$X^2(7) = 105.53$, p=0.000
Mother only	65(20.9)	7(10.8)	58(89.2)	
Both Parents	145(46.6)	115(79.3)	30(20.7)	
Stepmother	18(5.8)	16(88.9)	2(11.1)	
Relatives	28(9)	23(82.1)	5(17.9)	
Stepfather	10(3.2)	8(80)	2(20)	
Siblings	12(3.9)	5(41.7)	7(58.3)	
Friends	18(5.8)	11(61.1)	7(38.9)	
Father only	15(4.8)	10(66.7)	5(33.3)	
Father's Education				$X^2(5) = 34.953$, p=0.000
University/College	15(4.8)	4(26.7)	11(73.3)	
Secondary	54(17.4)	24(44.4)	30(55.6)	
Primary	65(20.9)	56(86.2)	9(13.8)	
Pre-Primary	4(1.3)	2(50)	2(50)	
No formal Education	14(4.5)	12(85.7)	2(14.3)	
N/A	159(51.1)	97(61)	62(39)	
Mother's Education				$X^2(5) = 103.78$, p=0.000
University/College	23(7.4)	2(8.7)	21(91.3)	
Secondary	33(10.6)	7(21.2)	26(78.8)	

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Primary	54(17.4)	20(37)	34(63)	
Pre-Primary	46(14.8)	41(89.1)	5(10.9)	
No formal Education	103(33.1)	81(78.6)	22(21.4)	
Did not respond	52(16.7)	44(84.6)	8(15.4)	
Average monthly income				$X^2(4) = 180.69$, p=0.000
<10,000	101(32.5)	95(94.1)	6(5.9)	
10,001-15,000	103(33.1)	87(84.5)	16(15.5)	
15,001-20,000	47(15.1)	7(14.9)	40(85.1)	
20,001-25,000	43(13.8)	5(11.6)	38(88.4)	
>25,000	17(5.5)	1(5.9)	16(94.1)	

Multivariate Analysis of the Relationship Between Socio-Economic Factors and the Occurrence of an Unintended Pregnancy

The results in Table 8 shows results from the multivariate analysis the socio-economic Factors associated the occurrence of Unintended Pregnancies among Adolescent. Upon model evaluation, it was discovered that the socioeconomic factors cumulatively explained 88.2% of the variance in the unintended pregnancies among adolescents (Pseudo R Square= 0.882). Additionally, the model demonstrates a high degree of fitness ((X^2 (27) =323.338, P<0.001).

Fathers who are civil servants correspond to considerably lower odds of unintended pregnancies (OR=0.019; 95% CI: 0.002-0.171; P<0.001). In other words, adolescents whose fathers are civil servants have significantly lower odds (OR = 0.019) of unintended pregnancies compared to those whose fathers are unemployed.

Mothers being employed only implies a reduction in odds by 96%, although this was not significant (OR=0.041; 95% CI: 0.002-0.945, P=0.058). Said otherwise, adolescents whose mothers are civil servants show a non-significant trend towards lower odds (OR = 0.056) of unintended pregnancies compared to those whose mothers are unemployed.

Adolescents living with their mothers have significantly lower odds (OR = 0.041; 95% CI: 0.002-0.945; P= 0.046) of unintended pregnancies compared to those living with both parents.

Adolescents who fathers have primary education exhibit increased odds of unintended pregnancies (OR=11.939; 95% CI: 1.037-137.515; P= 0.047). In other words, adolescents whose fathers have only primary education have significantly higher odds (OR = 11.939) of unintended pregnancies compared to those whose fathers have university/college education.

Households with average monthly incomes less than Ksh 10,000 (OR=31.022; 95% CI: 6.637-74.333; P<0.001) and between Ksh 10,001 and15,000 (OR=151.2; 95% CI: 5.841-3913.897; P= 0.003) display substantially greater odds of unintended pregnancies. Said otherwise, adolescents from households with income less than Ksh 10,000 have

significantly higher odds (OR = 31.022) of unintended pregnancies compared to those from households with higher incomes.

Mother's education matters in determining unintended pregnancies. Absence of formal education raises the odds by 98% (OR=0.022; 95% CI: 0.001-0.81; P= 0.038).

Table 8: Logistic Regression Analysis of Socio-economic Factors on the occurrence of Unintended teenage Pregnancies

Factor	Category	OR* (95% CI)	P value
What is your father's occupation?	Civil Servant	0.019 (0.002-0.171)	.000
	Unemployed	Ref	
What is your mother's occupation?	Civil Servant	0.056 (0.003-1.098)	.058
	Unemployed	Ref	
With whom do you live?	Mother Only	0.041 (0.002-0.945)	.046
	Both Parents	Ref	
What is your father's level of Education?	Primary	11.939 (1.037-137.515)	.047
	University/college	Ref	
Average monthly income	<10,000	31.022 (6.637-74.333)	.000
	10,001-15,000	151.2 (5.841-3913.897)	.003
	>25,000	Ref	
What is your mother's level of Education?	University/College	0.022(0.001-0.81)	.038
	No formal Education	Ref	

Qualitative Findings on the Linkage Between Socio-Economic Factors and Unintended Pregnancies

Qualitative findings are presented to explain the underlying linkage between socioeconomic factors and the occurrence of unintended pregnancies among teenage girls residing in Mukuru Kwa Njenga.

Parental Occupation and Support

Respondents from working parents or educated households had better reproductive health information and support, thus leading to fewer unintended pregnancies.

"*My father works as a teacher and he tells me about the need to use protective methods*," a 19-year-old girl said.

"*Having a working and educated mother makes me appreciate family planning*."

On the other hand, where both parents were unemployed, children bore the brunt of the economic burden which forced them to engage in sexual activities at an early age and experience unintended pregnancies.

"*Since my dad is jobless, there are times that I have to use some older boys for financial aid, and such situations lead to I can't refuse*," a 16-year-old participant shared.

"*There is no money in my turn and that exposes me to unhealthy relationships*."

Educational Attainment

As the degree of parental education level improved, there was more knowledge and actual use of contraceptives among the adolescent population.

"*My mom went to college and had a better understanding of contraceptives, so she educated me about family planning and how to use contraceptives correctly*," said an 18-year-old speaker.

"*Educated members of my family motivate me to always go for safe sexual practices*."

On the other hand, in families where education levels are lower, it was the lack of knowledge and resources that accounted for high levels of unintended pregnancies.

"*My parents didn't talk about sex with me because they did not know much about it themselves*," a 17-year-old girl explained.

"*I was also unable to do that because there was no proper education imparted to me at home on how to prevent unintended pregnancies*."

Household Income

The issue of economic constraints was prevalent, and several young individuals reported that poverty inhibits their access to reproductive health services and contraceptives.

"*We are a struggling family and barely live from hand to mouth, therefore I cannot go to the clinic often for contraceptives*," a 17-year-old girl narrated.

"*There are always financial constraints, so purchasing contraceptives is an unnecessary expense."*

Living Arrangements

Stability within the family structure offered better altitudes and counselling, therefore, was less prone to cases of unintended pregnancies.

"*When I live with my dad and mom together, I have another person to discuss all my problems and issues concerning sex*," 19 years old said.

"*When I live with friends rather than with my family, getting the necessary assistance becomes a challenge*".

Conversely, the adolescents who stayed with relatives or friends experienced less monitoring and support, and therefore, the rates of unintended pregnancies were higher.

"*I'm with my aunt, but she doesn't share about such issues with me, and. I'm really confused*," said a 16-year-old.

"*I lack the necessary family foundations, and therefore, it is impossible to make the right choices concerning my sexual health*."

Cultural Beliefs Regarding Teenage Pregnancies

Sociocultural factors and values play an important role in shaping perceptions and attitudes about teenage pregnancy by often targeting the young mothers and dismissing healthy discussions on sexual health issues.

"There is too much talk of shame where there is a teenage pregnancy, and so we suffer in silence without seeking assistance."

"*For us, getting pregnant and giving birth in one's teenage years is regarded as a disgrace*."

Community Judgment and Stigma

The societal perception of the use of contraceptives and early pregnancies amongst the youths acted as a barrier to their accessing reproductive health services and using contraception regularly.

"*Because of the stigma that attaches itself to teenage pregnancies, one cannot comfortably discuss the matter with a healthcare provider*."

"*I'm scared of what will happen if I use birth control. People will talk behind my back*."

4.9 Relationship Between Substance Abuse and the Occurrence of Unintended Pregnancies among Teenage Girls in the Specified Locale of Mukuru Kwa Njenga

The fourth objective was to empirically determine the association between substance abuse patterns and the prevalence of unintended pregnancies among teenage girls in the specified locale of Mukuru Kwa Njenga.

Bivariate Analysis of the Relationship Between Substance Abuse Patterns and the Occurrence of an Unintended Pregnancy

The results in Table 9 shows the association between socio-economic factors and the occurrence of unintended pregnancies among teenage girls using Pearson Chi-Square tests of association.

The results indicate a significant association between drug or substance use and occurrence of unintended pregnancy ($P<0.001$).

The age at which the adolescent had the first drug encounter was significantly associated with the occurrence of unintended pregnancy ($P<0.001$). Said otherwise, an early initiation of drug use (before 13 years old) is strongly associated with the occurrence of unintended pregnancies.

Chi-square tests of association also revealed a significant association ($P<0.001$) between the frequency of drug use and the occurrence of unintended pregnancies.

There was also a significant association) between drug use leading to sex and the occurrence of unintended pregnancy ($P<0.001$). In other words, drug use leading to sexual activity leads to unintended pregnancies.

Table 9: Correlation Between Substance Abuse Patterns and the Prevalence of Unintended Pregnancies among Teenage Girls

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
Do you use any kind of drugs or substances?				$X^2(1) = 23.177$, p=0.000
Yes	248(79.7)	172(69.4)	76(30.6)	
No	63(20.3)	23(36.5)	40(63.5)	
Type of Drug Used				$X^2(3) = 65.827$, p=0.000
Bhang	87(28)	67(77)	20(23)	
Alcohol	77(24.8)	73(94.8)	4(5.2)	
Miraa	27(8.7)	8(29.6)	19(70.4)	
Cigarette	57(18.3)	24(42.1)	33(57.9)	
None	63(20.3)	23(36.5)	40(63.5)	
When was your first encounter with drugs and substances?				$X^2(4) = 60.854$, p=0.000
Less than 10 years	66(21.2)	55(83.3)	11(16.7)	
11 to 13	86(27.7)	73(84.9)	13(15.1)	
13 to16	41(13.2)	17(41.5)	24(58.5)	
Above 17	55(17.7)	27(49.1)	28(50.9)	
N/A	63(20.3)	23(36.5)	40(63.5)	
How often do you use that drug or substance?				$X^2(4) = 149.053$, p=0.000
Monthly	32(10.3)	7(21.9)	25(78.1)	
Weekly	35(11.3)	3(8.6)	32(91.4)	
Twice a week	46(14.8)	33(71.7)	13(28.3)	
Daily	135(43.4)	129(95.6)	6(4.4)	

	Total	Intended Pregnancies	Unintended Pregnancies	Significance
N/A	63(20.3)	23(36.5)	40(63.5)	
Drug lead to sex?				$X^2(2) = 23.307$, p=0.000
Yes	177(56.9)	124(70.1)	53(29.9)	
No	71(22.8)	48(67.6)	23(32.4)	
Not Sure	63(20.3)	23(36.5)	40(63.5)	

Multivariate Analysis of the Relationship Between Substance Abuse Patterns and the Occurrence of an Unintended Pregnancy

Table 10 shows results from the multivariate analysis of the effect of Substance Abuse Patterns on the occurrence of Unintended Pregnancies among Adolescents. Model evaluation resulted to pseudo R^2 score of 0.725 which indicates that the exogenous variables jointly explain 72.5% of the variance in the unintended pregnancies among adolescents. The model fitted the data well as evidenced by the significant X^2 score (X^2 (11) = 235.731, P<0.001).

Teenage girls who use any kind of drugs or substances have significantly higher odds (OR = 3.936; 95% C.I: 2.205-7.027; P<0.001) of experiencing unintended pregnancies compared to those who do not use any substances.

Teenage girls who use drugs or substances less frequently (monthly (OR= 0.005; 95% C.I: 0.00-0.068; P<0.001), weekly (OR= 0.003; 95% C.I: 0.00-0.039; P<0.001), or twice a

week(OR= 0.088; 95% C.I: 0.011-0.717; P=0.023)) have significantly lower odds of unintended pregnancies compared to those who use substances daily (OR= 1.00). This inverse relationship suggests that a higher frequency of substance use is associated with a higher risk of unintended pregnancies.

Consuming Bhang contributes to a nearly six-fold increase in the odds (OR=5.388; 95% CI: 1.401-20.728; P= 0.014), whereas Alcohol ingestion escalates the risk dramatically by seventeen folds (OR=17.333; 95% CI: 2.916-103.03; P= .002). Teenage girls not reporting that drugs do not lead to sex have significantly higher odds (OR = 10.021; 95% C.I: 2.56-39.226; P= 0.001) of unintended pregnancies compared to those who are not sure about the relationship between drugs and sex.

Teenage girls who first encountered drugs or substances at a younger age of less than 10 years (OR= 5.969; 95% C.I: 1.219-29.216; P<0.027) and 11 to 13 years (OR= 10.102; 95% C.I: 2.05-49.79; P= 0.004) have significantly higher odds of having unintended pregnancies compared to those who have never encountered drugs.

Table 10: Regression Analysis of Substance Abuse Patterns on the occurrence of Unintended teenage Pregnancies

Factor	Category	OR* (95% CI)	P value
Do you use any kind of drugs or substances?	Yes	3.936 (2.205-7.027)	.000
	No	Ref	
How often do you use that drug or substance?	Monthly	0.005 (0-0.068)	.000
	Weekly	0.003 (0-0.039)	.000
	Twice a week	0.088 (0.011-0.717)	.023

	Daily	Ref	
Type of Drug Used	Bhang	5.388 (1.401-20.728)	.014
	Alcohol	17.333 (2.916-103.03)	.002
	None	Ref	
Drug lead to sex?	No	10.021 (2.56-39.226)	.001
	Not Sure	Ref	
When was your first encounter with drugs and substances?	Less than 10 years	5.969 (1.219-29.216)	.027
	11 to 13 Years	10.102 (2.05-49.79)	.004
	Never	Ref	

Qualitative Findings on the Relationship Between Substance Abuse Patterns and the Occurrence of Unintended Pregnancies

In this sub-section, qualitative findings are presented to explain the association between substance abuse patterns and the occurrence of unintended pregnancies among teenage girls in Mukuru Kwa Njenga.

Substance Use Impairing Judgment

Respondents mentioned that substance use influence their decision-making especially regarding sexual activities and use of contraceptives.

"*I tend to forget using protection when I go out partying, and this leads me to getting pregnant*," one 18-year-old shared.

"*Substance abuse of any form makes me an idiot such that the dangers of unprotected sex do not cross my mind*."

Types and Effects of Substances

From the quantitative analysis, use of various drugs influenced the use of contraceptives and pregnancy outcomes differently. Substance use including alcohol was reported as a major contributor to high-risk sexual behaviour. This aligns with what a 17-year old respondent said in one of the interviews.

"*When I am drunk, I completely lose control, and protection is the last thing on my mind*," a 17-year-old participant narrated.

"*I don't think smoking is such a big problem, but in inappropriate contexts and together with other drugs, it causes dangerous activities*."

Frequency and Early Initiation of Substance Use

From the quantitative data analysis, results showed that an increased use of substances at an early age and more frequently was associated with more unintended pregnancies. This was supported by the qualitative findings according to a statement by an 18-year-old respondent.

"*I began smoking at age 15. By 17, I was in several relationships and having unsafe sexual intercourse*." An 18-year-old respondent said.

"*Engaging in drug use routinely makes it difficult to adhere to contraceptive use*."

Substance Use Leading to Sexual Activity

Engaging in sexual activities without contraception was associated with substance use in the quantitative analysis. This was corroborated by a response from one of the interviews.

"*Sometimes after parties where we have been drinking, things end up just happening, I don't think of anything like preventing pregnancy,*" said a 19-year-old female respondent.

"*I do drugs because they remove my inhibitions, and I am more likely to have sex without protection.*"

CHAPTER 5: DISCUSSIONS

5.1 Introduction

This chapter discusses the study's findings on factors contributing to unintended pregnancies among teenage girls in Mukuru Kwa Njenga, Nairobi. Although many respondents had some knowledge of contraceptives, misinformation, stigma, and inadequate understanding led to inconsistent use. Access to reproductive health services was limited by barriers such as cost, distance, lack of youth-friendly facilities, and fear of judgment, reducing the effectiveness of contraceptive use.

Socio-economic challenges such as poverty, low educational attainment, and unstable family conditions further increased vulnerability, with some girls engaging in transactional sex due to financial hardship. Additionally, substance abuse, particularly alcohol and marijuana, was linked to risky sexual behaviour and poor contraceptive use, significantly correlating with unintended pregnancies. Overall, the findings underscore that unintended teenage pregnancies in informal settlements result from interconnected issues of knowledge gaps, limited access to services, socio-economic pressures, and substance use.

5.2 Prevalence of Unintended Teenage Pregnancies among Girls Residing in Mukuru Kwa Njenga

The findings from the study on unintended pregnancies among teenagers provide significant insights into the prevalence and associated socio-economic factors influencing this phenomenon. The high prevalence of those who reported experiencing unintended pregnancies underscores the complexity of reproductive health challenges faced by

adolescents, particularly concerning unintended pregnancies. The reported prevalence of 62.7% aligns with global concerns regarding adolescent reproductive health. According to the World Health Organization (WHO), unintended pregnancies among adolescents are a global public health issue, with higher rates observed in low- and middle-income countries where access to contraception and comprehensive sexual education may be limited (WHO, 2021). The findings corroborate previous studies highlighting the vulnerability of adolescents to unintended pregnancies due to factors such as inadequate access to contraceptives, socio-economic disparities, and cultural norms surrounding sexuality (Sedgh et al., 2015; Patton et al., 2016). Several studies have investigated the prevalence and determinants of unintended pregnancies among adolescents. According to Fotso et al. (2014), globally, about half of all pregnancies are unintended, with profound consequences for maternal and child health outcomes. Furthermore, research conducted by Sedgh et al. (2015) revealed that 44% of unintended pregnancies end in abortion, reflecting the magnitude of this public health concern.

5.3 Association Between Knowledge on Contraceptives and the Occurrence of Unintended Teenage Pregnancies.

The study found a significant association between discussing protection with a partner before sex and pregnancy intentions. This underscores the role of communication in proactive family planning and contraceptive use discussions (Moreau et al., 2016). Open communication may facilitate joint decision-making about contraception, potentially reducing the incidence of unintended pregnancies. Research shows that talking about protection before engaging in sexual intercourse reduces the likelihood of unintended

pregnancies (Sarnak et al., 2021). Couples who openly communicate about contraceptive use are more likely to adopt protective behaviours, such as using condoms and choosing effective contraceptive methods (Winner et al., 2016; Wondimagegne et al., 2023). The study highlights that the adolescents who discuss protection with their partners before engaging in sexual intercourse significantly reduce their odds of unintended pregnancies by 95.6%. This underscores the importance of open communication in contraceptive use and decision-making processes. According to a study by Sarnak et al. (2021) effective communication between partners regarding contraceptive use is crucial for increasing contraceptive consistency and reducing unintended pregnancies.

Knowledge about contraceptive side effects also emerged as a crucial factor influencing pregnancy intentions. Adolescents who were aware of these side effects reported higher rates of intended pregnancies compared to those with limited knowledge (15.8%). This finding aligns with previous research indicating that informed decision-making about contraceptives is associated with better reproductive health outcomes (Tao et al., 2011). Comprehensive education about contraceptive methods, including their potential side effects, is essential for empowering adolescents to make informed choices. Higher awareness of contraceptive side effects is generally associated with reduced compliance and continuation rates (Sundaram et al., 2017). Nevertheless, understanding the potential side effects helps adolescents make informed decisions and manage expectations regarding contraceptive use (Wondimagegne et al., 2023). Better knowledge and anticipation of side effects may promote adherence and persistence with chosen methods. Adolescents who are knowledgeable about the potential side effects of contraceptive methods exhibit

significantly lower odds of unintended pregnancies. This finding aligns with literature emphasizing the importance of informed decision-making in contraceptive use. For instance, a study by Harper et al. (2018) underscores that understanding the benefits and risks associated with different contraceptive methods is essential for effective use and pregnancy prevention (Harper et al., 2018).

Beliefs regarding the effectiveness of contraceptives significantly influenced pregnancy outcomes. Adolescents who believed in the effectiveness of contraceptives were more likely to report intended pregnancies compared to those who doubted their efficacy. Conversely, scepticism about contraceptive effectiveness was associated with higher rates of unintended pregnancies. This highlights the importance of addressing misconceptions and promoting accurate information about contraceptive efficacy to support effective family planning (Higgins et al., 2016). Strong belief in contraceptive efficacy decreases the likelihood of unintended pregnancies (Sedgh et al., 2015). Previous studies indicate that adolescents who understand the function of contraceptives and acknowledge their effectiveness are more likely to use them correctly and consistently (Winner et al., 2016; Sundaram et al., 2017). Moreover, confidence in contraceptive methods enhances user satisfaction and promotes continuous use. Adolescents who believe in the effectiveness of contraceptives in preventing pregnancies show significantly reduced odds of unintended pregnancies. Conversely, those who doubt contraceptive efficacy are at higher risk. This finding is consistent with studies highlighting the influence of contraceptive beliefs on contraceptive use behaviours and outcomes (Harada et al., 2024).

Access to contraceptive methods in nearby health facilities was strongly associated with pregnancy intentions. Adolescents with access reported higher rates of intended pregnancies compared to those without access. This underscores the critical role of healthcare infrastructure in facilitating contraceptive use and reducing unintended pregnancies (Bearak et al., 2019). Improving access to contraceptive services, particularly in underserved areas, is crucial for enhancing reproductive health outcomes among adolescents. Readily available contraceptive methods and information at local healthcare facilities reduce the incidence of unintended pregnancies (WHO, 2024b). Adolescents who can quickly access contraceptive services and counselling are more likely to select suitable methods, obtain accurate information, and maintain consistent use (Barnett et al., 2017). Access to contraceptive methods and information at local healthcare facilities is crucial. Adolescents with access to these resources have markedly lower odds of unintended pregnancies, while lack of accessibility increases these odds. This finding is supported by research indicating that access barriers, such as distance to healthcare facilities and cost, hinder contraceptive use and contribute to higher rates of unintended pregnancies (Mumah et al., 2020).

Similarly, the availability of contraceptive information in nearby health facilities correlated with pregnancy intentions. Adolescents with access to information reported higher rates of intended pregnancies compared to those without access. This highlights the need for comprehensive reproductive health education programs that provide accurate information about contraceptives and their use (UNESCO, 2017). Access to information empowers

adolescents to make informed choices about their reproductive health, contributing to lower rates of unintended pregnancies.

Overall knowledge about contraceptives significantly influenced pregnancy intentions. Adolescents with a clear understanding of contraceptives reported lower rates of unintended pregnancies compared to those with limited knowledge. This emphasizes the role of education in shaping contraceptive decision-making and reducing unintended pregnancies (Sedgh et al., 2016). Efforts to improve knowledge through school-based programs and community outreach initiatives are crucial for promoting reproductive health literacy among adolescents. Increased understanding of contraceptive methods is associated with decreased rates of unintended pregnancies (Sedgh et al., 2015). Comprehensive sexual education programs, designed to teach adolescents about contraceptive options, improve their understanding and application of contraceptive methods (WHO, 2024a, 2024b). Informed adolescents can make educated choices regarding contraceptive selection and usage. Adolescents who understand what contraceptives have significantly lower odds of unintended pregnancies. This underscores the importance of comprehensive sexual education programs that provide clear information about contraceptive methods and their mechanisms of action (Girma et al., 2021).

5.4 Accessibility to Reproductive Health Services and Occurrence of Unintended Teenage Pregnancies

The study indicates a clear gradient in pregnancy intentions based on proximity to healthcare facilities. Adolescents living closer to facilities (adjacent or slightly far) exhibited lower rates of unintended pregnancies compared to those living farther away.

This trend underscores the role of accessibility in shaping reproductive health outcomes. It is supported by previous literature indicating that easier access to contraceptives and reproductive health services reduces unintended pregnancies (Mwaikambo et al., 2011; Speizer et al., 2013). Distance to health facilities has been shown to adversely impact adolescents' uptake of sexual and reproductive health services (SRH) in low-resource settings (Chandra-Mouli et al., 2014). Long travel times coupled with transportation costs become barriers for adolescents trying to access these services (Santhya et al., 2010). Stigma surrounding adolescent sexuality also prevents adolescents from utilizing distant health facilities offering necessary services (Sedgh et al., 2015). Thus, making SRH services locally available and easily accessible to adolescents can reduce unintended pregnancies. Adolescents who live adjacent to a health facility have remarkably lower odds of unintended pregnancies compared to those who live very far away. Similarly, those living slightly far from a health facility also exhibit significantly reduced odds of unintended pregnancies. This underscores the importance of geographic accessibility in influencing reproductive health outcomes, aligning with findings that easier access to healthcare facilities improves utilization of reproductive health services and reduces unintended pregnancies (Harada et al., 2024)

The study found that adolescents who expressed worry about community judgment regarding contraception use had significantly higher rates of unintended pregnancies compared to those who did not worry. This finding reflects the impact of social norms and stigma surrounding reproductive health choices. Research indicates that fear of judgment can deter adolescents from seeking contraceptive services, thereby increasing the risk of

unintended pregnancies (Speizer et al., 2009; Warriner et al., 2016). Privacy concerns and societal stigma deter adolescents from accessing contraceptive information and services (Upadhyay et al., 2014). Misperceptions about contraceptive side effects and misinformation disseminated within communities discourage adolescents from practicing safer sex and utilizing contraceptives (WHO, 2014). Educating communities about the advantages of family planning and dispelling myths related to contraceptives can promote acceptance and normalcy around adolescents' engagement with contraceptive services. Adolescents worried about others discovering their contraceptive use have substantially higher odds of unintended pregnancies. This finding underscores the impact of social stigma and privacy concerns on contraceptive behaviours among adolescents, influencing their contraceptive choices and subsequent pregnancy outcomes (Jones et al., 2023).

Facilities open 24 hours or daily during standard hours showed lower rates of unintended pregnancies compared to facilities with limited opening hours. Consistent operational hours enable adolescents to schedule appointments conveniently and maintain continuity in their healthcare visits (Atuyambe et al., 2015). Limited operating hours restrict adolescents' ability to access services and obtain prescriptions for contraceptives promptly (Ipadeola et al., 2013). Extending healthcare facilities' working hours and implementing flexible scheduling can accommodate adolescents' needs and preferences. The study also highlights the influence of healthcare facility operational factors on unintended pregnancies. Adolescents attending health facilities that open daily from 8 AM to 5 PM have significantly lower odds of unintended pregnancies compared to those attending facilities with irregular opening hours. This suggests that consistent availability of

healthcare services during regular hours facilitates better access to reproductive health services, potentially leading to improved contraceptive use and reduced unintended pregnancies (Langston et al., 2014).

Similarly, facilities with adequate stock had fewer unintended pregnancies compared to those with insufficient or uncertain stock levels. These findings highlight the importance of consistent access to healthcare services and resources in preventing unintended pregnancies (Nungo et al., 2025; Sedgh et al., 2016). Shortages in contraceptive supplies and equipment undermine health services' effectiveness in meeting adolescents' demands for SRH (Gupta et al., 2020). Stockouts cause discontinuation and inconsistent use of contraceptives, thus augmenting the vulnerability of adolescents to unintended pregnancies (Yaya et al., 2012). Governments must allocate funds efficiently and invest in robust supply chains to sustain adequate inventory levels. Adolescents reporting inadequate supplies at health facilities have markedly higher odds of unintended pregnancies. This underscores the critical need for well-equipped healthcare facilities to ensure effective delivery of SRHS, which is essential for mitigating unintended pregnancies among adolescents (Neal et al., 2015).

The accessibility of sex education also emerged as a critical factor influencing pregnancy intentions. Adolescents who found sex education very or somewhat easy to access had lower rates of unintended pregnancies compared to those who found it difficult or impossible. This underscores the role of comprehensive sexual education in equipping adolescents with knowledge and skills to make informed reproductive health decisions (Kirby, 2007; UNESCO, 2018). Comprehensive sex education empowers adolescents with

requisite knowledge and skills to protect themselves against unintended pregnancies and STIs (UNESCO, 2018). Life skills curricula incorporated into schools teach adolescents healthy behaviours and develop their confidence to negotiate safer sex (Denford et al., 2017). Expanding sex education coverage and refining pedagogical approaches can fortify adolescents' self-efficacy and preparedness in managing their reproductive health. Adolescents who find it very easy or somewhat easy to access sex education have significantly lower odds of unintended pregnancies. This finding underscores the importance of accessible and comprehensive sex education programs in equipping adolescents with knowledge and skills necessary for making informed decisions about sexual health and contraception.

The attitudes of healthcare providers towards adolescents seeking reproductive health services were also significant. Facilities where healthcare providers were described as cheerful or calm had more balanced distributions of intended and unintended pregnancies. In contrast, facilities where providers were perceived as cold showed a higher proportion of unintended pregnancies. This highlights the importance of provider empathy, respect, and supportive interactions in fostering positive reproductive health outcomes among adolescents (Akinla et al., 2014; Lundsberg et al., 2017). Positive interactions between healthcare providers and adolescents engender trust and satisfaction, enhancing adolescents' willingness to utilize SRH services frequently (Jejeebhoy et al., 2015). Non-judgmental, empathetic, and person-centered communications exchanged between healthcare providers and adolescents establish rapport and motivate adolescents to return for continued care (Campbell et al., 2015). Training healthcare personnel in adolescent-

friendly approaches and creating enabling environments for adolescents to express their queries and apprehensions can minimize unintended pregnancies. Adolescents perceiving healthcare providers as cheerful or calm have significantly lower odds of unintended pregnancies. Conversely, cold interactions with healthcare providers increase the likelihood of unintended pregnancies. Positive attitudes from healthcare providers may enhance adolescents' comfort and trust, positively influencing their contraceptive use behaviours and reproductive health outcomes (Cooper et al., 2012).

5.5 Socio-Economic Factors and Occurrence of Unintended Teenage Pregnancies

The study found significant associations between father's occupation and pregnancy intentions among adolescents. Fathers in stable occupations, such as civil servants, showed lower rates of unintended pregnancies compared to those who were unemployed or had unspecified occupations. Research corroborates these findings by suggesting that stable employment provides financial security, which can facilitate access to healthcare services and contraceptive methods. For instance, a study by Gipson et al. (2008) found that paternal unemployment was associated with higher rates of unintended pregnancies among adolescents due to economic instability and reduced access to reproductive health services (Gipson et al., 2008). The lower odds of unintended pregnancies associated with fathers being civil servants may be attributed to the stability and benefits that come with such employment, which can provide better access to resources and information about reproductive health. This is in line with research that has shown a link between paternal socio-economic status and family planning outcomes (Upadhyay et al., 2012).

Similarly, mother's occupation influenced pregnancy intentions, with civil servant mothers showing lower rates of unintended pregnancies compared to unemployed or self-employed mothers. Studies indicate that maternal employment can impact reproductive health decisions. Employment may provide financial independence and access to health insurance, promoting better contraceptive use and family planning practices (Harada et al., 2024). Conversely, unemployment or irregular employment may limit access to healthcare and increase the risk of unintended pregnancies (Yakubu & Salisu, 2018). Similarly, the employment status of mothers appears to have a protective effect, with employed mothers corresponding to a reduction in the odds of unintended pregnancies by 96%. This could be due to increased autonomy and financial independence that employed mothers may have, which can influence their ability to access and utilize reproductive health services (Li et al., 2023).

Living arrangements also emerged as a significant factor influencing pregnancy intentions. This suggests that family structure and stability play crucial roles in adolescents' reproductive decisions. Adolescents living with both parents or in stable family environments reported lower rates of unintended pregnancies compared to those in single-parent or non-traditional family structures. Research indicates that family structure and stability play crucial roles in adolescent reproductive health outcomes. Adolescents in stable, supportive families tend to have better communication about sexuality and access to parental guidance, which can positively influence contraceptive use and decision-making regarding pregnancy (Santelli et al., 2017). The living arrangement where adolescents live with their mothers only being associated with lower odds of unintended

pregnancies is an interesting finding that may warrant further exploration. It could be that in such households, there is a closer mother-child relationship that fosters open communication about sensitive topics like sex and contraception.

The study highlighted disparities in pregnancy intentions based on parental education levels. Both fathers and mothers with higher levels of education reported lower rates of unintended pregnancies. Higher-educated parents were associated with lower rates of unintended pregnancies among adolescents. Parents with higher education levels may possess greater knowledge about reproductive health and contraception, which they can impart to their children, thereby influencing their reproductive decisions (Guzzo & Hayford, 2012). The educational background of fathers also emerges as an important factor, with primary educated fathers having increased odds of unintended pregnancies. This may reflect the influence of paternal education on family dynamics and decision-making processes, which can impact adolescent reproductive health behaviours (Bankole & Singh, 2018). The impact of mother's education on unintended pregnancies, with the absence of formal education raising the odds by 98%, underscores the importance of maternal education in reproductive health outcomes. Educated mothers may be more informed about contraceptive methods and have greater agency in reproductive decisions (Cleland, Conde-Agudelo, Peterson, Ross, & Tsui, 2012).

Household income was strongly linked to pregnancy intentions, with lower-income households experiencing higher rates of unintended pregnancies. This highlights the influence of economic stability on family planning decisions. Economic factors impact access to healthcare services, contraceptive methods, and overall quality of life, which in

turn influence reproductive health outcomes (Kavanaugh et al., 2017). Adolescents from low-income families may face barriers such as lack of insurance coverage, transportation, or financial resources for contraceptives, contributing to higher rates of unintended pregnancies. Household income is strongly associated with unintended pregnancies, with lower income categories displaying substantially greater odds. This finding is consistent with the literature that suggests a link between poverty and unintended pregnancies, likely due to limited access to education, healthcare, and contraceptive resources (Sundaram et al., 2017).

5.6 Correlation Between Substance Abuse Patterns and the Occurrence of Unintended Teenage Pregnancies

The study findings underscore the profound impact of drug and substance use on pregnancy outcomes among adolescents. It revealed that adolescents who reported using drugs or substances experienced significantly higher rates of unintended pregnancies compared to non-users. The study reveals a significant correlation between substance abuse and unintended pregnancies among adolescents. Specifically, those who reported using drugs or substances had a higher proportion of unintended pregnancies compared to non-users. This aligns with existing research indicating that substance abuse can impair decision-making abilities, increase risky sexual behaviours, and reduce the consistent use of contraceptives, thereby elevating the risk of unintended pregnancies (Hock-Long et al., 2010). The research indicates that teenage girls who engage in any form of substance use face nearly four times higher odds of experiencing unintended pregnancies compared to their non-using counterparts. This finding underscores a robust association between

substance use and heightened risk of unintended pregnancies, highlighting a critical public health concern.

The study further differentiated the impact of specific types of drugs on pregnancy intentions. For instance, users of alcohol reported the highest incidence of unintended pregnancies, followed by users of bhang, users of cigarettes, and users of miraa. Non-users, in comparison, reported lower rates of unintended pregnancies across the board, underscoring the variable risks associated with different substances. Specific types of drugs further exacerbate this risk disparity. Notably, the use of alcohol and cannabis (bhang) stands out in the study. Alcohol use escalates the odds of unintended pregnancies by seventeen-fold, while cannabis use increases the odds nearly six-fold. These statistics underscore the disproportionate impact of certain substances on reproductive health outcomes among teenage girls. This variation suggests that substances like alcohol and bhang, known to impair judgment and increase risk-taking behaviours, may disproportionately contribute to unintended pregnancies among adolescents (Patrick et al., 2016). Different types of drugs showed varying associations with pregnancy intentions in the study. Alcohol and bhang users, for example, reported higher rates of unintended pregnancies compared to non-users. This finding underscores the impact of specific substances on sexual risk-taking behaviours and contraceptive practices. Research suggests that alcohol use, in particular, is linked to impaired judgment and an increased likelihood of engaging in unprotected sex, thus contributing to unintended pregnancies (Santelli et al., 2017).

Adolescents who initiated drug use before the age of 13 reported significantly higher rates of unintended pregnancies compared to those who started later or did not specify their initiation age. This indicates that early exposure to substances may lead to behaviours that increase the likelihood of unintended pregnancies later in life (Kirby, 2002). The study finds that girls who initiate drug use before age 10 face quadrupled odds of unintended pregnancies. Similarly, those initiating drug use between the ages of 11 and 13 double their odds. These findings underscore the vulnerability of early adolescence as a crucial period when substance use behaviours may shape long-term reproductive health outcomes. This finding supports existing literature indicating that early exposure to drugs may lead to risky sexual behaviours and poor contraceptive use practices later in life (Kirby, 2002). Early onset of substance use may disrupt normal developmental processes, including decision-making skills related to sexual health, thus increasing the vulnerability to unintended pregnancies.

Frequency of drug use also played a pivotal role in pregnancy intentions. Daily users reported the highest rate of unintended pregnancies, followed by twice-weekly users, weekly users, and monthly users. This gradient suggests that a higher frequency of drug use correlates with a higher likelihood of engaging in risky sexual behaviours that contribute to unintended pregnancies. The significant associations found through chi-square tests underscore the robustness of these relationships, highlighting the need for targeted interventions addressing substance use and its impact on adolescent reproductive health outcomes (Hock-Long et al., 2010; Santelli et al., 2017). Daily drug users reported the highest rates of unintended pregnancies compared to less frequent users or non-users.

This pattern suggests that a higher frequency of drug use correlates with more frequent engagement in risky sexual behaviours, such as unprotected sex, leading to elevated rates of unintended pregnancies (Rothman et al., 2009).

Moreover, the study highlighted that drug use leading to sexual activity was associated with higher rates of unintended pregnancies. The study also addresses perceptions about the relationship between substance use and sexual behaviour. Interestingly, those who do not perceive a direct link between drug use and sexual activity still exhibit significantly higher odds of unintended pregnancies. This finding suggests that while beliefs about drug effects on sexual behaviour may vary, other factors associated with substance use contribute to increased pregnancy risks. This underscores the direct influence of substance use on sexual behaviour, where impaired judgment and disinhibition due to drug effects may lead to increased sexual risk-taking and decreased contraceptive use (Patrick et al., 2016).

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study concluded that there is a significant association between contraceptive knowledge and unintended pregnancies among teenage girls in Mukuru Kwa Njenga. Key factors such as discussing protection before sex, awareness of contraceptive side effects, effective use of contraceptives, availability of contraceptive options at nearby health facilities, access to contraceptive information, and basic understanding of what contraceptives are were all significantly linked to the likelihood of unintended pregnancy.

Access to reproductive health services was also found to be a significant factor. Specific barriers including distance to health facilities, fear of stigma from the community, irregular facility operating hours, shortages of reproductive health supplies, limited access to sex education, and negative attitudes of healthcare providers were all associated with increased rates of unintended pregnancies among adolescents.

Socioeconomic factors were shown to play a critical role in adolescent pregnancy. Variables such as parents' occupations and education levels, household living arrangements, and average monthly income were all significantly correlated with unintended pregnancies.

Lastly, substance abuse was identified as a major contributing factor. The use of drugs or substances, type and frequency of use, age at first exposure, and the belief that substance use leads to sexual activity were all significantly associated with unintended pregnancies among teenage girls in the area.

6.2 Recommendations for Further Research

1. Improve Availability of Youth-Friendly Services: Teenagers are more likely to access reproductive health services when they feel safe, respected, and understood. Establishing youth-friendly service points within local health facilities can reduce fear, improve comfort, and increase service uptake directly addressing accessibility and its impact on unintended pregnancies.
2. Enhance Health Education and Awareness Campaigns: Many teenagers lack accurate information about reproductive health and available services. Community and school-based awareness campaigns can bridge this knowledge gap, empowering teens to make informed decisions and seek services before facing unintended pregnancies.
3. Decentralize and Bring Services Closer: Distance and transport costs are significant barriers in informal settlements like Mukuru Kwa Njenga. By bringing services closer through mobile clinics or satellite centres, teenagers gain physical access a critical factor in reducing unintended pregnancies.

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APPENDIX I: RESEARCH QUESTIONNAIRE

IMPORTANT: PLEASE DO NOT WRITE YOUR NAME ANYWHERE ON THIS SURVEY.

Section A (Please tick the appropriate boxes)

Section A: Demographic Information

1. Education Level

Primary school	
Secondary school	
College	
University	
No education	

2. Who do you depend on for a living?

Parents	
Guardians	
Self	
Spouse	
Well wishers	

3. Religion

Christian	
Islam	
Hindu	
Prefer not to say	
Other (Specify)	

4. Marital status

Single	
Married	
Widowed	
Divorced	
Separated	

5. With whom do you live?

Mother	
Father	
Step mother	
Step father	
Relatives	
Siblings	

Friends	
Other (Specify)	

6. What is your father's level of Education?

University/College	
Secondary	
Primary	
Pre-Primary	
No formal Education	
N/A	

7. What is your mother's level of Education?

University/College	
Secondary	
Primary	
Pre-Primary	
No formal Education	
N/A	

8. What is your father's occupation?

Civil Servant	
Self employed	
Unemployed	
Other (Specify)	

9. What is your mother's occupation?

Civil Servant	
Self employed	
Unemployed	
Other (Specify)	

10. Describe where you live

Shack	
Flat	
House	
Shelter	
Other (specify)	

Section B: Knowledge on Contraceptives

No.	QUESTION	YES	NO	NOT SURE
1	Do you know what contraceptives are?			
2	Are you using any contraceptive method?			
3	Is information about contraceptive methods readily available to teenagers at health facilities near you?			
4	Are contraceptive methods physically accessible to teenagers in nearby health facilities?			

5	Do teenagers need parental or guardian consent to access contraceptive information or services at health facilities?			
6	Are you aware that not all contraceptive methods protect against STIs and HIV/AIDS?			
7	In your opinion or experience, does proper use of contraceptives effectively prevent unintended pregnancy among teenagers?			
8	Have you or someone you know experienced stigma or social isolation as a result of using contraceptives as a teenager?			
9	Are you aware of any side effects associated with different contraceptive methods?			

Sexual Behaviour

No.		Yes	No
1	Are you currently in a sexual relationship?		
2	Do you use any protection when you have sexual intercourse?		
3	Have you had sexual intercourse with more than one person?		
4	There are very limited chances of getting pregnant after one act of unprotected sex.		
5	By having unprotected sex, you can get pregnant and HIV at the same time.		
6	Pregnancy cannot occur if a couple has sex while standing.		

7	Washing the vagina after sex can prevent pregnancy.		
8	Do you talk about protecting yourselves with your partner before having sex?		

Section C: Access to SRHS

1.What is the distance between where you live and the nearest health facility or hospital?

Adjacent	
Slightly far	
Far	
Very far	

2.Do you know/ have any information about Reproductive Health?

Yes	No

If yes, where did you get the information?

School	
Religious Institution e.g., Church Mosque etc.	
Parents/ Guardians	
Health facility	
Hear say	
Other (Specify)	

3.How easy is it to access sex education?

Very easy	Somewhat easy	Not easy at all	Impossible

4.What is the attitude of the healthcare givers at health care facilities.

Cheerful	
Calm	
Cold	
Other (Specify)	

5.How do you feel when asking a healthcare provider questions about sex?

……

……

6.Does the health facility you visit have enough stock and materials in relation to SRHS?

Yes	No

7.How often do they open the health facility that you go to?

Everyday 24 hours	
Every day from 8AM to 5PM	
Only on Monday- Friday 8AM to 5PM	
Rarely Open	

8.Can you describe the code of conduct of the personnel working there?

Section D: Drug Substance and Abuse

1. Do you use any kind of drugs or substances?

Yes	
No	

2. If yes, what type of drug or substance? (Name the Drug or substance)

……

3. When was your first encounter with drugs and substances?

……

4. How often do you use that drug or substance?

……

5. What do you think the consequences of using drug are?

……

APPENDIX II: QUESTIONNAIRE FOR THE PARENTS OF THE RESPONDENTS

IMPORTANT: PLEASE DO NOT WRITE YOUR NAME ANYWHERE ON THIS SURVEY FORM.

(Please tick the appropriate boxes)

Section A: Demographic Information

1. What is your level of Education?

University/College	
Secondary	
Primary	
Pre-Primary	
No formal Education	
N/A	

2. Religion

Christian	
Islam	
Hindu	
Prefer not to say	
Other (Specify)	

3. What is your marital status?

Single	
Married	
Widowed	
Divorced	
Separated	

4. What is your occupation?

Civil Servant	
Self employed	
Unemployed	
Other (Specify)	

5. Describe where you live?

Shack	
Flat	
House	
Shelter	
Other (specify)	

6. Respond to the following questions as they relate the influence on teenage pregnancy.

Use a tick in the space provided.

Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Television programs, social media and print media contribute largely towards increase of teenage pregnancy.					
Teens belong to groups or certain formations which dictate the behavior and actions to be adhered to by others.					
Lack of parental guidance influence teen pregnancy.					

7. Do you have a teenager who has experienced an unintended pregnancy?

YES	NO

If yes, what could you attribute it to? (Tick where applicable)

Socio-economic factors	
Peer pressure	
Unavailability of contraceptives	
Lack of Knowledge of contraceptives	
Drug and substance abuse related reasons	

8. Do you have teenage daughters who are married?

YES	NO

If yes, how old is she?

13 - 17	
18-19	

Section B: Knowledge on Contraceptives

No.	QUESTION	YES	NO	NOT SURE
1	Do you know what contraceptives are?			
2	Are you or your partner using any contraceptive method?			
3	Is contraceptives information available for teenagers in the nearby health facilities?			
4	Are contraceptive methods available to teenagers in the nearby health facility?			
5	Do teenagers need assent from parents or guardians to obtain contraceptive information and/or services?			
6	Do all contraceptives prevent teenagers from contracting STIs and HIV/AIDS?			
7	Does using contraceptives effectively prevent teenagers from getting pregnant			
8	Do teenagers who use contraceptives experience stigma and isolation?			

9	Do you talk to your child about contraceptives?			

Section C: Teenage Knowledge and Access to SRHS

1. What is the distance between where you live and the nearest health facility or hospital?

Adjacent	
Slightly far	
Far	
Very far	

2. Do you know/ have any information about Reproductive Health?

Yes	No

If yes, where did you get the information?

Education forums	
Religious Institution e.g., Church Mosque etc.	
Chama	
Health facility	
Hear say	
Other (Specify)	

3. Do you talk to your daughter about her sexual reproductive health?

Yes	No

If yes, how often?

Many times	
Sometimes	
Rarely	

4. How easy is it to access sex education for the teenage girls at the heath care facilities?

Very easy	Somewhat easy	Not easy at all	Impossible

5. What is the attitude of the healthcare givers at health care facilities?

Cheerful	
Calm	
Cold	
Other (Specify)	

6. How do you feel when asking a healthcare provider questions about sex?

……

7. Does the health facility you visit have enough stock and materials in relation to SRHS?

Yes	No

8. How often do they open the health facility that you go to?

Everyday 24 hours	
Every day from 8AM to 5PM	

Only on Monday- Friday 8AM to 5PM	
Rarely Open	

9. Can you describe the code of conduct of the personnel working there?

APPENDIX III: IN-DEPTH INTERVIEW GUIDE

FACTORS CONTRIBUTING TO UNINTENDED PREGNANCIES AMONG TEENAGE GIRLS IN THE INFORMAL SETTLEMENT OF MUKURU KWA NJENGA, NAIROBI, KENYA

In-Depth Interview Schedule

The following are a list of questions that will be asked during the interviews:

Section A: Demographic data

i. What is your age?

ii. What is your current marital status?

iii. What is your current level of education?

iv. Are you currently in school? (If No, please state the reason: _____)

v. What is your religious affiliation?

vi. What is your occupation (if any)?

vii. Who do you live with?

viii. What is the estimated monthly income of your household?

ix. Do your parents/guardians have a regular source of income?

x. Have you ever been pregnant? (If yes, how many times? _____)

Section B: Experiences related to the pregnancy

i. Knowledge on Contraceptive Methods

a. Before you got pregnant, had you heard about contraceptive methods? (**Probes:** What types did you know about? Where did you get this information (school, clinic, friends, social media)?)

b. Did you know how to use contraceptives correctly and consistently? (**Probes:** Were you taught how to use them? Were there any myths or fears you had about using them?)

c. Were you using any contraceptive method at the time of conception? **(Probes:** If not, what stopped you? If yes, do you know why it failed (missed pill, condom burst, etc.)?)

ii. Accessibility to Reproductive Health Services

a. Did you know where to get contraceptives or reproductive health services? (**Probes:** Was the facility nearby? Were the services youth-friendly?)

b. Did you ever visit a health facility for family planning or sexual health advice before getting pregnant? (**Probes:** What was your experience like? Did you feel welcomed and respected?)

c. Did you need permission (from a parent/guardian) to access contraceptives? (**Probes:** Was this a barrier for you or your peers? How did this affect your choices?)

iii. Socio-Economic Factors

a. Were there financial challenges that influenced your decisions around contraceptive use or pregnancy? (**Probes:** Could you afford to buy contraceptives or pay for services? Did availability of finances influence your decisions around relationships or sex?)

b. Did anyone (partner, family, peers) influence your decisions about sex or contraceptives? (**Probes:** Did you feel pressured in any way? Was your pregnancy planned by you or influenced by others?)

c. How has the pregnancy affected your education, employment, or daily life? (**Probes:** Were you forced to drop out of school or change jobs? Did your responsibilities or financial needs change?)

d. Have you received any support (emotional, financial, or otherwise) since becoming pregnant? (**Probes:** From family, the baby's father, school, or the community? How has this support or lack of it affected you?)

Section C: Drug and Substance Abuse.

i. Do you know what drugs and other substances are? (**Probe** Examples)

ii. Have you ever used alcohol or any other drugs? (**Probe:** At what age did you start? What type of substances have you used?)

iii. Have you ever engaged in sexual activity while under the influence of alcohol or drugs? (**Probe:** Was contraception used during that time? Was it a planned or unplanned encounter?)

iv. Do you believe that using alcohol or drugs affects your ability to make safe decisions during sex? (**Probe:** In what ways does it affect your judgment? Do you feel pressured to have sex when under the influence?)

v. Do you think substance use contributes to unintended pregnancies among teenagers in your community? (**Probe:** Can you give an example or share what you've seen or heard? What do you think causes this link?)

INFORMED CONSENT, PARENTAL CONSENT AND ASSENT FORM

INFORMED CONSENT FORM FOR ADULT TEENAGERS AND MATURE MINORS

[This ICF should only be used for those who have attained the age of majority, 18 years]

Study Title	Factors Contributing to Unintended Pregnancies among Teenage Girls in the Informal Settlement of Mukuru Kwa Njenga, Nairobi, Kenya
Investigator(s)	Judith Akinyi Odede: Principal Investigator Telephone:0796669023 Dr. Nzomo Mwita: Co-Investigator Dr. Doreen Othero: Co-Investigator

This Informed Consent Form has two parts:

• Information Sheet (to share information about the study with you)

• Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

You are invited to take part in a research study titled *"Factors contributing to unintended pregnancies among teenage girls in the informal settlement of Mukuru Kwa Njenga."* Please read the information below carefully and feel free to ask the study team any questions for clarification. It is important that you fully understand the study and your involvement before deciding to participate. Participation is voluntary. You may choose not to take part or withdraw at any time without facing any negative consequences.

This study aims to explore the prevalence, patterns, and contributing factors to unintended teenage pregnancies in Mukuru Kwa Njenga, with the goal of identifying strategies to address the issue. Unlike previous studies, this research will specifically highlight significant causes of unintended teenage pregnancy, contributing to knowledge that can shape effective policies and improve access to reproductive health services in the area.

Who can participate?

1. Teenagers aged 13–19 years residing in Mukuru Kwa Njenga.
2. Teenagers who are already mothers at the time of study.
3. Teenagers who are currently pregnant with their first child.
4. Teenagers (or their guardians, where applicable) who provide informed consent and assent to participate in the study.

Voluntary participation

Participation in this study is entirely voluntary. Choosing not to participate will not result in any penalty or loss of benefits to which you are otherwise entitled. You are also free to withdraw from the study at any time without any negative consequences.

What is involved in this project?

The objective of this research is to explore the factors contributing to the rise in teenage pregnancies within the Mukuru Kwa Njenga informal settlement and to identify possible solutions to the challenges faced by teenagers in this community and across the country. Respondents are therefore encouraged to support the study by highlighting the various factors that lead to unintended teenage pregnancies in Mukuru Kwa Njenga.

How long will the project last?

The study will take a period of two months.

What are the risks?

There are no anticipated risks involved in this study, as your confidentiality and privacy will be fully maintained. However, participating in the study may prompt personal reflection on your life experiences.

What are the benefits?

The study will provide evidence-based insights that can guide the development of targeted policies and programs aimed at improving reproductive health education and services. Ultimately, the study seeks to contribute to a reduction in teenage pregnancy rates in Mukuru Kwa Njenga and other similar informal settlements.

How will we protect your information and maintain confidentiality?

Your personal details will remain anonymous, and your name will not be disclosed to anyone. The information you provide will only be accessible to the researcher and academic supervisors. To ensure your privacy, interviews will be conducted in classrooms or other safe, private, and comfortable spaces designated for respondents.

What will happen with the results?

The findings of this study will be published in reputable scientific journals and shared through relevant academic and community forums. Copies will be submitted to the university library, and a soft copy will be uploaded online in PDF format to ensure public accessibility. Dissemination efforts will also include sharing results with local stakeholders, such as community leaders, health officials, and youth organizations, to inform policy and practice.

Can I refuse to participate or withdraw from the study?

The study participants are allowed to withdraw from the study at any given time period and this will not subject them to any negative treatment whatsoever, by informing the researchers of their decision to discontinue the study.

Compensation

No compensation will be provided for participating in this study.

Whom can I contact?

If you have any questions, you can ask anyone from our team now or later. If you have questions later, you can contact **Miss Judith at 0796669023**

Do you have any questions at this time?

The Secretary ESRC

Amref Health Africa in Kenya

Wilson Airport, Lang'ata Road

Office Tel: +254 20 6994000

Mobile No: 0795746777

Fax: +254 20 606340

P.O Box 30125-00100

Nairobi, Kenya

Part II: Certificate of Consent

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to participate in this study.

Print name of Subject	[at least forename and surname]
Signature of Subject	

DD/MM/YYYY	

If visually impaired, physically impaired, mentally impaired or illiterate

I have witnessed the accurate reading of the Consent Form to the potential study subject, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print Name of Subject	[at least forename and surname]
Thumb/Foot print of Subject	
Signature of Witness	[A literate witness must sign and should be selected by the study subject and MUST have no connection to the research team.
DD/MM/YYYY	

Statement by the researcher/person taking consent

I confirm that the study subject was given an opportunity to ask questions about the study, and all the questions asked by the study subject have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Informed Consent Form has been provided to the study subject.

Print Name of researcher/person taking the consent	
Signature of researcher/person taking the consent	
DD/MM/YYYY	

APPENDIX IV: INFORMED CONSENT FORM, PARENTS AND GUARDIANS.

[This ICF should only be used for those who have attained the age of majority, 18 years]

Study Title	Factors Contributing to Unintended Pregnancies among Teenage Girls in the Informal Settlement of Mukuru Kwa Njenga, Nairobi, Kenya
Investigator(s)	Judith Akinyi Odede: Principal Investigator Telephone:0796669023 Dr. Nzomo Mwita: Co-Investigator Dr. Doreen Othero: Co-Investigator

This Informed Consent Form has two parts:

• Information Sheet (to share information about the study with you)

• Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

You are invited to take part in a research study titled “Factors contributing to unintended pregnancies among teenage girls in the informal settlement of Mukuru Kwa Njenga.” Please read the information below carefully and feel free to ask the study team any questions for clarification. It is important that you fully understand the study and your involvement before deciding to participate. Participation is voluntary. You may choose not to take part or withdraw at any time without facing any negative consequences.

This study aims to explore the prevalence, patterns, and contributing factors to unintended teenage pregnancies in Mukuru Kwa Njenga, with the goal of identifying strategies to address the issue. Unlike previous studies, this research will specifically highlight significant causes of unintended teenage pregnancy, contributing to knowledge that can shape effective policies and improve access to reproductive health services in the area.

Who can participate?

1. Teenagers aged 13–19 years residing in Mukuru Kwa Njenga.
2. Teenagers who are already mothers at the time of study.
3. Teenagers who are currently pregnant with their first child.
4. Teenagers (or their guardians, where applicable) who provide informed consent and assent to participate in the study.

Voluntary participation

Participation in this study is entirely voluntary. Choosing not to participate will not result in any penalty or loss of benefits to which you are otherwise entitled. You are also free to withdraw from the study at any time without any negative consequences.

What is involved in this project?

The objective of this research is to explore the factors contributing to the rise in teenage pregnancies within the Mukuru Kwa Njenga informal settlement and to identify possible solutions to the challenges faced by teenagers in this community and across the country. Respondents are therefore encouraged to support the study by highlighting the various factors that lead to unintended teenage pregnancies in Mukuru Kwa Njenga.

How long will the project last?

The study will take a period of 2 months.

What are the risks?

There are no anticipated risks involved in this study, as your confidentiality and privacy will be fully maintained. However, participating in the study may prompt personal reflection on your life experiences.

What are the benefits?

The study will provide evidence-based insights that can guide the development of targeted policies and programs aimed at improving reproductive health education and services. Ultimately, the study seeks to contribute to a reduction in teenage pregnancy rates in Mukuru Kwa Njenga and other similar informal settlements.

How will we protect your information and maintain confidentiality?

Your personal details will remain anonymous, and your name will not be disclosed to anyone. The information you provide will only be accessible to the researcher and academic supervisors. To ensure your privacy, interviews will be conducted in classrooms or other safe, private, and comfortable spaces designated for respondents.

What will happen with the results?

The findings of this study will be published in reputable scientific journals and shared through relevant academic and community forums. Copies will be submitted to the university library, and a soft copy will be uploaded online in PDF format to ensure public accessibility. Dissemination efforts will also include sharing results with local stakeholders, such as community leaders, health officials, and youth organizations, to inform policy and practice.

Can I refuse to participate or withdraw from the study?

The study participants are allowed to withdraw from the study at any given time period and this will not subject them to any negative treatment whatsoever, by informing the researchers of their decision to discontinue the study.

Compensation

No compensation will be provided for participating in this study.

Whom can I contact?

If you have any questions, you can ask anyone from our team now or later. If you have questions later, you can contact **Miss Judith at 0796669023 or email akiyij614@gmail.com**

Do you have any questions at this time?

The Secretary ESRC

Amref Health Africa in Kenya

Wilson Airport, Lang'ata Road

Office Tel: +254 20 6994000

Mobile No: 0795746777

Fax: +254 20 606340

P.O Box 30125-00100

Nairobi, Kenya

Part II: Certificate of Consent

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to participate in this study.

Print name of Subject	[at least forename and surname]
Signature of Subject	
DD/MM/YYYY	

If visually impaired, physically impaired, mentally impaired or illiterate

I have witnessed the accurate reading of the Consent Form to the potential study subject, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print Name of Subject	[at least forename and surname]
Thumb/Foot print of Subject	
Signature of Witness	[A literate witness must sign and should be selected by the study subject and MUST have no connection to the research team.

DD/MM/YYYY	

Statement by the researcher/person taking consent

I confirm that the study subject was given an opportunity to ask questions about the study, and all the questions asked by the study subject have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Informed Consent Form has been provided to the study subject.

Print Name of researcher/person taking the consent	
Signature of researcher/person taking the consent	
DD/MM/YYYY	

APPENDIX V: ASSENT FORM FOR MINORS

Project Title:	Factors Contributing to Unintended Pregnancies Among Teenage Girls in the Informal Settlement of Mukuru Kwa Njenga, Nairobi, Kenya.
Investigator(s):	Judith Akinyi Odede: Study PI Telephone: 0796669023 Dr. Nzomo Mwita: Co-Investigator Dr. Doreen Othero: Co-Investigator

We are conducting a research study to investigate the prevalence, patterns, and contributing factors of unintended teenage pregnancies among girls in Mukuru Kwa Njenga informal settlement. The study aims to generate practical solutions to help reduce teenage pregnancies and their impact on young mothers. Unlike previous studies, this research focuses on identifying the underlying causes of unintended teenage pregnancies. The findings will contribute to the existing body of knowledge and help shape policies that promote the use of reproductive health services and prevent future cases.

This study has received approval from the AMREF Ethics and Scientific Review Committee. Since participants are between 13 and 19 years old and considered minors under Kenyan law, we are seeking your assent to participate in the study. This form shows that you understand the study and agree to take part voluntarily. If you choose to participate, you will be asked to complete a questionnaire consisting of four simple and easy-to-understand sections. Filling out the questionnaire will take approximately 30 minutes.

There are no risks involved in participating, and your privacy and confidentiality will be fully protected. Your participation is entirely voluntary, and you may withdraw at any time without any negative consequences.

While there is no direct benefit to you, the information you provide may help support other teenagers in preventing unintended pregnancies. The results of the study will be shared through scientific journals, submitted to the university library, and uploaded online as a PDF for public access. Findings will also be shared with relevant stakeholders to inform policy and practice.

Whom can I contact?

If you have any questions, you can ask anyone from our team now or later. If you have questions later, you can contact **Miss Judith at 0796669023 or email akiyij614@gmail.com**

Do you have any questions at this time?

The Secretary ESRC

Amref Health Africa in Kenya

Wilson Airport, Lang'ata Road

Office Tel: +254 20 6994000

Mobile No: 0795746777

Fax: +254 20 606340

P.O Box 30125-00100

Nairobi, Kenya

You do not have to participate if you do not want to, and you can stop at any point. Your parents or guardians are aware of the study.

I, _____, want to be in this research study.

_____ _____

Signature Date

APPENDIX VI: RESEARCH AUTHORIZATION: AMREF ESRC APPROVAL LETTER

amref health africa

Amref Health Africa in Kenya

REF: AMREF – ESRC P1384/2023 **May 30, 2023**

Judith Odede
Amref International University
P.O. Box 27691-00506
Nairobi, Kenya
Tel: 0796669023
Email: akinyij614@gmail.com

Dear Judith Odede,

RESEARCH PROTOCOL: FACTORS CONTRIBUTING TO UNINTENDED PREGNANCIES AMONG TEENAGE GIRLS IN THE INFORMAL SETTLEMENT OF MUKURU KWA NJENGA, NAIROBI, KENYA

Thank you for submitting your protocol to the Amref Ethics and Scientific Review Committee (ESRC).

This is to inform you that the ESRC has reviewed and approved your protocol. Your application approval number is ESRC P1384/2023. The approval period is from May 30, 2023, to May 29, 2024, and is subject to compliance with the following requirements:

a) Only approved documents (including informed consents, study instruments, advertising materials, material transfer agreements, etc.) will be used.
b) All changes including (amendments, deviations, violations, etc.) are submitted for review and approval by Amref ESRC before implementation.
c) Death and life-threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the Amref ESRC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to Amref ESRC within 72 hours.
e) Clearance for export of biological specimen must be obtained from the relevant government authorities for each batch of shipment/export.
f) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
g) In case of late renewal, the Amref ESRC shall not be held responsible for any serious adverse events (SAEs) that may occur as a result of research activities that were carried out after the expiry of approval.
h) Submission of an executive summary report within 90 days upon completion of the study to the Amref ESRC.
i) All government regulations for prevention and control of the spread of COVID-19 including social distancing, provision of personal protective equipment for participants and research assistants should be adhered to during data collection. All research assistants should be monitored for COVID 19 symptoms and referred for testing in case they present with symptoms.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Please do not hesitate to contact the ESRC Secretariat (esrc.kenya@amref.org) for any clarification or query.

Yours sincerely,

AMREF - ESRC
30 MAY 2023
P.O. BOX 30125 - 00100, NAIROBI

Prof. Mohamed Karama
Chair, Amref ESRC
CC: Samuel Muhula, Senior Manager, Learning and Impact Amref Health Africa.

APPENDIX VIII: RESEARCH LICENSE – NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 351455

Date of Issue: 22/June/2023

RESEARCH LICENSE

This is to Certify that Miss.. Judith Akinyi Odede of Amref International University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: FACTORS CONTRIBUTING TO UNINTENDED PREGNANCIES AMONG TEENAGE GIRLS IN THE INFORMAL SETTLEMENT OF MUKURU KWA NJENGA, NAIROBI, KENYA. for the period ending : 22/June/2024.

License No: NACOSTI/P/23/26693

351455

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

APPENDIX IX: RESEARCH LICENSE: MINISTRY OF EDUCATION STATE DEPARTMENT FOR BASIC EDUCATION

Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT FOR BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: RDE/NRB/RESEARCH/1/65Vol.1 (04)

Date: 27th June, 2023

Miss. Odede Judith Akinyi
Amref International University
Lang'ata Road
P.O. Box 27691-00506
NAIROBI, KENYA

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from National Commission for Science, Technology & Innovation, **Ref. ED 10/6 VOL.XXVII (37)** dated **22nd June, 2023,** regarding research authorization in Nairobi County on the topic: *"Factors contributing to Unintended pregnancies among teenage girls in the informal settlement of Mukuru kwa Njenga, Narobi, Kenya"*

This office has no objection and authority is hereby granted to you to interact with pupils/students, teachers and parents in Nairobi County on condition that the exercise will be carried out professionally.

You are required to liase with Sub- County Directors of Education and the target schools Authorities before accessing the schools.

A report on the exercise will be required on completion.

DR. PETER KIRIKA
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI.

REGIONAL DIRECTOR OF EDUCATION
NAIROBI
27 JUN 2023
MINISTRY OF EDUCATION
P. O. Box 74629, NAIROBI

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI.

SGS

APPENDIX X: SIMILARITY REPORT