

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**



**PREGNANCY PLANNING AND ASSOCIATED FACTORS AMONG
REPRODUCTIVE-AGED WOMEN IN URBAN SLUMS IN ACCRA**

BY

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DECLARATION

I, ANTOINETTE AKPENEMAWU DA-ROCHA, do hereby declare that, apart from references made to works done by other authors which have been duly acknowledged, this work was done by me under supervision. I further declare that this work has not been submitted for the award of any degree in this university or any other university.

Antoinette A. Da-Rocha



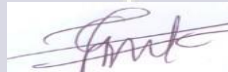
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Date



DEDICATION

I dedicate this dissertation to the Almighty God who knows all things and to my revered, Rev. Archibald Adams, for his counsel and support throughout my education and my Children - when I was going through all the emotional challenges, they were there with words of encouragement to urge me to do my best. God richly bless you all.



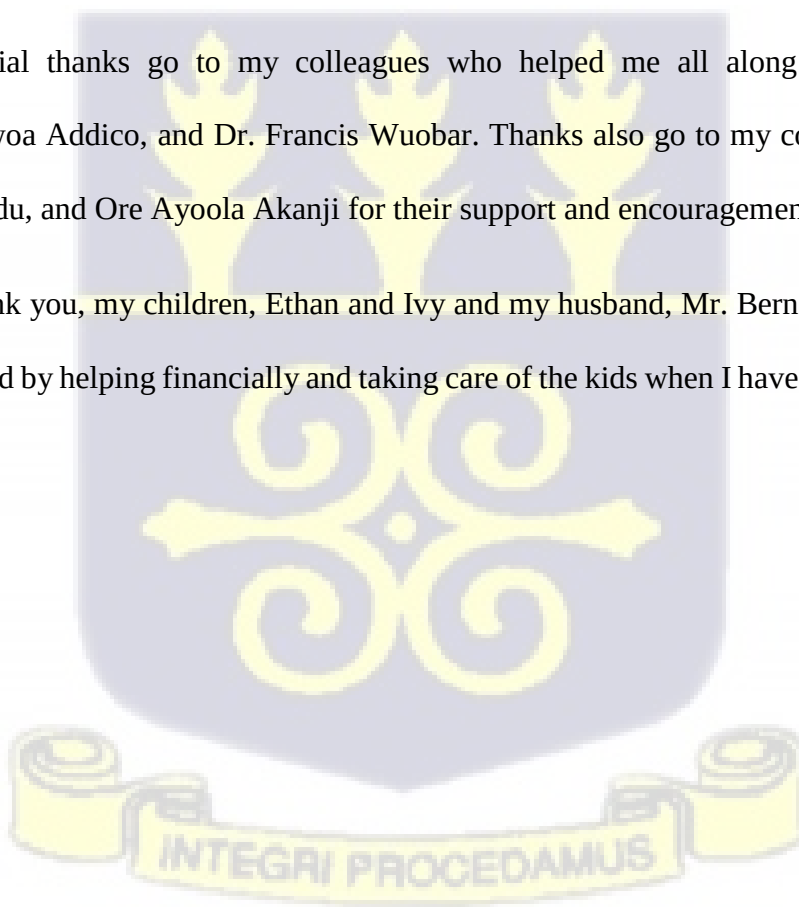
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ABSTRACT

Background: Unintended pregnancy is one of the major public health issues globally. Around 44% of all pregnancies worldwide are unintended, with 74 million in low- and middle-income countries. In sub-Saharan Africa, about 29.1% of all pregnancies are unintended, with 35.8% in Ghana. It has been estimated that about 37.9% (5.4 million) of urban residents in Ghana live in slums with most of the slums in Accra. While previous studies have highlighted many aspects of the reproductive health situation of women in urban slums, pregnancy planning in urban slums in Ghana has received little attention in the literature. This study aimed to fill this gap by examining pregnancy planning and its related variables among reproductive-aged women living in urban slums in Accra, Ghana.

Methods: The data used for this study are part of a larger mixed method cross-sectional study conducted to examine contraceptive use behaviours and identify challenges to contraceptive use as well as potential low-cost interventions in urban slums in Ghana. The secondary data used for the analysis in this study covered a total sample of 541 reproductive-aged women in two large urban slums in Accra - Agblobloshie and Old Fadama. Descriptive, bivariate, and logistic regression analysis techniques were used to analyze the data.

Results: Results indicated that 65.9% (357) of the respondents who have ever been pregnant did not plan their first pregnancy whilst 54.9% (297) did not plan their most recent pregnancy. After adjusting for potential covariates, only one variable (monthly expenditure) remained significantly associated with the planning of the most recent pregnancy. In general, increasing monthly expenditure positively predicted the planning of the most recent pregnancy. Specifically, those who spent between GHC 500 and 1000 had

higher odds of planning their most recent pregnancy (AOR=6.97, 95%CI: 6.90, 10.80; $p<0.01$) compared to those who spent less than GHC500. Similarly, the odds of planning the most recent pregnancy were over 13 times higher for those who spent between GHC 1001 and 1500 a month (AOR 13.19; 95%CI: 5.41-32.11; $p=0.01$) compared to those who spent less than GHC 500 a month.

Conclusions: The prevalence of unplanned pregnancy is high in urban slums in Ghana. Targeted community-level education on the benefits of family planning and how to prevent unplanned pregnancies are urgently needed in slum communities where this study was conducted. There is also a need for policymakers to make a continuous effort to improve the economic and/ or purchasing power situation of women and girls in urban slums to address the negative ripple effect of poverty on unwanted pregnancy, unsafe abortion, maternal mortality and the economy as a whole.

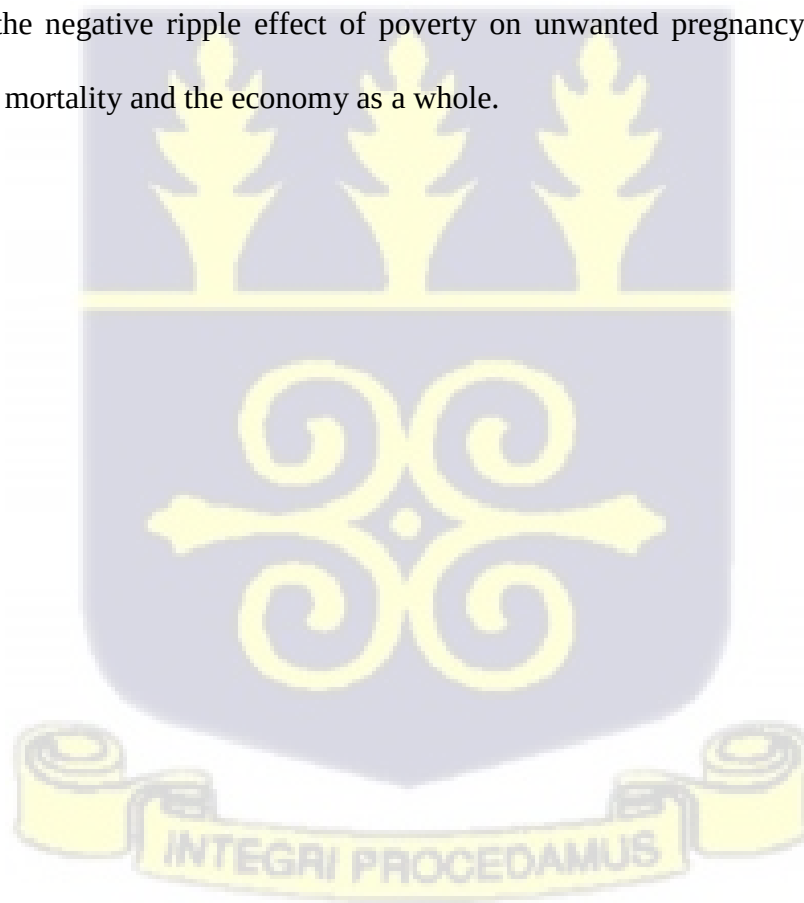


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LIST OF ACRONYMS

ARHP	Adolescent Reproductive Health Policy
CP	Contraceptive Prevalence
DHS	Demographic and Health Survey
FP	Family Planning
GHS	Ghana Health Service
NGOs	Non-Governmental Organizations
MDGs	Millennium Development Goals
SDGs	Sustainable Development Goals
UN	United Nations
UNFPA	United Nations Population Fund
USAID	United State Agency for International Development
WHO	World Health Organization



CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Unintended pregnancy is one of the major public health issues globally (Seidu et al., 2022). Around 44% of all pregnancies worldwide are unintended, with 74 million in low- and middle-income countries (Bearak et al., 2018). In sub-Saharan Africa, about 29.1% of all pregnancies are unintended, with 35.8% in Ghana (Ameyaw et al., 2019). Globally, about 600,000 women die yearly as a result of pregnancy-related causes (WHO., 2021). Almost all (94%) of these deaths occur in low-and middle-income countries including Ghana (WHO., 2019).

The use of contraceptives has been identified as an effective approach to fertility regulation by slowing population growth (Beson et al., 2018). A plethora of research posits that contraceptive use prevents maternal mortality by averting teenage pregnancy, unplanned pregnancies, unsafe abortions, and high-risk pregnancies and allowing for the spacing of childbearing (Ahmed et al., 2012). Equitable access and consistent use of contraception are therefore critical to the achievement of the fifth Sustainable Development Goal (SDG), which aims, among other things, to achieve gender equality and empowerment of all girls and women (United Nations, 2015).

Access to quality healthcare by urban residents including information on the planning of pregnancies is thought to be much easier in urban areas than the rural areas (Iftikhar & Nasreen, 2020). However, this is not entirely true due to the distinct living conditions found

in major cities (Seidu et al., 2022). Iftikhar and Nasreen (2020) indicated that women and girls in informal urban settlements (slums) experience various forms of health and socio-economic challenges and hence are at disadvantage in accessing quality healthcare including pregnancy planning services.

The works of Yadav et al. (2020) and Speizer et al. (2013) as reported by Seidu et al. (2022) indicated that the urban poor, which includes urban slum dwellers, tend to have poor access to reproductive and family planning health outcomes due to the lack of adequate health facilities. Consequently, this unmet need for family planning appears immanent in urban slums (Begum et al., 2014; Seidu et al., 2022). With long-term global decreases in desired family size and changes in the age at which people want to start families (Bongaarts et al., 2017; Darroch, 2013; Bongaarts, 2011), individuals increasingly spend more of their lives trying to avoid unintended pregnancies. Evidence suggests that rates of unintended pregnancy have declined worldwide (Bongaarts et al., 2017) with increasing access to and use of contraception likely contributing to these trends.

Unplanned pregnancies carry health risks both for the mother and her offspring. Half of all unplanned pregnancies are terminated by induced abortion out of which the majority are unsafe (Sedgh, et al., 2014). Women with unwanted pregnancies are less likely to receive adequate prenatal care, more likely to suffer from postpartum depression and their babies are less likely to be breastfed and immunised (Marston and Cleland 2003; Cheng et al. 2009; Kost & Lindberg 2015; Amo-Adjei & Anamaale Tuoyire 2016). Although the risks of unplanned pregnancy are assumed to be greater in low-income settings than in high-income settings, evidence concerning their consequences in those settings is lacking

(Gipson, Koenig, and Hindin 2008; Tsui, McDonald-Mosley, and Burke 2010; Pallitto, Campbell, and O'Campo 2005).

Studies on the factors contributing to unplanned pregnancy have mainly focused on maternal demographic and socioeconomic factors (Kost and Lindberg 2015). In low-income settings, unplanned pregnancies are generally associated with low socioeconomic status, younger age, being unmarried, higher parity, shorter birth- intervals and intimate partner violence (Hall et al. 2016; Iyun et al. 2018; Grace & Anderson 2018). Pregnancy planning is influenced by factors such as sexual behaviour, cultural values about sexuality, as well as by religious and political beliefs (Brown and Eisenberg 1995), many of which are context-dependent. To help individuals and couples achieve their desired number of children, identifying groups at risk of having an unplanned pregnancy in specific contexts such as slums in low-income economies such as Ghana is important. If family planning needs are met to delay, space, and limit the number of children women have, millions of girls and women in the world's poorest countries, including Ghana, will see an improvement in their living conditions. These potential benefits notwithstanding, nearly 222 million women in low-income countries do not use a modern form of contraception to plan pregnancy (Barrow et al., 2022). The third Sustainable Development Goal (SDG-3) prioritizes universal access to sexual and reproductive healthcare services, including reducing unmet contraceptive needs. To achieve this, adequate and long-term efforts are needed to eliminate several barriers to healthcare service use, including family planning, especially in resource-constrained settings such as urban slums in Ghana (Barrow et al., 2022).

1.2 Problem Statement

Approximately 37.9% (5.4 million) of the urban population in Ghana live in slums (Ganle et al., 2021; Danso-Wiredu & Midheme, 2017). There is widespread agreement in the literature that many slum neighbourhoods in Africa are risky places for human settlement (Adams et al., 2015; Ochako et al., 2016, Ganle et al., 2021). In addition, slums are typically characterised by inadequate infrastructure, poverty, and violence, in addition to the fact that they are frequently not acknowledged by public authorities as important elements of urban communities in general (Ganle et al., 2021; Agula et al., 2021). This disadvantage extends across several areas and includes limited access to family planning (FP) and contraceptive services (Ganle et al., 2021; Speizer et al., 2012). Family planning may be defined as the voluntary planning and activity done by people to avoid, postpone, or obtain pregnancy in its many forms (Ganle et al., 2021).

Globally, unintended pregnancy has decreased in high-income countries compared to low- and middle-income countries (Ameyaw et al., 2020). Unintended pregnancy, therefore, remains a public health problem and is substantially higher in low- and middle- income regions.

Family planning plays an important role in the reproductive health and rights of women and contributes to economic development. Preventing unwanted pregnancies results in a reduction in both maternal and child mortality and morbidity (WHO, 2019). Additionally, it reduces the number of dependents per adult in the labour force, thereby increasing per capita income. This demographic dividend that results from planned pregnancies is not

only derived from rising incomes, it can also be attributed to higher labour force participation rates for women, increased investment in the health and education of (existing) children, thereby increasing their future productivity, and higher national savings rates and investment (Karra et al., 2017).

According to the 2017 Ghana Maternal Health Survey, the total fertility rate in Ghana is 3.9 for all women of reproductive age. Reducing this rate will require deliberate planning and effort at the national, community, and household levels, involving the sensitization of the whole of society and access to contraception, all requiring the use of scarce resources.

In 2015, Ghana mounted a family planning programme which had as its objective to increase the contraceptive prevalence rate (CPR) of married women aged 15-49 from 22.2 to 29.7%, and that of unmarried women from 31.7 to 40% by 2020 (GFPCIP, 2015). The implementation of the programme has largely been successful: the CPR is 30.8% for married women (compared with 22.2% in 2014 before the programme) and 38.4% for unmarried women compared with 31.7% in 2014 (Ghana Statistical Service, Ghana Health Service Accra, The DHS Program ICF International, 2017). This represents an annual average increase in CPR of 2.9% for married and 2.2% for unmarried women. However, survey data suggests that there remains a significant percentage of women with an unmet need for contraception and a need to plan their pregnancy (Amporfu et al., 2020).

A strong family planning programme is present in many United Nations member countries—particularly in the high-income countries — but not in Sub-Saharan Africa, where, despite an increase in contraceptive prevalence, many women continue to have unmet contraceptive needs (UNFPA 2012; Cleland et al. 2006). The high fertility that

results as a consequence of this is connected with high rates of maternal death, particularly among the poorest populations such as women and girls in urban slums. It has been reported that in low-income countries, contraceptive usage among reproductive-aged women, whether married or unmarried, entails a great deal of experimentation and is often inconsistent (Blanc et al., 2009). Additionally, reproductive-aged women encounter several obstacles to accessing family planning services, including anxiety, humiliation, financial constraints, and a lack of awareness about the services (Blanc et al. 2009). Preconception care is a neglected, yet very important, component of mother and child healthcare services that must not be overlooked (Frayne et al., 2016). As a result, in settings where women of reproductive age are less aware of the importance of preconception care, promoting preconception care among women of reproductive age is critical to improving maternal healthcare services and reducing complications during antenatal care, institutional delivery, and postpartum care and care.

In Ghana, several studies have been undertaken to examine several reproductive health issues in urban slums including modern contraceptive use. For instance, Seidu et al. (2022) examined sexual and reproductive health education and its links with modern contraceptive use in urban slums in Accra. While these previous studies have highlighted many aspects of the reproductive health situation of women in urban slums, pregnancy planning in urban slums in Ghana has received relatively little attention in the literature. For example, Eliason et al. (2014) also conducted a study on predictors of unplanned pregnancies in rural Ghana. They concluded that unintended pregnancies may pose substantial repercussions for women and their families, including the likelihood of unsafe abortion, delayed prenatal treatment, poor mother mental health and poor child health outcomes. Although the

proportion of unwanted births in Ghana declined from 42% to 37% between 1993 and 2008, the pace of reduction has been slow, and the number of unintended births is still relatively high. Omane-Adjepong et al. (2012) also studied the prevalence of unexpected pregnancies, contraceptive use, and contributing variables linked with unplanned pregnancies in the Ahafo Ano South District, Ghana. This highlights a need to better understand the variables that contribute to unplanned births to enhance maternal health outcomes. To fill this knowledge gap, this study aimed to analyse pregnancy planning and its related variables among reproductive-aged women living in two urban slums in Accra, Ghana.

1.3 General objective

The general objective of the study was to examine pregnancy planning and associated factors among reproductive-aged women in urban slums in Accra.

Specific objectives of the study are to:

1. Estimate the proportion of reproductive-aged women in urban slums in Accra who planned their first pregnancies.
2. Estimate the proportion of reproductive-aged women in urban slums in Accra who planned their most recent pregnancies.
3. Determine the factors associated with planning of most recent pregnancy among reproductive-aged women in urban slums.

1.4 Research Questions

The following research questions were investigated:

1. What is the proportion of reproductive-aged women in urban slums in Accra who planned their first pregnancies?
2. What is the proportion of reproductive-aged women in urban slums in Accra who planned their most recent pregnancies?
3. What are the factors associated with planning of most recent pregnancy among reproductive-aged women in urban slums?

1.5 Justification

The findings of this study will contribute to the knowledge of pregnancy planning among reproductive-aged women in urban slums in Ghana. The findings of the study will also serve as a baseline resource for further research into family planning especially in urban slums in Ghana. Furthermore, the findings of the study will help policy makers make decisions on the services to provide to reduce unplanned and mistimed pregnancies among reproductive-aged women in urban slums in Ghana.

1.6 Chapter summary and organization of the study

This chapter discussed the background to the study, the statement of the problem, and as well set out the objectives and research questions. The rest of the dissertation is organized into five additional chapters. Chapter two reviews relevant literature and outlines a conceptual framework for the study. Chapter three describes the methods. Chapter four discusses the results while chapter five presents the discussion. Chapter six concludes with some recommendations.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed previous and existing studies on pregnancy planning in urban slums in Accra. The chapter looked at pregnancy planning among reproductive-aged women in urban slums and also the factors associated with pregnancy planning in urban slums. The chapter also looked at the conceptual framework underpinning the study and concludes with a summary of the chapter.

2.2 Pregnancy planning: definition and prevalence

The current study adopted the definition of unplanned pregnancy as put forward by Santelli et al. (2003) who indicated that it occurs when contraception is used, whether properly or poorly or when contraception is not used yet a pregnancy which is not intended occurs. This indicates that the pregnancy had occurred sooner than expected or not wanted at all.

White et al. (2017) conducted research titled 'You simply have to learn to keep going on': young women's experiences with unintended pregnancy in the Cook Islands. In this work, the authors explored the phenomenology of early pregnancy from the perspectives of ten young moms who were selected using a purposive sampling process. Participants' perspectives revealed that structural, cultural, and individual variables were all important considerations. The results of this qualitative study indicated that virtually all of the pregnancies were unplanned and that every participant had a negative reaction when she discovered she was expecting a child. Even though several of the participants expressed a

desire to terminate their pregnancies, their choices were restricted due to a shortage of safe, legal, and inexpensive abortion services. At the end of the study, although virtually all participants felt regret for not being able to postpone parenthood, they also expressed delight and pride in their newfound position as moms.

Research conducted by Bearak et al. (2020) looked at unintended pregnancy and abortion rates based on income, area, and the legal status of abortion from 1990 to 2019. A model was constructed that predicted the incidence of unwanted pregnancy and abortion in a Bayesian framework while also estimating the incidence of both. A variety of sources, including country-based surveys, government statistics, and published studies discovered via a literature search, and the World Population Prospects database, were used. Results showed that there were about 121 million unwanted pregnancies every year (UI 1128,000–1315,000), which were related to a worldwide yearly rate of 64 unintended pregnancies per 1000 women aged 15–49 years (60–70) on average. Unplanned pregnancies accounted for 48% (46–51%) of all pregnancies. When compared to women between the ages of 15 and 49, the worldwide annual unplanned pregnancy rate was 79 pregnancies (UI 74–84) per 1000 women between 1990 and

1994. Between 1990–94 and 2000–04, the rate of unplanned pregnancies per 1000 women fell by 12 points (7–15), to 67 pregnancies per 1000 women. The projected reduction in the worldwide unwanted pregnancy rate was highest before 2000, and the rate was 64 unintentional pregnancies (60–70 per 1000 women) per 1000 women in 2015–19. Unplanned pregnancies grew by 13 percent (4–22 percent) each year between 1990–94 and

2015–19, rising from 107.6 million (1010–1153) to 121.0 million (1128.0–1315), even though the rate of unwanted births fell over this period (Bearak et al., 2020).

Unplanned pregnancy rates were shown to be inversely related to income levels throughout World Bank income categories from 2015 to 2019. The average yearly unwanted pregnancy rate in high-income nations was 34 pregnancies per 1000 women aged 15–49 years (UI 32–37), but the rate in middle-income countries was 66 pregnancies per 1000 women aged 15–49 years (UI 61–73) (Bearak et al., 2020). For women aged 15–49 years in low-income countries, the yearly average rate of unwanted pregnancy was 93 pregnancies per 1000 women (88–100). From 1990–1994, the incidence of unplanned pregnancies decreased across all socioeconomic levels. After a fall of 21% (UI 15–27) for high-income countries and 13–28% for middle-income countries), low-income countries witnessed a decline of 18% (12–24) in the period between 2012 and 2014. (Bearak et al., 2020).

Annual average unplanned pregnancy rates differed by roughly a factor of three among the SDG zones, according to the United Nations Development Programme. In Europe and north America, the rate of unplanned pregnancies per 1000 women aged 15–49 years (UI 33–39) was 35, whereas, in Australia and New Zealand, the rate was 38 pregnancies per 1000 women aged 15–49 years (UI 32–45), respectively (Bearak et al., 2020). East and southeast Asia (58 unplanned pregnancies per 1000 women [48–73]), central and south Asia (64 pregnancies per 1000 women [59–70]), and Latin America (69 pregnancies per 1000 women [61–79]) had rates that were closest to the world average. In west Asia and north Africa, the unwanted pregnancy rate ranged from 67 to 114 pregnancies per 1000

women, whereas in sub-Saharan Africa, the rate ranged from 86 to 96 pregnancies per 1000 women (Bearak et al., 2020). During the 30-year study period, the authors saw evidence of a decrease in the incidence of unwanted pregnancies across all SDG areas. Unplanned pregnancy rates decreased by 47% (UI 40–53) in Europe and North America, and by 31% (16–45) in West Asia and North Africa (Bearak et al., 2020). Across Central and South Asia, it fell by 28% (15–40), while across Latin America, it fell by 27% (16–35). From 2004 to 2009, the rate in Sub-Saharan Africa fell by 12% (4–19). Aside from East and Southeast Asia, the unwanted pregnancy rate in Australia and New Zealand decreased by 4% (UI –15 to 19) from 1990–94 to 2015–19, while the rate in the United States decreased by 9% (UI –5 to 21) (Bearak et al., 2020).

In New Zealand, Hohmann-Marriott (2017) conducted a study on unexpected pregnancies. The study used information on unplanned births from the Growing Up in New Zealand research, paired with data on the number of births and abortions from Statistics New Zealand, as well as estimates of miscarriages. More than half (53%) of the projected 95,335 pregnancies in New Zealand in 2008 were unplanned, according to the findings of the study, which was published in 2008. Unplanned pregnancies resulted in the birth of 24,131 children. According to the National Centre for Health Statistics, 25% of all pregnancies were birthed from unexpected pregnancies, 19% were abortions, and 8% were miscarriages that were unplanned pregnancies. Unplanned pregnancies were more common among younger women, as well as among Maori and Pacific women, while they were less common among women in their 30s and European women (Hohmann-Marriott, 2017). Habib et al. (2017) found in Pakistan that 1150 pregnancies (38.2%) were reported as unplanned among 3010 pregnant women who participated in the study.

Speizer and colleagues (2012) performed research on the usage of family planning among urban poor women from six cities in the Indian state of Uttar Pradesh. The research examined family planning usage among the urban poor in Uttar Pradesh, India, using baseline, representative data from six towns in the state of Uttar Pradesh. Data were obtained from 3,000 presently married women in each of the six cities studied (Allahabad, Agra, Varanasi, Aligarh, Gorakhpur, and Moradabad). Women who took part in the study were questioned about their fertility aspirations, usage of family planning, and overall reproductive health. Across all of the cities, almost half of the women reported using contemporary methods of contraception. Women in slum regions were less likely than other women to utilise family planning techniques, and among those who do, women living in slums were more likely than other women to be sterilised rather than to use alternative methods such as condoms or hormonal treatments. Overall, there was a greater unmet need for family planning to restrict childbearing than there is for spacing births across all urban areas. In both the slum and non-slum samples, poorer women were more likely than affluent women to have an unmet demand; however, this impact was less pronounced when education was taken into consideration in the analysis.

Unwanted pregnancies were found to be the most common in Eswatini, according to research that compared thirty African nations (Amo-Adjei & Anamaale Tuoyire, 2016). In previous research, Niemeyer Hultstrand et al. (2019) discovered that unexpected births accounted for 70% of all pregnancies within the examined population (Niemeyer Hultstrand et al. 2019). Teenagers and first-time moms were more likely than other women to get pregnant unexpectedly, and women who became pregnant unexpectedly were less likely than other women to attend the required number of prenatal care appointments.

Mohamed et al. (2019) also published the results of their research on the prevalence, drivers, and effects of unplanned pregnancy in the Sohag province of Egypt. Five hundred and fifty-four ever-married women between the ages of 18 and 49 years old, whose last pregnancy occurred within three years of the data collection date, were chosen at random from both rural and urban locations. The information was gathered through home visits and the use of a validated questionnaire. It was discovered that almost one-third (30.7%) of the study sample experienced an unwanted pregnancy during the previous three years before the time of the interview.

The frequency of unwanted pregnancy and its connection with HIV status among pregnant women in South Africa was investigated by Woldesenbet and colleagues (2021). In 1589 randomly chosen public antenatal care facilities, a cross-sectional survey was performed between October and mid-November 2019 among pregnant women aged 15–49 years. Pregnancy intention was evaluated using two items from the London Measure of Unplanned Pregnancy, which is a questionnaire that was developed in the United Kingdom. The variables linked with unplanned pregnancy were investigated using survey logistic regression. A total of 34,946 individuals experienced an unplanned pregnancy, accounting for 51.6% of the total.

Peach and colleagues (2021) researched the risk factors and knowledge linked with high unplanned pregnancy rates and poor family planning usage among pregnant women in Papua New Guinea using data from a facility-based cross-sectional sample of 699 pregnant women. Over half of the ladies (55%) said that their pregnancy was an unwanted one.

Among those who had utilised a current FP method, just 18% had done so in the last year, and awareness of the various methods was limited.

Barrow et al. (2022) investigated the prevalence and risk factors related to unintended pregnancy in the Gambia using data from the Multiple Indicators Cluster Survey (MICS) conducted in the Gambia in 2018. The information was gathered from 3790 women ranging in age from 15 to 49 who had also given birth. Women who had an unintended pregnancy were found to account for about 25.3% (95% confidence interval: 23.1 -27.6) of the total.

Sisay (2019) researched the prevalence of unplanned pregnancy and the factors associated with it among pregnant women in Ethiopia. Exploratory cross-sectional research was conducted in the community from March 18 to March 22, 2018. Data were obtained from 327 pregnant women in Arerti town, representing 97.9% of the total population of 334 pregnant women in the town. Unplanned pregnancies were found to be prevalent in 97 of the cases (29.9 %).

Solanke (2019) researched to see if the characteristics of a community had an impact on unintended pregnancy rates in Kenya. The information in this study was derived from the 2014 Kenya Demographic and Health Survey (KDHS). Unplanned pregnancy was the outcome variable in this study. Several characteristics at the individual and community levels were chosen as explanatory variables. The multilevel mixed-effects logistic regression model was used in this analysis. A total of 41.9% of unwanted pregnancies were discovered.

At Suhul General Hospital in Northern Ethiopia, Moges et al. (2020) conducted research on Factors Associated with Unplanned Pregnancy. From February to April 2018, a facility-

based cross-sectional research design was carried out among expecting women who attended prenatal care follow-ups at Suhul General Hospital, Shire, and Northern Ethiopia during February and April 2018. In this research, the participants were chosen using a systematic sampling procedure, and the data were obtained via face-to-face interviews using a structured questionnaire that had been previously evaluated. Bivariate and multivariate logistic regression analyses were performed to evaluate the relationship between each independent variable and dependent variable. Among 379 pregnant women, the proportion of unexpected pregnancies was 20.6%.

Kebede et al. (2021) conducted a study on the spatial distribution, prevalence, and factors of unwanted pregnancy among 2446 young Ethiopian pregnant women aged 15–24 who had given birth in the previous 5 years, including their current pregnancy based on data from the Ethiopian Demographic and Health Survey 2016. Through the use of ArcGIS 10.3, the data on unplanned pregnancies were spatially depicted based on the coordinates of each respondent in the survey. Using the SaTScan programme, the Bernoulli model was utilised to detect the existence of an unwanted pregnancy cluster that was entirely spatial. A logistic regression analysis was used to evaluate the variables that are linked with unwanted pregnancy among young people. The findings revealed that there was significant regional variance in unintended pregnancy among young people throughout the nation. Unplanned pregnancies were projected to account for 20.5% (CI: 19.0, 22.2) of all pregnancies among young people. Spatial scan statistics showed 72 major clusters (Log-likelihood ratio of 37.6, $p < 0.001$) in Addis Ababa, the southern portion of Amhara, the northwest of Oromia, and the northeast of the Southern Nations, Nationalities, and Peoples Region.

In Ghana, Nyarko (2019) did a study on unintended pregnancy among pregnant women in Ghana, with a focus on the prevalence and determinants of undesired pregnancy. Using a cross-sectional research methodology, the data for this analysis was taken from the 2014 Ghana Demographic and Health Survey. The overall prevalence of unplanned pregnancies among pregnant women in Ghana was determined to be 40% of the population, which was a significant increase from the previous estimate of 30%.

Aside from that, there is evidence to suggest that adolescents in Ghana are particularly vulnerable to becoming pregnant unintentionally and having an abortion. The pregnancy termination rate among women under the age of 20 was 16%, according to the Ghana Maternal Health Survey conducted in 2007. Abortion rates among older women were less than 10%, according to the survey (Awusabo-Asare et al., 2017).

Eliason et al. (2014) conducted a study on predictors of unplanned pregnancies in rural Ghana using information from 1,914 pregnant women who attended prenatal clinics in four health institutions in the Mfantseman Municipal of Ghana's Central Region between January 2012 and April 2012, and who were born between January 2012 and April 2012. The researchers used bivariate and multivariate logistic regression analyses to investigate how women's socio-demographic characteristics, past reproductive health experiences, partner characteristics and relationships, awareness of and experience with contraceptives, and awareness of and experience with contraceptives influenced the status of their current pregnancy (whether intended or unintended). It was discovered that the mean age of the 1,914 respondents in the study was 25.6 ± 6.5 years. old on average. Unplanned pregnancies were reported by 70% of the women who were pregnant at the time.

Omane-Adjepong et al. (2012) studied the prevalence of unexpected pregnancies, contraceptive use, and contributing variables linked with unplanned pregnancies in the Ahafo Ano South District, Ghana using a random sample of 472 pregnant women who sought maternity care at healthcare facilities in the area. The data collected were evaluated using descriptive statistics and multinomial regression. In the district, 28 out of 59 pregnancies were unexpected, and 71.2% of pregnant moms did not use contraceptives, compared to 21.4% who used modern contraception and 7.4% who used traditional contraceptives.

2.3 Factors associated with pregnancy planning among reproductive-aged women in urban slums

2.3.1 Socio-demographic factors

Age and age at sexual debut

The majority of teenagers aged 15–19 years were more likely than the general population to describe their pregnancies as unintentional (Luchters et al., 2016). Unplanned pregnancy was 14 times more likely among teenagers in Nigeria than it was among adults, according to the World Health Organization (Izugbara, 2015). Among women over the age of 35, the likelihood of unintended pregnancy was greatest (Hall et al., 2016). There was no correlation identified between age and the likelihood of reporting an unplanned pregnancy in a community survey in the Democratic Republic of the Congo (Exavery et al., 2014). In Kenya, Nigeria, and South Africa, having first engaged in sexual behaviour before the age of 18 was related to a higher chance of unwanted pregnancy (Beguy et al., 2014).

A survey on the role of women in decision-making about pregnancy planning was done by Wahed, Bhuyan, and Rahman (2006) among women living in slums in a designated region of Dhaka city. According to the findings of the research, when it came to contraceptive technique selection, women were the ones who set the agenda. In the overall sample, more than one-third of the women expressed the self-assurance to make such choices despite their husband's opposition. According to one of the study's most significant results, the majority of women living in slums (45%) would prefer to make a joint decision about the number of children they should have. However, they were unable to give birth. It was estimated that nearly half (48.4%) of their first children were born by chance i.e. the pregnancies were unplanned. The researchers discovered a statistically significant association between respondents' age and their decision on family size. The length of the respondent's marriage was also identified as one of the most significant variables of family size when determining the number of children.

A study by Mohammed et al. (2019) on the effect of unplanned pregnancy in Egypt shows that young women under the age of 30 (OR = 2.24, 95% CI 1.12–4.48, $p = 0.02$), young husbands under the age of 30 (OR = 5.44, 95% CI 1.14–26.11, $p = 0.03$), women working for cash (OR = 6.16, 95% CI 3.15–13.92, $p = 0.03$), monthly income under 1200 LE (OR = 34, 95% CI 6. Women who worked for money (OR = 11.43, 95% CI 3.22–40.62, $p = 0.0001$), women who had fewer than five living children (OR = 11.45, 95% CI 2.84–46.07, $p = 0.0001$), and women who perceived their family size as larger than ideal (OR = 394.8, 95% CI 97.36–1601.17, $p = 0.0001$) were all found to be at risk for unwanted pregnancy.

Religion

According to Habte et al (2013), 14.1% of a sample of 1267 Ethiopian women did not know how many children they wanted in the future or related the number of children they wanted in the future to God's plan for their life (Habte et al., 2013). When comparing Muslims and Christians, it was found that unintended pregnancies were more common among Muslims (Eliason et al., 2014). Exavery and colleagues (2014) in Tanzania found that Muslims had the lowest rates of unwanted pregnancy births when compared to orthodox and protestant Christians, but Tebekaw and colleagues in Ethiopia found that Muslims had the highest rates (Tebekaw et al., 2014). In the Democratic Republic of the Congo, Dhakal et al. (2014) discovered that there was no connection between religion and the likelihood of unwanted pregnancy (Tebekaw et al., 2014).

Level of Education

There was no consensus across different studies when it came to the influence of education level on the chance of having an unwanted pregnancy. In Nigeria, South Africa, Southern Ethiopia, and Kenya (Ikamari et al., 2013), there was no association between the level of education and the odds of having an unintended pregnancy. In the Democratic Republic of Congo, however, there was an increased risk of reporting the last pregnancy as unintended as the level of education increased; and in Nigeria, Tanzania, and Kenya, there was an increase in the level of education being protective against unintended pregnancies. In Nigeria, Tanzania, and Kenya, there was an increase in the level. Two additional studies conducted in Ethiopia that investigated Demographic Health Survey data from nationally representative samples came to contradictory conclusions (Tebekaw et al., 2014). Using data from the 2011 Demographic Health Survey of 7,759 women who had at least one

pregnancy, Tebekaw et al (2014) discovered that higher levels of education were associated with a reduction in the likelihood of unplanned pregnancies in the study population. Habte et al. (2013) analyzed the same data set with 1267 pregnant women and found that there was no connection between education level and the risk of unwanted pregnancy. Beguy and colleagues discovered that remaining in school was protective against having an unwanted pregnancy, with a 10% reduction in the probability of having an unintended pregnancy in Nairobi's urban slums (Beguy et al., 2014b).

Socio-economic status and unintended pregnancy risk

The influence of socioeconomic status on the likelihood of unwanted pregnancy did not seem to be consistent across research. The majority of research found that having a better socio-economic position reduced the likelihood of having an unwanted pregnancy in the majority of cases (Solanke, 2019b). In the Democratic Republic of the Congo and sections of Kenya (comparing slum and non-slum urban settings of Nairobi), there was no connection between socio-economic level and the likelihood of having an unwanted pregnancy (Solanke, 2019b).

The sex of children and social provision as determinants of unplanned births in Pakistan were investigated in a cross-sectional research conducted by Naveed et al. (2018). The research was carried out at the Obstetrics and Gynaecology departments of four teaching hospitals in Lahore, Pakistan, from February 2014 to June 2014. The participants were women aged 15 - 44. These hospitals are supported by the state and provide services to low- and lower-middle-income residents of the surrounding communities. Everyone who was pregnant and who was identified as having a low or lower middle income and who

went to the departments for normal prenatal care was included in the study. Participants were excluded if they had serious medical comorbidities or were getting inpatient treatment. When it comes to unexpected births, parity among mothers was shown to be favourably linked with them ($r=0.19$, $p=0.001$) and insignificantly connected with social support ($r=0.04$, $p>0.05$). The partial correlations revealed that unexpected pregnancy was adversely linked with the overall score on the SPS scale ($r=0.19$, $p=0.001$) and that this association was maintained even after adjusting for the respondent's age ($r=0.19$, $p=0.001$). The Chi-square statistics calculated by Hosmer and Lemeshow were non-significant ($p=0.335$, $\chi^2=9.08$). Unplanned pregnancies (93.4%) and intended pregnancies (27.4%) were properly predicted using logistic regression, with the latter accounting for 21.1% of the variation in undesired pregnancies. Women living in rural regions had a larger chance of becoming pregnant unexpectedly than their peers living in metropolitan areas. Participants with low ratings on the reassurance and nurturance subscales were more likely to get pregnant unexpectedly than those with higher scores on these subscales. However, pregnant women who had one or more boys were shown to have greater probabilities of unexpected pregnancies than their counterparts, regardless of their history of contraception usage. Education level, family income, having girls, the total number of children, attachment, social integration, dependable alliance, and mentoring, on the other hand, were all shown to be minor predictors of the outcome.

Yusof et al. (2018) conducted a study in Malaysia on unexpected pregnancy and the variables that contribute to it among a total of 5727 Malaysian postpartum women. This countrywide cross-sectional research was conducted in government primary healthcare clinics across Malaysia and targeted women in their postpartum period. The data was

gathered using a structured questionnaire combined with a face-to-face interview. Several factors were investigated, including the age of the mothers, the age of the husband and their ethnicity, religious affiliation and marital status. Other factors investigated included polygamy, family support, contraception use, disagreement between the husband and his wife on contraception, smoking and alcohol consumption. The researchers also looked at the history of emotional, physical, and sexual intimate partner violence (IPV). Findings showed that unplanned pregnancies constituted 42.9% of all the pregnancies that were examined (95% CI: 38.6, 47.4). Unplanned pregnancy was shown to be substantially linked with older mothers aged 45-49 years old (aOR: 8.010; 95% CI: 1.909, 33.013) and Muslim mothers (aOR: 2.465; 95 percent confidence interval: 1.432-4.241). According to family income, moms earning less than RM1000 per month were 1.712 (95 %CI: 1.080, 2.713) times more likely to get pregnant unexpectedly. In addition, a history of emotional intimate partner violence was shown to be a significant related risk, with an adjusted odds ratio of [1.720 (95% CI: 1.011, 2.925).

Sarder and colleagues (2021) conducted a study in six South Asian nations to examine the prevalence of unplanned pregnancy and the variables that contribute to it. The study used data from the most recent national demographic and health surveys of Bangladesh (2014), Pakistan (2017–2018), Nepal (2016), Afghanistan (2015), Maldives (2016– 2017), and India (2015–2016). A multivariate analysis was carried out to investigate the relationship between unintended pregnancy and the factors that contribute to it. Unplanned pregnancies were reported by 19.1% of all women (n = 41,689) in the study, which included 41,689 women (ranging from 11.9% in India to 28.4% in Bangladesh). According to the logistic regression model, younger women (15–19 years old) had a 1.42 times greater likelihood of

having an unwanted pregnancy than older women. Unplanned pregnancies were 1.24 times more likely to occur among the poorest women and 1.19 times more likely to occur among poorer women. In addition, women who live in urban areas (aOR = 0.70, 95% CI = 0.50–0.80), women who have no children (aOR = 0.10, 95% CI = 0.09–0.12), women who have a smaller (4) family (aOR = 0.72, 95% CI = 0.67–0.78), women who intend to use contraception (aOR = 0.72, 95% CI = 0.60–0.86), women who are currently living with a partner.

Research on the perpetuating cycle of unintended pregnancy in Eswatini was carried out by Niemeyer Hultstrand et al. (2020). They hypothesised that unintended births are a serious public health concern that has severe social, economic, and health effects for people and their families throughout the world and that they should be addressed more aggressively. According to the findings of this study, unintended pregnancy is prevalent in Eswatini, a nation with a high prevalence of unplanned births. The researchers investigated the underlying reasons and consequences of this phenomenon. Focus group conversations with female health professionals, referred to as mentor moms, were held in January 2018 with participants who were selected for their ability to provide a dual viewpoint, as both Swati women and health workers working in socially and economically disadvantaged environments. Using inductive thematic analysis, they were able to identify five sub-themes as well as an overarching topic in the data, which they named 'the perpetuating cycle of an unexpected pregnancy.' The findings were framed by a social-ecological model, which describes how variables at the individual, relational, societal, and community levels interact to impact unwanted pregnancy at different stages of life. When young women live in this environment, factors such as perceived low self-esteem, as well as poor

living conditions in the community, encourage them to enter into transactional relationships that are characterised by abuse, gender inequality, and unprotected sex, ultimately leading to an unplanned pregnancy. Consequently, neglected and abandoned children grew up to become vulnerable, young adults who were at risk of becoming pregnant unintentionally, thereby creating an iterative cycle of unplanned childbearing.

Woldesenbet et al. (2021) found out in their study on the frequency of unwanted pregnancy and HIV status among women in South Africa that the odds of unintended pregnancy were higher among women who knew their HIV-positive status before pregnancy but did not begin treatment until after the first antenatal visit (adjusted odds ratio [aOR], 1.5 [95%CI:1.2–1.8]), women who started treatment before pregnancy (aOR, 1.3 [95%CI:1.2–1.3]), and women who received an HIV diagnosis during pregnancy (aOR, 1.2 [95%CI:1.1–1.3]). Compared to married women and women aged 30–49 years, women who were single, in a non-cohabiting or cohabiting relationship, and young women (15–24 years) had a considerably greater chance of unwanted pregnancy.

Peach et al. (2021) postulated that being single, separated, or divorced (adjusted odds ratio 9.66; 95%CI: 3.27–28.54), having a tertiary or vocational education (adjusted odds ratio 1.78; 95 %CI: 1.15–2.73), and having more than one pregnancy (adjusted odds ratio 1.43 for each additional pregnancy, 95% CI: 1.29–1.59) were all associated with unintended pregnancy; being accompanied by a male partner to ANC was Male partner participation (adjusted odds ratio 2.26, 95% CI: 1.39–3.67) and gravidity more than one (adjusted odds ratio 1.54 for each subsequent pregnancy, 95% CI: 1.36–1.74) were shown to be linked with contemporary FP usage.

Adeniyi et al. (2018) researched the prevalence of unintended pregnancy in a setting of integrated family planning and HIV care services in South Africa. The data involved 594 parturient women living with HIV in the Eastern Cape. The correlations between unexpected pregnancy and a variety of factors were investigated using chi-square statistics and binary logistic regression within the cohort. In this study, the prevalence of unplanned pregnancy was found to be 71% ($n = 422$), with a higher rate among parturient women who were newly diagnosed during the index pregnancy (87%). Unplanned pregnancy was found to be significantly associated with younger age, single status, HIV diagnosis at the time of booking, high parity, and a previous abortion in one's life. Women who reported an unplanned pregnancy were more likely to arrive late to their appointments and to have lower CD4 counts than other women. Among the significant predictors of unplanned pregnancy in the cohort, having one child and five to seven children (adjusted odds ratio = 2.2; 95% CI = 1.3–3.1), being younger than 21 years (adjusted odds ratio = 3.3; 95% CI = 1.1–9.8), not being married (adjusted odds ratio = 4.3; CI = 2.7–6.8), and having HIV diagnosis at booking.

Barrow et al. (2022) postulated that when comparing women aged 30–34 years with those aged 15–19 years, there was a 45% decrease in unintended pregnancy (AOR=0.55; 95 %CI: 0.32–0.94). When compared to Mandinka women, the Fula and non-Gambian women had a 30% and 45% reduction in unplanned pregnancies. When comparing women who did not have functional difficulties with those who did, those who did not have functional difficulties had a 47 percent reduction in unplanned pregnancy (AOR=0.53; 95 %CI: 0.30 to 0.91). Comparing women who had given birth to 1–2 children with those who had given birth to 3–4 and 5+ children, those who had given birth to 3–4 and 5+ children were 1.79

and 3.02 times more likely to have an unplanned pregnancy, respectively. When compared to women who are currently married or in a union, women who are single or unmarried were 11.38 times more likely to have an unplanned pregnancy (adjusted odds ratio [AOR]=11.38; 95 %CI: 6.38, 20.29). Unplanned pregnancy was found to be significantly associated with the location of one's residence in the local government. Furthermore, as compared to highly happy women and women under the age of 18, women who were neither happy nor satisfied and who were 18 or older at the time of their sexual debut were 1.39 and 1.34 times more likely to have an unintended pregnancy, respectively.

Sisay (2019) indicated from a study on the prevalence of unplanned pregnancy and the factors associated with it among pregnant women in Ethiopia that the AORs of 3.845 (2.023-7.307) and 12.472 (1.571-99.011) for the use of family planning methods, respectively, and the educational status of pregnant women, were found to be significantly associated with an unplanned pregnancy. According to the findings of this research, more than one-third of pregnant women experienced an unexpected pregnancy. The researchers concluded that there is an apparent need for health extension and other health service workers to provide information and counselling about each contraceptive method to make an informed choice and correct method use, as well as to strengthen family planning methods among clients in need of service and to encourage women's education.

Solanke (2019) researched to see if the characteristics of a community had an impact on unintended pregnancy rates in Kenya. He reported that Unplanned births were highly influenced by community variables such as educational attainment, the timing of childbirth, fertility norms, and media exposure. The Intra-Cluster Correlation (ICC) test offered

evidence that the features of a community had an impact on unwanted pregnancy rates. According to the study's findings, there is evidence that the features of a community have an impact on the incidence of unwanted pregnancy in Kenya. All activities aimed at reducing the occurrence of unplanned births should place a strong emphasis on raising awareness and mobilising the community.

Moges et al. (2020) researched Factors Associated with Unplanned Pregnancy in Northern Ethiopia and reported that Unmarried women [AOR: 4.73, 95%CI: 1.56, 14.33], women over the age of forty [AOR: 4.17, 95 %CI: (1.18, 14.6)], women who had no previous history of unplanned pregnancy [AOR: 3.26, 95%CI:(1.65, 6.44)], and women who were unemployed [AOR: 6.79, 95 %CI: (2.05, 22.46)] were the variables that were significantly associated. In this study, the findings revealed that unplanned pregnancy was widespread and that factors such as age, marital status, occupational status, and a previous history of unplanned pregnancy were all statistically associated with the likelihood of an unplanned pregnancy. Kebede (2021) postulated that unplanned pregnancy among Ethiopian adolescents was influenced by characteristics such as age, area, marital status, employment, gender of the household head, and the number of household members in the family.

In Ghana, Nyarko (2019) reported that unplanned pregnancy was found to be associated with factors such as age (OR=4.85, 95 % CI=1.48-15.84), level of education (OR=0.50, 95 %CI=0.26-1.00), marital status (OR=3.83, CI=1.67-8.75), parity (OR=0.13, CI=0.05-0.32), and region of residence (OR=0.11, CI=0.03-0.31) after adjusting for unmet need for contraception. Unmet need for contraception, on the other hand, was found to be a statistically significant predictor of undesired pregnancy (OR=7.13, 95%CI=1.57-8.91),

independent of the respondents' demographic and socioeconomic backgrounds. As the authors point out in their paper, the findings of the study point to an urgent need for major improvements in access to contraceptive procedures and family planning information to drastically reduce the number of unintended births throughout the whole country.

2.3.2 Maternal factors

Unplanned pregnancies were less likely to occur when people were in stable marriages (Tebekaw et al., 2014). It was shown that having more than 2 children were connected with an increased likelihood of reporting recent pregnancies as unplanned, with the highest likelihood reported by women who had 5 or more children (Wado et al., 2013). Wado et al. (2013) found that being single, being divorced, being widowed, and having other unstable living circumstances were all related to greater risks of reporting an unwanted pregnancy. In Ethiopia, the chances of single women reporting recent pregnancies as unplanned were five times higher than the odds of married women saying the same (Wado et al., 2013).

Eliason et al (2014) indicated that the odds of having an unintended pregnancy were significantly higher for women who had other marital arrangements than those who were married under the law of marriage (Muslim or Christian wedding). Women not living with their spouses demonstrated greater chances of having unwanted pregnancies compared to women who resided with their partners (AOR 1.72, 95% CI: 1.28 - 2.30). (AOR 1.72, 95% CI: 1.28 - 2.30). Awareness of conventional methods of family planning (withdrawal and rhythm) was related to decreased risks of having unplanned pregnancy compared to non-awareness (AOR 0.66, 95%CI: 0.49-0.89).

A study by Mohammed et al. (2019) indicated that mistimed and unwanted pregnancies were found to be significantly associated with late initiation of antenatal care (ANC), low birth weight (LBW), and a lack of breast milk intake. Furthermore, unintended pregnancies were related to a higher rate of pregnancy problems. The study concluded that unintended pregnancy is a public health problem in Sohag. As a result, improving services in rural areas, raising the economic level of the population, and encouraging the effective use of family planning methods may all help to reduce the risks associated with unintended pregnancy.

Eliason et al. (2014) showed that key risk variables related to unwanted births were: parity, living arrangements with a partner, marriage by ordinance and understanding of traditional, non-pharmacological contraceptive techniques. Family planning strategies targeting diverse categories of women, particularly during the postpartum period, would be critical to minimise rates of unplanned births and improve beneficial health outcomes. Omane-Adjepong et al. (2012) indicated that parity is shown to be a significant predictor of unintended pregnancy.

Having a pregnancy interval of 12 months (AOR 1.7 1.4-2.2), having parity of more than two (AOR 1.4 1.2-1.8), not know contraceptive methods (AOR 3.0 1.7-5.4), and never using contraceptive methods (AOR 2.3 1.4-5.1) were all found to be significantly associated with unintended pregnancy in the multivariate analysis (Habib et al., 2017).

Eliason et al. (2014) conducted a study on predictors of unplanned pregnancies in rural Ghana using information from 1,914 pregnant women who attended prenatal clinics in four health institutions in the Mfantseman Municipal of Ghana's Central Region between

January 2012 and April 2012 and reported that women with five or more children had higher odds of having an unintended pregnancy than women with one to two children [adjusted odds ratio (AOR) 6.06, 95 %CI: 3.24-11.38) versus AOR 1.48, 95 %CI:1.4-1.93)].

2.3.3 Community factors

Solanke et al. (2019) indicated that most existing studies on unintended pregnancies tend to examine the influence of individual socio-demographic and health characteristics without sufficient attention to community characteristics. They carried out a study to examine community characteristics influencing unintended pregnancies in Kenya. Solanke et al. (2019) extracted data from the 2014 Kenya Demographic and Health Survey (KDHS). The outcome variable was unintended pregnancy. The explanatory variables were selected as individual and community-level variables. The Multilevel mixed-effects logistic regression was applied. The results of their study showed that 41.9% prevalence of unintended pregnancies. Community characteristics such as community education, community timing for initiation of childbearing, community fertility norms, and community media exposure significantly influence the likelihood of unintended pregnancies. The Intra-Cluster Correlation (ICC) provided evidence that community characteristics had effects on unintended pregnancies. The study concluded that is evidence that community characteristics influence the prevalence of unintended pregnancies in Kenya. Community sensitization and mobilization should be central to all efforts aiming to reduce the prevalence of unintended pregnancies.

Yebyo (2014) indicated that in Ethiopia, the community-level characteristics, rural communities (OR=4.67, 95% CI: 3.06, 7.11), pastoralist communities (OR=4.53, 95%CI:2.81, 7.28), communities with higher poverty levels (OR=1.49; 95% CI: 1.08, 2.22), and those with lower ANC utilization (OR=2.01, 95% CI: 1.42, 2.85) and women in areas with the perceived problem of distance to health facilities (OR=1.29; 95% CI: 1.03, 1.62) had a positive influence on women to give birth at home.

Huda et al. (2019) indicated from their study observed a substantial amount of variation at the community level. About 28.6% of the total variance in health facility delivery could be attributed to the differences across the community. At the community level, place of residence (AOR 1.48; 95% CI 1.35–1.64), the concentration of poverty (AOR 1.15; 95% CI 1.03–1.28), the concentration of use of antenatal care services (AOR 1.11, 95% CI 1.00–1.23), the concentration of media exposure (AOR 1.20, 95% CI 1.07–1.34) and concentration of educated women (AOR 1.12, 95% CI 1.02–1.23) were found to be significantly associated with health facility delivery.

2.4 Conceptual Framework

The study reviewed empirical studies on socio-demographic variables as well as the maternal and community factors that influence the planning of pregnancies. Several studies have indicated that unplanned pregnancy is not dependent on only one factor but multiple factors (Huda et al., 2019; Mohammed et al., 2019). Solanke et al. 2019 in their study on the prevalence of unplanned pregnancy in Kenya established that unplanned pregnancy is influenced by socio-demographic variables such as age and the marital status of the woman, parity as well as community factors such as Community characteristics such as

community education, community timing for initiation of childbearing and community fertility norms. The conceptual framework of the study was developed based on the works of other researchers such as Solanke et al. (2019).

The conceptual framework as indicated in figure 2.1 predicts that planning of both first and recent pregnancies is likely to be influenced by: demographic, maternal, community and health service factors. For demographic factors, the framework identifies factors such as the age of the woman, her educational status, occupation, income level of the household and marital status. Other demographic factors that have been considered in the development of the conceptual framework are the type of marriage of the pregnant woman, her residence, religion as well as the educational level of the spouse. Maternal health service factors have also been considered as another set of factors that have a direct relationship with the planning of first and recent pregnancies. Variables such as parity, ANC attendance and the number of attendance and knowledge on the importance of maternal health service factors.

Studies from different literature as demonstrated in earlier discussions have shown a strong relationship between community factors and unplanned pregnancy. Under the community factors, variables such as distance to the health facility, belief system and women's involvement in decision-making have been considered. These variables are more likely to predict the outcome variable, which is the planning of pregnancy. The framework further establishes a direct relationship between health service factors and the planning of pregnancy. For health service factors, variables such as the attitude of health workers, unavailability of skilled birth attendants and the cost of delivery have direct relationships

planning of pregnancy as well as maternal health factors. The framework further explains that maternal health factors or outcomes could be influenced by some demographic and socio-cultural factors. For instance, ANC attendance as well as the number of ANC visits are likely to be influenced by almost all the key demographic factors (age, educational status of both woman and husband, occupation status, marital status).



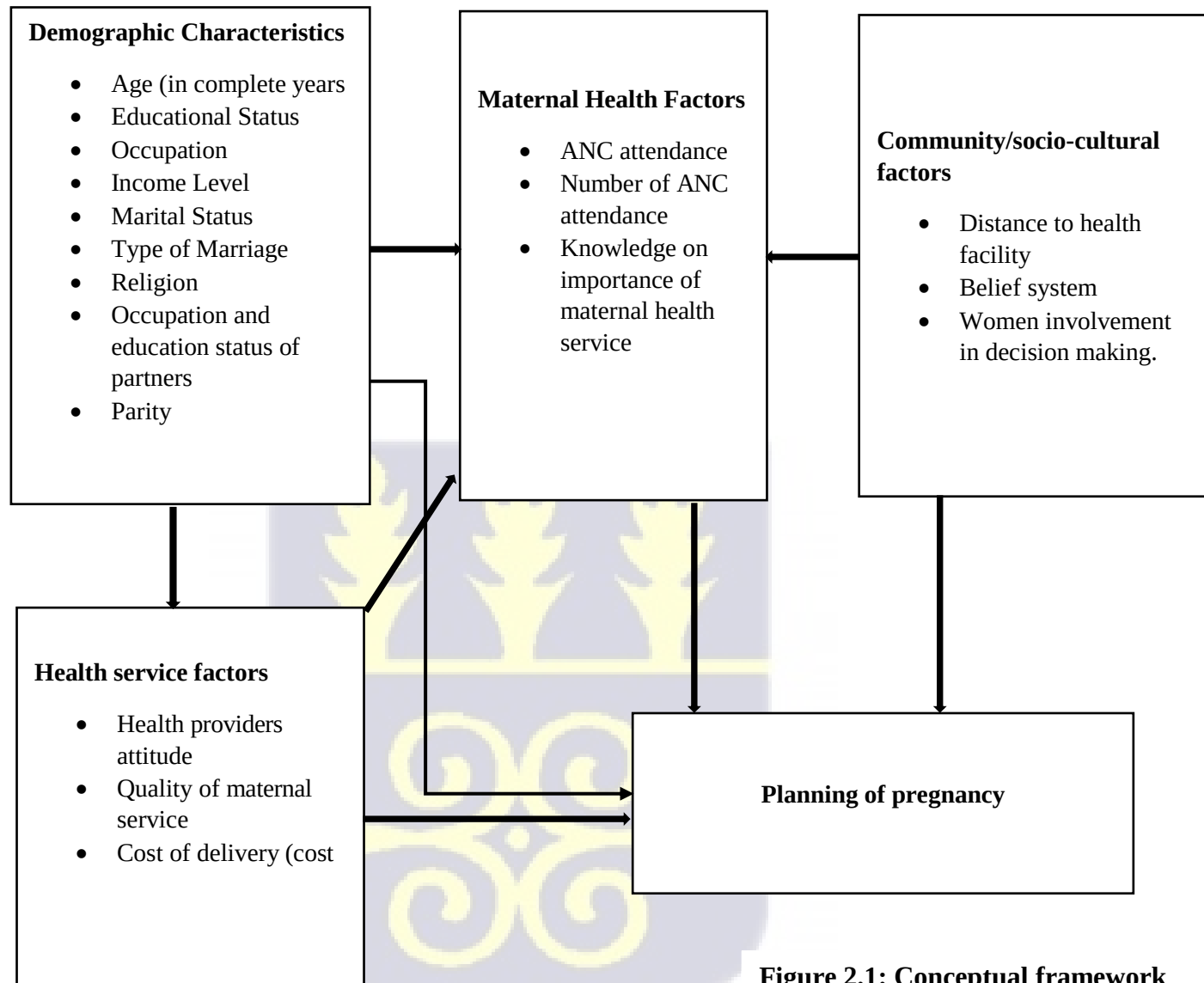


Figure 2.1: Conceptual framework

2.5 Summary of Chapter

The chapter reviewed appropriate empirical studies where the definition of pregnancy planning was espoused and the literature on the prevalence of pregnancy reviewed. The chapter also looked at the factors associated with pregnancy planning and concluded with a conceptual framework of the study.



CHAPTER THREE

METHODS

3.1 Introduction

This chapter discussed the methods the researcher adopted in conducting the study. The chapter looked at the study design, the study area, the population of the study, the sample size and sampling techniques, the data collection methods and instruments, the issue of quality control in the study, data analysis and ethical considerations.

3.2 Study Design

The current study was part of a bigger study with a focus on contraceptive use in urban slums in Ghana. The larger study used a mixed-methods cross-sectional design, involving a scoping review, a quantitative survey and qualitative focus group discussions and in-depth interviews (see Seidu et al, 2022). The data used for the analysis in this dissertation were obtained from the lead researcher following a formal request.

3.3 Study area and population

As part of the focus of the larger study, data were collected from two major urban slums in Accra. The selected slums were Agbogbloshie and Old Fadama. These settlements were chosen as the study area due to their cosmopolitan nature yet with the scarcity of amenities (Oberhauser & Yeboah, 2011). It is estimated that the total land size of the two slums spans around 31.3 hectares with an estimated population of 8305 for Agbogbloshie and 100,000 for Old Fadama (Amoako & Inkoom, 2018, in Seidu et al., 2022). The data used for the analysis in the current study involved female slum dwellers aged 15 -49.

3.4 Sample size determination

A total of 1074 respondents were interviewed for the quantitative survey. The sample size of the original larger study was estimated using the Cochran (2007) sample size determination algorithm for cross-sectional studies where the following assumptions were made in arriving at the total sampled respondents: (a) confidence level was assumed to be 95%; (b) margin of error is assumed to be 5% (i.e.=0.05); and (c) based on the recent Ghana Maternal Health Survey (2018), which reported a modern contraceptive use prevalence of 21% in the Greater Accra region, it was assumed that 21% of the girls/women who will be surveyed in urban slums will be modern contraceptive users. Based on these assumptions and the assumption of 80% study power, the sample size of 1074 was estimated. For the current study, however, only women who have ever been pregnant (n=541) were included in the analysis.

3.5 Sampling and recruitment of participants

The sampling method used for the larger study was based on a convenience sampling technique. The researchers who collected the primary data used a convenience sampling technique due to the disorganized nature of the population in comparison to formal settlement areas in the country. The researchers in making sure the right participants were interviewed for the study, first met with the community leaders of the slums and briefed them on the purpose of the study. This was done using laid-down community involvement practices. Furthermore, the researchers also publicized the study using formal and informal networks in the community and study volunteers were recruited using both formal and informal means. Three local community recruitment officers were tasked to register

sexually active women of reproductive age and to verify their eligibility to participate in the study.

3.6 Data collection methods and tools

The data for the primary study were collected using a standardized questionnaire. The questionnaire contained several validated questions from the Ghana Demographic and Health Survey questionnaire as well as the Ghana Maternal and Child Health Survey questionnaire. The questionnaire was however pre-tested in a nearby slum in Accra.

Interviews were conducted face-to-face and the responses of study participants were recorded electronically into REDCap (Research Electronic Data Capture Platform (see <https://projectredcap.org/software/>), which is software used to develop and collect electronic data using electronic devices such as mobile phones and tablet PCs. This programme enabled data to be captured and stored automatically on the device. With this technology, the danger of data loss, which is prevalent with paper-based surveys that are readily damaged by natural phenomena such as rain, is reduced (Seidu et al, 2022).

Eight (8) graduate research assistants were trained to collect the data through a face-to-face method with participants being fluent in one of four languages: English, Twi, Ga or Hausa. The researchers followed strictly laid down COVID-19 protocols (social distancing of 1-2 metres, wearing of nose masks and the regular use of alcohol-based hand sanitisers). The study participants were compensated for the lost time with a cake of geisha soap and a disposable nose mask.

3.7 Derivation of study variables

Outcome variable

The outcome variable for this study was pregnancy planning. It was derived from two questions: ‘did you plan to have your first pregnancy?’, and ‘did you plan your most recent pregnancy?’ The responses to these questions were “yes” and “no”.

Independent variables

Apart from the dependent variable, other independent variables were considered for this study. These comprised:

Age of the respondents: This referred to the age years of the study participants at the time of administering the survey questionnaire. It is a categorical variable and was categorized as “15-24”, “25-34” and “35-49”. This was coded as 0=15-24 years; 1=25-34 years and 2=35-49 years.

Educational level: This referred to the highest level of education achieved by the respondent at the time of administering the questionnaire. It is a categorical variable and it was categorized as “no formal education”, “primary”, “JSS/JHS”, “secondary”, “Vocational”, and tertiary. This was coded as “0” =no formal education, “1” for primary, “2” for JSS/JHS, “3” for secondary, “4” for vocational and “5” for tertiary.

Ethnicity: This is a categorical variable which measured the ethnicity of the respondents and was categorized as “Ga/Dangbe”, “Ewe”, “Akan”, “Mole Dangbani” “Gurma” and others. This was coded as “0”=Ga/Dangbe, “1”=Ewe, “2”=Akan “3”=Mole Dangbani and “4”=Gurma and “5”=other.

Exposure to radio: This measured if the respondents have access to radio to access information on sexual and reproductive health. It is a categorical variable, and it was categorized as “listen to radio more than once a month”, “listen to radio once a month”.

“does not listen to radio at all”. It was coded as “0”= more than once a month, “1”= once a month, and “2” not at all.

Marital status of respondents: This was a categorical variable that measured the marital status of the study respondents. It was categorized as “never married”, “married”, “cohabiting” and “separated/divorced/widowed”. This was coded as “0”=never married, “1” =married, “2” =cohabiting, and “3” =separated/divorced/widowed.

Exposure to newspaper: This measured if the respondents read a newspaper for the purpose of accessing information on sexual and reproductive health. It is a categorical variable, and it was categorized as “read more than once a month”, “read once a month”, “does not read at all”. It was coded as “0”= more than once a month, “1”= once a month, and “2” not at all.

Exposure to television: This also measured if the respondents have access to television for the purpose of accessing information on sexual and reproductive health. It is a categorical variable, and it was categorized as “watch television more than once a month”, “watch television once a month”, and “does not watch television at all”. It was coded as “0”= more than once a month, “1”= once a month, and “2” not at all.

Knowledge about internet: This measured whether the respondents had heard about the internet at the time of administering the questionnaire. It is a binary variable and was coded

“0” yes, “1” no.

Ownership of mobile phone: This measured whether the respondent had a mobile phone at the time of administering the questionnaire. It is a binary variable and was coded “0” yes, “1” no.

Access to social media: This measured whether the respondents had access to social media at the time of administering the questionnaire. It is a binary variable and was coded “0” yes, “1” no.

Access to internet through mobile phone: This measured whether the respondents had access to internet via their mobile phone at the time of administering the questionnaire. It is a binary variable and was coded “0” yes, “1” no.

Type of marriage: This is a binary variable and it measured the type of marriage the respondent was in at the time of administering the questionnaire. It was coded as “monogamous” and “polygamous”

Spouse highest level of education: This referred to the highest level of education achieved by the spouse of the respondent at the time of administering the questionnaire. It is a categorical variable and it was categorized as “no formal education”, “primary”, “JSS/JHS”, “secondary”, “Vocational” and “tertiary”. This was coded as “0” =no formal education, “1” for primary, “2” for JSS/JHS, “3” for secondary, “4” for vocational and “5” for tertiary.

Bank account ownership: This measured whether the respondents had a bank account at the time of administering the questionnaire. It is binary data and was coded “0” yes, “1” no.

Approximate monthly household income: This is a categorical variable and measured the approximate income of the respondent’s household in a month. It was categorized as “less than 500”, “500-1000”, and “1001-1500”. 1501-2000”, “and more than 2000”

Approximate monthly household expenditure: This is a categorical variable, and it measured the amount of money spent by the respondent’s household in a month. It is categorized as “less than 500”, “500-1000”, and “1001-1500”. 1501-2000”, “and more than 2000”.

Ever used internet: This is a binary variable, and it was categorized as “Yes and “No”.

Who do you stay with: This is a categorical variable which sought to assess if the respondents stayed with someone. It was categorized as Both parents, “Father”, “Mother”, “Grandmother” “Husband/Partner”, “Boyfriend”, “Self”, and “Other (specify)”.

Mothers’ education: This is a categorical variable, and it assessed the highest level of education of the respondent’s mother. It was categorized as having “No formal education”,

“Primary”, “JSS/JHS/Middle school”, “Vocational”, “Secondary (SSS/SHS)”, and “Tertiary”.

Fathers’ education: This is a categorical variable, and it assessed the highest level of education of the respondent’s father. It is categorized as “No formal education”, “Primary”, “JSS/JHS/Middle school”, “Vocational”, “Secondary (SSS/SHS)”, “Tertiary”

3.8 Data processing and analyses

The data was received already coded in STATA 14. The researcher went through the data to check for correct coding and possible coding errors. Descriptive and inferential analyses were then conducted. At the descriptive level, frequencies and percentages were used to present information on demographic characteristics and pregnancy planning (first and recent pregnancy). Inferential bivariate and binary logistic regression models were then run. This approach was considered suitable as the dependent variable of the study was a binary variable. The researcher first run the bivariate (chi-square) analysis and based on significant factors, a binary logistics regression model was run with Odd Ratios (OR) and Adjusted Odd Ratios (AOR). In all the analyses, statistical significance was set at a p-value less than 0.05.

3.9 Ethical Consideration

3.9.1 Ethics Approval

The original study received ethical approval from the Ghana Health Service Ethics Review Committee. Furthermore, administrative approval was sought by the lead researchers from

the Ghana Health Service and the Greater Accra Regional Health Directorate before selecting personnel for the study.

3.9.2. Access and approval of study area

The researchers who initiated and collected the primary data obtained administrative approval from the municipal health directorate for their intention to conduct the study among reproductive-aged women in the urban slums in Agbobloshie and Old Fadama.

3.9.3. Informed consent

All respondents gave informed written consent. Participants were made to sign or thumbprint a written consent form after a detailed explanation was given to each of them.

3.9.4. Privacy and confidentiality

The secondary data obtained for further analysis had no personal information or data on the study respondents. The primary researchers took the necessary steps to protect the privacy and confidentiality of the study respondents.

3.9.5. Risk and Benefits

There were no direct benefits associated with taking part in the study except for the researchers giving out COVID-19 nose masks and a cake of geisha soap to study participants as part of COVID-19 protocols. However, it is expected that the results of the study would contribute towards policy decisions making to improve the sexual and reproductive health of women in urban slums in Ghana.

3.9.6. Voluntary withdrawal

Participants were at liberty to withdraw from the study at any point in time. Data collected

on any participant who withdrew from the study were deleted. However, each participant was encouraged to fully participate in the study.

3.9.7. Data storage and usage

The researcher kept the secondary data received on her laptop in a secured folder with a password.

3.9.8. Declaration of conflict of interest

The researcher declares no conflict of interest in this study.

3.10 Chapter Summary

The chapter discussed the research methods. The discussion highlighted the research design, sampling and data collection and analysis methods. Ethical issues were also addressed. The next chapter presents the results.



CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results of the study. The results are presented in three parts; the socio-demographic characteristics of the study respondents, descriptive statistics and inferential statistics where the bivariate and logistic regression analysis investigating the factors associated with pregnancy planning among urban slum dwellers are presented.

4.2 Socio-demographic characteristics of respondents

About 541 respondents who had ever been pregnant were included in the analysis. Table 4.1 shows the essential characteristics of the respondents. In terms of the age of the respondents, 165 (30.50%) were aged 15-24 years, 217 (40.11%) were aged 25-34 years and those aged 34-49 years were 159 representing 29.4% of the total sampled respondents. In terms of the educational level of the respondents, those with no formal education were 178 (30.50%), those with primary education were 106 (19.56%), holders of JSS/JHS/middle school certificates were 166 (30.63), the respondents with a vocational certificate were 17 (3.14%) whilst those with secondary certificate were 62 (11.44%) and those with tertiary education were 12 (2.21%). In terms of the ethnicity of the respondents, those with an Akan background were 134 (24.81%); Ga-Dangme were only 55 (10.19%); Ewes represented 64 (11.85%) of the respondents, and Mole-Dagbani group were the majority 230 (42.59%). The study further sought to assess whether the respondents had access to radio, more than half of the respondents 301 (55.74%) used or listen to radio at least once a month, and 103 (19.07%) use or listen to radio less than once a month. Pertaining to marital status, 276 (74.24%) of the respondents did not use or read any form of newspaper or magazine and

those who read once a month were about 26 (7.18%). In terms of exposure to television, the results indicated that 436 (80.59%) of the respondents had access to television at least once a month and those who do not have access to television at all 49 (9.06%).

This indicates that at least the majority of the respondents have access to television viewing where information on public health and family planning dissemination can be useful to the slum dwellers. In an information age, where most information is disseminated via the internet, 226 (64.94%) have access to internet which is good for information dissemination on family planning. Of significant importance is the number of respondents with access to mobile phones which represented 502 (92.36%) of the total sampled respondents however 296 (58.96%) of the respondents do not have access to social media even though 184 (82.51%) had access to internet through their mobile phones. On the marital status of the respondents, 247 (45.76%). On the type of marriage, most of the women were in a monogamous relationship 269 (80.78%). There is not much difference between the highest level of education of the women and their husbands as the majority of the respondents indicated that their husbands had no formal education, 106 (34.75%). The respondents indicated that they have a form of bank account for savings, 403 (74.77%). In terms of the monthly income by the respondents, those with less than 500 GHC monthly income were 202 (37.34%), those who earned between 500-1000GHC were 208 (38.45%), 63 (11.65%) earn between 1001 and 1500, 18 (3.33%) earn between 1501 and 2000 and only 11 (2.03%) earn more than 2000 GHC in a month. In terms of the monthly expenditure of the respondents, those who spend less than 500 GHC a month were 358 (66.42%), those who spend between 500 to 1000 GHC a month were 156 (28.94%), those who spend between 1001 and 1500 GHC a month were only 18 (3.34%) whilst 6 (1.11%) and 1 (0.19%) spent

monthly between 1501-2000 and more than 2000 respectively. In terms of the mother's highest level of education, those with no formal education were 436 (81.95%) of the total respondents and 2 (0.38%) were holders of tertiary certificates respectively. On the highest level of education of the respondent's father, the result was not too different from the educational level of the respondent's mother as those fathers with no formal education were 383 (73.51%) and tertiary was 18 (3.45%). The study further assessed who the respondent stayed with, and the results indicated that those who lived with both parents were 13 (2.40%), father only was 5 (0.92%), mother only was 20 (3.69%), grandmother was 5 (0.92%), husband or partner was 215 (39.85%) and those who live alone were 166 (30.63%) whilst those staying with others were 51 (9.41%).

Table 4.1: Socio-demographic characteristics of respondents

Variable	Frequency	Percent (%)
Age (n=541)		
15-24 years	165	30.50
25-34 years	217	40.11
34-49 years	159	29.39
Educational level (n=541)		
No formal education	178	33.03
Primary	106	19.56
JSS/JHS/Middle school	166	30.63
Vocational	17	3.14
Secondary	62	11.44
Tertiary	12	2.21
Ethnicity (n=540)		
Akan	134	24.81
Ga-Dangme	55	10.19
Ewe	64	11.85
Mole-Dagbani	230	42.59
Gurma	8	1.48

Other	49	9.07
Frequency of listening to radio (n=540)		
At least once a month	579	53.81
Less than once a month	239	22.21
Not at all	258	23.98
Frequency of reading newspaper (n=362)		
At least once a month	60	16.57
Less than once a month	26	7.18
Not at all	276	74.24
Frequency of watching television (n=541)		
At least once a month	436	80.59
Less than once a month	56	10.35
Not at all	49	9.06
Ever use internet (n=348)		
Yes	226	64.94
No	122	35.06
Mobile phone ownership (n=540)		
Yes	502	92.36
No	38	7.04
Access to social media (n=502)		
Yes	206	41.04
No	296	58.96
Access to internet through mobile phone (n=223)		
Yes	184	82.51
No	39	17.49
Marital status (n=541)		
Married	247	45.76
Single	183	33.76
Divorced	40	7.38
Separated	22	4.06
Co-habiting	38	7.01
Widowed	11	2.03
Type of marriage (n=333)		
Monogamous	269	80.78
Polygamous	50	15.02
No Response	14	4.20
Spouse highest level of education (n=305)		
No formal education	106	34.75
Primary	20	6.56
JHS/Middle school	75	24.59
Vocational	22	7.21

Secondary	53	17.38
Tertiary	29	9.51
Bank account ownership (n=539)		
Yes	403	74.77
No	136	25.23
Monthly income (n=541)		
Less than 500	202	37.34
500-1000	208	38.45
1001-1500	63	11.65
15001-2000	18	3.33
more than 2000	11	2.03
No Response	39	7.21
Heard about the internet (n=535)		
Yes	347	64.86
No	188	35.14
Father's highest level of education (n=521)		
No formal education	383	73.51
Primary	40	7.68
JSS/JHS/Middle school	58	11.13
Vocational	1	0.19
Secondary (SSS/SHS)	21	4.03
Tertiary	18	3.45
Internet use in the last month (n=495)		
Yes	187	81.66
No	42	18.34
Who you stay with (n=541)		
Both parents	13	2.40
Father	5	0.92
Mother	20	3.69
Grandmother	5	0.92
Husband/Partner	215	39.85
Boyfriend	66	12.18
Self	166	30.63
Other (specify)	51	9.41
Monthly expenditure (n=539)		
less than 500	358	66.42
500-1000	156	28.94
1001-1500	18	3.34
1501-2000	6	1.11
more than 2000	1	0.19
Mother's highest education (n=532)		
No formal education	436	81.95

Primary	33	6.20
JSS/JHS/Middle school	42	7.89
Vocational	12	2.26
Secondary (SSS/SHS)	7	1.32
Tertiary	2	0.38

4.3 Pregnancy History and Planning

The study sought to assess the pregnancy history and planning of respondents. The result as indicated in table 4.2 shows that 221 (41.15%) had their first pregnancy aged 13-19 years, 313 (58.29%) had their first pregnancy aged 20-29 years and only 3 (0.56%) of the respondents had their first pregnancy aged 31-35 years. Also, 197 (36.35%) of the respondents have been pregnant once, 142 (26.2%) have been pregnant twice, 98 (18.08%) have been pregnant three times, 57 (10.52%) have been pregnant four times and those who have been pregnant for six times or more were 22 (4.06%). The results further show that 357 (65.87%) did not plan their first pregnancy whilst 297 (54.9%) did not plan their recent pregnancy. Finally, a majority (83%) of the respondents had no plans of getting pregnant in the next twelve months.

Table 4.2: Planning of pregnancy

Variable	Frequency	Percent (%)
Age at first pregnancy (n=537)		
13-19	221	41.15
20-29	313	58.29
31-35	3	0.56
No Response	30	5.55
Number of times pregnant (n=541)		
1	196	36.35
2	142	26.2
3	98	18.08
4	57	10.51
5	26	4.8
6+	22	4.06

**Intention to become pregnant in the next twelve months
(n=541)**

Yes	108	19.93
No	427	78.97
No Response	6	1.11

4.4 Factors associated with planning of most recent pregnancy

Table 4.3 shows a bivariate analysis investigating factors associated with planning of most recent pregnancy. The results show that out of the independent 22 variables examined, only twelve were significantly associated with the planning of the most recent pregnancy ($p < 0.05$). These variables are respondents' age, respondent' educational level, ever use of internet, marital status, type of marriage, spouse highest level of education, monthly income, ever hearing about the internet, who the respondent stays with, monthly expenditure, father's highest level of education and mother's highest level of education.

Table 4.3 Factors associated with planning of most recent pregnancy (Bivariate analysis)

Indicator	Planned recent birth		p-value
	Yes	No	
Age			<0.001
15-24 years	40 (18.78)	112 (37.84%)	
25-34 years	90 (42.25)	116 (39.19%)	
34-49 years	83 (38.97)	68 (22.97%)	
Educational level			<0.001
No formal education	81 (37.85%)	86 (29.05%)	
Primary	31 (14.49%)	70 (23.65%)	
JSS/JHS/Middle school	55 (25.70%)	101 (34.12%)	
Vocational	11 (5.14%)	6 (2.03%)	
Secondary	29 (13.55%)	29 (9.80%)	
Tertiary	7 (3.27%)	4 (1.35%)	
Ethnicity			0.08
Akan	47 (22.07%)	78 (26.44%)	
Ga-Dangme	19 (8.92%)	33 (11.19%)	
Ewe	25 (11.74%)	37 (12.54%)	

Mole-Dagbani	90 (42.25%)	123 (41.69%)	
Gurma	2 (0.94%)	5 (1.69%)	
Other	30 (14.08%)	19 (6.44%)	
Frequency of listening to radio			0.21
At least once a month	127 (59.91%)	165 (55.74%)	
Less than once a month	30 (14.15%)	60 (20.27%)	
Not at all	55 (25.94%)	71 (23.99%)	
Frequency of reading newspaper			0.16
At least once a month	16 (11.94%)	41 (19.62%)	
Less than once a month	11 (8.21%)	14 (6.70%)	
Not at all	107 (79.85%)	154 (73.68%)	
Frequency of watching television			0.27
At least once a month	169 (79.34%)	251 (84.80%)	
Less than once a month	20 (9.39%)	21 (7.09%)	
Not at all	24 (11.27%)	24 (8.11%)	
Ever use internet			<0.001
Yes	72 (56.69%)	147 (71.36%)	
No	55 (43.31%)	59 (28.64%)	
Mobile phone ownership	195 (91.55%)	278 (94.24%)	0.28
Yes	18 (8.45%)	17 (5.76%)	
No			
Access to social media			0.18
Yes	75 (38.46%)	124 (44.60%)	
No	120 (61.54%)	154 (55.40%)	
Access to internet through mobile phone			1.00
Yes	60 (82.19%)	118 (81.94%)	
No	13 (17.81%)	26 (18.06%)	
Marital status			<0.001
Married	142 (66.36%)	92 (31.08%)	
Single	27 (12.62%)	145 (48.99%)	
Divorced	14 (6.54%)	24 (8.11%)	
Separated	12 (5.61%)	9 (3.04%)	
Co-habiting	11 (5.14%)	24 (8.11%)	
Widowed	8 (3.74%)	2 (0.68%)	
Type of marriage			0.03
Monogamous	137 (79.19%)	119 (84.40%)	
Polygamous	32 (18.50%)	14 (9.93%)	
No Response	4 (2.31%)	8 (5.67%)	
Personal decision to go into polygamous marriage			0.49

Yes	21 (65.63%)	11 (78.57%)	
No	11 (34.38%)	3 (21.43%)	
Spouse highest level of education			<0.001
No formal education	49 (29.88%)	52 (42.28%)	
Primary	10 (6.10%)	9 (7.32%)	
JHS/Middle school	41 (25%)	26 (21.14%)	
Vocational	4 (2.44%)	18 (14.63%)	
Secondary	35 (21.34%)	16 (13.01%)	
Tertiary	25 (15.24%)	2 (1.63%)	
Bank account ownership			0.75
Yes	161 (75.59%)	218 (74.15%)	
No	52 (24.41%)	76 (25.85%)	
Ever pregnant			
Yes			
No			
Monthly income			<0.001
Less than 500	59 (27.57%)	138 (46.78%)	
500-1000	77 (35.98%)	123 (41.69%)	
1001-1500	39 (18.22%)	21 (7.12%)	
15001-2000	12 (5.61%)	5 (1.69%)	
more than 2000	10 (4.67%)	0	
No Response	17 (7.94%)	8 (2.71%)	
Heard about the internet			0.01
Yes	125 (59.24%)	207 (70.65%)	
No	86 (40.76%)	86 (29.35%)	
Father's highest level of education			0.002
No formal education	139 (66.51%)	219 (78.21%)	
Primary	16 (7.66%)	21 (7.50%)	
JSS/JHS/Middle school	31 (14.83%)	26 (9.29%)	
Vocational	1 (0.48%)	0	
Secondary (SSS/SHS)	11 (5.26%)	8 (2.86%)	
Tertiary	11 (5.26%)	6 (2.14%)	
Internet use in the last month			0.58
Yes	64 (84.21%)	118 (80.27%)	
No	12 (15.79%)	29 (19.73%)	
Who you stay with			<0.001
Both parents	3 (1.40%)	10 (3.38%)	
Father	0	4 (1.35%)	
Mother	3 (1.40%)	17 (5.74%)	
Grandmother	0	5 (1.69%)	
Husband/Partner	115 (53.74%)	91 (30.74%)	

Boyfriend	14 (6.54%)	51 (17.23%)	
Self	67 (31.31%)	82 (27.70%)	
Other (specify)	12 (5.61%)	36 (12.16%)	
Monthly expenditure			<0.001
less than 500	88 (41.12%)	248 (84.64%)	
500-1000	107 (50%)	41 (13.99%)	
1001-1500	14 (6.54%)	3 (1.02%)	
1501-2000	5 (2.34%)	0	
more than 2000	0	1 (0.34%)	
Mother's highest education level			0.03
No formal education	165 (77.46%)	245 (85.37%)	
Primary	13 (6.10%)	17 (5.92%)	
JSS/JHS/Middle school	25 (11.74%)	14 (4.88%)	
Vocational	4 (1.88%)	8 (2.79%)	
Secondary (SSS/SHS)	4 (1.88%)	3 (1.05%)	
Tertiary	2 (0.94%)	0	

Based on the results of the bivariate (chi-square and fisher's test), Fisher's test (age, frequency of listening to radio, frequency of reading newspaper, frequency of watching television, ever use internet, mobile phone ownership, access to social media, access to internet through mobile phone, type of marriage, heard about the internet) and Chi-square (educational level, ethnicity, marital status, personal decision to go into polygamous marriage, spouse highest level of education, mother's level of education, father's highest level of education, monthly income, monthly expenditure and who do you stay with) analysis in table 4.3, the 12 variables that showed statistical association were further examined using binary logistic regression analysis. The results are presented in table 4.4. After adjusting for potential covariates, only one variable (monthly expenditure) remained significantly associated with the planning of the most recent pregnancy. In general, increasing monthly expenditure positively predicted the planning of the most recent pregnancy. Specifically, those who spent between GHC 500 and 1000 had higher odds of planning their most recent pregnancies (AOR=6.97, 95%CI: 6.90, 10.80; $p<0.01$)

compared to those earning who spent less than GHC500. Similarly, the odds of planning the most recent pregnancy were over 13 times higher for those who spent between GHC 1001 and 1500 a month (AOR 13.19; 95%CI: 5.41-32.11; $p=0.01$) compared to those who spent less than GHC 500 a month.

Table 4.4: Logistics Regression of factors associated planning of most recent pregnancy

Factors	Crude			Adjusted	
	OR	95% CI	p-value	OR	95% CI
Age					
15-24 years	<i>Ref</i>				
25-34 years	2.17	(1.38, 3.42)	0.001	0.88	(.34, 2.28)
34-49 years	3.42	(2.11, 5.54)	0.00	0.57	(.20, 1.59)
Educational level					
No formal education	<i>Ref</i>				
Primary	0.47	(.28, .79)	0.004	0.98	(.39, 2.45)
JSS/JHS/Middle school	0.58	(.37, .90)	0.016	0.45	(.16, 1.22)
Vocational	1.95	(.69, 5.51)	0.209	1.00	
Secondary	1.06	(.58, 1.93)	0.844	1.77	(.166, 1.22)
Tertiary	1.86	(.52, 6.59)	0.337	1.00	
Marital status					
Married	<i>Ref</i>				
Single	0.12	(.07, .19)	0.00		
Divorced	0.38	(.19, .76)	0.007		
Separated	0.86	(.35, 2.13)	0.751	0.64	(.13, 3.08)
Co-habiting	0.29	(.14, .64)	0.002	0.57	(.10, 3.22)

Widowed	2.5	(.54, 12.48)	0.235		
Spouse highest level of education					
No formal education	Ref				
Primary	1.18	(.44, 3.15)	0.742	0.91	(.25, 3.32)
JHS/Middle school	1.67	(.89, 3.13)	0.108	1.47	(.58, 3.74)
Vocational	0.24	(.07, .75)	0.014	0.04	(.00, .89)
Secondary	2.32	(1.14, 4.72)	0.02	2.1	(.74, 5.93)
Tertiary	13.27	(2.98, 58.99)	0.001	3.04	(.39, 23.32)
Monthly income					
Less than 500	Ref				
500-1000	1.46	(.96, 2.22)	0.073	0.14	(.55, .33)
1001-1500	4.34	(2.36, 8.00)	0	0.22	(.06, .84)
1501-2000	5.61	(1.89, 16.64)	0.002	0.31	(.01, 5.03)
Who you stay with					
Both parents	Ref				
Father	1				
Mother	0.59	(.99, 3.49)	0.559	0.09	(.00, 6.29)
Grandmother	1				
Husband/Partner	4.21	(1.13, 15.76)	0.033	0.36	(.20, 6.46)
Boyfriend	0.92	(.22, 3.78)	0.902	0.06	(.00, 1.70)
Self	2.72	(.72, 10.29)	0.14	0.74	(.05, 11.82)
Other (specify)	1.11	(.26, 4.72)	0.886	1	
Monthly expenditure					
less than 500	Ref				
500-1000	7.35	(4.76, 11.36)	0.00	6.97	(6.90, 10.80)
1001-1500	13.15	(3.69, 46.85)	0.00	13.19	(5.41, 32.11)
Ever use internet					
Yes	Ref				
No	1.9	(1.19, 3.02)	0.00	1.15	(.21, 6.44)
Type of marriage					
Monogamous	Ref				
Polygamous	1.98	(1.01, 3.89)	0.05	1.39	(.10, 18.70)
No Response	0.43	(0.13, 1.48)	0.18		
Heard about the internet					
Yes	Ref				
No	1.66	(1.14, 2.40)	0		
Father's highest level of education					
No formal education	Ref				
Primary	1.2	(0.61, 2.38)	0.6	0.61	(.02, 16.26)
JSS/JHS/Middle school	1.88	(1.07, 3.29)	0.03	0.19	(0.28, 1.27)
Vocational	1				
Secondary (SSS/SHS)	2.17	(0.85, 5.52)	0.11		

Tertiary	2.89	(0.51, 0.79)	0.04		
Mother's highest level of education					
No formal education	Ref				
Primary	1.14	(0.54, 2.40)	0.74	2.08	(0.05, 83.62)
JSS/JHS/Middle school	2.65	(1.34, 5.25)	0.005	21.61	(0.78, 601.64)
Vocational	0.74	(0.22, 2.51)	0.63		
Secondary (SSS/SHS)	1.97	(0.44, 8.96)	0.38		
Tertiary	1				

4.5 Chapter Summary

This chapter presents the findings of the study. The findings showed that only monthly expenditure was significantly associated with the planning of the most recent pregnancy.

These results are discussed in chapter five.



CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter discusses the results presented in the previous chapter. The discussion consists of a summary of the findings, and a comparison of the findings from the study with previous studies done elsewhere. The chapter also deals with the strengths and limitations of the study.

5.2 Characteristics of respondents

The results of the study as presented above show that the high rate of rural-urban migration needs to be curbed. The study results showed that the majority of the slum dwellers sampled migrated from the Northern region with a majority of them not having requisite education and skills, with negative consequences for reproductive health. For instance, the study findings indicated that those with low educational achievement had lower odds of planning their pregnancy. This is also evident in the number of times the study respondents were impregnated as per the study findings. The results of the study further indicated that in terms of the educational level of both the mother and fathers, most of the parents did not have a formal educational level. The findings are not encouraging for information dissemination especially as radio is used more often to disseminate information on public health in the country. This indicates that at least the majority of the respondents have access to television viewing where information on public health and family planning dissemination can be useful to the slum dwellers. Furthermore, most of the respondents

earn less than GHC 500 per month and with the increased cost of living, the gap between the poor and the rich keeps widening.

5.3 Pregnancy history and planning

The result of the study also indicated that 357 (65.87%) did not plan their first pregnancy whilst 297 (54.9%) did not plan their recent pregnancy. The results indicated that the level of pregnancy planning among urban slum dwellers is very low. This has a negative consequence on population planning and by extension a negative consequence on the resources of the country. It is important that reproductive-aged women especially those living within the slums can plan their pregnancies as the findings of the study have indicated that most of the respondents earn less than GHC 500 and most of them have migrated from the Northern part of the country in search of greener pastures. The purpose of coming to the south to work will be defeated if they keep getting pregnant without any recourse to plan. This will also affect the health of the mother and the child; the mother needs to space the birth of their child to give both the mother and the child enough room to grow. With fewer health facilities in the slums, receiving good maternal care is a luxury for most of the slum dwellers hence without good planning for pregnancy, they will not be able to receive adequate maternal health care. This finding is supported by the works of Awusabo- Asare et al. (2017) who indicated that three-quarters of births in their sample were reported as unplanned.

5.4 Factors associated with recent pregnancy planning

Findings also revealed monthly expenditure as a predictor of planning for the most recent pregnancy. That is as monthly expenditure increases, the likelihood of planning a recent

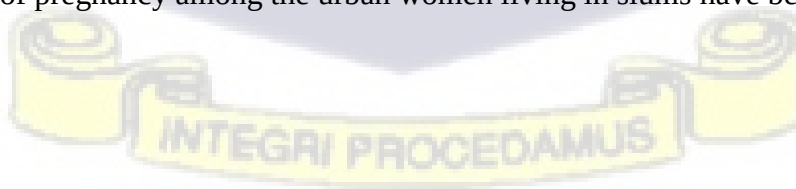
pregnancy also increases. Income is said to be positively correlated with the planning of one's life including pregnancy and spacing the birth of children. Spending 500-1500GHCa month in a slum where poverty is high and where access to amenities is lacking is perhaps indicative of a relatively better standard of living so that such respondents will be able to access family planning services and contraceptives to prevent unwanted pregnancies.

5.5 Strengths and Limitations

The study has discovered new findings which are relevant to the planning of pregnancy, especially within urban slums and these have positive implications for policy interventions and future research in the area. The study however has limitations. The study was carried out using a structured questionnaire and the scope was limited to two slums in the Greater Accra Region. This may not make the findings of the study generalizable to other populations of slum dwellers. Future research to advance knowledge on the planning of pregnancy among slum dwellers should expand the scope of the study to cover other slums within other urban areas in Ghana to make the findings even more generalizable. Furthermore, a mixed method should be adopted to make up for the shortcomings of using a purely quantitative research method where the study respondents were not able to freely express themselves to further enrich the findings of the study.

5.6 Chapter Summary

The study findings indicated that income is a good determinant of planning pregnancy and planning of pregnancy among the urban women living in slums have been poor.



CHAPTER SIX

CONCLUSION

6.1 Conclusion

The purpose of this study was to assess pregnancy planning and associated factors among reproductive-aged women in urban slums in Accra. The study used secondary data from a larger study which aimed to assess contraceptive usage among urban slum dwellers in Ghana. The result of the study indicated that 357 (65.87%) did not plan their first pregnancy whilst 297 (54.9%) did not plan their recent pregnancy. After controlling for potential confounders, only monthly expenditure remained significantly associated with the planning of most recent pregnancy.

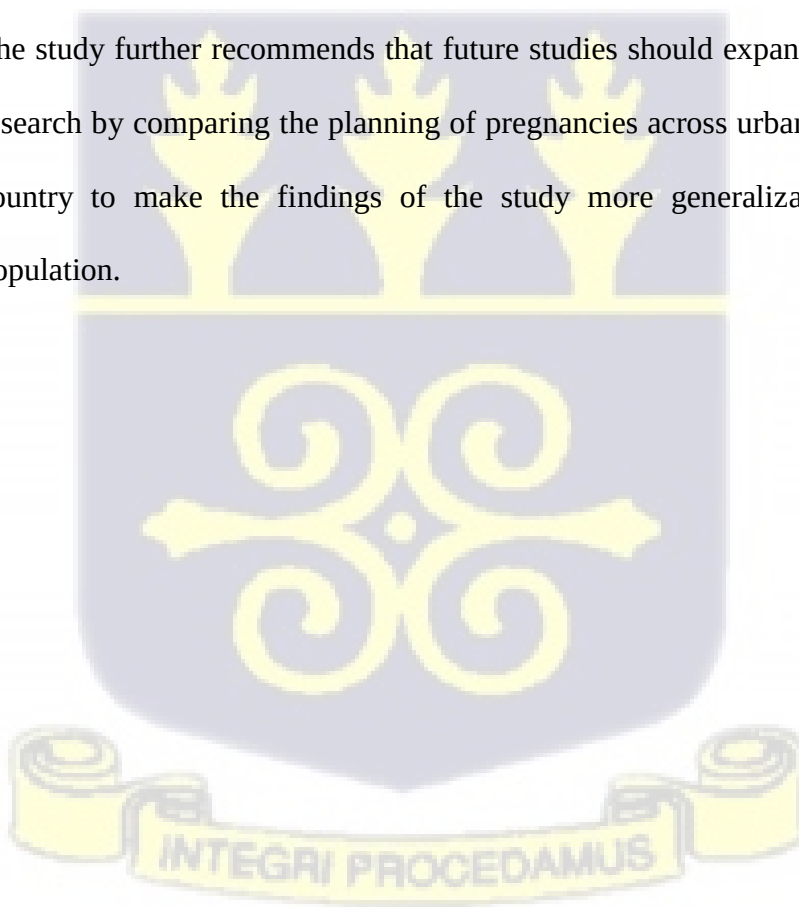
Based on these findings and discussions in the previous chapters, it can be concluded that the prevalence of unplanned pregnancy is high in urban slums in Accra and that economic factors such as monthly income and expenditure are important determinants of women's ability to plan their pregnancy in urban slums. Therefore, targeted community-level education on the benefits of family planning and how to prevent unplanned pregnancies are urgently needed in slum communities where this study was conducted. There is also a need for policymakers to make a continuous effort to improve the economic and/ or purchasing power situation of women and girls in urban slums to address the negative ripple effect of poverty on unwanted pregnancy, unsafe abortion, maternal mortality and the economy as a whole. In particular, policymakers such as the municipal assemblies must create better economic opportunities for women/girls in the slum areas to help them

improve upon the spacing of the birth of their children through the planning of pregnancy.t
recent pregnancy.

6.2 Recommendations

Based on the findings of the study, the following recommendations are hereby made:

1. Measures must be put in place to help control unplanned pregnancies which may result in several unsafe abortions and an increase in the population which comes with its antecedent pressures on health facilities and the economy.
2. The Ministry of Health and its partners should carry out a sensitization programme to sensitize the urban slum dwellers on the importance of family planning and the health benefits it brings.
3. The study further recommends that future studies should expand the scope of the research by comparing the planning of pregnancies across urban slums across the country to make the findings of the study more generalizable to the entire population.



REFERENCES

- Adams, A. M., Islam, R., & Ahmed, T. (2015). Who serves the urban poor? A geospatial and descriptive analysis of health services in slum settlements in Dhaka, Bangladesh. *Health Policy and Planning*, 30(suppl 1), i32–i45. <https://doi.org/10.1093/heapol/czu094>
- Adeniyi, O. V., Ajayi, A. I., Moyaki, M. G., Goon, D. T., Avramovic, G., & Lambert, J. (2018). High rate of unplanned pregnancy in the context of integrated family planning and HIV care services in South Africa. *BMC Health Services Research*, 18(1). <https://doi.org/10.1186/s12913-018-2942-z>
- Agula, C., Henry, E. G., Asuming, P. O., Agyei-Asabere, C., Kushitor, M., Canning, D., Shah, I., & Bawah, A. A. (2021). Methods women use for induced abortion and sources of services: insights from poor urban settlements of Accra, Ghana. *BMC Women's Health*, 21(1). <https://doi.org/10.1186/s12905-021-01444-9>
- Ahiadeke, C. (2001). Incidence of Induced Abortion in Southern Ghana. *International Family Planning Perspectives*, 27(2), 96. <https://doi.org/10.2307/2673822>

- Ahinkorah, B. O., Hagan, J. E., Seidu, A.-A., Budu, E., Hormenu, T., Mintah, J. K., Sambah, F., & Schack, T. (2019). Access to Adolescent Pregnancy Prevention Information and Services in Ghana: A Community-Based Case-Control Study. *Frontiers in Public Health*, 7. <https://doi.org/10.3389/fpubh.2019.00382>
- Ahinkorah, B. O., Seidu, A.-A., Armah-Ansah, E. K., Ameyaw, E. K., Budu, E., & Yaya, S. (2021). Socio-economic and demographic factors associated with fertility preferences among women of reproductive age in Ghana: evidence from the 2014 Demographic and Health Survey. *Reproductive Health*, 18(1). <https://doi.org/10.1186/s12978-020-01057-9>
- Ahmed, S., Li, Q., Liu, L., & Tsui, A. O. (2012). Maternal Deaths Averted by Contraceptive Use. *Obstetrical & Gynecological Survey*, 67(11), 685–686. <https://doi.org/10.1097/01.ogx.0000423181.64758.aa>
- Ameyaw, E. K., Budu, E., Sambah, F., Baatiema, L., Appiah, F., Seidu, A.-A., & Ahinkorah, B. O. (2019). Prevalence and determinants of unintended pregnancy in sub-Saharan Africa: A multi-country analysis of demographic and health surveys. *PLOS ONE*, 14(8), e0220970. <https://doi.org/10.1371/journal.pone.0220970>

- Amo-Adjei, J., & Anamaale Tuoyire, D. (2016). Effects of planned, mistimed and unwanted pregnancies on the use of prenatal health services in sub-Saharan Africa: a multicountry analysis of Demographic and Health Survey data. *Tropical Medicine & International Health*, 21(12), 1552–1561. <https://doi.org/10.1111/tmi.12788>
- Amo-Adjei, J., Mutua, M., Athero, S., Izugbara, C., & Ezech, A. (2017). Improving family planning services delivery and uptake: experiences from the “Reversing the Stall in Fertility Decline in Western Kenya Project.” *BMC Research Notes*, 10(1). <https://doi.org/10.1186/s13104-017-2821-4>
- Amporfufu, E., Arthur, E., Novignon, J., & Wong, B. (2020). *COST-BENEFIT ANALYSIS OF FAMILY PLANNING IN GHANA*.
- Appiah, F., Seidu, A.-A., Ahinkorah, B. O., Baatiema, L., & Ameyaw, E. K. (2020). Trends and determinants of contraceptive use among female adolescents in Ghana: Analysis of 2003–2014 Demographic and Health Surveys. *SSM - Population Health*, 10, 100554. <https://doi.org/10.1016/j.ssmph.2020.100554>
- Awusabo-Asare, K., Ekuban, G., & Agbemefoh, F. (1992). Family life education in the new educational system of Ghana. *J Special Educ.*, 6(1).

- Awusabo-Asare, K., Stillman, M., Keogh, S., Doku, T., Kumi-Kyereme, A., Esia- Donkoh, K., Leong, E., Amo-Adjei, J., & Bankole, A. (2017). *From paper to practice: sexuality education policies and their implementation in Ghana*. New York: Guttmacher Institute.
- Ayalew, Y., Mulat, A., Dile, M., & Simegn, A. (2017). Women's knowledge and associated factors in preconception care in adet, west gojjam, northwest Ethiopia: a community based cross sectional study. *Reproductive Health*, 14(1). <https://doi.org/10.1186/s12978-017-0279-4>
- Ayele, A. D., Belay, H. G., Kassa, B. G., & Worke, M. D. (2021). Knowledge and utilisation of preconception care and associated factors among women in Ethiopia: systematic review and meta-analysis. *Reproductive Health*, 18(1). <https://doi.org/10.1186/s12978-021-01132-9>
- Barrow, A., Jobe, A., Barrow, S., Touray, E., & Ekholuenetale, M. (2022). Prevalence and factors associated with unplanned pregnancy in The Gambia: findings from 2018 population-based survey. *BMC Pregnancy and Childbirth*, 22(1). <https://doi.org/10.1186/s12884-021-04371-7>
- Bearak, J., Popinchalk, A., Alkema, L., & Sedgh, G. (2018). Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian

hierarchical model. *The Lancet Global Health*, 6(4), e380–e389. [https://doi.org/10.1016/s2214-109x\(18\)30029-9](https://doi.org/10.1016/s2214-109x(18)30029-9)

Bearak, J., Popinchalk, A., Ganatra, B., Moller, A.-B., Tunçalp, Ö., Beavin, C., Kwok, L., & Alkema, L. (2020). Unintended pregnancy and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990–2019. *The Lancet Global Health*, 8(9). [https://doi.org/10.1016/S2214-109X\(20\)30315-6](https://doi.org/10.1016/S2214-109X(20)30315-6)

Begum, S., Nair, S., Donta, B., & Prakasam, C. (2014). Prevalence of unmet need for contraception in urban slum communities, Mumbai. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 627–630. <https://doi.org/10.5455/2320-1770.ijrcog20140946>

Beguy, D., Ezeh, A. C., Mberu, B. U., & Emina, J. B. O. (2017). Changes in Use of Family Planning among the Urban Poor: Evidence from Nairobi Slums. *Population and Development Review*, 43, 216–234. <https://doi.org/10.1111/padr.12038>

Beguy, D., Mumah, J., & Gottschalk, L. (2014a). Unintended Pregnancies among Young Women Living in Urban Slums: Evidence from a Prospective Study in Nairobi City, Kenya. *PLoS ONE*, 9(7), e101034. <https://doi.org/10.1371/journal.pone.0101034>

Beguy, D., Mumah, J., & Gottschalk, L. (2014b). Unintended

Pregnancies among Young Women Living in Urban Slums:
Evidence from a Prospective Study in Nairobi City, Kenya.

PLoS ONE, 9(7), e101034.

<https://doi.org/10.1371/journal.pone.0101034>

Benson, Calhoun, Corroon, Lance, O'Hara, Otsola, Speizer, & Winston. (2017). Longitudinal Evaluation of the Tupange Urban Family Planning Program in Kenya. *International Perspectives on Sexual and Reproductive Health*, 43(2), 75.
<https://doi.org/10.1363/43e4117>

Beson, P., Appiah, R., & Adomah-Afari, A. (2018). Modern contraceptive use among reproductive-aged women in Ghana: prevalence, predictors, and policy implications. *BMC Women's Health*, 18(1). <https://doi.org/10.1186/s12905-018-0649-2>

Bongaarts, J. (2011). Can Family Planning Programs Reduce High Desired Family Size in Sub-Saharan Africa? *International Perspectives on Sexual and Reproductive Health*, 37(04), 209–216. <https://doi.org/10.1363/3720911>

Bongaarts, J., Mensch, B. S., & Blanc, A. K. (2017). Trends in the age at reproductive transitions in the developing world: The role of education. *Population Studies*, 71(2), 139–154.
<https://doi.org/10.1080/00324728.2017.1291986>

Chanda, M. M., Ortblad, K. F., Mwale, M., Chongo, S., Kanchele, C.,

- Kamungoma, N., Barresi, L. G., Harling, G., Bärnighausen, T., & Oldenburg, C. E. (2017). Contraceptive use and unplanned pregnancy among female sex workers in Zambia. *Contraception*, 96(3), 196–202. <https://doi.org/10.1016/j.contraception.2017.07.003>
- Cheng, D., Schwarz, E. B., Douglas, E., & Horon, I. (2009). Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. *Contraception*, 79(3), 194–198. <https://doi.org/10.1016/j.contraception.2008.09.009>
- Christofides, N. J., Jewkes, R. K., Dunkle, K. L., McCarty, F., Shai, N. J., Nduna, M., & Sterk, C. (2014). Risk factors for unplanned and unwanted teenage pregnancies occurring over two years of follow-up among a cohort of young South African women. *Global Health Action*, 7(1), 23719. <https://doi.org/10.3402/gha.v7.23719>
- Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: the unfinished agenda. *Lancet (London, England)*, 368(9549), 1810–1827. [https://doi.org/10.1016/S0140-6736\(06\)69480-4](https://doi.org/10.1016/S0140-6736(06)69480-4)
- Danso-Wiredu, E. Y., & Midheme, E. (2017a). Slum upgrading in developing countries: lessons from Ghana and Kenya. *Ghana J Geography*, 9(1), 88–108.

- Danso-Wiredu, E. Y., & Midheme, E. (2017b). Slum upgrading in developing countries: lessons from Ghana and Kenya. *Ghana J Geography.*, 9(1), 88–108.
- Darroch, J. E. (2013). Trends in contraceptive use. *Contraception*, 87(3), 259–263.
<https://doi.org/10.1016/j.contraception.2012.08.029>
- Dhakal, S., Song, J. S., Shin, D. E., Lee, T. H., So, A. Y., & Nam, E. W. (2016). Unintended pregnancy and its correlates among currently pregnant women in the Kwango District, Democratic Republic of the Congo. *Reproductive Health*, 13(1).
<https://doi.org/10.1186/s12978-016-0195-z>
- Donkoh, K. E., Donkoh, K. E., & Asare, H. (2014). Coping in Silence: Challenges Faced By Pregnant-Students at the University of Cape Coast, Ghana. *International Journal of Education and Practice*, 2(10), 222–233.
<https://doi.org/10.18488/journal.61/2014.2.10/61.10.222.233>
- Eliason, S., Baiden, F., Yankey, B. A., & Awusabo-Asare, K. (2014). Determinants of unintended pregnancies in rural Ghana. *BMC Pregnancy and Childbirth*, 14(1).
<https://doi.org/10.1186/1471-2393-14-261>
- Exavery, A., Kanté, A. M., Njozi, M., Tani, K., Doctor, H. V., Hingora, A., & Phillips, J. F. (2014). Predictors of mistimed, and unwanted pregnancies among women of childbearing age in Rufiji,

Kilombero, and Ulanga districts of Tanzania. *Reproductive Health*, 11(1). <https://doi.org/10.1186/1742-4755-11-63>

Fotso, J. C., Izugbara, C., Saliku, T., & Ochako, R. (2014). Unintended pregnancy and subsequent use of modern contraceptive among slum and non-women living in slums in Nairobi, Kenya. *BMC Pregnancy and Childbirth*, 14(1). <https://doi.org/10.1186/1471-2393-14-224>

Frayne, D. J., Verbiest, S., Chelmow, D., Clarke, H., Dunlop, A., Hosmer, J., Menard,

M. K., Moos, Merry-K., Ramos, D., Stuebe, A., & Zephyrin, L. (2016). Health Care System Measures to Advance Preconception Wellness. *Obstetrics & Gynecology*, 127(5), 863–872. <https://doi.org/10.1097/aog.0000000000001379>

Ganle, J. K., Baatiema, L., Ayamah, P., Ofori, C. A. E., Ameyaw, E. K., Seidu, A.-A., & Ankomah, A. (2021a). Family planning for urban slums in low- and middle- income countries: a scoping review of interventions/service delivery models and their impact. *International Journal for Equity in Health*, 20(1). <https://doi.org/10.1186/s12939-021-01518-y>

Ganle, J. K., Baatiema, L., Ayamah, P., Ofori, C. A. E., Ameyaw, E. K., Seidu, A.-A., & Ankomah, A. (2021b). Family planning for urban slums in low- and middle- income countries: a scoping review of interventions/service delivery models

and their impact. *International Journal for Equity in Health*, 20(1). <https://doi.org/10.1186/s12939-021-01518-y>

Gipson, J. D., Koenig, M. A., & Hindin, M. J. (2008). The Effects of Unintended Pregnancy on Infant, Child, and Parental Health: A Review of the Literature. *Studies in Family Planning*, 39(1), 18–38. <https://doi.org/10.1111/j.1728-4465.2008.00148.x>

Habib, M. A., Raynes-Greenow, C., Nausheen, S., Soofi, S. B., Sajid, M., Bhutta, Z. A., & Black, K. I. (2017). Prevalence and determinants of unintended pregnancies amongst women attending antenatal clinics in Pakistan. *BMC Pregnancy and Childbirth*, 17(1). <https://doi.org/10.1186/s12884-017-1339-z>

Habte, D., Teklu, S., Melese, T., & Magafu, M. G. M. D. (2013). Correlates of Unintended Pregnancy in Ethiopia: Results From a National Survey. *PLoS ONE*, 8(12), e82987. <https://doi.org/10.1371/journal.pone.0082987>

Hall, J. A., Barrett, G., Phiri, T., Copas, A., Malata, A., & Stephenson, J. (2016). Prevalence and Determinants of Unintended Pregnancy in Mchinji District, Malawi; Using a Conceptual Hierarchy to Inform Analysis. *PLOS ONE*, 11(10), e0165621. <https://doi.org/10.1371/journal.pone.0165621>

Hohmann-Marriott, B. E. (2017). Unplanned pregnancies in New Zealand. *Australian and New Zealand Journal of Obstetrics*

and *Gynaecology*, 58(2), 247–250.
<https://doi.org/10.1111/ajo.12732>

Iftikhar, Z., & Nasreen, S. (2020). Women's Experiences And Perspectives Of Induced Abortions In Urban Slum Areas Of Karachi, Pakistan. *Pakistan Journal of Gender Studies*, 20(2), 177–200. <https://doi.org/10.46568/pjgs.v20i2.523>

Ikamari, L., Izugbara, C., & Ochako, R. (2013a). Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *BMC Pregnancy and Childbirth*, 13(1). <https://doi.org/10.1186/1471-2393-13-69>

Ikamari, L., Izugbara, C., & Ochako, R. (2013b). Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *BMC Pregnancy and Childbirth*, 13(1). <https://doi.org/10.1186/1471-2393-13-69>

Izugbara, C. (2015). Socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls. *South African Family Practice*, 57(2), 121–125. <https://doi.org/10.1080/20786190.2014.977042>

Jalu, M. T., Ahmed, A., Hashi, A., & Tekilu, A. (2019). Exploring barriers to reproductive, maternal, child and neonatal (RMNCH) health-seeking behaviors in Somali region, Ethiopia. *PLOS ONE*, 14(3), e0212227. <https://doi.org/10.1371/journal.pone.0212227>

- Jaramillo, N., Buhi, E. R., Elder, J. P., & Corliss, H. L. (2017). Associations Between Sex Education and Contraceptive Use Among Heterosexually Active, Adolescent Males in the United States. *Journal of Adolescent Health*, 60(5), 534–540. <https://doi.org/10.1016/j.jadohealth.2016.11.025>
- Kebede, S. A., Tusa, B. S., & Weldesenbet, A. B. (2021). Spatial distribution, prevalence, and determinants of unintended pregnancy among youth (15–24) in Ethiopia: Further analysis of Ethiopia Demographic and Health Survey. *SAGE Open Medicine*, 9(1-13), 205031212110599. <https://doi.org/10.1177/20503121211059963>
- Kost, K., & Lindberg, L. (2015). Pregnancy Intentions, Maternal Behaviors, and Infant Health: Investigating Relationships With New Measures and Propensity Score Analysis. *Demography*, 52(1), 83–111. <https://doi.org/10.1007/s13524-014-0359-9>
- Krenn, S., Cobb, L., Babalola, S., Odeku, M., & Kusemiju, B. (2014). Using behavior change communication to lead a comprehensive family planning program: the Nigerian Urban Reproductive Health Initiative. *Global Health: Science and Practice*, 2(4), 427–443. <https://doi.org/10.9745/ghsp-d-14-00009>
- Li, Q., Louis, T. A., Liu, L., Wang, C., & Tsui, A. O. (2019).

Subnational estimation of modern contraceptive prevalence in five sub-Saharan African countries: a Bayesian hierarchical approach. *BMC Public Health*, 19(1). <https://doi.org/10.1186/s12889-019-6545-3>

Lindberg, L. D., & Maddow-Zimet, I. (2012). Consequences of Sex Education on Teen and Young Adult Sexual Behaviors and Outcomes. *Journal of Adolescent Health*, 51(4), 332–338. <https://doi.org/10.1016/j.jadohealth.2011.12.028>

Luchters, S., Bosire, W., Feng, A., Richter, M. L., King'ola, N., Ampt, F., Temmerman, M., & Chersich, M. F. (2016). “A Baby Was an Added Burden”: Predictors and Consequences of Unintended Pregnancies for Female Sex Workers in Mombasa, Kenya: A Mixed-Methods Study. *PLOS ONE*, 11(9), e0162871. <https://doi.org/10.1371/journal.pone.0162871>

Marston, C., & Cleland, J. (2003). Do unintended pregnancies carried to term lead to adverse outcomes for mother and child? An assessment in five developing countries. *Population Studies*, 57(1), 77–93. <https://doi.org/10.1080/0032472032000061749>

Moges, Y., Worku, S. A., Niguse, A., & Kelkay, B. (2020). Factors Associated with the Unplanned Pregnancy at Suhul General Hospital, Northern Ethiopia, 2018. *Journal of Pregnancy*, 2020, 1–7. <https://doi.org/10.1155/2020/2926097>

- Mohamed, E. A.-E. B., Hamed, A. F., Yousef, F. M. A., & Ahmed, E. A. (2019). Prevalence, determinants, and outcomes of unintended pregnancy in Sohag district, Egypt. *Journal of the Egyptian Public Health Association*, 94(1). <https://doi.org/10.1186/s42506-019-0014-9>
- Mohammed, F., Musa, A., & Amano, A. (2016). Prevalence and determinants of unintended pregnancy among pregnant woman attending ANC at Gelemso General Hospital, Oromiya Region, East Ethiopia: a facility based cross-sectional study. *BMC Women's Health*, 16(1). <https://doi.org/10.1186/s12905-016-0335-1>
- Mulatu, T., Sintayehu, Y., Dessie, Y., & Deressa, M. (2020). Modern Family Planning Utilization and Its Associated Factors among Currently Married Women in Rural Eastern Ethiopia: A Community-Based Study. *BioMed Research International*, 2020, 1–9. <https://doi.org/10.1155/2020/6096280>
- Naveed, S., Lashari, U. G., Waqas, A., Bhuiyan, M., & Meraj, H. (2018). Gender of children and social provisions as predictors of unplanned pregnancies in Pakistan: a cross-sectional survey. *BMC Research Notes*, 11(1). <https://doi.org/10.1186/s13104-018-3696-8>
- Niemeyer Hultstrand, J., Omer Abuelgasim, K., Tydén, T., Jonsson, M., Maseko, N., & Målqvist, M. (2020). The perpetuating

cycle of unplanned pregnancy: underlying causes and implications in Eswatini. *Culture, Health & Sexuality*, 23(12), 1–16. <https://doi.org/10.1080/13691058.2020.1791359>

Nkole, T., Silumbwe, A., Munakampe, M. N., Cordero, J. P., Milford, C., Zulu, J. M., & Steyn, P. S. (2021). Community and health provider perspectives on the quality of family planning and contraceptive services in Kabwe District, Zambia. *Sexual and Reproductive Health Matters*, 29(1). <https://doi.org/10.1080/26410397.2021.1985945>

Nonvignon, J., & Novignon, J. (2014). Trend and determinants of contraceptive use among women of reproductive age in Ghana. *African Population Studies*, 28(0), 956. <https://doi.org/10.11564/28-0-549>

Nyarko, S. H. (2019). Unintended Pregnancy among Pregnant Women in Ghana: Prevalence and Predictors. *Journal of Pregnancy*, 2019, 1–8. <https://doi.org/10.1155/2019/2920491>

Ochako, R., Izugbara, C., Okal, J., Askew, I., & Temmerman, M. (2016). Contraceptive method choice among women in slum and non-slum communities in Nairobi, Kenya. *BMC Women's Health*, 16(1). <https://doi.org/10.1186/s12905-016-0314-6>

Omane-Adjepong, M., Oduro, F. T., & Annin, K. (2012). Multinomial Regression Analysis of Unplanned Pregnancies in Ahafo Ano South District, Ghana. *American International*

Journal of Contemporary Research, 2(12).

Peach, E., Morgan, C., Scoullar, M. J. L., Fowkes, F. J. I., Kennedy, E., Melepie, P., Homiehombo, P., Au, L., Luchters, S., Umbers, A. J., Vallely, A., Vallely, L. M., Kelly-Hanku, A., Robinson, L. J., Crabb, B. S., Elijah, A., Siba, P. M., Pomat, W., & Beeson, J. G. (2021). Risk factors and knowledge associated with high unintended pregnancy rates and low family planning use among pregnant women in Papua New Guinea. *Scientific Reports*, 11(1), 1222. <https://doi.org/10.1038/s41598-020-79103-6>

Sarder, Md. A., Islam, S. M. S., Maniruzzaman, Md., Talukder, A., & Ahammed, B. (2021). Correction: Prevalence of unintended pregnancy and its associated factors: Evidence from six south Asian countries. *PLOS ONE*, 16(10), e0259360. <https://doi.org/10.1371/journal.pone.0259360>

Sedgh, G., Singh, S., & Hussain, R. (2014). Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends. *Studies in Family Planning*, 45(3), 301–314. <https://doi.org/10.1111/j.1728-4465.2014.00393.x>

Seidu, A.-A., Ameyaw, E. K., Ahinkorah, B. O., Baatiema, L., Dery, S., Ankomah, A., & Ganle, J. K. (2022). Sexual and reproductive health education and its association with ever

use of contraception: a cross-sectional study among women in urban slums, Accra. *Reproductive Health*, 19(1). <https://doi.org/10.1186/s12978-021-01322-5>

Silumbwe, A., Nkole, T., Munakampe, M. N., Cordero, J. P., Milford, C., Zulu, J. M., & Steyn, P. S. (2020). Facilitating community participation in family planning and contraceptive services provision and uptake: community and health provider perspectives. *Reproductive Health*, 17(1). <https://doi.org/10.1186/s12978-020-00968-x>

Silumbwe, A., Nkole, T., Munakampe, M. N., Milford, C., Cordero, J. P., Kriel, Y., Zulu, J. M., & Steyn, P. S. (2018). Community and health systems barriers and enablers to family planning and contraceptive services provision and use in Kabwe District, Zambia. *BMC Health Services Research*, 18(1). <https://doi.org/10.1186/s12913-018-3136-4>

Singh, S., Sedgh, G., & Hussain, R. (2010). Unintended Pregnancy: Worldwide Levels, Trends, and Outcomes. *Studies in Family Planning*, 41(4), 241–250. <https://doi.org/10.1111/j.1728-4465.2010.00250.x>

Sisay, A. (2019). Prevalence of Unplanned Pregnancy and Factor Among Pregnant Women, Ethiopia 2018 GC. *Clinical Medicine Research*, 8(2), 39. <https://doi.org/10.11648/j.cmr.20190802.12>

- Solanke, B. L. (2019a). Do Community Characteristics Influence Unintended Pregnancies in Kenya? *Malawi Medical Journal*, 31(1), 56. <https://doi.org/10.4314/mmj.v31i1.10>
- Solanke, B. L. (2019b). Do Community Characteristics Influence Unintended Pregnancies in Kenya? *Malawi Medical Journal*, 31(1), 56. <https://doi.org/10.4314/mmj.v31i1.10>
- Speizer, I. S., Calhoun, L. M., Hoke, T., & Sengupta, R. (2013). Measurement of unmet need for family planning: longitudinal analysis of the impact of fertility desires on subsequent childbearing behaviors among urban women from Uttar Pradesh, India. *Contraception*, 88(4), 553–560. <https://doi.org/10.1016/j.contraception.2013.04.006>
- Speizer, I. S., Nanda, P., Achyut, P., Pillai, G., & Guilkey, D. K. (2012). Family Planning Use among Urban Poor Women from Six Cities of Uttar Pradesh, India. *Journal of Urban Health*, 89(4), 639–658. <https://doi.org/10.1007/s11524-011-9667-1>
- Tebekaw, Y., Aemro, B., & Teller, C. (2014a). Prevalence and determinants of unintended childbirth in Ethiopia. *BMC Pregnancy and Childbirth*, 14(1). <https://doi.org/10.1186/1471-2393-14-326>
- Tebekaw, Y., Aemro, B., & Teller, C. (2014b). Prevalence and determinants of unintended childbirth in Ethiopia. *BMC*

Pregnancy and Childbirth, 14(1).

<https://doi.org/10.1186/1471-2393-14-326>

Tsui, A. O., McDonald-Mosley, R., & Burke, A. E. (2010). Family Planning and the Burden of Unintended Pregnancies. *Epidemiologic Reviews*, 32(1), 152–174. <https://doi.org/10.1093/epirev/mxq012>

United Nations. (2015). *Transforming our world: the 2030 agenda for Sustainable Development*. United Nations, Contract No.: A/RES/70/1.

Wado, Y. D., Afework, M. F., & Hindin, M. J. (2013). Unintended pregnancies and the use of maternal health services in southwestern Ethiopia. *BMC International Health and Human Rights*, 13(1). <https://doi.org/10.1186/1472-698x-13-36>

White, A. L., Mann, E. S., & Larkan, F. (2017). “You just have to learn to keep moving on”: young women’s experiences with unplanned pregnancy in the Cook Islands. *Culture, Health & Sexuality*, 20(7), 731–745. <https://doi.org/10.1080/13691058.2017.1371336>

WHO. (2019). *Contraception: evidence brief*. 2019. https://apps.who.int/iris/bitstream/handle/10665/112319/WHO_RH_R_14.07_eng.pdf?ua

WHO. (2021). *Maternal mortality*. <https://www.who.int/News-Room/Fact-Sheets/Detail/Maternal-Mortality>.

Woldesenbet, S., Kufa, T., Lombard, C., Manda, S., Morof, D., Cheyip, M., Ayalew, K., & Puren, A. (2021). The prevalence of unintended

pregnancy and its association with HIV status among pregnant women in South Africa, a national antenatal survey, 2019.

Scientific Reports, 11(1).

<https://doi.org/10.1038/s41598-021-03096-z>

Yadav, K., Agarwal, M., Shukla, M., Singh, J. V., & Singh, V. K. (2020).

Unmet need for family planning services among young married women (15–24 years) living in urban slums of India. *BMC Women's Health*, 20(1). <https://doi.org/10.1186/s12905-020-01010-9>

Yusof, M., Samad, A. A., Omar, M., & Ahmad, N. A. (2018).

Unplanned Pregnancy and Its Associated Factors.

Global Journal of Health Science, 10(8), p132.

<https://doi.org/10.5539/gjhs.v10n8p132>

