Levels and covariates of age at first sexual intercourse among females aged 15-24 in Lesotho

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ABSTRACT

***Background*:** The main objective of the study is to examine levels and covariates of age at first sex among females aged 15-24 in Lesotho. The sexual introduction for young girls is an indicator of the development from adolescence to adulthood. A person's sexual introduction is deep-rooted with many personal and social relations. Young females are at increased risk of experiencing negative outcomes from early sex initiation due to the conditions they develop in.

***Methods*:** This study used secondary data from the Lesotho Demographic and Health Survey (LDHS) of 2014. Analysis of the data was organized in three levels univariate, which includes frequencies, the bivariate included the Log rank test and multivariate to establish the association between age at first sex and background variables. A multivariate Cox regression analysis was conducted to examine the impact of various factors on survivorship before sexual debut.

***Results*:** The study findings show that age, level of education, household wealth, exposure to radio and TV, place of residence, and district were statistically associated with age at first sexual intercourse. The mean age for surviving before experiencing sexual debut was lower for female aged 15-19 (15.9) was lower compared to those aged 20-24, moreover females with primary or less education had low mean age 16.3 years compared to those with higher education. Females from urban areas had higher mean age 17.1 years than their counterparts. Hazard ratios of reporting age at first sex were significantly deceasing among females from poorer households [HR=1.3 (95%3 CI: 1.10-1.54), p=0.003], compared to poorest households. Further the results showed that females residing in Quthing district [HR=1.55 (95% CI: 1.28-1.87), p=0.036,] were more likely to have experienced first sex at any point in the survival time when compared to Maseru.

***Conclusion*:** There are certain interventions and strategies that could have an important role in delaying early sexual debut among young females in Lesotho. Therefore, these interventions and strategies include Programs that provide females with sexual and reproductive education and familiarize sexual and reproductive education at primary level in schools. Further, these interventions and strategies empower rural women and females from poor households through creation of job opportunities and decent and productive employment, as well as ensuring equal access of girls to education, health services and challenging social norms that bound rural girl's equal rights and opportunities.

DECLARATION

I, Reamogetse Patience Phateng (25431080), declare that this work titled "Levels and covariates of age at first sexual intercourse among females aged 15-24 in Lesotho" is my original research work, and has never been submitted for any degree or examination in any other University or Institution. I declare that the information contained in this document is a true copy of my thesis and has been approved for submission by my thesis supervisor. Dr Karabo Mhele from the Department of Population Studies and Demography supervised this work. This work is submitted in partial fulfilment of the requirements for the degree Master of Social Science in Population and Sustainable Development at the North-West University, Mafikeng Campus, and South Africa.

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ABBREVIATIONS/ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CI	Confidence Interval
CAPI	Computer Assisted Personal Interviewing
EAs	Census Enumeration Areas
HIV	Human Immunodeficiency Virus
HR	Hazard Ratio
LDHS	Lesotho Demographic and Health Survey
P-VALUE	Probability value
SDGs	Sustainable Development Goals
STATS- SA	Statistics South Africa
STI	Sexually Transmitted Infection
UNAIDS	United Nations Joint Programme on HIV/AIDS
WHO	World Health Organization
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UP	Upper Bound Confidence Interval

CHAPTER 1: INTRODUCTION

1.1 Background to the study

The mean average age at sexual debut was estimated at 15 globally (WHO, 2018). The mean age at sexual debut have shown variations across the regions of the world ranging from as low as 14 years old in Sub Saharan Africa to 17 years in USA (Magnusson *et al.*, 2015). Age at first sexual intercourse in the developing world is lower compared to those in the developed regions. For example, the mean age of sexual debut among American females is approximately 17 years and those 15–24 years had their first heterosexual vaginal intercourse before their 15th birthday, increasing with each year to 54% experiencing first intercourse by age 18 (Kann *et al.*, 2014). Another study indicated that in Italy the age at first sex was 15 among young females aged 15-19 and 21.7% of young girls had sexual intercourse before the age of 15 (Borraccino *et al.*, 2020).

However, different studies have indicated that women in developing countries initiate sex at younger age than in the developed countries. In Jamaica, it is reported that 24% of women aged 15-24 have had sex by the age of 14 and 30% of females had had sex before the age of 14 (Longman-Mills & Carpenter, 2013). In addition, in sub -Saharan Africa age at sexual debut among women varied across the regions. The median age at sexual debut among women was lowest in West Africa where a larger proportion of women had sex before the age of 15, followed by Eastern Africa with the highest at 16 in Northern Africa(Pengpid & Peltzer, 2021). In 2013, almost 20% of women in Nigeria were sexually active by the age of 15 and the median age for first sex was between age 17 and18 years for women aged 20-24 (Fagbamigbe & Idemudia, 2017). School going young females in Eastern African countries had initiated in sexual activity before the age of 15 for example Kenya 26%, Tanzania, 9.3% Zambia 16.5% and Uganda 15.5% (Women & UNICEF, 2018). Southern African countries have shown differences in age at sexual debut among women. For instance, the lowest and highest ages at sexual debut was reported in Mozambique 12 years and South Africa 16 years respectively (Eaton, 2022).

Demographically, age at sexual debut among women has shown variations. Age at sexual debut was less than 15 among rural women and 18 in the urban area(Janis *et al.*, 2019). Age at sexual debut has also shown difference by level of education. Age at sexual debut among women have been shown to be inversely related to the level of education. Women with no formal education showed lower age at sexual debut, followed by women with primary education at 15 and at 18 for those with tertiary education(Kugbey *et al.*, 2018).

Among women, an early sexual debut has been associated with the risk of acquiring STIs and HIV/AIDS; young women make more half of people living with HIV. About 19.1 million globally and three in every five new HIV infections among young people (aged 15– 24 years) were among young women because of unsafe and unprotected sexual practise at first sex (UNAIDS, 2021). Early sexual initiation has undesirable consequences such as pregnancies, which may be unplanned. About 16 million girls between 15-19 years and one million girls younger than 15 years get pregnant every year globally (Kirchengast, 2016). Some unplanned pregnancies lead to medical risk such as abortions, where 5.6 million abortions occur among women aged 15-19 contributing to maternal mortality and lasting health problems (WHO, 2018), and social problems such as low educational level, unemployment, and poverty(Kirchengast, 2016).

In Lesotho, all of those who initiated in sex before 16, 79.7% were residing in rural areas and 20.3% of them in urban areas in 2009(Lesotho Demographic and Health Survey (LDHS) of 2009). The Lesotho Demographic and Health Survey (LDHS) of 2014 showed that the median age at sex debut for women aged 20-49 ranged from 17 years' in Quthing to 18 years in Butha – Buthe.

1.2 Statement of the problem

WHO (2016) showed that among Basotho women who had sex before age 20, the norm was that they would have had their first sexual intercourse at age 16. Several studies have examined sexual and reproductive health matters among young females in Lesotho. A study by Motsima and Motsima and Malela-Majika (2016), found that 36% of the women in Lesotho had their first sexual intercourse at 15 or below. Child or forced marriage is related to age at first sex. According to International Federation of Red Cross and Red Crescent Societies, Geneva, (2019) 17% girls in villages of Lesotho are married before the age of 18 which is the primary cause to early sexual debut. A study by Matope (2021) which focused on the factors that determine usage of contraceptive services among adolescent women in Lesotho found that 50% of their first sexual experiences were reportedly between ages 12-14 years. with the other 50% reporting sexual debut as being between 15-19 years. The mean age at sexual debut was 14 .6 years with arrange of 12 to 19 years.

There are adverse negative outcomes associated with lower age of sexual debuting. The likelihood of the age-disparate relationships, multi-sexual partnerships and other negative outcomes associated with lower age of debut. For example, some studies showed that people who engage in sex before 15 were also more likely to have multiple sexual partnership in future (Mhele, 2017). Motsima and Malela-Majika (2016), investigating the effects of early first sexual intercourse amongst Lesotho women. They found that women who have had their first sexual intercourse at age 16 were less likely to be married at above age of 18, to have failed to complete secondary school and had the highest chance of having no knowledge about AIDS. Child marriage and sexual debut are associated with maternal mortality. For example, women who were married before 18 tend to have more children and are less likely to receive maternal health care services, leading to pregnancy related deaths (UNICEF, 2019).

While previous studies have looked at the covariates influencing sexual debut in Lesotho, none have focused on the proportion surviving at different points. This is crucial for understanding when debuting is most likely to take place. Despite the robust studies among young women in Lesotho, none of these studies examined the age at sexual debut in Lesotho. Age at first sexual debut could be used to monitor the development or transition into contraceptive use and child marriage, STDs, teenage pregnancy, and other factors affecting the health of young females in Lesotho.

1.3 Main objective of the study

The main objective of the study is to examine levels and covariates of age at first sex among females aged 15-24 in Lesotho.

1.3.1. Specific objectives of the study

The study aims to answer the following specific objectives:

- To determine the overall survival times before experiencing sexual debut.
- To establish the different socio-demographic factors influencing the survival times before first sex

1.4 Research hypotheses

- ✓ There is no significance difference in the age at sexual debut between women who have no education and those with formal education.
- ✓ The age of sexual debut in rural areas is not significantly different from the one observed in the urban areas of Lesotho.
- ✓ There is no significant difference in the age at sexual debut between women who are employed and those who are unemployed
- ✓ The age of sexual debut among women belonging to religious groups is not significantly different from the one observed among those who are non-religious.
- ✓ There is no significant difference in the age at sexual debut between women belonging to the rich household and those from poor households.

1.5 Significance of the study

The findings of the study may be relevant in the development of HIV-prevention interventions for females. The study will provide additional information to the government of Lesotho as well as demographers to map out the development policies that will reduce the factors contributing to early age at first sexual intercourse. The outcome of this research will contribute to the formulation of relevant programs on the effort to combat the concerning effects of early first sexual activity in relevant societies. It will stimulate the research further and allow for comparison with the existing research. It will improve knowledge about the determinants of age at first sexual. This study will contribute to advancing Sustainable Development Goals (SDGs goal 5&5.3, which relates to women's sexual health, empowerment and eliminating child, early forced marriages in the region of the study.

1.6. Definition of concepts

Age at first sex (debut sex) - age at which adolescents become sexually active (WHO, 2018).

HIV Risk -The probability that a person may be infected with HIV (UNAIDS 2021).

Unprotected sex -Unprotected sex can be defined as sexual behaviours, such as having sex without condom that can put people at high risk of contracting HIV (UNAIDS, 2021).

1.7. The organisation of the study

The study is going to be structured in this particular form. The first chapter is an introductory chapter of the whole research, and it contains the background information about of age at first sexual intercourse among females in Lesotho, the problem statement, the rationale or significance of the study, the main objectives, the specific objectives, hypothesis as well as the description of the variables. Chapter two which contains the literature review follows it. Chapter three deals with the methods of study, putting its focus on sources of data and data collection, as well as data analysis. Chapter four is going to present the frequency distribution of the variables that are identified. Cross tabulations will be presented in chapter five. The last chapter is going to outline the recommendations and conclude what has been covered in all chapters of the study.

Chapter 2: LITERATURE REVIEW

2.1. Introduction

Age at first sexual intercourse is a measure of the average age at which individuals become sexually active. This chapter reviews the previously research findings on age at first sexual intercourse among females looking particularly on the global, regional, the determinants and the conceptual as well as the theoretical framework of the study. The theoretical and conceptual framework is going to serve as the path through which to review the most crucial determinants of age at first sexual intercourse. The chapter first present the trends and levels, followed by the socio-demographic determinants of sexual debut and lastly the theoretical and conceptual framework of the study.

2.1. Trends and levels of age at sexual debut

The age at first sex increased with cohort age among women in all countries. The estimated mean age at first sexual intercourse was 17 in USA among the women of ages 15 -24, and 15 % had their first sex before the age of 15(Magnusson *et al.*, 2015) . A study by (Chandra-Mouli *et al.*, 2019), shown that overall median age at first sexual intercourse among females 15-18 years was 16 in Denmark, 17 in Norway. The Nepal Demographic Health Survey found that the age at sex debut among females 15-19 is below the age of 15(Shrestha *et al.*, 2016). Furthermore, in urban and rural areas in China 10% of females 15-19 years reported had sex before the age of 17 (Wei *et al.*, 2019) .Mulugeta and Berhane (2014) , showed that the age at sexual intercourse among female was 16 for students aged 16-18 in Ethiopia. However, age at first debut continued to decrease across births cohorts. In Italy women who were born in 1940s had their first sexual intercourse between the age of 21 and 22 years and decreased to 10 years among women who were born in 1970s(Marino *et al.*, 2014).

According to Pengpid and Peltzer (2021), the age at sexual debut is increasing in sub-Saharan African countries however the proportion of sexual initiation before the age of 15 remains high. Studies found that from 24 sub-Saharan countries women aged 15-19 years reported having their first sex before the age of 15 in 2005 and 2010 (Seff *et al.*, 2021). Furthermore, there was evidence that a large proportion of women had their first sexual intercourse before the age of 15 in West Africa (Seff *et al.*, 2021). A study found that unmarried young women had had their

sexual debut between the age of 16 and 17 years in Gambia and Liberia respectively (Amo-Adjei & Darteh, 2017). However, the lowest median age at first sexual debut for women was 14 years in Congo (Amo-Adjei & Darteh, 2017). School based studies showed 17% and 21% of young girls had initiated sexual activity before the age of 15 in Eastern/Southern African countries and Middle African countries respectively (Women & UNICEF, 2018).

Lesotho Demographic and Health Survey (LDHS) of 2009 showed that 9% and 7% of women aged 15-19 and 20-24 in Lesotho have had first sexual debut by the age of 15. In addition, by age 20, 74% of women aged 20-24 have initiated sexual activity. The median age at which young women had their first sexual intercourse has decreased over time. Proportion of adolescents and young women who had their first sexual intercourse by age 15 was 6% and 5% for the age 15-19 and 20-24 respectively in Lesotho (DHS, 2014). Ministry of Health/Lesotho, (2015) & Health and International (2016), showed that over half of young women had first sexual experience between the ages of 15-17 years, with 14 years being the mean age for first sexual activity. Low age of sexual debut has a myriad of negative consequences ranging from unplanned pregnancy to contraction of sexually transmitted diseases.

2.2. Socio -demographic factors and age at first sex

Highest educational level

Research findings have indicated that having lower academic goals, achievement and educational attainment raises the possibility of engaging in early sexual intercourse(Omoyeni *et al.*, 2014) . The level of education can affect the sexual behaviors of individuals, and this has been established among females. School aspects, including grades and educational aspirations are being linked to individual's sexual activity (Somba *et al.*, 2014). A study by Wand *et al.* (2017), showed that females who had first sex below the age of 18 were less likely to have completed high school and in Australia those who had less than high school education had their first sexual debut at 15 years. However, the possible reasons are that the costs of being sexually active such as falling pregnant are not as great for young females with lower academic achievement and expectations(Whitworth & Paik, 2019). Young females' aspirations and achievements are assumed to associated with her fertility behaviour implying that females with high educational goals and achievement are more likely to delay the initiation of sex or be more likely to use contraception if sexually active, in order to decrease the chances of pregnancy and sexually transmitted diseases (Durowade *et al.*, 2017).

In addition, about 15% of females living in urban areas and who obtained tertiary education are less expected to have had sexual intercourse before the age of 18 relative to females who have lower level of education from poor urban areas in sub-Saharan Africa, (Wamoyi *et al.*, 2019), is also credible to provide medically accurate information and enhancing decision-making skills at a crucial developmental stage for both female and male youth staying in metropolitan areas in comparative to those staying in poor regions (Michelsen & Wells, 2017). However, females who have lower levels of education are at risk because they are likely to be engage in sexual intercourse at an early age (Kugbey *et al.*, 2018).

Religion

Studies show that religious values are the source of moral interdictions for many people; the teachings of the churches are likely to play a role in the formation of individual attitudes, values and decisions(Landor & Simons, 2019) .The level at which religion impacts individual attitudes and behavior, however, depends on the specific beliefs and policies of the churches and on the degree of integration and commitment of individuals to their particular religious' association (Molteni, 2017). In the United Kingdom, the inverse relationship between religion and sexual behavior is mostly reported for both genders and tend to be weaker among males and strong among females(Brenner, 2016). Religion is an imperious differentiator of early versus later initiators of sexual intercourse, the effect of religion appears to be due to the strength of religious beliefs and their practice rather than affiliation with a particular religious value(Olufemi *et al.*, 2018). Pedersen (2014) , has shown that Christian females who attend church delayed their age at first sexual debut to 21 and 28 in Italy.

Individuals who usually attend the worship meetings of religious organizations (churches) are likely to receive religious messages about the premarital sex and therefore more likely to start sexual activity at later ages (Sprecher *et al.*, 2022).Females who are active in the religious congregations would tend to face more prominent obligations regarding sexual restriction before marriage and would tend to accentuate the issue of the need for development in sexual connections than would females who are less active in religious organizations (Thorpe *et al.*, 2021) .

Sex of the household

There is evidence that the sex of head of household influences the timing of sexual debut for women and men. Studies have shown that the risk of sexual debut occurring at younger ages was higher among women in women-headed households (Muchiri & Odimegwu, 2019) . However, another study showed male youth raised in male-headed households also had lower odds of having sexual debut earlier. (Bruederle *et al.*, 2019). A recent study in Uganda revealed that the employment status of the head is the main determinant of whether a person was likely to have early sexual debut(Luwedde *et al.*, 2022) . This study attributed socioeconomic status of the head of household as the mediating factor to early sexual initiation. In a study examining the timing of sexual debut among unmarried youth, aged 15-24 in Sub Saharan Africa revealed that women in female-headed households and in Central, South and West Africa had higher hazards of early sexual debut in than male-headed households and East Africa (Amo-Adjei & Tuoyire, 2018).

Type of place of residence

People who are residing in urban areas turn out to have more knowledge about detrimental behaviour including sexual well-being and dangers related with early sex. This is completely different among females who are residing in rural areas (Stephenson *et al.*, 2014). This makes females who reside in rural areas more vulnerable to diseases and a poor way of life. Rural females are more likely to engage early in sex than those females who are living in the urban areas (Janis *et al.*, 2019). Females who typically live in the rural areas most of the time follows cultural norms and therefore are more likely to be involved in early involuntary matrimonies and this commonly leads them to engage in early sexual intercourse(Wamoyi *et al.*, 2019).

Females who are residing in shanty towns are more likely to engage in sexual intercourse, which increases the risk of acquiring HIV and other adverse sexual and reproductive health outcomes (Ely & Hamilton, 2018). Most studies conducted among females in urban slums validate this and reveal that early sexual initiation and number of sexual partners among young females is often much higher than their rural counterparts(Daniels *et al.*, 2018).

Employment status

The employment status of a household or community can influence age at first sex, as it can limit the type of investment that an individual might obtain due to current economic state (Odimegwu *et al.*, 2016). The lack of economic opportunities in communities may contribute to women

engaging in early non marital sexual activity (Odimegwu *et al.*, 2016) . A study by(Misinde, 2019) , shown that female adolescents who were not employed were more likely to engage in sexual debut and reporting positive STIs than female adolescents who were working However, availability of labor force opportunities for women decreases the chance of women to engage in early sexual intercourse also raises their likelihood of using condom at first sexual activity. Employment can have a further beneficial effect on female sexual activity as it is likely to increase thinking capacity and with this increase in capacity, better decision-making, and desire for independence.(Zegeye *et al.*, 2022). Young women who are employed will continue working more than those who are unemployed. This might lower their propensity to initiate in sexual activity or increase their use of contraceptives(Ameyaw *et al.*, 2017)

2.3. Environmental and Behavioral factors

Alcohol/drug abuse and age at first

According to Harden (2014), females who are using drugs and drinking alcohol are likely to experience unsafe first sexual activity, because alcohol and drugs have a strong negative impact, often causing users to lose control and engage in criminal sexual activity, such as rape. However, there are clear connections between sexual debut and substance abuse in terms of t health risks. Studies show that young women in Lebanon who use drugs were less likely to use condom during their first sexual intercourse(Ghandour *et al.*, 2014).Alcohol and drug abuse may also place women in situations where their chances of being sexually abused radically increase(Gaskins *et al.*, 2018). This is prevalent in South Africa where 47% of young women raped when they are still virgins, are raped with alcohol and drugs as a causal factor (Peltzer & Phaswana-Mafuya, 2018).

As the example of the United States makes clear, substance use, and abuse has a correlation with age of first sexual intercourse. More than 60% of young females reported their first sexual intercourse between age of 15-19 and 80% of have used substance such as alcohol, tobacco (Clark *et al.*, 2020). The act of sexual debut could directly predict subsequent increases in substance use. When youth become sexually active tend to spend more time with their sexually active peers who might be using substance(Johnson, 2017).

Moreover, the similarities between drug use debut and sexual debut, many studies have highlighted a connection or correlation between both kinds of debut, linking the debut of one

type of behaviour to the other, or both, and underscore their complex and often interwoven association (Dekker *et al.*, 2020) . For example, some young females in Sweden who reported sexual debuts at age 15 used more tobacco, illicit drugs, and alcohol than their aged-matched inexperienced peers, suggesting a collecting of risk behaviours linked with early sexual initiation(Makenzius *et al.*, 2018).

Media exposure and age at first sex

It is broadly anticipated that young girls' exposure to sexual content in the mass media influences their sexual activity and may contribute to sexual risk behaviors. Portrayals of sexual activity in mass media preferred mostly by young people often show the emotional and social consequences of sexual activity; guilt, disappointment, but less regularly show adverse physical consequences, pregnancy as well as STIs(Lee *et al.*, 2018). Considering this, and in view of the amount of mass media young females are exposed to and the proportion of that exposure that contains sexual content, it is realistic to think that risky sexual behavior early sex, unprotected sex, results in part from the impact of mass media on adolescents' attitudes, beliefs, and behavior(Ondieki *et al.*, 2021).

According to (Wana *et al.*, 2019)the influence of media depends largely on the content it contains. Most of the researchers are likely to link the media and sex particularly attitudinal effects focusing on television. Television viewing remains the most common medium platform and largest chunk of young people media use; television includes great deal of sexual content (Perry *et al.*, 2019). Media use is selective, with users focusing on content related to the main issues of interest to them (Wright & Tokunaga, 2015) . Thus, young people whose interest in sex is growing because of puberty and other forces are more likely to select media with sexual content. Lin *et al.* (2020), quantifies that youth who use media specifically as an opportunity to learn about sex may be more influenced by their exposure. Media normally influences the sexual behavior of people in particular areas by playing pornographic films or videos on televisions (Coyne *et al.*, 2019).

Bogale and Seme (2014), stipulate that female who have watched pornographic material in their lifetime are more likely to have unprotected sex than females who have not seen such media. After being exposed to the sexual content on media, young males are more likely to report that they engage in sexual intercourse (Muhammad *et al.*, 2021). However, the media does not clarify risks associated with sexual substance and media users most of the time are disposed to receive

the practices of characters they see to be fascinating to them and pays a little respect to the dangers included (Cornelius *et al.*, 2019).

Household wealth

Household wealth has been found to be one of the factors influencing early sexual debut. Females from the rich households have a low probability of initiating early sexual debut as compared to those from poor households. Studies have shown that wealth index contributes to time of first sexual intercourse. Kitaw and Haile (2022) in their study among 6143 weighted female youths in Ethiopia showed that wealth index predicted age at first sex in bivariate Cox proportional hazard regression model. Wealth index predicting age at first sex remained robust at multivariate Cox proportional hazard regression model. In another study in conducted in Nepal, researchers established that compared to people from poorest wealth index, those from middle and richest wealth index showed higher likelihood and lower likelihood to experience early sexual debut respectively (Shrestha *et al.*, 2016). They attributed inconsistent effects of wealth index to cultural values and norms differences(Melesse *et al.*, 2021).

2.4. Theoretical framework

Disorganization Theory

According to social disorganization theory, neighbourhood characteristics such as neighbourhood disadvantage, ethnic heterogeneity, and residential instability influence adolescent delinquency and problem behaviours through informal social control.(Hewitt *et al.*, 2018) . The social disorganization theory alternatively shows that high-risk sexual behaviour is a multifaceted issue that encompasses the interaction of individual, community, and societal factors (Hewitt *et al.*, 2018). Moreover, age, education, employment status, neighbourhood poverty, volatility, and family disorders weaken individual and community self-regulatory capacities(Irwin & Shafer, 2021). The theory of social disorganisation further elucidates how individual and community factors such as poverty, family disruptions, residential instability, and race/ethnic disparities influence the reproductive health of people living including youth in certain neighbourhoods, (De Graaf *et al.*, 2015).

Social disorganization theory, suggest that a person's type of residential location is more significant than the person's characteristics. Environment can affect young people's sexual behaviour in a variety of ways (Uchudi *et al.*, 2012). Adolescents who live in less organized

areas, whether in urban or rural, are more likely to be sexually active(Charis & Ronald, 2017). Neighbourhood characteristics associated with socially disorganized communities, as assumed by the social disorganization theory, greatly affect the onset of sex among young people by influencing parents' ability to guide and monitor their children to combat deviant behaviour and communicate acceptable conventional norms of conduct.(Sampson, 2017)

Parenting and peer relationships will affect the likelihood of youth engaging in sex for youth because parents living in highly disorganized neighbourhoods may not always be able to shield their children from the effects of the neighbourhood; thus, parents behaviours on engagement in sex may be weakened in socially disorganized areas where they are disadvantaged, ethnic heterogeneity and residential instability (Lei & Beach, 2020). Peers may have a stronger influence on juvenile sexual behaviour in more highly disorganized communities where such behaviour may be acceptable(Uchudi *et al.*, 2012).

Peers play a critical role in the lives of adolescents, as youth grow older; they seek independence from parents and strengthen bonds with their peer groups for guidance on behavioural issues. Adolescents often become members of peer networks to gain acceptance and support from their friends(Kubrin & Wo, 2015).

Parental attitudes and behaviour have strong direct impact on subsequent adolescent sexual development (Jones & Pridemore, 2019). In most cases adolescents who have a positive relationship with their parents and feel supported and loved by their parents are less likely to engage in this problem behaviour because they perceive that their parents will not allow them to have sex (Bunting & Stamatel, 2019) .However, one's ability to parent effectively is frequently influenced by the neighbourhood in which one lives. According to(Simons *et al.*, 2012) , parents who live in neighbourhoods with higher levels of social disorganization may be disadvantaged, with fewer resources and less access to the types of social and economic capital needed to support their children(Somefun & Olamijuwon, 2022).

Parents in low-income neighbourhoods may lack the resources to provide emotional and social support to their children to help them resist peer pressure(Widman *et al.*, 2016). In addition, other factors that encourage adolescents to engage in sexual activity include the fact that parents who live in densely populated and ethnically diverse areas may not develop any relationships with neighbours and thus may not provide adequate social support and supervision to their children(Odimegwu *et al.*, 2016). As a result, adolescents will have more opportunities to meet

potential sexual partners. According to Social Disorganisation, theory support and monitoring by parents decrease the likelihood of youth engaging in sexual activity(Tsuyuki *et al.*, 2019).

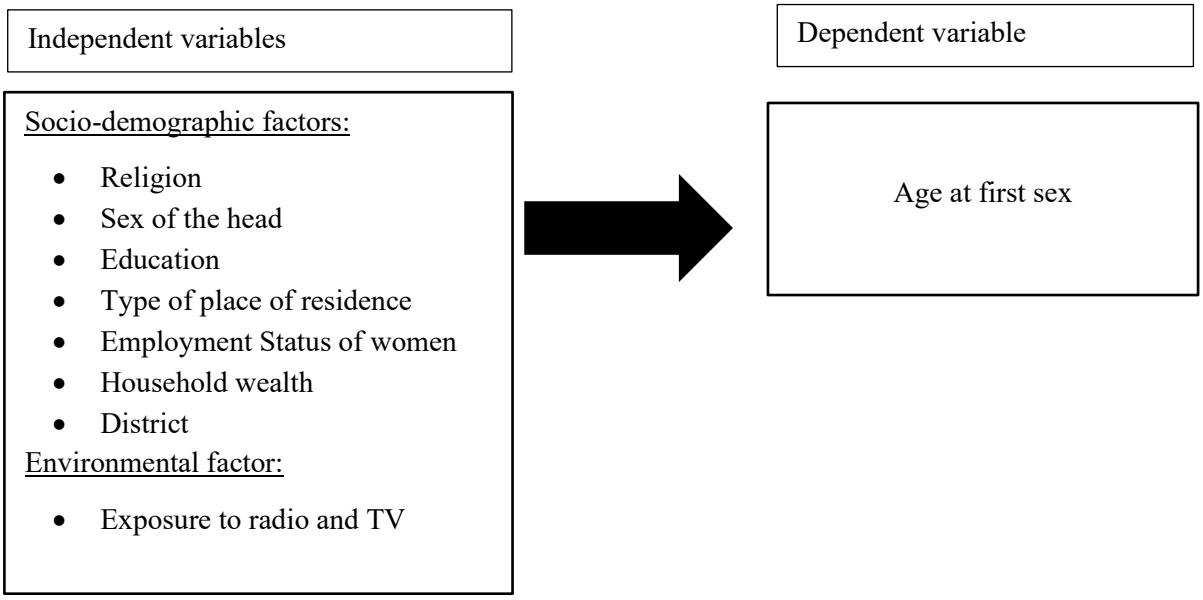
Early sexual debut and low academic goals may lie on the same developmental path(Clark & Mathur, 2012) . Many researchers have proven that young people tend to participate in problem behaviours such as the use of alcohol, drugs (tobacco), delinquency and early sexual activity(Konkor *et al.*, 2021). The adolescent or young people's bad attitude have been found to impact negatively on their academic achievement, goals, and attainment (Sung-Heui *et al.*).In case of the social disorganization theory, it can be assumed that adolescents residing in socially disorganized areas are more likely to participate in such problem behaviours and the result may be that early sexual debut led to poor academic achievement, attainment, and aspirations(Dekker *et al.*, 2020). Therefore, other theories like Problem behaviour advocate that, there are specific effects of early sexual debut including probability of disturbance in education caused by early pregnancies or STIs leading to less time and focus on academic goals if young girls started dating and participating in sexual activity (Parker *et al.*, 2016).

2.5. Conceptual framework

Conceptual framework is defined as a methodical tool with several variations and contexts. It describes the known knowledge in the literature review and it outlines the methodological underpinnings of study. The chosen theoretical framework assimilates the conceptual framework used below because it describes the socio- demographic characteristics that impacts early sexual debut, both theoretical and conceptual show the link between the identified covariates and age at first sex. Age, place of residence, employment status, household wealth, education, alcohol consumption, and media exposure all tend to influence of early sexual debut as specified in the frameworks. The conceptual framework for this study illustrates the connection between age at first intercourse and background characteristics. The background characteristics are classified as follows : socio-demographic characteristics which are age, religion ,sex of the head, education, employment status of women, household wealth. Environmental factors include exposure to media. The geographical characteristics are place of residence and district. The background characteristics are the main influencers of age at sexual debut. Furthermore, conceptual and theoretical frameworks are related as they show the association between the covariates and age

at first sexual intercourse. For example, in both frameworks it shows that education, age, type of residence, household wealth is related to age at first sexual intercourse.

Figure 2.1: Conceptual framework depicting the relationship between socio-demographic factors, environmental factors, and age at first sex



Summary

In summary, literature review indicated that age at first sex is generally influenced by poor socio-economic conditions that women are exposed to. In the first place, more women in the rural areas experience lower age at first sex than it is the case urban areas. However, on the contrary most studies conducted among females in urban areas reveal that women in urban areas also have lower age at sexual debut compared to their rural counterparts. Other factors affecting age of sexual debut were the highest education level. For example, females with no formal education are more likely to have sexual intercourse earlier than those with primary and tertiary education. There was examination on environmental factors like, exposure to media (TV and radio) that influence early sexual debut among young women. However other studies argued that media does not play films on TV, is the viewer that decide to play the film by switching the TV on and searching out the channel they want to watch. This study contributes to the literature available on factors that influence sexual debut among young women. While previous studies have looked at the covariates influencing sexual debut in Lesotho, none have focused on the proportion surviving at different points. This is crucial for understanding when debuting is most likely to

take place. Additionally, most studies focus on the social factors than factors like for instance mental health history and present, sexual abuse in childhood, the body image and roles of parents.

CHAPTER 3: METHODOLOGY

3.1 Introduction

The purpose of this chapter is to define how data collection, analysis and interpretations will be carried out through the study. This chapter represents the researcher's choice of methodological approach to the study and elaborated on the quantitative techniques in social science research. Other contents of this chapter discuss are the researcher's targeted population, data, collection, analysis process.

3.2. Data Source

Data collection for Lesotho Demographic and Health Survey 2014 was collected by Lesotho Ministry of Health through questionnaires. Three questionnaires were used for the Lesotho Demographic and Health Survey (LDHS 2014): The household questionnaires, the women questionnaires, and men questionnaires, were adapted to reflect the population and health issues to Lesotho. The final questionnaires were in English and were translated to Sesotho. The interviewers used personal digital assistants (PDAs) to record responses during interviews. The PDAs were equipped with Bluetooth technology to enable remote electronic transfer of files (e.g., transfer of assignment sheets from team supervisors to interviewers and transfer of completed questionnaires from interviewers to supervisors). The computer-assisted personal interviewing (CAPI) data collection system employed in the 2014 LDHS was developed by The DHS Program using the mobile version of CSPro software.

The 2014 LDHS was designed to provide up-to-date information on key indicators needed to track progress in Lesotho's population and health programmes. These indicators include fertility and child mortality levels, maternal mortality, fertility preferences and contraceptive use, utilisation of maternal and child health services, women's and children's nutrition status and knowledge, and attitudes and behaviours relating to HIV/AIDS and other sexually transmitted diseases.

3.3. Study Population and Sampling Design

This study will use secondary data obtained from the Lesotho Demographic and Health Survey 2014 (LDHS, 2014). The LDHS 2014 was a nationally representative cross-sectional probability

sample of women aged 15-49 years in Lesotho designed to provide up-to-date information on fertility levels, marriage, and fertility preferences in the country. However, only women in the ages of 15-24 were selected for the purpose of this study. The sampling frame used for the 2014 LDHS is an updated frame from the 2006.

Lesotho Population and Housing Census (PHC) provided by the Lesotho Bureau of Statistics (BOS). The sampling frame excluded nomadic and institutional populations such as persons in hotels, barracks and prisons. The 2014 LDHS followed a two-stage sample design and was intended to allow estimates of key indicators at the national level as well as in urban and rural areas, four ecological zones, each of Lesotho's 10 districts. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) delineated for the 2006 PHC. A total of 400 clusters were selected, 118 in urban areas and 282 in rural areas. The second stage involved systematic sampling of households. A household listing operation was undertaken in all the selected enumeration areas in July 2014, and households to be included in the survey were randomly selected from these lists. The total number of women who participated in survey age 15-49, for was 6621. However, the focus of the current study is on young women aged 15-24 with population of 2765.

3.4. Data analysis

Data obtained from LDHS data will be analysed using Stata software. The data was weighted using the Stata software to ensure representation for different clusters. Analysis of the data was organized in three levels univariate, bivariate and multivariate as follows:

3.4.1. Univariate analysis

A univariate analysis used to describe the variables in the study using frequency and the percentages.

3.4.2 Bivariate analysis

Bivariate analysis will examine whether there is an association between the dependent and independent variables using the Kaplan-Meier methods. This is done through the computation of a statistical Log Rank test. The method this study used for estimating the mean age at sexual

debut is survival analysis. The data for survival analyses are age of the respondent, whether or not they have ever had sex. Females who never had sexual intercourse are censored at their current age and those who reported age at first sex is the failure event, for example those who never had sex or had sex after the age 15 were considered censored. Age at first sexual debut was estimated using Kaplan-Meier method and the Log rank test. This study used the log rank test to compare the survival time between groups of categorical variables (Age, education, type of residence, head of household, household wealth, employment status, media exposure,region) and Kaplan Meier survival curve was computed to estimate the time of first sexual debut.

Formula for Kaplan Meier method known as log-rank test and Cox proportion hazard test.

$$T_{logrank} = \frac{\sum_{j=1}^{k}(O_j - E_j)}{\sqrt{\sum_{j=1}^{k} V_j}} \sim N(0.,1) \ under \ H_0$$

Whereby:

$O_j = d_{1j}$: Observed number of failures

$E_j = d_j \frac{Y_1(T_j)}{Y(T_j)}$: expected number of failures

$V_j = \frac{Y_0(T_j) Y_1(T_j) d_j (Y(T_j) - d_j)}{Y(T_j)^2 (Y(T_j) - 1)}$: variance o

3.4.3 Multivariate analysis

This study used the Cox regression analysis to examine the impact of various factors on survivorship before sexual debut. The Cox regression model will be utilized because the dependent variable is dependent on time. Therefore, Cox model is used to examine how specified factors (socio-demographic, environmental and behavioural factors) influence the rate of a particular event happening at a particular point in time (the age at first sex). The rate is also known as the hazard rate and the predictor variables as covariates.

The Cox model equation

The Cox model $= h\,t\square = h\square 0\square\, t\square \times \exp(b\square 1\square\, x\square 1\square + b\square 2\square\, x\square 2\square + \cdots + b\square p\square\, x\square p\square)$

Whereby:

t=survival times

$h\,t\square$: the hazard functions

$b\square p\square$: the coefficients that measures the impact of the p-covariate

$h\square 0\square\, t\square$: the baseline hazard. It is the value of the hazard if all the ix are equal to zero

3.5. Description of study variables

Dependent variable

A dependent variable for this study is age at which the individual had first sexual intercourse. This study focuses on the initiation of sexual intercourse among females 15-24 in Lesotho. Age at first sexual intercourse is categorised as 15-24.

Independent variables

Table 3.1: Independent variables selected for this study

Independent variable	**Description**	**Code**
Age group	Respondents age	• 1= 15-19. • 2 = 20-24
Level of education	Highest educational level of respondents	• 1=Primary or less • 2=Secondary • 3=Higher
Religion	Religion of respondents	• 1=Christianity. • 2=other/none
Employment	Employment status of respondents	• 0=No. • 1=Yes
Exposure to radio and TV	Frequency of listening to the radio and watching TV	• 0=not at all • 1=Less than once a week • 2=At least once a week

Sex of household head	Sex of the household	• 1=male • 2=female
Household wealth	Household wealth index	• 1=Poorest • 2=Poorer • 3=middle • 4=richer • 5=richest
Place of residence	Type of place of residence categorised into two residences	• 1=urban • 2=rural
Districts	Ten districts of Lesotho	• 1=Botha-Bothe • 2=Leribe • 3=Berea; • 4=Maseru; • 5=Mafeteng; • 6=Mohale's hoek • 7=Qouthing; • 8=Qacha's –Neck • 9=Mokhotlong; • 10=Thaba Tseka

3.6. Ethical considerations

The ethical consideration of 2014 Lesotho DHS protocol was reviewed and approved by the Lesotho Ministry of Health Research and Ethics Committee and the Institutional Review Board of ICF International. However, in compliance with the university policy, further ethical approval from North West University was acquired from the Basic Social Science Research Committee.

CHAPTER 4: DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter presents the findings of the study, and they were arranged as follows. The first part describes the background characteristics of the study participants followed by bivariate analysis and in the last section, the Cox regression method is utilised to examine the impact of various factors on survivorship before sexual debut.

4.2 Characteristics of the study population

Table 4.1 presents the background characteristics of the respondents in the study. The results in Table 4.1 showed that 52.1% of the respondents were aged 15-19, while those aged 20-24 account for 47.9% of the study population. Those with primary education or less education account for 27.8% followed by secondary 67.0% and higher with 5.2%. The large number of the study population were Christian's accounting for 98.3% and those with other religions or none account for 1.7% respectively. Respondents who are not working account for 81.2% and those who are working with 18.8%. Respondents who never listened to radio or watched TV contributed for 21.6%, less than once a week with 15.5% and those who listened to radio or watched TV at least once a week with 63.0%.

Table 4.1: Percentage distribution of background characteristics of the study population

Variables	**Number**	**%**	**Median age (only for 20-24)**
Age group			
15-19	1439	52.1	Na
20-24	1322	47.9	18.4
Education			
Primary or less	767	27.8	17.4
Secondary	1849	67.0	18.6
Higher	144	5.2	19.5

Variables	Number	%	Median age (only for 20-24)
Religion			
Christianity	2714	98.3	18.4
Other/none	47	1.7	18.0
Employment status			
No	2241	81.2	18.5
Yes	520	18.8	18.1
Exposure to radio and TV			
Not at all	595	21.6	17.7
Less than once a week	427	15.5	18.4
At least once a week	1739	63.0	18.6
Sex of household head			
Male	1676	60.7	18.3
Female	1085	39.3	18.6
Household wealth			
Poorest	421	15.2	17.8
Poorer	461	16.7	17.9
Middle	562	20.4	18.4
Richer	678	24.6	18.6
Richest	638	23.1	19.0
Place of residence			
Urban	922	33.4	18.5
Rural	1839	66.6	18.4
District			
Botha-bothe	167	6.0	18.7
Leribe	452	16.4	18.6
Berea	371	13.4	18.6
Maseru	720	26.1	18.6
Mafeteng	253	9.2	18.2
Mohale's hoek	221	8.0	18.3
Quthing	157	5.7	16.9
Qacha's-nek	87	3.2	17.9
Mokhotlong	163	5.9	18.2
Thaba tseka	171	6.2	18.2
Total	**2761**	**100.0**	**18.4**

The findings show that respondents from male headed household account for 60.7% followed by those from female-headed household with 39.3%. The respondents who are poorest account for 15.2% followed by those who are poorer with 16.7% the table further indicate those who are middle with 20.4%, richer 24.6% and richest 23.1% in that order. The results further showed that there were fewer respondents from the urban area with only 33, 4% compared to 66, and 6% of those coming from the rural areas. Regarding the regions, Botha –Bothe contributed 6.0% of the study population while Leribe and Berea contributed 16.4% and 13.4% respectively. Maseru had the largest study population with 26.1% coming from there while, Mafeteng and Mohale's hoek

had 9.2% and 8.0% respectively, followed by Quthing with 5.7% and Qacha's –nek had lower population with 3.2% . Mokhotlong 5.2 % and Thaba Tseka population with 6.2%.

4.3 Survival times before sexual debut

This section presents the mean and median survival times before experiencing sexual debut by different socio-economic factors. The log rank test for equality of survival times used to determine if the survival times were statistically different. However, religion, employment status, sex of the household did not show statistical association with the mean age. As expected, the mean age for surviving before experiencing sexual debut was lower for females aged 15-19 (15.9) compared to those aged 20-24 (p =0.0000) The mean also increased with an increase in the educational level showing an average of 16.3 years for those who had primary or less and 18.6 years for those who had higher education (p = 0.0000).

4.3.1 Mean and median survival time before sexual debut

Table 4.2: Mean and median survival times in years by individual variables

Variables	**Number of subjects**	**Extended mean**	**Median**	**Log rank test**
Age group				0.0000
15-19	712	15.9	16	
20-24	1211	17.5	18	
Education				0.0000
Primary	566	16.3	16	
Secondary	1257	17.1	17	
Higher	100	18.6	19	
Religion				0.0875
Christianity	1887	16.9	17	
Other/no	36	16.6	16	
Employment status				0.0093
No	1551	16.9	17	
Yes	372	17.2	17	
Exposure to radio and TV				0.0000
Not at all	499	16.5	16	
Less than once a week	301	16.8	17	
At least once a week	1123	17.1	17	

Variables	Number of subjects	Extended mean	Median	Log rank test
Sex of the household				0.8651
Male	1179	16.9	17	
Female	744	16.9	17	
Household wealth				0.0000
Poorest	348	16.6	16	
Poorer	366	16.6	17	
Middle	425	16.8	17	
Richer	429	17.1	17	
Richest	355	17.6	18	
Place of residence				0.0139
Urban	561	17.1	17	
Rural	1362	16.9	17	
District				0.0000
Botha-bothe	178	17.5	17	
Leribe	237	17	17	
Berea	219	17	17	
Maseru	248	17.3	17	
Mafeteng	182	17	17	
Mohale's	193	16.9	17	
Quthing	198	16.1	16	
Qacha's-	163	16.6	17	
Mokhotlo	170	17	17	
Thaba tseka	135	17	17	
Total	1923	16.9	17	

The mean age showed a stable increase from the Christians 16.9 years to other religious group 16.6 years in terms of religion (p=0.0875). Employment status showed that those who were not employed 16.9 years had less mean age than those who were employed p=(0.0093). The mean age was 16.9 years from both male and female headed household (p=0.8651). Exposure to radio and TV at least once a week was associated with a longer average years before debuting at 17,5 years compared to 16,9 years for those who did not have the exposure (p= 0.0000). The mean age showed consistent increase from the poorest 16.6 to the richest 17.6 in terms of household wealth (p=0.0000). Place of residence showed that urban area 17.1 had higher mean age than their rural counterparts did (p=0.0139). In terms of districts Quthing had lowest mean age 16.1 while the highest mean 17.5 was observed in Botha-bothe, except for Mohale's hoek and Qacha's –Nek all the districts had mean age of 17.0 (p = 0.0000)

The median age showed an increase by the highest level of education, those with primary education 16 years secondary 17 years and higher 19 years. Religion showed that those who are non-religious 16 years had less median age than Christians 17 years. Exposure to radio and TV at least once a week was associated with an average year before debuting at 17 years compared to those who did not have the exposure 16 years. The median age was low in Quthing 16 years compared to other districts 17 years. Wealth index showed that those from poor households 16 years had less median age than those from rich households 18 years.

The next section shows the results indicating the proportion surviving before sexual debut at different age intervals. The results show that at the end of age 8 and the beginning of age 9, the proportion of women who had not experienced sexual activity 99%, which is 1923 in total. By the end of age 14 and inception of age 15, the proportion that were surviving before sexual debut was 91%. Slightly over half 58% of females aged 16 and 17 were surviving before sexual debut .For the 1130 females aged 17 and 18, less than half 38% experienced sexual debut. However, from the end of age of 17 and the beginning of age 18 was consistent decline in the proportion of the women surviving sexual debut. By the age of 24 and 25, all of them experienced sexual debut.

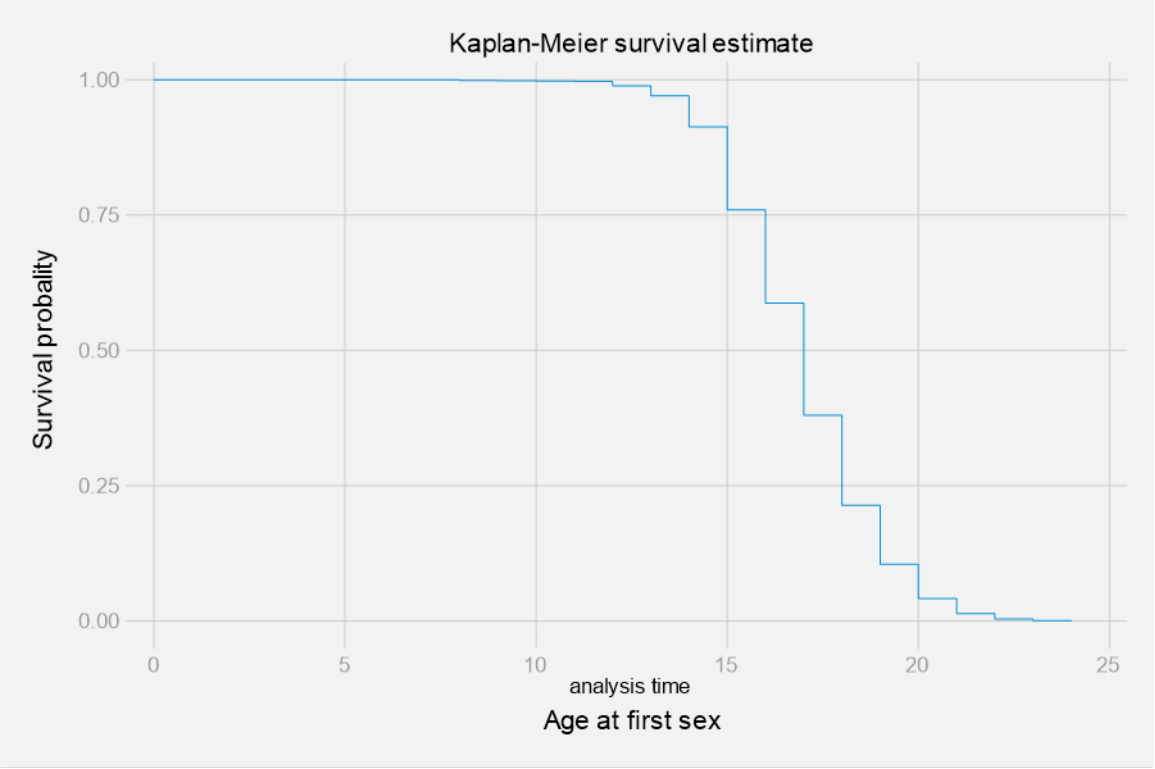
Table 4.3: Proportion surviving before experiencing sexual debut

Age interval	Total	No debuting	Std. Survival	Error	[95% Conf. Int.]
8 9	1923	2	0.9990	0.0007	0.9958 0.9997
9 10	1921	1	0.9984	0.0009	0.9952 0.9995
10 11	1920	1	0.9979	0.0010	0.9945 0.9992
11 12	1919	2	0.9969	0.0013	0.9931 0.9986
12 13	1917	15	0.9891	0.0024	0.9833 0.9929
13 14	1902	36	0.9704	0.0039	0.9617 0.9771
14 15	1866	110	0.9132	0.0064	0.8997 0.9249
15 16	1756	295	0.7598	0.0097	0.7400 0.7782
16 17	1461	331	0.5876	0.0112	0.5653 0.6093
17 18	1130	399	0.3801	0.0111	0.3584 0.4018
18 19	731	320	0.2137	0.0093	0.1957 0.2323
19 20	411	210	0.1045	0.0070	0.0914 0.1187
20 21	201	122	0.0411	0.0045	0.0329 0.0506
21 22	79	53	0.0135	0.0026	0.0091 0.0195
22 23	26	19	0.0036	0.0014	0.0017 0.0073
23 24	7	6	0.0005	0.0005	0.0001 0.0029

24	25	1	1	0.0000	.	.	.

The results in Figure 4.1 shows that the survival times is higher around age 10 but start to decline thereafter showing that most women started engaging in sexual intercourse after that age.

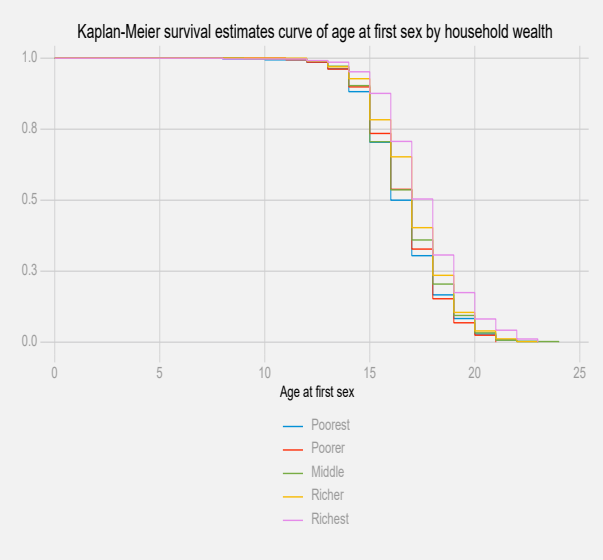
Figure 4.1: Survival times before experiencing sexual debut for study respondents

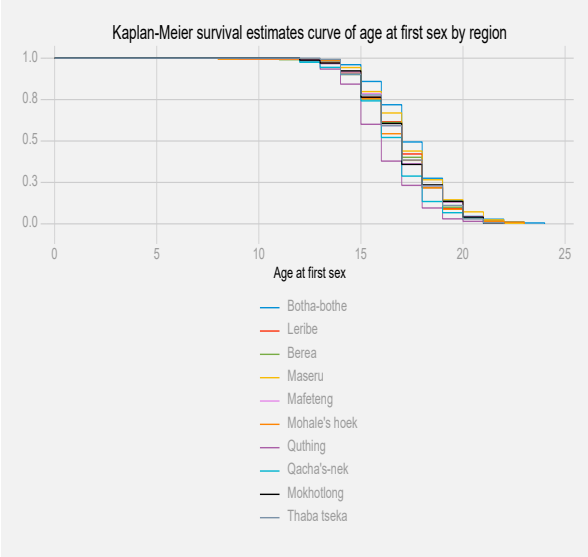


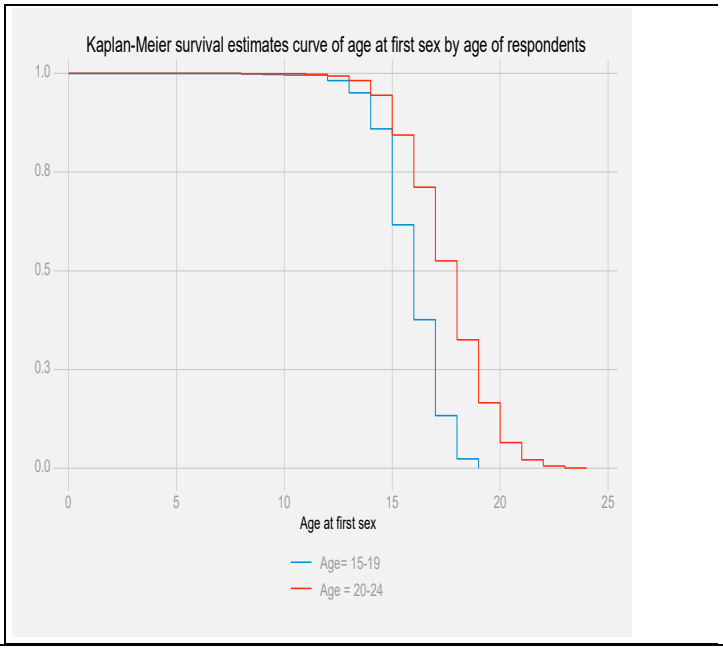
4.3.2 Kaplan Meier survival estimate curves

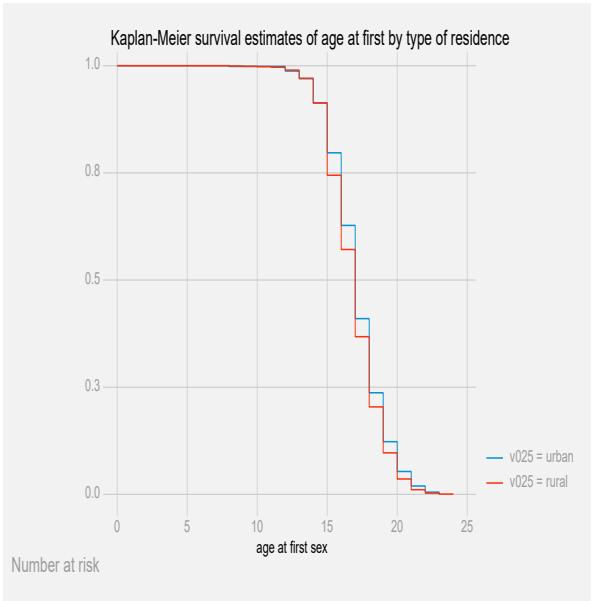
The survival times between different categories were proportional on different variables, which satisfy the assumption of proportionality. For example, the results below show that the survival times among those coming from the different households with different wealth index were almost proportional across the different survival times. The survival time among those living in different type of residence were different according to the different survival time.

Kaplan Meier survival estimate curves by different socio-demographic variable









4.4 Factors influencing survivorship before sexual debut.

Table 4.4: Present the results showing the hazard ratio of experiencing first sex by different socio-economic variables. The results indicate that women in ages 15-19 were 2.5 [H.R=2.5 (95% CI: 2.27-2.81), p=0.00] more likely to have experienced first sex at any point in the survival time when compared to the reference category. Concerning education, the hazard ratio showed that an increased level of education was associated with a lower hazard ratio. For example, compared to those with primary or no education, women with secondary and higher levels of education had a hazard ratio of 0.72 [H.R=0.72 (95% CI: 0.64-0.80), p=0.00] and 0.56 [H.R =0.56 (95% CI: 0.47-0.67), p=0.00] respectively.

The results shows that women from other religions or without religion were 1.33 [H.R=1.33 (95% CI: 1.05-1.67) p=0.016] likely to have experienced first sex at any point in the survival time compared to Christian women .For employment status, the hazard ratio showed to increase with the status of employment with a high hazard ratio. For example, compared to those who are not working, women who are employed had a hazard ratio of 1.05 [H.R= 1.05(95% CI: 0.94-1.19), p=0.392]. However, the differences by employment status were not statistically significant.

Table 4.4: Hazard ratio for experiencing first sex by different socio-economic variables

Variables	**Hazard ratio**	**Std. Err.**	**Z**	**P-value**	**95% CI**	
					Lower	**Upper**
Age group						
15-19	2.53	0.14	17.08	0.000	2.27	2.81
20-24®	**1**					
Education						
Primary or less ®	**1**					
Secondary	0.72	0.04	-6.21	0.000	0.64	0.80
Higher	0.56	0.05	-6.42	0.000	0.47	0.67
Religion						
Christianity®	**1**					
Other/none	1.33	0.15	2.41	0.016	1.05	1.67
Employment status						
No ®	**1**					
Yes	1.05	0.06	0.86	0.392	0.94	1.19
Exposure to radio and TV						
Not at all	1.07	0.07	0.94	0.347	0.93	1.22

Variables	Hazard ratio	Std. Err.	Z	P-value	95% CI	
					Lower	Upper
Less than once a week®	**1**					
At least once a week	0.99	0.06	-0.23	0.821	0.87	1.11
Sex of the household						
Male®	**1**					
Female	0.99	0.05	-0.31	0.756	0.90	1.08
Household wealth						
Poorest	1.18	0.11	1.77	0.078	0.98	1.43
Poorer	1.3	0.11	3.01	0.003	1.10	1.54
Middle	1.26	0.09	3.16	0.002	1.09	1.46
Richer	1.16	0.09	1.99	0.047	1.00	1.35
Richest®	**1**					
Place of residence						
Urban®	**1**					
Rural	0.9	0.05	-1.75	0.081	0.80	1.01
District						
Botha-bothe	0.82	0.08	-2.11	0.036	0.69	0.99
Leribe	0.98	0.07	-0.25	0.802	0.85	1.14
Berea	1.01	0.08	0.07	0.942	0.86	1.18
Maseru®	**1**					
Mafeteng	0.99	0.09	-0.09	0.926	0.83	1.19
Mohale's hoek	1.02	0.10	0.25	0.800	0.85	1.23
Quthing	1.55	0.15	4.54	0.000	1.28	1.87
Qacha's-nek	1.11	0.12	0.98	0.328	0.90	1.39
Mokhotlong	0.92	0.09	-0.91	0.362	0.76	1.11
Thaba tseka	0.93	0.09	-0.76	0.449	0.78	1.12

The results indicate that women who did not listen to radio and watch TV were 1.07[H.R=1.07(95% CI: 0.93-1.22),p=0.347] more likely to have experienced sex while those who listen radio and watch TV at least once a week were 0.99 [H.R=0.99(95% CI: 0.87-1.11), p=0.821] less likely to have experienced first sex at any point in the survival time when compared to the reference category (p=0.35, p=0.82) respectively. Concerning sex of the household the hazard ratio showed that head of the household was associated with a higher hazard ratio. For example, compared to those from male headed household, women from female headed household had a hazard ratio of 0.99, [H.R=0.99 (95% CI: 0.90-1.08), p=0.756]. According to the household wealth, women from poorest, 1.18 [HR=1.18(95% CI: 0.98-1.43),p=0.078] poorer, 1.30 [HR=1.30(95% CI: 1.10-1.54),p=0.003], middle, 1.26 [HR=1.26(95% CI: 1.09-1.46),p=0.002] and richer.16 [HR=1.16(95% CI: 1.00-1.35) p=0.047] household were likely to have experienced first sex at any point in the survival time when compared to the richest . The results indicate that the hazard ratio showed that type of place of residence was associated with a lower hazard ratio. For instance, compared to women from urban areas, women from rural

areas had a hazard ratio of 0.09 [HR=0.09(95% CI: 0.80-1.01), p=0.081]. For districts, women from Botha-bothe were 0.82 [HR=0.82 (95% CI: 0.69-0.99), p=0.036], Quthing 1.55 [HR=1.55 (95% CI: 1.28-1.87), p=0.036,] more likely to have experienced first sex at any point in the survival time when compared to Maseru. Leribe, 0.98 [HR= 0.98(95% CI: 0.85-1.14), p=0.802], Berea, 1.01, [HR= 1.01 (95% CI: 0.86-1.18), p=0.0942] Mafeteng, 0.99, [HR= 0.99 (95% CI: 0.83-1.19) p=0926], Mohale's hoek, 1.02 [HR=1.02(95%CI:0.85-1.23)p=0.800],Qacha's-nek,1.11,[HR=1.11(95%CI:0.901.39),p=0.328], Mokhotlong 0.92 [HR=0.92 (95% CI: 0.76-1.11), p=0.362], Thaba Tseka 0.93 [HR=0.93(95% CI: 0.78-1.12) p=0.449] were less likely to have experienced first sex at any point in the survival time when compared to Maseru.

CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter was to discuss the results followed by the conclusions drawn from and the recommendations of the study. The study assesses these discussions based upon the covariates selected for this study.

The results showed that mean survival time was longer for women in age group 20-24, and this was further confirmed at the multivariate level were hazard rates for the younger age group was higher. The study found that the age of the women at the time of the interview predicted history of early sex debut. Early sexual debut reported among the young females aged 15-19 years is quite similar with other previous studies reported in Kisumu Kenya (Ondenge *et al.*, 2021).

Although the results showed that the survival times before sex were longer in the urban area relative to the rural place of residence, the differences disappeared when other variables were controlled for at the multivariate level. This implies that the differences observed earlier was due to the effect of other variables. However, other studies found that the mean age at first sex differed by the type of place of residence. This study found that mean age at first sex was increasing among females residing in the rural areas, which is consistent with previous findings in Ghana(O. Asante *et al.*, 2018) and United States (Janis *et al.*, 2019).

Furthermore, the study revealed that age at first sex related to women's educational level. Women with higher level of education have a lower hazard ration than those with no education. This finding agrees with the previous study by Fagbamigbe and Idemudia (2017) which revealed that those with primary or less education was likely to have sexual intercourse at an earlier age than those with higher education. This delay of sexual debut at early would have contributed to the ability to complete secondary and higher education among these young females. A study by Motsima and Malela-Majika (2016), found that women who have had their first sexual intercourse at earlier age were likely not to make it to secondary school or complete their secondary education.

The finding of the study that women from the poorest households engage in early sexual debuts, which concurred with the study by(Alhassan *et al.*, 2021) . Additionally, the study also revealed that household rich wealth status as a protective factor for early sex debut (Omolola et al., 2018).The results also differed by place of residence showing that Quthing district had higher hazard ration than Maseru. Similarly, to Lesotho Demographic and Health survey (LDHS) of 2014 showed a longer survival time before sex among women in Maseru compared to Quthing. The study finds indicated that females from Botha-Bothe had a low mean survival time before sex as compared to Maseru. However, on the contrary, the Lesotho Demographic and Health survey (LDHS) of 2014 showed that females from Botha-Bothe have longer mean survival time before sex than Maseru.

5.3 Conclusion

The study finds that high proportion of females were initiating sexual activity at an early age in Lesotho. The study shows that numerous covariates are associated with age at first sexual intercourse among females in Lesotho. Furthermore, the study found that that these covariates such as age, place of residence, district, education, and household wealth were statistically associated with age at first sex among women in Lesotho. There was no significant association in terms of employment status, exposure to radio and TV, religion, and sex of the household. Female youths from rural areas, with less or no education, from poor households were more likely to have early sexual debut than others. Therefore, young females in Lesotho need sexual and reproductive education to delay sexual debut and to prevent its health and socio-economic economic consequences.

5.4 Recommendations

To address the issue of early sexual intercourse among females in Lesotho some recommendations can be helpful in solving the challenge and are as follows:

- Policies and programmes to help delay sexual debut among young females in Lesotho should be put in place and include sexual and reproductive education, also provide activities that will empower females and has intentions of increase female status. It also important to ensure education right for all young women from the childhood and

familiarise sexual and reproduction education at primary level in school curriculums: which will expand more on dangers and consequences of having sexual intercourse at early age. Efforts also need to be made at community level to provide sex education to the young people. Parents and guardians should make sexuality an open discussion topic and discourage early sex.

- Females from poor households are more likely to engage in sexual activity earlier, the county government of Lesotho needs to implement programmes that will educate the young women on sexual health and that teach technical skills that will help the young women to be able to make additional income therefore removing poverty as a driver towards early sexual debut. Creation of job opportunities for women who come from destitute backgrounds should be made a priority

- Women who reside in the countryside are more likely to report in sexual intercourse. Women in rural areas are more likely to face constraints in participating in economic activities due to gender- based discrimination, unpaid work, and education and health disparities. Disadvantaged women can trade sex for economic survival. Therefore, some of them are initiating in sexual activities as they see sex as a means of survival this is mainly because of the lack of basic needs. There should be policies and programs that provide activities that will empower rural females through creation of jobs, decent and productive employment. Setting and enforcing minimum wages that contribute overcoming poverty. Ensuring equal access of girls to education, health services and challenging social norms that bound rural girl's equal rights and opportunities.

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Appendix 1: Ethics approval letter

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24 August 2022

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Basic and Social Sciences Research Ethics Committee (BaSSREC)** on **24/08/2022**, the Basic and Social Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWUSERC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Levels and covariates of age at first sexual intercourse among females aged 15-24 in Lesotho

Study Leader/Supervisor (Principal Investigator)/Researcher: Dr K.Mhele

Student/Research Team: R Phateng-25431080

Ethics number:

N	W	U	-	0	1	0	1	4	-	2	2	-	A	7
Institution				Study Number						Year		Status		

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation **Application Type: Single study**

Commencement date: **29/08/2022** **Risk:** **No risk**

Expiry date: 29/08/2023

Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

General conditions:

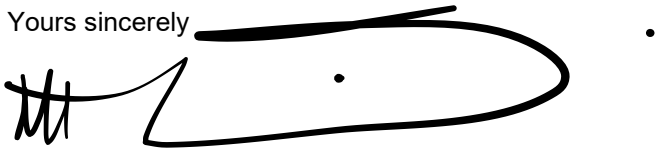
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principal investigator)/researcher must report in the prescribed format to the BaSSREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the BaSSREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started.*

- *In the interest of ethical responsibility, the NWU-SCRE and BaSSREC reserves the right to:*
  - *request access to any information or data at any time during the course or after completion of the study;*
  - *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process; – withdraw or postpone approval if:*
    - *· any unethical principles or practices of the study are revealed or suspected;*
    - *· it becomes apparent that any relevant information was withheld from the BaSSREC or that information has been false or misrepresented;*
    - *· submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or · new institutional rules, national legislation or international conventions deem it necessary.*
- *BaSSREC can be contacted for further information or any report templates via* BaSSRECAdmin@nwu.ac.za.

The BaSSREC would like to remain at your service as scientist and researcher and wishes you well with your study. Please do not hesitate to contact the BaSSREC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely



Prof E. Idemudia

Chairperson NWU Basic and Social Sciences Research Ethics Committee

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