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SEXUAL HEALTH OF THE AGED IN SELECTED COMMUNITIES IN THE GREATER ACCRA REGION OF GHANA

EFUA KWAAMBAA TURKSON

2024

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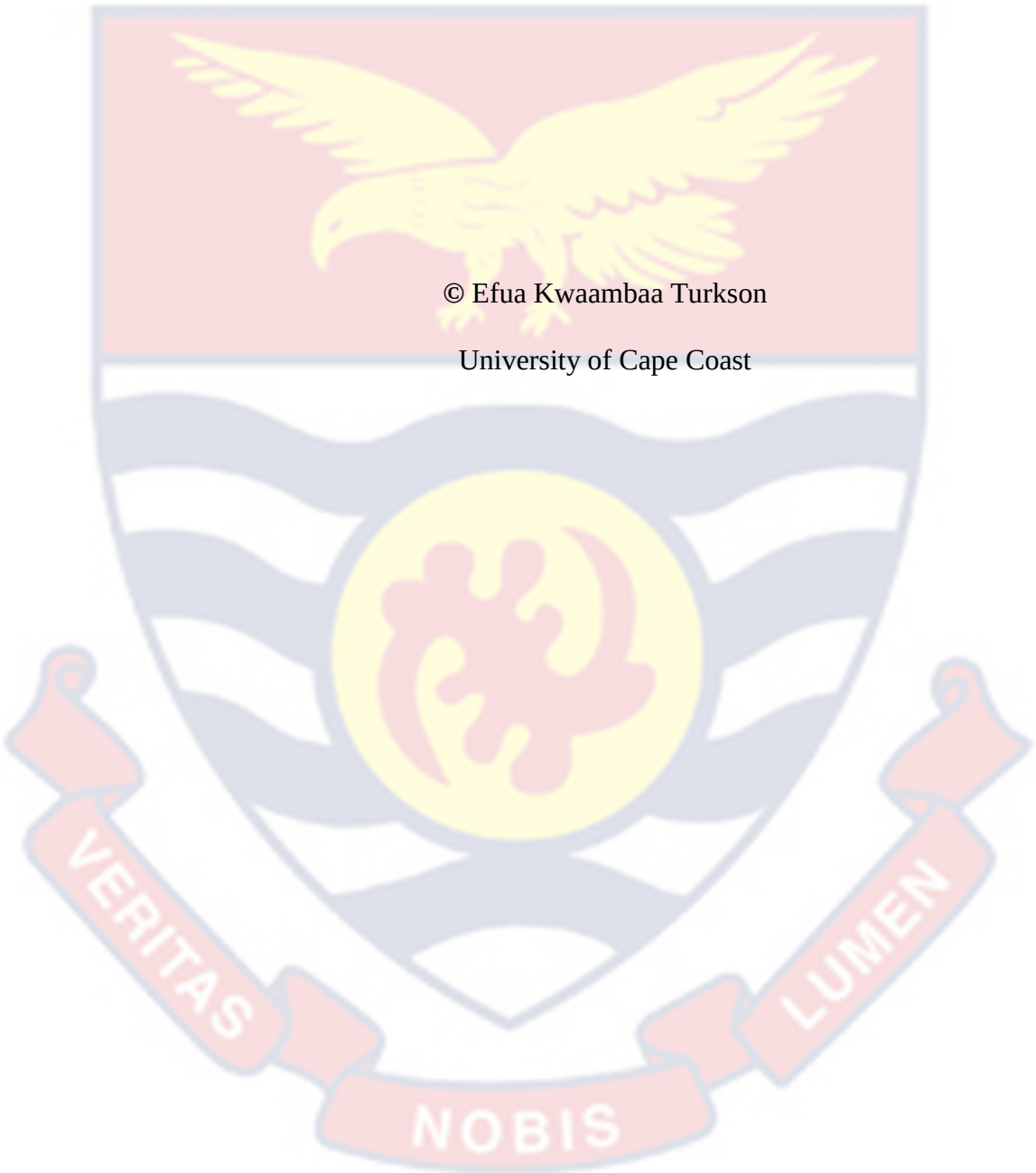

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SEXUAL HEALTH OF THE AGED IN SELECTED COMMUNITIES IN THE GREATER ACCRA REGION OF GHANA

BY

EFUA KWAAMBAA TURKSON

Thesis submitted to the Department of Population and Health of the Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy Degree in Population and Health

OCTOBER 2024

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature…… Date ……..…….

Name: Efua Kwaambaa Turkson

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature ……..…… Date ……

Name: Prof. Akwasi Kumi Kyereme

Co-Supervisor's Signature …… Date ……

Name: Prof. Samuel K. Miledzi Agblorti

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ABSTRACT

Sexuality is a critical component for all age groups, including the aged. Even as physiological changes affect the sexual health of the aged, they are interested in sexual activities, which enhance their well-being. The main objective of the study was to assess the sexual health of the aged in selected communities in the Greater Accra Region of Ghana. The study was guided by the biopsychosocial model and employed quantitative methods. An interview schedule was used to collect data from 817 respondents. The data was analysed using the chi-square test and binary multiple logistic regression. Findings from the multiple logistic regression indicate that the aged who are not in union (AOR=0.020, 95% CI=0.005, 0.078, $p<0.05$) had lower odds of good sexual health. Also, the aged who reported being unemployed (AOR=0.359, 95% CI=0.145, 0.888, $p<0.05$) were less likely to have good sexual health. In addition, the aged 70-74 years (AOR=0.091, 95% CI=0.021, 0.392, $p<0.05$) had a lower likelihood of having good sexual health. It was observed that the likelihood of having good sexual health among the aged who have been diagnosed with two or more types of chronic illness (AOR=0.318, 95% CI=0.116, 0.870, $p<0.05$) was lower. The aged who are depressed (AOR=0.080, 95% CI=0.011, 0.604, $p<0.05$) were less likely to have good health compared to those aged with depression. Neglecting the socio-economic, biological/physiological, and psychological factors that contribute to sexual inactivity, sexual dissatisfaction, and sexual dysfunction of the aged can lead to poor sexual health outcomes. A comprehensive approach to addressing sexual health is essential for promoting healthy ageing and ensuring fulfilling sexual lives.

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KEYWORDS

Sexual Activity

Sexual Satisfaction

Sexual Dysfunction

Socio-Economic

Physiological

Psychological

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DEDICATION

To my children, Paa Kwesi, Nana Adwoa and Kow Adom

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LIST OF ACRONYMS

BPS	Biopsychosocial
ED	Erectile Dysfunction
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
MMDAs	Metropolitan, Municipal and District Assemblies
NHIS	National Health Insurance Scheme
NPC	National Population Council
PHC	Population and Housing Census
PPWB	Positive Psychological Well-being
SWB	Subjective Well-Being
UN	United Nations
WHO	World Health Organisation

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CHAPTER ONE

INTRODUCTION

Background to the Study

Although "old age" has many definitions, none has been universally confirmed. Biological age is the most common means of identifying an older person. Old age is the final stage in a person's life course, and defining a person as old primarily depends on the region and country (Foster & Walker, 2021; Kornadt et al., 2019; WHO, 2022). Further, the onset of ageing depends on a society's culture and history. In some instances, old age is deemed more social than biological. According to (OECD, 2023), traditionally, the term "elderly" has been used to describe people who are 65 years of age or older and between the ages of 65 and 74 are known as "early elderly", and people over the age of 75 are known as "late elderly", however, this definition of the "elderly" is not supported by evidence.

Some gerontologists have defined sub-groups to demonstrate the variability of old age. Forman, Berman, McCabe, Baim and Wei (1992) established differences among the young-old (60 to 69), the middle-old (70 to 79), and the very old (80+). Zizza et al. (2009) also indicate sub-groupings as young-old (65 to 74), middle-old (75–84), and oldest-old (85+). Demographics of Ageing (2016) established a third sub-grouping, which is "young old" (65–74), "old" (74–84), and "old-old" (85+). A fourth age sub-group, defined as "an arena of inactive, unhealthy, unproductive, and ultimately unsuccessful ageing", was added by Higgs & Gilleard (2015). The UN agreed that the cut-off age for the aged refers to persons 60 years and older (WHO, 2002).

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Globally, more than a billion people are 60 years and older and one in six persons will be 60 years and older by 2030 (WHO, 2022). From 2015 to 2050, the rate of the world's population over 60 years is expected to almost double from 12 percent to 22 percent (WHO, 2022). As of 2020, 74.4 million people aged 60 and older lived in Africa, with 54.3 million in sub-Saharan Africa (He, Aboderin, & Adjaye-Gbewonyo, 2020). According to the 2010 National Ageing Policy of Ghana, the aged in Ghana are classified as persons aged 60 years and older. From the 2010 Population and Housing Census, evidence shows the proportion of the aged population was 5.3 percent in 1970, 4.7 percent in 2010 and expected to be 8.5 percent in 2020 (GSS, 2013). The population aged 60 and older is estimated to be 8.4 percent in 2040 and 10.5 percent in 2050 (NPC, 2017). Hence, there is a need to ensure their well-being, including their sexual health.

Every country strives to provide quality of life for its population across all age groups to support the national and global goals of the Sustainable Development Goals (SDG), particularly Goal 3, which focuses on promoting a healthy population and ensuring well-being in all ages. Creating an environment that ensures a healthy population includes having a sexually healthy population (WHO, 2020). However, in some parts of the world, the sexual health needs of the aged have not attracted that much attention as they are perceived to be asexual with associated misconceptions and issues about their sexuality (Ricoy-Cano, Obrero-Gaitán, Caravaca-Sánchez & Fuente-Roble, 2020). Again, the sexuality of the aged is controlled and limited, especially older women, who are perceived as asexual and with their sexuality linked to procreation (Politis, Kosidou, Fors, & Nord, 2024). Sexual health

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needs are mainly focused on women in the reproductive age group, adolescents, young people, and youth, while sexual health in later life has been primarily shelved and neglected.

According to the World Health Organisation, sexual health is crucial to overall health. It includes physical, emotional, mental, and social well-being related to sexuality. (WHO, 2017). It is not limited to the absence of dysfunction and disease. Sexual health is considered physiological, psychological, and psychosocial well-being regarding sexuality, not only the lack of sickness, malfunction, or infirmity. Respect, safety, and freedom from violence and discrimination are three fundamental concepts of sexual health defined by the World Health Organisation. Sexual health is influenced by various elements, some of which an individual has little or no control over, including physical, psychological, cognitive, socio-cultural, religious, legal, political, and economic (UNFPA, 2010; WHO, 2010). Although the physical issues of the sexual health of the aged need to be addressed, the World Health Organisation's definition of sexual health indicates that the social characteristics of an individual need attention to ensure that the aged are sexually healthy.

Sexual health involves a positive and respectful approach to sexuality and sexual relationships, having pleasurable and safe sexual experiences that are free of coercion, discrimination, and violence. Limited research on the sexual health of the aged is that sexuality is often perceived as a private and personal area of life that should not be discussed in public. Further, healthcare practitioners may not openly assess the sexual health of their patients due to the difficulty of patients in discussing the issue (Kelder, Sneijder, Klarenbeek,

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& Laan, 2022). It is generally believed that elderly people are not sexually active. However, there is a higher chance that they will remain sexually active, with more seeking treatment for sexual health-related issues to live healthier and longer (Fisher, Rezk, Nwefo, Masterson, & Ramasamy, 2020).

Generally, it is assumed that older adults lack sexual activity or interest, so their sexual health has not been addressed over the years. However, studies show otherwise, as in England, 86 percent of men and 60 percent of women aged 60–69 reported being sexually active, which declines with age (Steckenrider, 2023). Even those over 90 were active. In the United States, among sexually active 75–85-year-olds, 54 percent had sex biweekly and 23 percent weekly. Interest levels remain substantial as older people between 65 to 80 years view sex as important to their well-being.

Sexuality, unfortunately, is often focused on births, contraception and the prevention of sexually transmitted infections only rather than on the more comprehensive aspects of sexual health (Agunbiade 2019 & Leah). Due to this fact, healthcare providers, therefore, may not discuss sexual health unless it is overtly relevant in particular circumstances and frequently let go of the opportunity to discuss the sexual health of the aged. Given that well-being is important in all stages of life, including years, it is always important to pay attention to the sexual well-being of older persons. Since the population keeps ageing over time, attention must be paid to the sexual well-being of elderly people to give them sufficient care and health services.

Healthy sexual functioning, or the ability to enjoy the intended sexual pleasure and satisfaction, is a crucial aspect of sexual health (American Sexual Health Association, 2019). Also, how a person's body responds at various

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stages of the sexual response cycle is called sexual function (Masters & Johnson, 1966). These aspects of sexual function are relevant in identifying the sexual desires among the aged and rely on the social and medical attitudes towards sexuality, which may be considered normal and "what is not". Health conditions such as diabetes, hypertension and other chronic illnesses can affect the sexual functioning of an individual, including the aged (American Sexual Health Association, 2019). In addition, the psychological effects such as anxiety, anxiety or depression of a chronic condition of the aged can impact the sexual health of the aged and the medications to treat these conditions can worsen the situation.

To ensure healthy ageing, an enabling environment for the aged should be created, and approaches should be adopted to help the aged have a healthy lifestyle and financial stability. Age-related sexual health and rights are acknowledged globally (IPPF, 2018). The document "Ageing and Health: A Global Strategy and Action Plan, 2016-2020" was adopted by the World Health Assembly in 2016 and recognised the significance of healthy ageing. The Convention on the Elimination of All Forms of Discrimination Against Women endorsed by the International Session on Human Rights "ICPD Beyond 2014" Conference in July 2013 states that the sexual health of the aged and gender-specific conditions, including older women, has been ignored (Beijing Platform for Action, Article 95). This statement indicates that the sexual health needs of older persons have not received sufficient attention (Aboderin, 2014). Sexual activity in later life involves more than just sexual intercourse. It is significantly connected to enhanced mental health and overall wellbeing. This shows that sexuality remains an important and lasting element

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of life. However, research, policy, and programmes have continually failed to satisfy the requirements of the aged (Heidari, 2016). For the aged to be comfortable with their sexuality, the physical and emotional principles and attitudes towards sexuality should be acknowledged. However, society continues to deny the elderly the opportunity to express and fulfil their sexuality as the younger generation (Deacon et al., 1995). Older people are also considered helpless and inactive and need economic and social support (Dai, Zhang, Zhang, Li, Jiang, & Huang, 2016). Irrespective of their marital status, the aged have the same rights to sexual reproductive health. The basic approach to the right of the aged to sexual and reproductive health is to adopt a positive and respectful attitude toward sexuality and sexual relationships. Regardless of sex and orientation, the aged should be able to have a satisfying and fulfilling sexual life (Health in Ageing Foundation, 2019).

In Ghana, the sexual health of the aged has received relatively little attention in research, health care, or social initiatives despite the indications that the aged are burdened with health issues. Most related surveys and policies in Ghana, such as the Demographic and Health Survey, the 2010 National Ageing Policy, the 2015 Gender Policy and the 2017 National Population Policy, among others, have not adequately considered issues of sexual health or these issues minimally represented in these documents. Also, advocacy and education on sexual health are usually targeted at the younger population. To address the requirements of the elderly in terms of sexual health and to assure their well-being, it is necessary to investigate the elements that influence their sexual health.

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The importance of studying the sexual health of the aged is a relatively emerging issue which has gained attention in the last decade. Research into ageing and sexuality has been limited due to several factors, including the assumption that the aged are not sexually active (Portellos, Lynch, & Joosten, 2023). Also, attitudinal barriers from health professionals, as well as the aged, have hindered research efforts. However, several factors make it an area of growing importance. Globally, the aged population is growing, especially in the Western world. This is largely because the "baby boomer" generation is now reaching old age. Increased life expectancy also means that individuals spend more years as "elderly" (Bloom & Luca, 2016). Therefore, it is important to ensure that the aged maintain a high quality of life for as long as possible. Sexual health is an essential aspect of overall health and well-being. As the population ages, it is crucial to support the aged. The support can be done through recognition of the issues which can impact sexual health, as well as identifying ways to maximise sexual health in the aged. To ensure quality sexual health of the aged, it is important to fully understand the impact of ageing on sexuality, as well as the factors which influence sexual health in the aged.

An evolving understanding of the constructs and dimensions of sexual health demands holistic assessment processes to capture its intrinsic benefits for the state of health. Sexual health plays a vital role in overall well-being and raising awareness of early causes of sexual dysfunction in the prevention of persistent problems among the aged (Mitchell, Lewis, Sullivan, & Fortenberry, 2021). Therefore, sexual health requires constant assessment and maintenance throughout the lifespan. Understanding how ageing affects sexual

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health will help identify "at-risk" groups and facilitate future prevention strategies or therapeutic interventions to enhance sexual health in older adults.

Based on the following, the study assesses the sexual health of the aged in selected communities in the Greater Accra Region of Ghana.

Statement of the Problem

Addressing factors affecting the sexual health of the aged helps to ensure their well-being and quality of life (Zhang et al., 2023). Evidence on the sexual health of the aged is also required to inform policy and strategic plans and to ensure effective development and implementation. Unfortunately, the sexual health of the aged has not been adequately addressed and given much attention. While governments and other stakeholders work towards promoting the health of the people, sexual well-being among older persons has remained a challenging issue and has been ignored. Overlooking the sexual health needs of the aged hinders the quality of life for all. It is, therefore, of profound importance that the sexual health of the aged is addressed, taking into consideration the contributions made by these elderly persons in the broader community. National agendas must prioritise their needs to ensure comprehensive well-being for all citizens.

According to Aboderin (2014), worldwide, the issues of the health of the aged are yet to be considered in policies, human rights mechanisms, and reports. As a result, there is no clear policy for health issues and the demands of older people's sexual health. The 2013 International Conference for Population and Development (ICPD) concluded that there are discriminations in access to health care for the aged, and efforts should be made to correct the

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imbalances that prevent the aged from receiving needed healthcare, as well as to put systems in place to ensure government accountability.

Several studies on the sexual health of the aged, such as Rebec et al. (2015); Lochlainn and Kenny (2013); Edith (2014); Syme and Cohn (2016); Agunbiade (2018); Nyanzi (2011); Malaquias et al., (2017); Lekalakala-Mokgele, (2016); Ramesh (2021); Darshan et al. (2015); Pascoal et al. (2017); and Adjei et al., (2016), suggest that a decline in sexual health in the context of ageing is due to socio-economic, biological/physiological and psychological factors. However, not every older person experience a decline in their sexual health. Also, the relationship between socio-economic, biological/physiological, and psychological factors and the sexual health of the aged is still not well understood and ascertained.

Given that most of these studies were conducted in advanced and developed countries, mostly in Europe, the socio-cultural setting of Ghana may present a different situation on the sexual health of the aged as they are mostly perceived to be asexual and not supposed to discuss, express their sexuality, or engage in sexual activity. Therefore, this study assesses the sexual health of the aged in selected communities in the Greater Accra Region of Ghana. To enhance the study, predictive factors (socio-economic, biological/physiological, and psychological) that influence the sexual health of the aged were considered in the study.

Objectives of the Study

The main objective of the study was to assess of the sexual health of the aged.

The specific objectives were to:

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1. Assess the knowledge of the aged on sexual health;
2. Examine the attitude towards the sexual health of the aged;
3. Examine dimensions of sexual health of the aged;
4. Assess the factors that influence the sexual health of the aged.

Research Questions

1. What is the level of knowledge of the aged on sexual health?
2. What are the attitudes of the aged towards sexual health?
3. What are the dimensions of sexual health for the aged?
4. What factors influence the sexual health of the aged?

Hypotheses of the Study

These research hypotheses were formulated;

H_0: There is no statistically significant association between socio-economic factors and the sexual health of the aged.

H_1: There is a statistically significant association between socio-economic factors and the sexual health of the aged.

H_0: There is no statistically significant association between biological/physiological factors and the sexual health of the aged.

H_1: There is a statistically significant association between biological/physiological factors and the sexual health of the aged and the sexual health of the aged.

H_0: There is no statistically significant association between psychological factors and the sexual health of the aged.

H_1: There is a statistically significant association between psychological factors and the sexual health of the aged and the sexual health of the aged.

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Significance of the Study

Ageing is unavoidable as getting older has its associated challenges, which affect older persons socially, culturally, economically, physiologically, and psychologically. The aged should not be excluded from societal engagements and activities because they are vital to the socio-economic advancements of any nation (Asiamah, 2017). With the emergence of COVID-19, which worsened the existing health challenges of the aged, it was difficult to get treatment for chronic illness, negatively impacting their well-being, including sexual health. In the recent past, much focus has been on the sexual reproductive health of women, particularly in the reproductive age group, adolescents, and youth. On the other hand, the sexual health of the aged has been ignored, and research, policy, and programmes have consistently failed to address the sexual health issues of the aged effectively. Following that, there are no formal studies on the sexual health of the aged, this study assesses the factors that affect the sexual health of the aged.

By identifying predictors of the sexual health of the aged, this research will provide insights into the factors that affect the sexual health of older persons in Ghana. From this study, findings showing the association between socio-cultural and economic, physiological, and psychological factors and the sexual health of the aged would deepen the current understanding of the sexual health of the aged. Health professionals will consider economic factors in addressing the sexual health of the aged.

The study's findings, particularly those related to economic factors and the sexual health of the aged, will significantly enhance the bio-psychosocial model that underpins the study's conceptual framework. By highlighting how

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economic conditions impact the sexual health of older adults, the research will provide a more comprehensive understanding of the interplay between biological, psychological, and social factors in this context.

Through this research, there will be evidence to advocate for the needed attention to the sexual health of the aged. The analysis from this study will inform future research exploring the sexual health of the aged in other regions.

Definition of Terms

This study used several demographic and public health concepts/terminologies. This section provides definitions/explanations for the concepts and terms used or conceptualised in this study.

Sex: "…the biological characteristics that define humans as female or male… *In general use in many languages, the term sex is often used to mean "sexual activity …"* (WHO, 2006a).

Sexual Health: "…a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences free of coercion, discrimination, and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected, and fulfilled..." (WHO, 2006a)

Sexuality: "…a central aspect of being human throughout life which encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed

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in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is the einfluence of biological, psychological, social, economic, political, cultural, legal, historical, religious, and spiritual factors..." (WHO, 2006a**)**

Sexual Rights: … "The fulfilment of sexual health is tied to the extent to which human rights are respected, protected and fulfilled. Sexual rights embrace certain human rights that are already recognized in international and regional human rights documents and other consensus documents and in national laws... including the rights to the highest attainable standard of health (including sexual health) and social security" (WHO, 2006a).

Organisation of the Study

The study is organised into nine chapters. Chapter One entails the background to the study, statement of the problem, research questions, objectives of the study, hypotheses of the study, significance of the study and definition of terms. Chapter Two presents contextual and empirical literature on the knowledge of the sexual health of the aged, socio-economic, biological/physiological, and psychological factors, and the sexual health of the aged.

Chapter Three comprises a review of conceptual and theoretical literature. This chapter discusses issues on healthy ageing, the disengagement theory of ageing, the activity theory of ageing, the continuity theory of ageing, the biopsychosocial model, the social norm theory, and the conceptual framework for the study.

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Chapter Four focuses on the research methods of the study. This chapter comprises the introduction, research philosophy, research design, study area, study population, sample size, sampling procedure, data collection instruments, data collection procedures, data processing and analyses, and ethical issues.

Chapter Five presents the background characteristics of the respondents, knowledge and attitude of the aged. The chapter also presents the socio-cultural and economic factors, including religion, cultural practice, marital status and the sexual health (sexual activity, sexual satisfaction and sexual dysfunction) of the aged. A discussion of the results was presented in this section. Chapter Six presents the biological/physiological factors such as age, overall health, chronic illness, number of chronic illnesses and treatment of illnesses and the sexual health of the aged. A discussion of the results was presented in this section.

In Chapter Seven, psychological factors, namely, subjective well-being, depression and living with a partner and sexual activity, sexual satisfaction, and sexual dysfunction of the aged, were analysed. Further, a discussion of the results was presented in this section. Chapter Eight presents the factors that affect the sexual health of the aged with a discussion of results.

Chapter Nine summarised the main findings, conclusions, recommendations, the study's contribution to knowledge, and areas for further research.

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CHAPTER TWO

REVIEW OF EMPIRICAL LITERATURE

Introduction

The changes in sexual desire and behaviour in an individual's life cycle are normal, especially as an individual enters his or her later years or starts to age. It is perceived that older people should be asexual. However, evidence shows that some older people remain sexually active throughout their lives (Rogers, 2016). As people age, their sexual health becomes more critical to their well-being. In recent years, there has been an increased awareness of the need to address the sexual health of older people. As a result, there have been several research studies geared towards a better understanding of the sexual health experiences of the ageing population as well as identifying factors that may contribute to their sexual activity, sexual satisfaction, and sexual dysfunction to promote the sexual well-being of the aged.

This chapter presents the empirical literature on the sexual health of the aged, specifically sexual activity, sexual satisfaction, and sexual dysfunction of the aged. The articles were reviewed in three thematic areas, including socio-cultural and economic factors, physiological factors, and psychological factors. Specifically, research findings on these factors and the sexual activity, sexual satisfaction and sexual dysfunction of the ageing population were reviewed. Also, the chapter discussed the relationship between these factors and the sexual health of the aged by synthesising and analysing existing research on the subject.

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The Concept of Ageing

With the world's population getting older, it is essential to understand the experiences and challenges of the aged. Ageing, a natural process that leads to a decline in physical, cognitive, and social functioning (Castro et al., 2022), is a universal phenomenon characterised by the gradual decline in physiological, psychological, and social functions over time (Almeida, Ribeiro, & Medeiros, 2017). This review presents several ageing elements, such as their definitions, theories, biological processes, biopsychosocial factors, and their influence on individuals and society. Ageing is not just a process that humans, animals, and fungi undergo. However, it can also refer to single cells within an organism that have ceased dividing or to the population of a species (Liochev, 2015).

In humans, ageing is the gradual accumulation of changes over time, and the process involves physical, mental, and social transformations (Ahmed, Sheng, Wasnik, Baylink, & Lau, 2017; Pralash, 1997). For example, while reaction time may slow down with age, memories and general knowledge often increase. Ageing is associated with increased risks of cancer, Alzheimer's disease, diabetes, cardiovascular disease, and mental health issues. About 150,000 people die each day across the globe, and about two-thirds die from age-related causes. According to Gilbert (2000), ageing refers to the gradual decline in the physiological functions crucial for survival and reproduction. Unlike diseases of ageing, such as cancer and heart disease, ageing characteristics affect all individuals of a species.

Ageing, a ubiquitous, intrinsic, and ongoing process, has been debated since the ancient Greeks. It is now understood that no single theory can fully

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explain all aspects of ageing. The complex nature of ageing demands integrating various theories (Viña, Borrás, & Miquel, 2007). The ageing process is also open to wide cultural and academic interpretation. However, where some see ageing as a natural and inevitable process (and results â la Segel-Karpas & Bergman 2022), others have emphasised the dynamic/multifaceted nature. Emerging definitions of successful ageing include physical health, mental function and social engagement as people age (Urtamo, Jyväkorpi & Strandberg 2019).

Ageing is a gradual and ongoing process that systematically diminishes the functionality of many organs in an individual. This decline increases vulnerability to environmental stressors and diseases and increases morbidity and mortality rates. With time, various cellular components are damaged by multiple factors, contributing to ageing.

Ageing Process

Like psychosocial factors, social ties and behaviour are as important as key drivers of ageing outcomes (Waite, 2018). Strong social ties have been shown to result not only in better cognitive function and mental health (Saeri, Cruwys, Barlow, Stronge & Sibley 2018) but also having numerous socio-economic gaps can negatively influence the welfare of older people through differences in access to healthcare and lifestyle choices. Ageing trajectories are largely determined by lifestyle factors, including diet and exercise (Moradell, Casajús, Moreno, Vicente-Rodríguez & Gómez-Cabello 2023). Shifts in family structures and caregiving dynamics create intergenerational relationship strains. Societal challenges encompass healthcare costs, pension systems, and workforce participation amid ageing populations.

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Cultural norms shape how people experience ageing, and different views, ranging from respect to stigma, impact well-being. People live longer than before because of improvements in education, technology, healthcare, food supply, and hygiene. However, longer life does not necessarily mean a better quality of life in old age. Some aged thrive by adopting healthy habits, preserving their independence, and being actively involved in their families and communities.

Ageing is a process that includes childhood and old age. It starts at conception and goes on until death. According to Chalise (2019), ageing includes three parts: (i) Growth and development in our infant years, (ii) Maturation in our teenage and young adult years, and (iii) Senescence after age 30. The human body changes in many noticeable ways with age, and a decline in bodily functions often accompanies ageing. However, a decline in function differs from a loss resulting from disease. Aging is associated with various physical changes, including diminished vision and hearing, the development of wrinkles, and a decline in organ function (Chalise, 2019). Cellular changes also occur, such as reduced cell division and altered functioning. Although ageing impacts all body systems, many organs retain functional reserves. Acknowledging the distinction between normal ageing and diseases is critical for early diagnosis and treatment. Considering diverse perspectives to address the challenges related to ageing is needed. Ageing can be grouped into three primary categories, which are biological, psychological, and social.

Chronological ageing measures a person's age in years but does not always reflect their biological, psychological, or social age. Biological ageing

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refers to the gradual decline of cells, leading to reduced organ function and a weakened immune response (Séguy, Courgeau, Caussinus, & Buchet, 2019). Psychological ageing includes changes in cognitive functions such as memory, learning, and coping skills. Social ageing is related to shifts in roles and societal expectations. Acknowledging the various aspects of ageing can help improve the understanding and support for individuals as they navigate this complex process. Functional ageing compares psychological traits with those of peers of the same age. The decline in organ function and reduced physical fitness, often due to decreased activity levels, are closely linked to ageing and cannot be easily separated (Wagner, Knaier, & Infanger, 2019). Recognising these different aspects helps to differentiate between chronological age and an individual's overall ageing experience, which influences how ageing is perceived positively or negatively.

According to Chalise (2019), chronologically, 65 years is the beginning of ageing in Western and developed countries. The aged can be classified as (a) Young old (65 to 74), (b) Middle Old Year (75 to 84), (c) Old-Old Years (85+), and (d) Centenarians (100+). In addition, older persons aged 60 and older are classified for demographic data collection and other purposes. As people age, they experience biological, psychological, and social changes. Biologically, hair turns grey, nails thicken, and skin loses elasticity (Mitina et al., 2020; Preston & Biddell, 2021; Santiago, 2020). Sensory alterations affect taste, smell, vision, and hearing. Organ systems, including the heart, lungs, musculoskeletal, gastrointestinal, and urinary tracts, experience decline. Psychological changes involve slower cognitive processing and memory recall. The aged are faced with various social challenges, including retirement,

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declining health, and losing loved ones or partners. Some of these older persons are on fixed incomes and at risk of fraud and abuse. Providing appropriate adjustments and support is essential to assist older people to manage these changes in later years.

Worldwide, the population is ageing rapidly, significantly impacting on the health of society. By 2030, one in six people will be over 60 years old and reach 1.4 billion by 2050. This demographic shift is particularly pronounced in low- and middle-income countries (WHO, 2022). Ageing results from molecular and cellular damage over the years, resulting in physical and mental decline and increased disease risk. Common health issues in older age include hearing loss, arthritis, and dementia. Several factors impact on healthy ageing, such as genetics, environments, and lifestyle such as nutrition and physical activity. Having access to good facilities, supportive communities, and environments is crucial for the health of the aged. Unfortunately, ageist beliefs and disparities still exist, hindering the chances for the aged to age healthily.

Globalisation and technological advancements further shape the experiences of older adults (WHO, 2022). The UN declared 2021-2030 the "Decade of Healthy Ageing" to foster longer and healthier lives through collaborative efforts across sectors. This initiative focuses on changing perceptions of ageing, empowering communities, enhancing healthcare, and ensuring access to quality long-term care. Adapting policies and attitudes is important to address the diverse needs of older populations worldwide.

The World Health Organization projects that the ageing population in sub-Saharan Africa will increase from 46 million in 2020 to 694 million by

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2100. Also, Ghana has shown a nearly tenfold increase in the elderly population over the past 60 years from 1960, with those aged 80 years and older indicating significant vulnerabilities (GSS, 2021). Furthermore, about 25 percent of the older population is experiencing multidimensional poverty, which is marginally less than what is observed in the total population. These observations emphasise the need for focused strategies to support the elderly in Ghana and to tackle their socio-economic, biological/physiological, and psychological challenges.

Concept of Sexual Health

The World Health Organisation emphasises the importance of sexual health for individuals and communities in their well-being, playing a major role in social and economic development (WHO, 2024). A healthy perspective on sexuality includes a respectful and positive approach to relationships, which promotes enjoyable and safe experiences without coercion, discrimination, or violence (WHO, 2022). Achieving sexual health depends on access to quality information, awareness of risks, availability of healthcare, and a supportive environment (WHO, 2024). Sexual health encompasses various issues, including sexual orientation, gender identity, relationships, and pleasure, as well as challenges like HIV, STIs, reproductive tract infections, unintended pregnancy, abortion, sexual dysfunction, sexual violence, and harmful practices such as female genital mutilation (FGM).

Defining sexual health is quite complex. This is because of the diverse cultural and individual perspectives on what constitutes a healthy sexual life (Narasimhan, Gilmore, Murillo, & Allotey, 2023). Each culture and sub-culture may have its norms and values regarding sexuality, which can greatly

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influence perceptions of sexual health. Sexual health is a comprehensive concept that involves physical, emotional, mental, and social dimensions (WHO, 2017). Any definition of sexual health should consider this diverse range of factors and recognise that what may be deemed healthy will differ in different situations.

Evolution of Sexual Health Definitions

Edwards and Coleman (2004) reviewed eight different definitions of sexual health, from the WHO's original definition in 1975 up to the one published by the World Health Organisation (WHO) in 2002. Over time, these definitions evolved to include mental health, individual responsibility, and sexual rights. Most of these definitions are similar in many aspects, however the definition of sexual health must be clear and distinct from other definitions. Cultural considerations will continue to refine the definition of sexual health. It is risky to set "norms", and also an unbiased definition of sexual health is risky because it could lead to the exclusion or labelling of individuals as unhealthy or abnormal.

World Health Organization (1975), "…sexual health is the integration of the somatic, emotional, intellectual and social aspects of sexual being, in ways that are positively enriching and enhance personality, communication and love…"

Langfeldt and Porter (1986), "…sexuality is an integral part of the personality in everyone: man, woman and child. It is a basic need and an aspect of being human that cannot be separated from other aspects of life…" Sexuality extends beyond intercourse and orgasms. It encompasses the energy

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driving love, intimacy, and sensuality, influencing our thoughts, feelings, actions, and overall mental and physical health.

Pan American Health Organisation, World Association of Sexology (1991): "…sexual health is the experience of the ongoing process of physical, psychological and social-cultural well-being related to sexuality…" Sexual health involves freely expressing sexual capabilities for personal and social well-being beyond the absence of issues. Protecting sexual rights is crucial for attaining and sustaining sexual health.

SIECUS (1995), Sexual health includes the development of sexuality and reproductive health, in addition to qualities such as the capacity to form and sustain significant interpersonal connections, respect for one's own body, the ability to engage with both genders respectfully, and the expression of affection, love, and intimacy in a manner that aligns with one's values.

Lottes (2000), **"…s**exual health is the ability of women and men to enjoy and express their sexuality and to do so free from risk of sexually transmitted diseases, unwanted pregnancy, coercion, violence and discrimination…" Sexual health involves informed, enjoyable, and safe sex based on self-esteem, positive attitudes, and mutual respect, enhancing life quality, relationships, and personal identification.

Satcher, Surgeon General's Report (2001), **"…s**exual health is inextricably bound to both physical and mental health..." Sexual health involves the interaction between physical, mental, and sexual well-being. It extends beyond reproductive years, encompassing understanding of risks, freedom from abuse, integration of sexuality into life, and reproductive choice.

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The National Strategy for Sexual Health and HIV (2001) indicates that sexual health is integral to both physical and mental well-being, forming a crucial aspect of human identity alongside fundamental rights like privacy, family, and freedom from discrimination. Essential elements involve equitable partnerships, sexual gratification, and the accessibility of information and services to mitigate unforeseen results.

Robinson et al. (2002) state, "...Sexual health is defined as an approach to sexuality founded in accurate knowledge, personal awareness, and self-acceptance, where one's behaviour, values, and emotions are congruent and integrated within a person's wider personality structure and self-definition..." Sexual health encompasses intimate communication, functionality, responsibility, and boundaries in sexual interactions. It embraces self-acceptance, diversity appreciation, and freedom from dysfunction, diseases, and assault, affirming sexuality's positive impact on overall well-being.

World Health Organisation (2002), since at least 1974, the World Health Organisation has been involved in sexual health initiatives. This engagement began with an expert committee that published a technical report titled "Education and Treatment in Human Sexuality" in 1975. In 2000, the Pan American Health Organisation (PAHO) and WHO held several expert consultations to review terminology and identify programme options, where key terminologies were developed. In a subsequent meeting organised by PAHO and the World Association for Sexual Health (WAS), several sexual health concerns were addressed concerning body integrity, sexual safety, eroticism and gender.

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According to the World Health Organisation, sexual health is a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health entails respectful, pleasurable, and safe sexual experiences, free from coercion and discrimination. Upholding sexual rights for all individuals is crucial for achieving and preserving sexual well-being.

The key conceptual components of sexual health are, among others are sexual health is about well-being, not merely the absence of disease; sexual health depends on the fulfilment of certain human rights (Mitchell, Lewis, O'Sullivan, & Fortenberr, 2021). Sexual health is important throughout a person's life, not just during reproductive years. It applies to both young and elderly individuals. Sexual health is inclusive of all sexual orientations and gender expressions. Moreover, gender norms or power dynamics considerably contribute to constructing sexual health. Sexual health plays a role in social and economic aspects (WHO, 2024, p.1). This involves a sexual positivity philosophy, publicising enjoyable and safe experiences without any threat of harm through force or discrimination. Factors affecting the sexual health of the aged may include inadequate knowledge and poor attitude towards sexual health, socio-economic, biological/physiological and psychological factors.

Knowledge and Attitude of the Aged on Sexual Health

Sexual health is vital to overall well-being, regardless of age (Uzdavines, Helmer, Spelman, Mattocks, Johnson, Chardos, Lynch and Kauth (2022). However, sexual health knowledge among older people has often been neglected (Haesler, Bauer, & Fetherstonhaugh, 2016; Hiedari, 2016; Portellos, Lynch & Joosten, 2023). Further, the sexual health of the aged is considered

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irrelevant in the context of health care. Given the increase in the aged population and longer life expectancy, sexuality issues among older people need to get more attention to ensure an appropriate type of service delivery which is respectful of a person's dignity. (UNDESA, 2017; WHO, 2022). This section provides an overview of sexuality through the ripening age, including their perception of sexual health and attitudes toward the risk of promiscuous sex.

Sexuality remains significant for many older people (Zhang, 2023), and it is influenced by physical health, emotional well-being, and social relationships (Potki, Ziaei, Faramarzi, Moosazadeh, & Shahhosseini, 2017; Rao, Tripathi, Manohar &Tandon, 2024). Despite this, older people often have inadequate knowledge of sexual health (Davis & Elder, 2020). In addition, there is insufficient sexual health education available for older persons, compounded by the stigma surrounding sexuality in later life (Bauer, Haesler, & Fetherstonhaugh, 2016; Schaller, 2020). This attitude can result in unhealthy sexual practices can result in adverse consequences, including a higher prevalence of sexually transmitted infections (STIs) among older persons (Smith, Bergeron, Goltz, Coffey & Boolani, 2020).

According to Agunbiade (2018), sexual issues are subjective, and for the aged, they shape the differing meanings and expectations for sexual activities. A widespread belief within society and among elders is that older adults are not affected by STIs. Hence, they do not access information or sexual health services (Brown & Adeagbo, 2021). Kiplagat, Mwangi and Chasela (2019) study older persons' challenges in managing commodities, including STIs and HIV and reported that stigma, myths and misconceptions

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pose major barriers to older persons' access to treatment, which affects their sexual health. Relhan, Bansal, Hegde, and Sahoo (2021) have demonstrated that even though older persons chronologically may have a higher vulnerability of being infected with sexually transmitted infections (STIs) due to intrinsic physiological limitations related to age. These include sexual practices that may be risky, differential healthcare-seeking behaviour or delayed diagnosis of infections among older people and effects on sexual health. Also, Adjei, Agyemang, Krampa, Abdul-Rahman, Ofei, Lartey and Tettey (2016) reported a high rate of HIV-1 infections among elderly patients admitted to Korle Bu Teaching Hospital (KBTH), impacting their sexual well-being.

Sexual dysfunction, which includes erectile dysfunction in men and vaginal dryness in women, is prevalent in older adults as a result of the ageing process (Fisher, 2020). Unfortunately, many older persons are unaware of available treatments and view sexual dysfunction as an inevitable consequence of ageing (Zhang, 2023). One of the major causes of sexual dysfunction in older people is insufficient sexual knowledge. Many view sexual issues as a natural part of ageing, which discourages them from seeking treatment. Inadequate essential information about sexual health often make many older adults to overlook sexual dysfunction and view it as something separate from their overall health. Some of these people are also uncomfortable discussing their sexual health issues as there is still limited knowledge, which prevents them from going to health care provider. Hence, this attitude negatively affect the sexual satisfaction of the aged, which then directly impacts the sexual well-being of the aged (Gore-Gorszewska, 2020). It is possible that older

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women, in particular, may be unaware of the sexual health effects they can suffer from the physiological changes as they age. Harder, Starkings, Fallowfield, Menon, Jacobs and Jenkins (2019) found that older women often had limited knowledge of how menopause affects their sexual health and are hesitant to discuss these issues with healthcare providers.

Societal attitudes significantly shape sexual health knowledge among older people (Peng, 2024; Stowell et al., 2023). Ageist attitudes towards the sexuality of the aged restrict sexual expression in later life and, therefore, prevent older people from discussing their sexual health concerns with healthcare providers. According to Ezhova, Savidge, Bonnett, Cassidy, Okwuokei, and Dickinson (2020), barriers that stop older people from seeking sexual health advice and treatment include cultural, societal views, beliefs, stigma, embarrassment and discrimination towards the sexual health of the aged (Nash, Willis, Tales, & Cryer, 2015). Also, Haesler, Bauer, and Fetherstonhaugh (2016) found that older people frequently experience embarrassment and fear of judgment when seeking sexual health advice. Cultural and religious beliefs also reinforce the perception that sexuality is irrelevant for older people, perpetuating ignorance and misinformation (Ezhova, Savidge, Bonnett, Cassidy, Okwuokei, Dickinson, 2020).

According to Soares and Meneghel (2021), older men emphasise sexual potency and view sexuality primarily in terms of biological satisfaction and the sexual act, while older women often see the end of sexual activity as a natural part of ageing, placing greater importance on emotional connection, affection, and companionship. This attitude reflects broader gendered differences in sexual health perceptions among older people, where men may

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prioritise physical aspects of sexuality, and women focus more on relational and emotional intimacy in later life (Fileborn, Thorpe, Hawkes, Minichiello, Pitts & Dune 2015).

Gender differences also influence knowledge of the aged on sexual health, with older men being more likely than women to seek sexual health information and services. Older men are more likely to discuss sexual dysfunction with healthcare providers, while older women are less likely to seek help for issues concerning their sexual dysfunction (Levkovich, Gewirtz-Meydan, Karkabi, Ayalon, 2019). This disparity is driven by gendered norms around sexuality and ageing, which tend to devalue women's sexuality after menopause. However, Burrell, Sharon, Bassler and Davidov (2019) reported that older women had greater knowledge of sexual health compared to older men. However, both sexes demonstrated a generally limited knowledge of sexual health.

The healthcare system further limits the aged access to sexual health information. Healthcare providers often assume that older people are no longer sexually active, leading to a lack of sexual health screenings and discussions. Older people have inadequate information on their sexual health as some healthcare professionals often feel uncomfortable discussing sexual health with older patients, which could be due to inadequate training in geriatric sexual health (Morgan, 2021). According to Malta, Temple-Smith, Bickerstaff, Bourchier, and Hocking (2020), older patients anticipate healthcare providers to initiate discussions about sexual health concerns. However, healthcare providers prefer that older patients initiate issues on their

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sexual health, leading to unaddressed concerns, missed education opportunities, emotional distress, and worsened sexual health outcomes.

Despite the growing need for sexual health education among the aged, sexual health knowledge among older adults remains under studied. Societal, stigma, cultural norms, and attitudes of the aged and the healthcare system towards the sexual health of the aged create barriers to the aged accessing sexual health information. Addressing these gaps in sexual health education among seniors will require a multi-pronged strategy, including interventions targeted at the senior population, training for healthcare providers on how to talk about sex with their older patients and normalising discussions around sexuality late in life. It is very important to find ways to address these issues so that older adult sexual life stays safe as they grow older.

Socio-Economic Factors and Dimensions of Sexual Health of the Aged

Socio-economic factors such as religion, employment, and marital status significantly impact older persons' sexual behaviour (Ekundayo, Akanni & Oyedeji, 2012). According to Dominguez and Barbagallo (2016), all stages of life are affected by sexuality, which substantially affects the social-cultural components of human health. The sexual health of the aged is affected by socio-cultural factors such as cultural norms and taboos, gender dimensions, marital status, knowledge of sexual reproductive health and attitude towards the sexuality of the aged. These factors influence the sexual behaviour of the aged and have implications on the sexual health of the aged. Also, aside from the health of the aged declining with age and gender differences, the individual economic position is a significant predictor of healthy ageing. (Lee, Peng, Lin, Loh, & Chen, 2020).

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Economic factors such as poverty and the wealth status of the aged have implications for their sexual health. For instance, poverty may result from economic vulnerability among the aged, as most are not economically active or retired.

Socio-Economic Factors and Sexual Activity of the Aged

Religion holds considerable influence over the sexual activity of older persons. Religious beliefs and doctrines have implications for the intimate relationships of the aged. For the aged not in a union, such religious integration negatively correlates with sexual activity for older women but not older men (McFarland, Uecker, & Regnerus, 2010). This association between religion and sexual activity demonstrates how much religion affects older women's sexual health more than older men. The conception of sexuality of the aged is mostly related to genitality and thought of sex, which was significant with religion (Alencar, Marques, Leal, &Vieira, 2016).

Cultural factors play a crucial role in moulding the sexual activity of the aged. As the world's population ages, there is a growing interest in successful ageing and the factors that impact healthy ageing. Across diverse societies, cultural practices, norms, taboos, and attitudes toward ageing vary greatly. These cultural beliefs influence the expression, acceptance, and expectations of the sexual lives of the aged. Understanding and examining these cultural factors is crucial in understanding the complexities and nuances of sexual activity among older people. Sexual health is a significant issue ignored or treated as taboo in older populations (Lusti-Narasimhan & Beard, 2013), and some societies are viewed as restricting the sexuality of the aged. However, sex and sexual desire are naturally understood by the aged as a

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necessary aspect of romantic partnerships for both married and unmarried. All persons have an inbuilt urge for sexual activity, which continues throughout their lives, although on the issue of sex, procreation was prominent. However, sex is frequently discussed by older men and women regarding pleasure and general well-being (Freeman & Coast, 2013).

Social factors such as cultural practice influence how individuals or society perceive the sexuality of the aged. Subsequently, these cultural practices affect the sexual health of the aged. In many societies, there is a continuation of sexual activity for elderly persons, with cultural factors determining their sexual behaviour. Rebec, Karnjuš and Ličen (2015) indicate that taboos and social pressure negatively influence the sexuality of the aged. The influence of socio-cultural elements, which affect older women's libido, also contributes to a higher decline in sexual desire among these women (Kalra et al., 2011). Societal assumptions about ageing form the basis for sexual stereotypes regarding older persons. The sexual stereotype persists in our societies because ideas embedded in culture slowly change. Older persons' sexual behaviour, sexual function within a group, and group rules and values are all influenced by society and cultural norms.

Older persons are expected to "be, or ought to be," asexual due to cultural norms that place a high value on procreation and youth. This perception makes older people believe that one is a deviant when he or she expresses his sexuality or is sexually active. Lochlainn and Kenny (2013) stated that the cultural influence in dictating the sexual life of older persons is gradually fading due to the diminishing cultural influence on the sexuality of the aged and partly due to the use of the internet, including social media. Some

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elderly persons use social media platforms to establish and improve relationships, including sexual relationships. Such activities most often are not privy to society. However, for some cultural settings, especially in some remote areas, the influence of the internet will be minimal due to limited internet access by the aged (Kearns & Whitley, 2019). Also, other cultures may view sexual engagement among the elderly as a sign of wisdom and experience (Jones & Gabb, 2016).

Gender roles and dimensions are pivotal aspects to consider when examining the sexual activity of the aged. The expression, desires, and experiences of older people in their sexual lives can be profoundly impacted by societal expectations, conventions, and power dynamics related to gender. Edith (2014) found some gender dimensions to the sexuality of the aged, where male sexual prowess is not an issue to discuss compared to women. These perceptions often make it difficult for sex to be discussed openly among older people, especially women. However, it may always be the case in some parts of the world where women can openly express and discuss their sexuality. Again, according to Edith (2014), older men perceive the sexual activeness of older women to be shameful.

Older men believe that, unlike them, older women should give up their sexuality earlier. These views often determine the sexual health status of the aged. Besides, it is acceptable for a man to be sexually active until old age, while older women are perceived as asexual (Lieberman, 2017; Li et al., 2022; Proulx, Sandra, & Mary, 2008). This notion could be due to the cessation of childbearing for older women, especially in a society that links sexual activity to procreation. Managing the sexuality of the aged needs to be discussed to

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ensure the well-being of the elderly. A reduced sexual desire in older men and women can affect relationships and their sexual health. It is even more difficult to disclose some of the challenges associated with sexuality to older men as they are more susceptible and sensitive to issues of sexuality (Chung, 2019). Age-disparate relationships are perceived as a man-thing, while older women in intimate relationships with younger men are stigmatised (Lieberman, 2017). According to studies, age-disparate relationships are perceived negatively by society, with older partners labelled as "creepy," "predatory," or even "perverted." This stigma can lead to social isolation and discrimination for the partners involved, especially older women, who are frequently judged harsher than their male counterparts (Kaufman & Taniguchi, 2018; Winter, 2019). These challenges affect the continuity of sexual activity and sexual health of the aged, especially older women.

Society discriminates against older women when expressing their sexuality, resulting in a gender disparity in sexual attitudes and behaviour. Attitudes towards the sexuality of the elderly indicate low ageing sexual stigma, although attitudes increase with age and later generations. Regardless of age, men appear more vulnerable to beliefs on sexuality (Syme & Cohn, 2016). The socio-cultural setting is changing due to technology and changing the societal structure. The changes have made the aged, especially older women, more expressive about their sexuality, primarily through the internet. However, it is still offensive in some parts of Africa because of the socio-cultural and environmental setting (Isoldi et al., 2014).

Gender dimensions among older men and women affect their sexual activity. On the initiation of sex, older women have limited control over older

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men, partly due to traditional practices and other societal values. According to Yang and Yan (2016), older Chinese people adhere to the traditional Confucian principle that women should never express interest in having sex. Hence, society places differing sexual expectations on older men and women. Kalra et al. (2011) established that sexual activity declines with an increase in age, but older men maintain their sexual activity for a more extended period. Older men believe that women should give up sex earlier, which firms up the notion that the sexuality of women is related to their ability to reproduce. When older women reach the menopausal stage, all sexual activity should cease. Older women also believe that as they age, the body experiences changes, including menopause, and sexual activity should be ruled out (Edith, 2014).

According to Agunbiade and Gilbert (2019), older women believe that, during the reproductive period, younger women feel bound by marital duty to engage in sexual activity with their spouses. However, as women age, they do not feel obligated to engage in sexual activities due to menopause and the inability to procreate. However, some older women did not think the aged were asexual, confirming their desire to engage in sexual activity.

Socio-cultural factors cause the aged, especially older men, to have multiple partners and increase the risk of the aged contracting sexually transmitted infections, such as HIV, which can impact their sexual activity. According to Agunbiade (2018), there is low use of condoms among the aged, which is influenced by the stigmatisation associated with the aged buying condoms (Agunbiade, 2018). Gender differences occur among the aged using condoms (Malaquias et al., 2017). Most older men use condoms during sexual

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intercourse than older women, possibly due to the reproductive health status of older women, the perception that condom use is for preventing pregnancy and the associated stigma. Such an attitude may cause a decline in the use of condoms for protection against STIs among older women.

Malaquias et al. (2017) identified that most of the aged do not have regular partners, implying that some are in casual relationships, which has implications for their sexual health. Inadequate knowledge of the aged on sexual issues is due to explicit and implicit sexual stigmatisation, societal myths and stereotypes. For instance, male virility and sexual prowess are valued highly in communities that practise cultural norms and taboos. When older people have several sexual partners, gender variations in sexuality are observed. Multiple sexual partners are approved and acceptable for older males than older females (Anarfi & Owusu, 2011). In a study conducted in sub-Saharan Africa, most of the older men engaged in sexual activity. Most of these men engaged in risky sexual practices such as having multiple partners and unprotected sex. HIV and other STDs are spreading in sub-Saharan Africa predominantly through unsafe sexual activity. The improper behaviour of the aged impacts their sexual activity and sexual health (Odimegwu & Mutanda, 2017).

Furthermore, Rosenberg et al. (2017) confirmed that sexual partners were more with older men than women. Women have a reduced desire for sexual activities as they age and the influence of socio-cultural practices. Therefore, there is a dimension to establishing an association between successful ageing and sexual activity regarding women. The marital status of older persons has a substantial impact on their sexual activity. Being in a

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union, separated, divorced or widowed can negatively impact their sexual lives. Understanding the challenges, opportunities, and dynamics that shape older people's intimate relationships in later life necessitates investigating the relationship between marital status and sexual activity. The aged in a union may engage more in sexual activity than those unmarried, separated, divorced or widowed (DeLamater & Sill, 2005), which could be because long-term relationships require an emotional and physical connection. Furthermore, widowed people may feel guilt or shame in sexual activity outside of marriage, especially if their spouse recently died (Karupiah, 2020).

Losing a partner is a social issue that affects the sexual activity of the aged. Most times, the urge for sex diminishes for older men and women, reducing the desire to have sex when they lose a spouse (Nyanzi, 2011). In some societies, older widows are discouraged from engaging in sexual activity (Molefi, 2021), as it is taboo for family and family-in-law, while society encourages widowers to remarry after performing the rites of mourning. According to Nyanzi (2011), while some older widows reject inheritance from their deceased brother due to cultural practice so that they will not marry their wives for fear of contracting HIV/AIDS, other older widows accept the inheritance to continue sexual activity and get the assistance of guardians. Cultural practices in some societies can encourage women to resume sexual activity, making them more susceptible to STIs, including HIV, if their partners are infected. Nyanzi (2011) emphasised the critical need to financially support older women, who are economically vulnerable and are compelled to remarry due to economic vulnerability.

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Marital status impacts the continuity of sexual activity in old age. According to Trudel et al. (2013), despite the limitations the aged face in sexual functioning, especially with some of their reproductive organs, older couples are satisfied with their non-genital sexual activities. Although the aged are perceived to reduce sexual activity in old age, marriage influences the continuity of sexual activity and subsequent improvement in sexual health (Ivenuik & Waite, 2018). Contrarily, Liu and Su (2017) showed that the effect of marital status on the sexual activity of the aged is less significant. However, a relationship exists between marriage and the aged that facilitates communication about sexual health issues with healthcare providers (Adams, 2014).

Marital quality gives married older men and women the comfort of discussing sexual issues (Ivenuik & Waite, 2018). This behaviour is essential because discomfort is a significant barrier to sexual health communication between patients, including the aged and healthcare providers, enabling healthcare providers to effectively assess the sexual health status of the aged and the general state of health (Adams, 2014). Yang and Yan (2016) also identified that living arrangements are crucial to influencing sexual activity. Being married or in a union encouraged older women to engage more in sexual activity than older men.

The economic and financial status of the aged have implications for their sexual activity. Financial security or instability can impact access to services, healthcare, and opportunities for intimacy. The economic status of the aged may influence aspects of the lives of the ageing population, including their sexual behaviour and activity. The well-being of the aged is crucial and

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includes sexual health. However, economic factors like income, economic activity and health insurance status can impact the sexual activity of the aged. Sexual activity among older persons and income are correlated. This relationship can determine the sexual health of the aged. The socioeconomic status of the aged can influence the sexuality of the aged. Lindau et al. (2007) illustrate that older people earning more income are more likely to engage in sexual activity than those with lower income levels. Malaquias et al. (2017) suggest that women's lower income levels impact their sexual activity, while men tend to engage more in sexual activity when they are economically successful (Okiria, 2014). Some older men perceive that when a man is wealthy, he can have any woman and have sexual intercourse with multiple women (Lekalakala-Mokgele, 2016). This attitude shows that older men increase their sexual partners with higher income levels.

Another factor that may impact sexual activity among older persons is employment status. A study by Erens et al. (2019) demonstrates a relationship between decreased sexual activity among older men and women and retirement. Similarly, a study by Brody et al. (2010) discovered that sexual activity was related to the job position of the aged, influencing their sexual behaviour. Boyacıoğlu et al. (2023) reported that older people who were employed are more inclined to engage in sexual activity than those who are retired or unemployed. The study also suggested that employment provides opportunities for social interaction, increasing the likelihood of sexual activity. Employment can provide a sense of purpose, offer socialisation opportunities, and financial security, which can positively impact the sexual activity of the aged. Freak-Poli (2020) states that working older persons are more sexually

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active than those unemployed. According to the study, older persons may engage in less sexual activity due to the detrimental impacts of unemployment on their self-esteem and general well-being. Unemployment can result in economic vulnerability, social disengagement, and low self-esteem, negatively affecting sexual activity.

The availability of health insurance plays a considerable role in the sexual activity of the aged. Health insurance is an important economic factor that can influence the sexual activity of the aged. According to Waite et al. (2009), the aged with health insurance have a higher rate of sexual activity than those who do not have health insurance. Further, accessing healthcare services and resources, including those related to sexual health, may improve the general health and sexual function of the aged and positively impact sexual activity. Trudel et al. (2013) reported that access to healthcare by the aged has an association with the sexual activity of the aged. The health insurance status of the aged has implications for accessing sexual health services and affects their sexual behaviour.

Socio-Economic Factors and Sexual Satisfaction of the Aged

The ageing population is gradually increasing, and sexual satisfaction and sexual health have been a growing concern. In addition, some socio-cultural and economic factors may contribute to the sexual satisfaction of the aged. Hence, this section discusses these factors and the sexual satisfaction of the aged. Religious affiliation has implications for the sexual satisfaction of the aged. Religious beliefs influence attitudes towards sexuality, moral values, and expectations within intimate relationships. Analysing the relationship between religion and sexual satisfaction among older people provides insights

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into sexual desires and religious convictions in later life. Religious behaviour strongly correlates with life satisfaction, which may include sexual satisfaction. The predictiveness of a relationship correlates with religious affiliation (Habib, Donald, & Hutchinson, 2018). However, religion is mainly unrelated to sexual frequency and satisfaction among married people who are aged.

According to Uchôa et al. (2016), religion is one of the barriers to an older person's sexuality and sexual health. Religion, among other barriers, suppresses the sexual pleasures of older persons, which makes them struggle to fit in society. People have a fundamental need for touch and sexual self-expression, but discrimination against the aged may hamper the satisfaction of expressing their sexuality. Religious beliefs and practices can also influence the sexual activity of the aged. Furthermore, many religions have codes of conduct that may discourage sexual engagement among the aged, especially outside of marriage. Religious affiliations such as Christianity and Islam promote abstinence outside of marriage, which may prevent the aged from engaging in sexual activity (Iveniuk, O'Muircheartaigh, & Cagney, Waite, 2016). According to Robinson and Heitmann (2018), moral and religious ideologies and beliefs can also impact people's attitudes about sex and affect the sexual satisfaction of the aged. According to Iveniuk, O'Muircheartaigh, and Cagney (2016), religious influence is associated with higher sexual satisfaction for older men. Faithfulness in the sexual engagement of the aged was attributed to several factors, including religious affiliation, church attendance, and intrinsic religiosity. McFarland and Uecker (2011) suggested that religion is mainly unrelated to sexual frequency and satisfaction in

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married older people. However, religious inclusion in daily life has a slight but positive relationship with sexual pleasure. Such religious inclusion has been linked to unmarried older women having had sex in the previous year but not to unmarried older men. In contrast, other religions may encourage sexual activity among the aged to strengthen marital relationships, enhance emotional and physical intimacy and promote sexual satisfaction (McFarland & Regnerus, 2011).

Cultural practice is one of the major factors that impact the sexuality of the aged. From Haesler and Fetherstonhaugh (2016), the aged lack confidence in their sexuality. Cultural norms and taboos are some of the factors identified to impact attitudes towards older people's sexuality, affecting sexual appeal and desire. A variety of factors influence older women's sexual interests and activities. The socio-cultural contexts in which older women were raised play a role in forming their sexual subjectivities. In some cultures, sex is not openly addressed, and masturbation is considered taboo and embarrassing (Fileborn et al., 2015). The sexual demands of older people, particularly older women who have ceased childbearing, have likely been suppressed by cultural practice, which continuously has sought to limit sexual behaviours to women who are procreating (Guan, 2004). According to Hashemipatast, Chattu, and Allahverdipour (2022), the aged find difficulty in expressing their sexual desires and perceive that engaging in sexual activity might be inappropriate. This attitude suppresses their sexual desires and satisfaction. Contrarily, some cultures value the sexual engagement of the aged, leading to a high level of sexual satisfaction among the aged (Ubillos, Paez, & González, 2000). Ama and Ngome (2012) indicate that older women still enjoy sex with their

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partners, which requires adequate services and information on sexual health for the aged.

Gender roles have a significant influence on the sexual satisfaction of the aged. There is an assumption that older men continue with sexual activity in later years, unlike older women, because of traditional gender norms. With the perception that they are no longer appealing, or sexually attractive, older women may experience decreased sexual desire and satisfaction (Maestripieri, Klimczuk, Traficonte, & Wilson, 2014). Positive attitudes towards sex can influence sexual satisfaction among the aged and increase sexual desire and activity, resulting in higher sexual satisfaction (Kontula, 2017). A study conducted by Nienaber, Reis, Kropp, Meyer, and Mu (2014) indicates that over a longer length of time, the enjoyment of sexual activity for both men and women remained constant, which is in contrast with the assumption that sexual activity of the aged decreased over the years. An extended period of cohabitation is because of long-term satisfaction, influencing how the aged cope with age-related physical and functional changes.

There is a relationship between marital status and older people's sexual satisfaction. Their intimate relationships and level of satisfaction can be considerably impacted by factors, including whether they are in a union or not in a union. Reviewing the link between the marital status of the aged and sexual fulfilment provides insightful information on the dynamics, obstacles, and potential sources of fulfilment in their sexual life. In the study of the association between marital satisfaction and sexual satisfaction, Brynn (2021) reported that a lack of sexual quality among older people resulted in lower marital satisfaction. Also, Stokes, Gallagher, Kanyat, Bui and Beaulieu (2020)

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established a person's marital status has a notable impact on their sexual quality of life. This relationship suggests that whether someone is married or not can affect various aspects of their sexual well-being and satisfaction.

Further, changes in marital status can either improve or worsen people's sexual lives, particularly older people's ability to enjoy their sexual lives. Older women are less likely to enjoy their sexual lives due to divorce and widowhood, indicating the challenges for older unmarried women's sexuality. Compared to older people with sexual quality, those who indicated the absence of sexual quality had reduced marital satisfaction. Thompson (2019) and Zhang, Xuehua, and Aiping (2023) found that the absence of satisfying physical contact and sex was substantially correlated with marital satisfaction. From Freitas, Aparecida, Aparecida, Pereira and Pires (2019), most of the aged who were married were more active and satisfied. Marriage allows older persons to explore their sexuality, engage with their partners, and increase affection, feelings of attachment, interaction, relationships, and mutual love. Furthermore, a prior understanding of the partner's preferences and feelings may contribute to sexual satisfaction among married older persons.

Economic factors such as income, employment, unemployment, and health insurance can impact sexual satisfaction. Sexual satisfaction is an essential aspect of the overall well-being of the aged. Sexual satisfaction of the aged positively correlates with income. According to a study by Oksanen et al. (2013), high-income levels relate to high sexual satisfaction in older men and women. Thomas et al. (2015) observed that older women who earn high levels of income are more likely to express sexual satisfaction than older women

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with low levels of income. This finding could be attributed to the aged, who earn income and have easier access to resources for sexual health, including medical treatment and sex therapy. Using sexual aids and therapies can promote sexual satisfaction among older persons who may experience age-related changes in sexual function (Fisher, Rezk, Nwefo, Masterson, & Ramasamy, 2020).

Over time, the aged have improved their ability to prevent unfavourable impacts on their sexual functioning from occurring and gained sexual satisfaction (Nienaber et al., 2014). Foong, Haron, Koris, Hamid, & Ibrahim (2021) and Moore (2011) demonstrated the connection between income and sexual pleasure among the aged. According to the study, the aged who reported higher levels of sexual satisfaction were more likely to have higher income levels. The sexual satisfaction of the aged can significantly be influenced by income and access to healthcare. The employment status of the aged can also impact sexual satisfaction among them. The employed aged show greater sexual satisfaction than those not employed (Erens et al., 2019). According to Kontula and Haavio-Mannila, (2011), unemployment is associated with decreased sexual satisfaction among older men. This finding may be due to the stress and anxiety usually associated with unemployment, negatively impacting the sexual satisfaction of the aged.

Poverty has a strong relationship with geriatric depression. Economic factors and related inequalities may influence depression among older people in lower-middle-income countries (LMICs) due to the absence of proper health systems. Economically disadvantaged older people in LMICs are at risk (Brinda et al., 2016). According to Kim and Kim (2020), self-employment

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negatively influences general health and mental health compared to wage work, which has a positive impact. However, self-employment improves the cognitive functioning of the aged (Kim & Kim, 2020). For self-employment, the aged can operate at a relaxed pace, creating less stress for them than in wage employment, where the activities of the aged are regulated, leaving little room for flexibility. The sexual health of the aged includes their mental status; therefore, from the findings, economic factors have implications for the sexual health of the aged.

Health insurance has implications for the sexual satisfaction of the aged. According to Mitra et al. (2017), older people with health insurance had higher sexual satisfaction than those without health insurance, which could be because health insurance gives the aged access to medical care, including sexual health resources such as sex therapy and medication for sexual dysfunction.

Socio-Economic Factors and Sexual Dysfunction of the Aged

Religious beliefs, affiliation, and other spiritual factors determine the sexual dysfunction of the aged. The processes of coping with age-related changes in health, functioning, and social losses of older people are supported by religion and spirituality (Dalby, 2006). The sexual dysfunction of the aged is affected by the notion that sexual activity has spiritual repercussions in various cultures (Agunbiade & Titilayo, 2012). The sexual decline in old age is considered by the aged as curable using traditional medicines. Sexual dysfunction in old age is viewed from a spiritual dimension by the aged and society, and only conventional medicine can help cure such conditions. In

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addressing the sexual health of the aged, healthcare providers may consider issues of religion and spirituality associated with an ailment.

In a study by Koening and Titus (2004), religiousness and spirituality were consistently associated with improved cognitive function, lower depression symptoms, and higher levels of social support. The self- and observer-rated health of older people who identify as neither spiritual nor religious tends to be worse, and they are also likely to have more medical comorbidities. On the other hand, religious-affiliated radio or television was linked to worse physical health and more medical comorbidity, which has implications for the sexual functioning of the aged. However, spiritual and religious interventions could enhance the subjective well-being of the aged and reduce anxiety in those undergoing treatment to improve their sexual functioning (Hedayati, Maryam, Marzieh, & Keshavarzi, 2015).

Promoting cultural norms in society can affect how the aged view their sexuality, and this may cause them to change their behaviour and attitude, which may result in sexual dysfunction. For instance, in some cultures, sex is considered taboo, especially for the aged, resulting in shame, guilt, stigmatisation and lack of communication around sexual issues. In addition, according to Fileborn, Thorpe, Hawkes, Minichiello, and Pitts (2015); Heidari (2016), rigid gender norms and expectations regarding sexual behaviour in some cultures may contribute to the aged experiencing inadequacy or nervousness regarding sexual performance. These societal expectations may have a detrimental effect on sexual function and result in sexual dysfunction.

According to Ayalon, Gewirtz-Meydan, Levkovitz, and Karkabi (2019), older men experience increased sexual difficulty as they age and are

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more adversely affected by changes associated with ageing. Both older men and women express concern about changes in their sexual function over time and that of their partner's sexual function. These changes include ejaculation and erection among older men and loss in sexual desire for both older men and women. Cultural factors significantly impact the sexual interest of the aged, affecting their sexual function or dysfunction (Atallah, 2016). According to Chirinda and Zungu (2016), older men stay sexually active longer than women, which is attributed to older women ceasing sexual activity after menopause (Kalra et al., 2011). Older men place a high value on sexual performance, while older women regard the normal decline in sexual activity with age as a natural process (Soares & Meneghel, 2021).

According to Rutagumirwa and Bailey (2018), the expectations and benefits of male sexuality are indicated by male initiation ceremonies, which act as a basis for male sexuality. Older men are concerned about changes in their sexual lives, such as an impairment in their sexual function, and they also experience emotional stress due to the decline in their sexuality and age-related physical changes. Additionally, older men's sense of masculinity is sometimes undermined by their inability to follow traditional male sexual norms.

Gender roles can also affect sexual dysfunction among the aged, especially in cultures with stereotypical perceptions of gender roles and sexual behaviour. Sexual functioning for the aged is sexual intercourse disregarding other forms of sexuality. For instance, unlike women, men are expected to be virile and potent and may feel pressure to perform sexually or maintain an erection even in later life. In contrast, for women, the pressure is focused on

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sexual desire and pleasure as determined by society (Brotto & Yule, 2017). These expectations decrease the preparedness to engage in sexual activity due to shame and guilt and can contribute to the sexual dysfunction of the aged.

Additionally, cultural beliefs that sex is only for procreation can contribute to sexual dysfunction among the aged, especially women (Nancy, 2020). Freak-Poli (2020) states that ageing is connected to traditional gender roles. However, presently, older people may be more sexually active, more capable, and less embarrassed than in previous generations.

Marital status significantly influences the sexual functioning of older persons. Whether unmarried, married, living together, separated, divorced or widowed, the availability or unavailability of a partner can impact sexual desire, arousal, and overall sexual function. The aged have issues with sexual activity and sexual functioning. After controlling for factors including marital status and a history of chronic illnesses, low self-reported quality of life of older men was found to be correlated with a lack of sexual activity, sexual unhappiness, and the existence of sexual difficulties. The only element connected to women's low self-reported quality of life was sexual issues. Being married may lessen the negative effects of sexual issues on the quality of life for men and women (Santosa et al., 2011). Relationship stress was related to sexual activity. For older men but not for older women, regular sexual activity has been linked to less relationship stress. The stress in intimate relationships was found to decrease with increased sexual engagement. However, when the significance of sex for women was considered, the impact of this relationship was diminished (Orr, Layte, & O'Leary 2019).

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Challenges in the economic situation of the aged can affect accessing sexual health services, as some studies have concluded that some of the aged are still sexually active (Ama & Ngome, 2012). Fonta et al. (2017) indicated that income negatively affects the self-reported health of the aged, including the sexual health of the aged. According to several studies (Kontula & Haavio-Mannila, 2014; Lindau et al., 2007), older persons with lower incomes had a higher prevalence of sexual problems than those with higher incomes. Similarly, older women with lower incomes had a higher prevalence of sexual dysfunction (Kontula & Haavio-Mannila, 2014). Older people with the highest income quintiles were less likely to report poor health than those in the middle and low-income quintiles. The affordability of health care services for older people is essential in reducing the burden of diseases on older people, especially in light of the rising demand for medical care.

Further, compared to those who work in the informal sector, older people who are unemployed have a higher likelihood of reporting ill health. This situation could be due to the affordability of health services as they are not in gainful employment, and finances may be lower. The sexual health of older persons significantly impacts income, a critical economic issue. Compared to older persons with lower incomes, those with better sexual health are likelier to have a higher income. The ability to access sexual health services and goods and engage in more sexual activities that support sexual health is made possible for older persons in high-wealth quintiles.

Employment status can also affect sexual dysfunction in older adults. Unemployment contributes to sexual dysfunction among the aged (Basson et al., 2004). Additionally, unemployment is a significant predictor of sexual

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dysfunction in both men and women. Among older people, financial insecurity is a potential risk to poor health. The economically vulnerable aged experience the worst health outcomes in later years. A significant public health concern is the issue of health disparities among the elderly, especially the sexual health of the aged, because of their increasing number. Hans (2021) demonstrated that health deterioration is associated with retirement. Retirement enhances people's chances of experiencing worsening health. However, for the less educated, retirement enhances the health and movement of men, who likely had a work history characterised by laborious and physically demanding employment. Setting a minimum retirement age may delay retirement, deteriorate older workers' health conditions, and raise healthcare costs.

Buffel, Missinne, and Bracke (2017) demonstrated in a study that established the association between unemployment, mental health care and medication use among older men. Mental health is crucial for both employed and unemployed older men, as the employed are less prone to depression, positively impacting healthy ageing, including sexual functioning. In places where unemployment is low, older men who are not working have more contact with physicians than in places where unemployment is high. However, in high unemployment areas, employed people are more depressed. Displaced unemployed men use fewer antidepressants and anxiolytics, improving mental health. However, non-displaced unemployed older men still have higher medication use based on their mental health. Employment offers the aged financial security, access to health insurance, and a sense of purpose and identity, all of which benefit their sexual health.

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Shangren, Zirui, and Ye (2019) discussed that among the aged, there was no variation in the prevalence of chronic diseases between income categories. Chronic diseases are known to affect the sexual health of the aged. The income inequality of chronic diseases frequency declines with age, which could be attributable to the younger population currently working and personal income reflecting their job nature and working environment, among other factors. The lack of income disparity among different age groups might be linked to the survival effect in the ageing population. This effect suggests that individuals from various income brackets have survived despite economic inequality, leading to minimal differences in prevalence across income groups. Again, major disparities in chronic disease prevalence persist into old age. Economic variables might also influence the frequency of sexually transmitted diseases (STIs) among the aged. According to a study by Ward, Disch, Levy and Schensul (2015), older persons who live in poverty have a higher risk of contracting STIs.

Age-related ailments, which include cardiovascular diseases and diabetes and associated medication, are covered by medical aids, which benefits older people (Golomski, 2018). Access to medical aid by the aged improves their overall and sexual health. Also, insurance affiliation is positively associated with healthcare usage (Blanchet et al., 2012). According to Shrestha (2021), overall inpatient utilisation increased more among older men and women when evaluating the effects of the health insurance programme for older people with low incomes on health care and usage. However, during the evaluation, an estimated more significant effect of insurance programmes was observed on the overall outpatient utilisation of

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older women. According to Fenny (2017), the socio-economic situation of the aged varies with age. The situation is more closely related to National Health Insurance Scheme registration by the aged. This relationship is stronger among the aged in lower age groups, that is, 60-69 years, than the higher age groups, which is over 70 years. However, the National Health Insurance Scheme may benefit those educated, employed and economically able to pay for their premiums, putting the vulnerable and less privileged older persons at health risk because they cannot pay their bills when they access sexual health services at the health facilities.

Older persons who are uninsured or those who have left the insurance programme can not afford premiums (Dake & van der Wielen, 2020; Kuuire, Tenkorang, Rishworth, Luginaah & Yawson 2017), which emphasises the importance of socioeconomic factors in influencing insurance status, particularly among the non-exempt group. However, traditional structures have protected and shielded older people from the general vulnerabilities of old age. The breakdown of the support function for older people reveals that older people need financial aid to cover more expensive medical costs related to chronic illness in later years. Continuous insurance coverage as a person grows older can transform the poor health state of the aged to excellent and improved health (Hadley & Waidmann, 2006).

Physiological Factors and Dimensions of Sexual Health of the Aged

Sexual functioning evolves (Ayalon et al., 2019; DeLamater, Koepsel & Johnson, 2017). Biological and physiological factors are significant factors that characterise the sexual functioning of a person (Brotto et al., 2016). Among physiological elements that affect the sexual health of older persons

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are age-related changes and differences, chronic illness, number of chronic illnesses, and ongoing treatment for illnesses. Additionally, erectile dysfunction and vaginal dryness affect the sexual health of older men and women, respectively.

Biological/Physiological Factors and Sexual Activity of the Aged

Sexual activity is essential to human life, and its significance extends to later ages. With the ageing process, physiological changes can affect the sexual activity of the aged and affect their sexual health and quality of life. Darshan et al. (2015) and Lindau et al. (2007) mentioned that sexual activity rapidly declines with an increase in an individual's age. According to Freeman and Coast (2013), endurance during sexual activity and the number of times orgasms occur during sexual intercourse indicate sexual potency and adequate strength. For the aged to obtain sexual satisfaction, a suitable amount of bodily fluid is needed to engage in sexual activity. However, as men age, their sexual prowess rapidly declines, and they cannot engage in sexual activities. Increasing age and its associated illness affect the overall health of the aged, including sexual inactivity.

According to Hinchliff, Tetley, Lee, and Nazroo (2018), for the aged, the absence of sex does not affect their relationship because some of them have intimate activities with their partners, such as kissing, hugging, and snuggling without having sexual intercourse. Such a relationship demonstrates that without sexual intercourse, the aged still participate in some form of sexual activity. Some people become less sexually active as they age, although not all the aged, especially older women, suffer this decline in sexual function (Erens et al., 2019; Menone, Fiacco, & Elhert, 2019). In contrast,

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sociodemographic characteristics such as age have less of an impact on partnered sexual activity among older men and women. It is essential to dispel older people's misconceptions about sexuality, especially among women. According to Lee, Nazroo, Connor, Blake, and Pendleton (2016), the aged have issues with their sexual health, especially those who are sexually active, and these challenges increase with age. Also, for sexually active older women, excitement, orgasm, dry vagina, and pain are typical sexual issues and for older men, decreased sexual activity.

Poor health status of the aged is associated with decreased sexual activity. Nyanzi (2011) mentioned that postmenopausal widows have a lower sexual desire for sexual activity than younger widows. Also, older men appreciate the procreative role of a woman in the reproductive period. The reason is that a woman is perceived as desirable during this period and engages more in sexual activity than in later years (Maestripieri, Klimczuk, Traficonte, & Wilson, 2014). Pascoal, Slater and Guiang (2017) showed that as patients get older, sexual discussions on health conditions with their partners occur less frequently. Older people are also reluctant to seek medical assistance for sexual issues because they believe these problems are a natural part of getting older, talking about sex is embarrassing, and having sex makes a person weaker. This perception of the aged on their sexuality has implications for the sexual health of the aged as it reduces sexual activity due to anxiety and fear.

Chronic illness can negatively affect sexual activity in older people. Increased life expectancy and the expanding ageing phenomena can lead to an increase in the burden of chronic diseases, which negatively impacts the

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general health of the aged, specifically their sexual activity (Merghati-Khoei, Pirak, Yazdkhasti, & Rezasoltani, 2016). The factors affecting the sexuality of an aged include chronic illnesses. There is a relationship between older people's sexual inactivity and shortness of breath, but not all the aged struggle with their sexuality. Breathlessness is a medical condition which impacts the sexual health of the aged. In addition, the occurrence and duration of sexual inactivity among the aged may be influenced by shortness of breath (Ekström et al., 2018). Physical well-being is essential to enhance the sexual health of the aged.

Older persons engage in risky sexual behaviour, which can put them at risk of contracting STIs such as HIV, impacting their sexual health. In the 1980s, a human immunodeficiency virus (HIV) emerged. Since then, HIV has changed from a fatal disease to a controllable chronic condition (McDonald, Slavin, Pitts, & Elliott, 2016; Webel et al., 2020). While younger persons continue to be the focus of sexual health policies, the incidence of STIs among the aged is increasing due to risky sexual behaviour coupled with low condom usage and intergenerational intercourse (Adjei et al., 2016; Houle et al., 2017). This attitude of the aged can cause illness and reduce the urge for sexual inactivity (Bourchier, Malta, Temple-Smith, & Hocking, 2020; Gott, Hinchliff, & Galena, 2004).

Older women who have passed menopausal age find it unnecessary to use condoms during sexual intercourse, making them more susceptible to STIs (Rosenberg et al., 2017). When the vaginal walls become overly thin, older women may be more likely to have STIs such as HIV because of bruises during sexual intercourse and may have to stop having sex ultimately (Avis et

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al., 2009). The number and severity of chronic conditions diagnosed affect the sexual activity of the aged. Older women may have less ability to engage in sexual activity due to decreasing blood supply to the vaginal area (Kontula & Uutela, 2015). According to Siegel et al. (2021) and Zhong, Jayanty, Wroblewski, & McClintock (2018), sensory alterations are common in older persons. The sensory alterations can cause a decline in feelings and pleasure experienced during sexual activity.

Chronic illness treatments can also disrupt the cycle of the sexual response. For instance, antihypertensive medication negatively impacts arousal during sexual activity. Psychotropic substances obstruct orgasm and interfere with desire and arousal. Arousal and orgasm can be affected by surgical procedures like transurethral prostatectomy by upsetting delicate sympathetic and parasympathetic circuits. Physical restrictions, drug side effects, psychological problems, and other chronic conditions can all impact the sexual activity of the aged. The management of chronic conditions may impact sexual function in older persons. For instance, drugs and medications used to treat chronic diseases like depression and hypertension can have sexual side effects that affect sexual activity and sexual function (Alpert, 2016). Reduced probabilities of sexual activity were independently related to the use of antidepressants and β-blocker (Hyde et al., 2010).

Biological/Physiological Factors and Sexual Satisfaction of the Aged

Physiological changes brought on by ageing have implications for the sexual satisfaction of the aged. Due to physiological changes, sexual desire, frequency, and satisfaction may decline with age (Basson, 2006). Individual sexual satisfaction may deteriorate due to ageing. Also, the sexual desire and

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sexual satisfaction of the aged decrease with age. Sexual desire directly impacts sexual satisfaction (Chao et al., 2011). According to Fernandez-Ballesteros et al. (2012), some physiological changes associated with ageing include decreasing hormone levels, changes in muscle strength, decreased cardiovascular function, and diminished sensory function. Having healthy, safe, and secure sexual experiences, as well as having a good, thoughtful attitude towards sexuality and sexual relations, are all aspects of the sexual health of an older person. Additionally, age significantly influences the sexual pleasure of the aged, and age-related changes in sexual function were linked to decreased levels of sexual satisfaction (Mernone, Fiacco, & Ehlert, 2019).

Good health status is vital to the sexual satisfaction of the aged. Sexual health considers a person's overall health (Guevara & Jurado, 2017), although there are differences in the mode, frequency, and intensity of expression. In older persons, sexual satisfaction significantly predicts their health status and low sexual satisfaction correlates with poor self-rated health among the aged (Smith et al., 2019). However, some variables may make it challenging for older persons to express themselves sexually. Also, older men and women have less sexual satisfaction when experiencing poor physical health (Liu et al., 2014).

More severe chronic diseases among the aged result in lower levels of sexual satisfaction (Shen, 2017). According to Smith et al. (2014), older people who have chronic diseases like diabetes and arthritis are more likely to have sexual unhappiness. Menopause and erectile dysfunction are issues impacting the sexual stability of the aged. However, a relationship exists between age and the sexual quality of life (SQoL) of older people. Also,

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growing old might be linked to developing abilities that can hasten the ageing process effects on declining SQL, especially when there is a happy relationship (Forbes, Eaton, & Krueger, 2017). According to Fonta, Nonvignon, Aikins, Nwosu, and Aryeetey (2017), older people's self-reported health is influenced by their age, and they are more likely to report poor health, which has an impact on their sexual satisfaction. Although the aged frequently endure reduced mobility and have other physical and health issues, the need for assistance with daily activities worsens as they age. Furthermore, limited comprehensive knowledge of diseases and strategies for disease prevention may also contribute to the poor health of the aged. Older women are worried about their sexual health, and the concerns about sexual desires are more significant than the frequency of sexual activities. For men, it was more with the level of sexual desire than erectile difficulties (Lee, Nazroo, O'Connor, Blake, & Pendleton, 2016). Olatayo, Kubwa, and Adekunle (2015) showed that older men are more willing than women to discuss their sexual issues with their partners and doctors.

A major factor responsible for sexual inactivity among older men is medical ailments, and for women, dyspareunia. Although some aged people are overwhelmed by their medical conditions, they enjoy sexual activity. Furthermore, physiological changes due to ageing, such as early menopause, may increase the occurrence of sexual disorders among older women (Darshan et al., 2015). Chronic medical conditions typically cause age-related changes in sexual desire and the cycle of sexual responses. For instance, a diabetes diagnosis and lifestyle change might negatively affect an older person's sexual

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self-confidence and body image. Additionally, neurologic conditions may impact orgasm, arousal, and desire (Nusbaum & Hamilton, 2003).

Ongoing treatment of illness, including chronic conditions, may impact the sexual satisfaction of the aged. Diabetes drugs are associated with reduced levels of sexual satisfaction in older persons diagnosed with diabetes (Copeland, et al., 2012). Again, older women who used hormone therapy reported less sexual satisfaction (Doffman et al., 2019). Furthermore, older persons may experience changes in their sexual function due to medical procedures such as surgery, chemotherapy, and radiation therapy. The degree to which these medical issues are treated and managed can significantly impact older persons' sexual engagement. Additionally, medical procedures, such as radiation therapy for prostate cancer, might result in erectile dysfunction and decreased sexual pleasure (Dickstein et al., 2023). Depression can cause the aged to lose interest in sexual activities once enjoyed, and some antidepressants can also affect the sex drive or ability to have an orgasm (Din, Akahbar, & Ibrahim, 2019).

Biological/Physiological Factors and Sexual Dysfunction of the Aged

The aged frequently experience sexual dysfunction caused by physiological changes. These variables include age, health status, chronic illness, the number of chronic illnesses, and ongoing treatment illnesses.

Ageing influences the sexual activity of older people. According to Fugl-Meyer et al. (2003), sexual functioning may worsen with age and related illness. However, most older persons continue to have fulfilled and active sexual lives in later years (Lindau et al., 2007). Variations in sexual function brought on by ageing do not always result in decreased sexual desire or

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activity. Multiple ageing-related physiological alterations in the aged affect their sexual function. Furthermore, sexual dysfunction related to the sexual response cycle may be prevalent in older people, affecting both men and women (Hategan, Bourgeois, Cheng, & Young, 2018). Age-related changes in sexual desire, arousal, lubrication, orgasm, discomfort, and contentment, as well as a loss in sexual function and the menopausal transition, are evidence of ageing.

According to Kirakoya et al. (2019), older people have a decrease in libido, which could be attributed to an age-related decrease in androgen and a demonstrated strong correlation between the age of older men and the quality of erection. For older men, sexual activity gives pleasure and ensures the continuity of intimacy with their partners. However, older men have challenges with sexual activity, such as erectile dysfunction. Older women experience more issues with sexual functioning than older men during sexual activity (Fischer, Træen, & Hald, 2018; Smith et al., 2019). However, no conclusion has been reached regarding the parts of sexual functioning that alter as people age (Fischer et al., 2018). Some older people assume that sex is only important to young people. Hence it becomes less important as one becomes older and sexual capacity and sexual vitality deteriorate.

Older men are pressured to perform sexually as their sexual function declines because they are unsure of their sexual competence (Zhang, Yang, Li & Wang, 2023). Poorer health is linked with decreased sexual activity and worsened issues with the sexual functioning of the aged, particularly among men (Lindau et al., 2007). According to NeJhaddadgar, Ziapour, Mardi, and Zare (2020), sexual function in older women is influenced by factors like their

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overall health. Despite this, it is noteworthy that even though some older women have been engaging in sexual activity recently, they still experience sexual dysfunction. Ill health among the aged affects activity and sexual functioning, limiting sexual expression. In less close relationships, ill health is an excuse to stop sex or avoid attempts to resolve sexual difficulties (Erens et al., 2019). Cho and Duffy (2019) established that the sexual function of older men may be impacted by frequent sleep disorders, which are perceived to contribute to their sexual dysfunction. Chronic sleep deprivation has been connected to a variety of health problems, including type two diabetes, metabolic syndrome, obesity, depression, hypertension, and heart disease, which can impair sexual function in older people. Reduced sexual function is frequently related to worse self-rated health, although older men are more likely to experience these problems than older women. Older men are more preoccupied with their sexual functions and activities and express less discontentment with ageing, while older women appear to be less unsatisfied with their sex lives than older men.

Chronic illness plays a substantial role in the sexual dysfunction of the aged. Sexual function can be affected by various chronic medical illnesses, including diabetes, cardiovascular disease, and neurological problems (Polland, Zeymo, & Iglesia, 2019). In addition, various medical conditions like obesity, arthritis, and chronic pain can also significantly worsen the sexual dysfunction of older people. Most postmenopausal women have sexual dysfunction, which is associated with increasing age and duration of menopause (Jain, Mehra, Goel, & Chavan, 2019). The physiological changes in women determine how they function sexually (Agunbiade & Gilbert, 2019).

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Older women find sexual activity less desirable than men, which is attributed to biological and physical changes in the body as they age. However, some older women tend not to acknowledge that they are sexually dysfunctional, possibly due to the non-acceptance of biological changes as they age.

According to Lee, Nazroo, Connor, Blake, and Pendleton (2016), self-reported chronic conditions such as diabetes, hypertension, cardiovascular diseases, and poor or fair self-rated health cause erectile dysfunction among older men. However, it was undetermined whether psychological and comorbid issues frequently present with chronic illnesses and the treatments cause erectile dysfunction among older men. The most common sexual illnesses in older people include erectile dysfunction and delayed ejaculation, decreased sexual interest, arousal disorders, female orgasmic disorders, endopelvic pain, and penetration symptoms in older women (Dominguez & Barbagallo, 2016). For some older men experiencing erectile dysfunction, the urge for intimacy has declined due to the embarrassing nature of their situation. According to Shen (2019), older persons with many chronic diseases are more likely to have sexual dysfunction than those with fewer or no chronic conditions. Further, sexual function may impact chronic illnesses directly, indirectly, or both, depending on the physical and hormonal changes.

Erectile dysfunction experienced in older men is attributed to ageing and could lead to severe ailments like heart disease (Olatayo, Kubwa, & Adekunle, 2015). Erectile dysfunction is a medical issue that affects the sexual health of older men. Erectile dysfunction could be due to a medical condition among older men that has gone undetected, however, early and regular visits to the hospital or health facility can help to manage it and remove any

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misconception associated with chronic illness. Darshan et al. (2015) indicated that sexual health issues and chronic illness influence the sexuality of the aged. Some of these issues go beyond socio-cultural factors, however, there is no detailed linkage or relationship between chronic illness and the sexuality of the aged. According to Darshan et al. (2015) and Pascoal, Slater, and Guiang (2017), challenges with sexual functioning are frequent among older men and women. The most prevalent sexual dysfunction in older women is arousal disorder and vaginal atrophy resulting from menopause, causing vaginal dryness and painful intercourse, but for older men is erectile dysfunction. This finding suggests that while psychology is crucial for women's sexual functioning, physiology plays a significant role in older men.

Evidence shows that the aged who are HIV-positive are sexually active and continue to engage in unhealthy sexual activities, just like young people (Karpiak & Lunievicz, 2017). The sexual functioning of the aged infected with HIV can be compromised when the aged and health providers do not manage the disease well. The aged may be unable to do some activities because of ageing and HIV. Adjei et al. (2016) showed that the age of older people has no bearing on the risk of obtaining HIV, but the risk of infection tends to increase with an increase in the age of older persons.

Older men's sexual frequency negatively correlated with increased chronic illness burden. Also, a greater likelihood of lubrication issues for women and orgasm difficulties for men is associated with chronic disease and in most cases, these diseases have serious health implications. This variation in sexual issues among the aged highlights the gender inequalities in how diseases affect older people's sexual lives (Shen, 2019). Chronic illnesses and

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comorbidity burdens affect the sexual functioning of the aged. In addition, primary testicular dysfunction and its related conditions are often present in the aged with a high chronic disease burden (Rastrelli, Corona and Maggi, 2020). Older women with two or more chronic diseases diagnosed have lower levels of sexual desire and satisfaction, and there is a higher likelihood of reporting poor sexual desire when there are multiple medical conditions.

According to Lotti and Maggi (2018), sperm abnormalities and sexual dysfunction in older men can result from ongoing treatment and medication used to manage general health issues. Hinchliff, Tetley, Lee, and Nazroo (2018) indicated that medications like hypertensive drugs prescribed for the aged could have sexual side effects and can result in erectile dysfunction among older men. Further, given their sensitivity to the side effects of the medications, it is found that older persons have a higher prevalence of drug-related sexual disorders. Also, medications and treatments for chronic conditions may exacerbate older people's sexual dysfunction. Further, antidepressants and antihypertensive medicines, among others, can negatively influence the sexual dysfunction of the aged. Medical procedures such as radiation therapy for prostate cancer may exacerbate erectile dysfunction and other sexual problems (Dickstein et al., 2023). There is limited knowledge of how routine medical care and chronic disorders physiologically affect the sexual function of older women.

Psychological Factors and Dimensions of Sexual Health of the Aged

Ageing is a psychological transition that typically affects the sexual health of older persons (Maciel & Laganà, 2014). Therefore, psychological issues such as poor subjective well-being, depression, and unpartnered

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relationships are barriers to the sexual health of the aged. In past years, managing the sexual health of individuals, including the aged was focused on only the physiological responses of patients and issues were analysed and addressed medically. However, some psychological factors have shown associations with all aspects of the sexuality of individuals, while others operated in more specific ways. Therefore, the health care approach to diagnosing issues on sexual health was functional, without considering the psychological factors that influence the sexual health of individuals, including the aged.

Psychological Factors and the Sexual Activity of the Aged

Sexual activity is an essential component of human life, and it can significantly affect an individual's overall well-being, including subjective well-being. Subjective well-being, often related to happiness or life satisfaction, is a psychological element that influences older persons' sexual activity. Subjective well-being can impact sexual activity by improving an individual's mood, self-esteem, and overall outlook. A study of older persons discovered that those who reported having engaged in sexual activity were more likely to have higher levels of subjective well-being (Jongenelis, Pot, Beekman, Kluiter, 2004; Lukaschek, Vanajan, Hamimatunnisa, Weiland, & Ladwig, 2017). In comparison with those who did not engage in sexual activity, older people who reported recent sexual activity express much better levels of life satisfaction. Older men and women had different preferences for how sexual activity should be expressed. Older men who are sexually active, experience more sexual dysfunction than older women. These older men

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worried about their sexual problems and lower levels of life satisfaction (Smith et al., 2019).

Depression can significantly impact the sexual activity of older people. Low mood, loss of interest, and tiredness can all interfere with the sexual activity of the aged. According to Lindau et al. (2007), less sexual activity among the aged is linked to depressive symptoms. Sexual activity in older persons may impact depression among the aged, a prevalent mental health problem. Older men are more sexually active than women, however, older women have higher levels of sexual satisfaction than men. Again, for older women, ageing is associated with lower sexual engagement, while older men are less likely to engage in sexual activity due to illnesses such as depression.

Regarding sexual satisfaction, depression remained a major predictor of poorer sexual satisfaction in older men (Lay, Duarte, & Vilela Borges, 2022). Depression can affect the sexual activity of the aged by reducing sexual desire, making it challenging to get or keep an erection and orgasm. Observations show that there are age-related declines in sexual activity of the aged among older people. Lee, Nazroo, O'Connor, Blake, and Pendleton (2016) demonstrated that sexually active men report higher degrees of sexual dissatisfaction and are concerned and stressed with their sexual health, unlike older women. Alam and Fadila (2016) indicated that for some older people, factors such as the fear of death and ill health affect their sexual activity, and subsequently affect their sexual health. Some of the aged avoid sexual activities altogether as they believe it is risky for their health. However, despite this perception, some of the aged engage in sexual activity and are satisfied with their sex lives (Wang et al., 2015).

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Living with a partner strongly predicts sexual activity among the aged. The aged who live together with their spouse are more likely to engage in sexual activity than those living alone (Freak-Poli, 2020). Also, older people who are living together or in a union have a higher likelihood of engaging in sexual activity than those who are not in a union (Lindau et al., 2007). The emotional support, physical love, and possibilities for sexual expression that come with living with a partner might boost the sexual activity of the aged. Fischer, Træen, and Hald (2018) highlighted that positive attitudes toward sexual changes associated with ageing, previous sexual activity, and relationship satisfaction were crucial factors influencing partnered sexual engagement among older individuals. According to Kolodziejczak et al. (2019), older people who are very lonely also report less sexual activity and intimacy. However, ill health might influence the availability of a sexual partner (Erens et al., 2019). Freak-Poli et al. (2017) state that sexuality is a crucial feature of active ageing. Living with a partner has been linked to an increased likelihood of sexual activity among the aged. Most partnered older persons engage in sexual activity. However, one of the major barriers to being sexually active at an older age is the loss or absence of a partner, which mostly affects older women than men. This difference in sexual activity is attributed to higher testosterone levels linked to an increased likelihood of engaging in sexual behaviour by older men (Hyde et al., 2010). In contrast, Lee, Nazroo, Connor, Blake and Pendleton (2016) reported that engaging in sexual activity by older people, especially men, is independent of whether they are a union or not.

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Older people living together/in consensual partnerships reported more sexual activity than married people. Older people who live together and in consensual unions generally have the highest sexual frequency and the lowest incidence of chronic diseases. This finding indicates that sexual behaviour has a correlation with later-life relationships and that sexual activity patterns may vary depending on the type of relationship (Sevikova, Gottfried, Blinka, 2021). Widowhood is reported to be the main cause of sexual inactivity among older women (Santos, Santos & Cendoroglo, 2015).

Psychological Factors and Sexual Satisfaction of the Aged

Age-related sexual satisfaction is influenced by a person's overall happiness and life satisfaction or subjective well-being. The aged with higher levels of subjective well-being reported higher levels of sexual satisfaction (Lee et al., 2019). Similarly, Sanchez-Fuentes et al. (2018) indicated that among older people, sexual satisfaction is strongly tied to self-esteem. In addition, higher levels of subjective well-being are associated with higher levels of sexual pleasure in both men and women. According to Fisher et al. (2016), high sexual satisfaction in the aged is due to higher self-esteem. Older people's sexual activity positively correlates with both sexual life satisfaction and sexual activity. The frequency of the activities of the aged did not bother them as they engaged in enjoyable sexual behaviour, indicating their adaptation and health concerns about the ageing process (Skałacka & Katarzyna, 2019). In both older men and women, there is a link between sexual satisfaction and subjective well-being. Sexual satisfaction is a life domain associated with life satisfaction in older men and women. As a result,

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maintaining or improving sexual satisfaction may impact successful ageing (Buczak, Koing, Hajek, 2019).

Depression can cause the aged to lose interest in sexual activities once enjoyed. Older persons who are depressed are less likely to experience sexual satisfaction than those without depression (Din, Akahbar, Ibrahim, 2019). Older men with good subjective well-being had higher sexual satisfaction than women (Van Damme-Ostapowicz, 2021). Additionally, older people with better self-esteem indicated higher levels of sexual satisfaction (Carvalho et al., 2020). Body image issues significantly predict the level of sexual satisfaction in older persons. According to Thomas, Hamm, Borrero, Hess, and Thurston (2019) and Schaller, Ingela, and Træen (2023), older women who felt more confident about their bodies experienced higher sexual satisfaction. Similar findings by Markowitz et al. (2018) in examining older men reported that those with a positive perception of their bodies report higher levels of sexual satisfaction. According to Pascoal, Slater, and Guiang (2017), psychological issues concerning mental illness and anxiety regarding sexual performance affect sexual satisfaction levels in ageing persons. However, when both partners have sexual difficulties, engaging in sexual activity does not become an issue. The improvement of a person's mood, sense of self, and view on life can have an impact on sexual satisfaction. Subjective well-being and health are inextricably linked, and the relationship may become essential as people age. However, the presence of chronic illness and treatment for life-threatening illnesses increases with age. As a preventive factor for health, subjective well-being may lower the risk of physical sickness and prolong the life of older people (Steptoe, Deaton & Stone, 2015).

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Older men and women with infrequent/no sexual activity or older men and women, who engage in sexual activity but have issues, have frequently lower subjective well-being than those who have sexual activity with no issues. While desire and frequency of partnered activities were shown to be more crucial determinants in women's subjective well-being, sexual function difficulties were found to be more strongly related to lower subjective well-being in older men. Older persons exhibiting higher sexual desire, engaging more frequently in sexual activities with their partners, and experiencing fewer functional difficulties tended to achieve higher scores on measures of subjective well-being. Aside from being content with one's sexual life, excellent sexual health and strong interpersonal relationships benefit the quality of life and subjective well-being of an individual (Lee, Vanhoutte, Nazroo, & Pendleton, 2016).

Depressive symptoms experienced by the aged can result in decreased levels of sexual satisfaction for both older men and women (Jongenelis et al., 2018; Kleinstäuber, 2017). Depressive symptoms, rather than physical function, worry or stress, or ageing, may be related to poorer sexual health outcomes in the aged. Successful treatment of depression, especially at subsyndromal levels, may improve the sexual health of the aged (Wang et al., 2015). In older people, there is a connection between sexual health and mental health status, particularly adverse effects and depressive symptoms. However, according to Kleinstäuber (2017), positive psychological well-being may explain sexual activity among the aged rather than the absence of depressive symptoms.

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Sexual well-being can be impacted by physical and mental health issues, which can also reduce sexual desire, make it difficult to maintain a sexual position and heighten anxiety (Bouman, as cited in Hinchliff, Tetley, Lee & Nazroo, 2018). Din, Akhabar, and Rahimah (2019) demonstrated the occurrence of depression among older people, and most were not satisfied with their sexual lives.

The availability of a partner affects the sexual health of the aged (Thomas, Hess, & Thurston (2015). Older persons, especially older women, may remain sexually active if partners are available. Relationship happiness and sexual satisfaction of the aged are positively correlated. According to Fischer, Štulhofer, Carvalheira, and Træen (2020), older men and women who express higher levels of relationship satisfaction also express more significant levels of sexual satisfaction. McMahon et al. (2019) reported that the aged in committed relationships have higher levels of sexual satisfaction than those who were alone. Older people are more concerned with enjoying sexual activities and the frequency of engaging in intimate behaviours, thus reflecting their adaptation to the ageing process and potential sexual health difficulties (Gillespie, 2017). Interpersonal factors, including issues with sexual activity, can affect the sexual frequency and sexual satisfaction of the aged, and can subsequently influence their sexual life. Fischer et al. (2018) reported that a decline in the desire for sexual activity may affect the sexual health of the aged and this decline could be due to psychological factors, which include arguments with a partner over initiating sex and feeling forced to have sex. For the aged, understanding among partners and a good sexual relationship can positively influence the sexual satisfaction of older people.

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Further, Skałacka and Gerymski (2019) showed that an older person's sexual activity favourably correlated with both sexual and overall life satisfaction. However, various types of intimacy have various effects on contentment. Improving the sexual health of the aged has implications for life satisfaction. Furthermore, among the elderly who are not in a relationship, higher life satisfaction was connected with increased physical tenderness and a lower prevalence of sexual conduct (Freak-Poli et al., 2017). The various hormones released during orgasm and sexual activity were attributed to the association between life satisfaction and sexual behaviour. The quality or absence of sexual life can impact older people's mental health. Also, negative psychological issues are reported to have a causal relationship with a lack of or diminished sexual life (Zhang, Xuehua, & Aiping, 2023)

Psychological Factors and Sexual Dysfunction of the Aged

The sexual functioning of the aged can be influenced by psychological factors such as subjective well-being, depression, and cohabitation.

In older persons, subjective well-being positively correlates with sexual functioning. Older persons who feel better about their subjective well-being have better sexual function (Jackson, 2019; Laumann et al., 2005). Also, the aged and their partners experience sexual difficulty. However, for some older persons, it does not negatively affect their lives, especially when experiencing sexual difficulties (Hinchliff et al., 2018). Sexual difficulty could affect the well-being of the aged and make them frustrated and depressed, resulting in discontinuity from previous active sexual life to a decrease in regular sexual activity or cessation of sexual activity. This transition is

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difficult for the aged to handle, especially when the aged want to be sexually active and view sex as crucial to intimate relationships.

Decreased sexual function in the aged, especially women, is not only associated with ageing but also with illness and biological changes such as menopause, stress, tiredness, mental health, desires for a sexual partner, and sexual activity (Yazdanpanahi, Nikkholgh, Akbarzadeh, & Pourahmad, 2018). For instance, during menopause, women may be more sensitive to psychological pressures, especially anxiety and depression. Also, there is a relationship between these psychological pressures, such as depression and sexual dysfunction in postmenopausal women. Sexual function declines with an increase in anxiety, depression, and stress. Depression among the aged relates to issues with lubrication, inability to get or keep an erection, and poor sexual desire (Bae & Park, 2015; Colson et al., 2016). Furthermore, depression has a higher impact on the prediction of sexual dysfunction and the mental health of older women, influencing their sexual function.

According to Jerez-Roig et al. (2016), depressive symptoms are common in older people with functional limitations and arterial hypertension. The most prevalent chronic condition linked to depression is arterial hypertension. Mismanagement of arterial hypertension can result in functional impairment and the sexual function of the aged. Mental illness is strongly linked with sexual functioning (Lack & Aziz, 2020; Lu et al., 2020). Older people, especially older men with sexual dysfunction, are more likely to report depression symptoms.

Older people's sexual satisfaction was inversely correlated with depressive symptoms and how frequently they engaged in sexual activity.

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Being single, heart illness, and erectile dysfunction were all positively correlated with depressive symptoms. Further, older men's erectile dysfunction and decreased sexual activity are a result of the inability to have a healthy sexual life (Nicolosi, Moreira, Villa, & Glasser, 2004). Depression and sexual dysfunction are common among older women. The sexual function score of women's vaginal slickness, orgasm, pain, overall sexual dysfunction, and sadness were found to have a significant negative relationship. Depression worsens the sexual function of older women experiencing menopause and impairs sexual performance (Yangin, Sozer, Sengun, & Kukulu, 2008).

Sexual functioning is a complicated procedure influenced by various psychosocial factors, including family and sexual partners, and it is dependent on the neurologic, vascular, and endocrine systems (Nusbaum & Hamilton, 2003). According to Fischer, Træen, and Hald (2018), age-related sexual attitudes and the partner's sexual function significantly impact partnered sexual activity. Additionally, there is a connection between older people's sexual activity and favourable attitudes about sexual changes due to ageing. Freak-Poli (2020) states that partner availability is likely to be a more influential element in sexual conduct, however, ageing contributes to a decrease in partner availability. The current generations of older people may be more capable, less ashamed of their sexual appetites, and participate in more sexual activities than previous generations.

The literature review shows that socio-economic, biological/physiological, and psychological factors can influence the sexual health of the aged. These factors differ in cultural settings and societies. Although generally, the aged are perceived not to engage in sexual activities

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across cultures, this is relatively liberal in some developed countries. Socio-economic, physiological, and psychological factors impacting the sexual health of older persons, several gaps emerge, particularly concerning the Ghanaian context and economic influence on the sexual health of the aged. Firstly, there is a scarcity of research specifically examining the socio-cultural issues and norms within Ghana that impact the attitudes towards sexuality of the aged. Understanding how cultural beliefs and societal expectations intersect with sexual health among the aged is crucial for tailored interventions.

Secondly, while physiological and psychological factors have been extensively explored globally, limited research contextualises these factors within the Ghanaian population. Factors such as the prevalence of chronic diseases, treatment undergoing, and subjective well-being may uniquely influence the sexual health outcomes of elderly Ghanaians. Moreover, economic factors remain understudied in relation to the sexual health of the aged in Ghana. Economic stability, poverty levels, and access to resources likely impact sexual activity, satisfaction, and dysfunction among the aged. Exploring how economic disparities intersect with other socio-cultural and physiological factors could provide valuable insights for targeted interventions and policy development aimed at improving sexual health outcomes among the aged population in Ghana. Closing these gaps in the literature is essential for developing comprehensive strategies to address the sexual health needs of the aged in Ghana.

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Chapter Summary

Sexuality is a continuing human concern, regardless of a person's age. The review discusses sociocultural practices and behaviour and the sexual health of the aged, with variations seen among older men and women. Further, economic vulnerability influences the sexual health of the aged, which includes sexual activity, sexual satisfaction and sexual functioning. Most of the aged are retired, not working, or earning a regular income. Hence it is difficult to access sexual health services to enhance sexual health outcomes. Even though physiological changes affect the sexual health of the aged, they are still interested in sexual activity, which enhances their sexual functioning. Further, sexual dysfunction, especially erectile dysfunction among older men and menopause among older women, is often seen as a normal part of ageing. Psychologically, the aged are sexually satisfied with improved well, partnered relationships and mental well-being, which offer the aged a sense of belonging.

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CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORKS

Introduction

The theoretical framework provides a theoretical perspective on the sexual health of the aged (Grant & Osanloo, 2014), while the conceptual framework describes the key concepts and relationships that shape the sexual health of the aged (Varpio, Paradis, Uijtdehaage, & Young, 2020). The theoretical framework describes the theoretical concepts, models, and theories that guide the three psychosocial theories of ageing (disengagement, activity, and continuity theories of ageing), social norm theory, and the biopsychosocial model, and how they relate to the research problem. The conceptual framework offers a broader perspective on the socio-cultural, economic, physiological, psychological, and sexual health of the aged, including identifying the key variables, concepts, and assumptions that shape the study. The theories reviewed include the Disengagement Theory of Ageing, Activity Theory of Ageing, Continuity Theory of Ageing, Social Norm Theory and the Biopsychosocial Model.

Disengagement Theory of Aging

In the book "Growing Old," Cumming and Henry developed the Disengagement Theory of Ageing in 1961. The notion contends that elderly persons' withdrawal from society is common (Touhy, Jett, Boscart, & McCleary, 2011), and gerontology has historically embraced this viewpoint. The theory is one of three major psychosocial theories describing individuals' ageing. According to the Disengagement Theory of Ageing, ageing is an inevitable reciprocal withdrawal and detachment that results in less

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engagement between the elderly and others in the social system to which they belong (Cumming & Henry 1961). According to disengagement theory, it is normal for older people to isolate themselves from social interactions and close relationships as they age.

Cumming and Henry (1961) provided the nine assumptions underlying the "disengagement" process (Cumming & Henry, 1961): (i) One's ability deteriorates with time, and he or she loses ties with people and society because of the expectance of death; (ii) Interactions with people strengthen norms, and once a person has few interactions with people, he is free from the norms which facilitate their eventual disengagement from the people and society; (iii) Disengagement process differs by gender due to the socially assigned roles; (iv) An individual's life deteriorates due to ageing which is a form of ego change. As people age, they desire to maintain their skills and knowledge while engaged in active roles.

In addition, for successful ageing, the old should retire before they lose their skills and knowledge; (v) The individual and society (social system) should both be ready for disengagement. However, when neither party is ready, the engagement continues; (vi) When socio-economically assigned roles to men and women are abandoned, e.g., a man is for work, and a woman's role is procreation, both rapidly lose social living space, and get depressed unless they take on the various roles required by the disengaged state; (vii) Readiness for disengagement occurs when an individual has prepared for later life and the limited time available, and each level of society permits individuals to disengage. The disengagement is to provide jobs for the younger ones to cater for the nuclear family; (viii) Relationships in the

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remaining roles are altered by fewer encounters and disengagement from primary roles, e.g., the inability to work can lead to an inability to provide fully for the family; (ix) and Disengagement theory is not associated with culture, but socio-culturally embedded.

According to the disengagement theory of ageing, older people may withdraw from social roles and relationships as they age, which occurs across all cultures. Furthermore, the theory implies that society must prepare to live and work in the absence of the aged. Furthermore, according to the theory, disengagement is important for society as it keeps the social structure stable and well-organised. The aged are happier when they accept and willingly participate in disengagement. (Cumming & Henry, 1961).

Arslantaş et al. (2015) mentioned that health challenges associated with old age are linked to older persons' withdrawal from society. Loneliness and physical inactivity are characteristics of the aged, which partially confirms the Disengagement Theory of Ageing. Furthermore, this assertion is consistent with the theory in which Cumming and Henry (1961) claim that ageing is unavoidable and that one's contact with friends and relatives diminishes over time. Loneliness and social isolation are prevalent among the aged and are associated with other concepts, such as the availability or lack of social support (Courtin & Knapp, 2015). Arslantaş et al (2015) demonstrated that loneliness reduces the standard of living as people age and that chronic health problems strongly predict loneliness. Due to physical or social limitations, older people may struggle to manage illness and feel isolated. As a result, loneliness and quality of life may strongly influence psychosocial well-being, subsequently affecting their sexual health.

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The Disengagement Theory of Ageing demonstrates that interactions with people strengthen norms, and once a person has few interactions with people, the individual is free from the norms, which facilitates their eventual disengagement from the people and society and results in loneliness. Loneliness is less prevalent in societies that value social relationships and traditional structures, but individuals' perceptions of the quality of their relationships may influence the presence of loneliness. This situation suggests that in such a setting, the aged will likely lose all or most people they may socially interact with in old age through death. Low life expectancy and a strong disincentive to social interaction and exercise in old age might result from living in a culture with few people or no one to interact with society (Asiamah, 2017).

According to Schrempft, Jackowska, Hamer, and Steptoe (2019), a relationship between loneliness and physical inactivity confirms the Disengagement Theory of Aging. Loneliness and lack of a partner psychologically influence general health, including the sexual health of the aged. Addressing the local needs of older persons through programmes and activities, either directly or indirectly, reduces loneliness and social isolation. Also, services and activities have the potential to meet the more extensive health and social care needs of older persons. Once the aged have such services and activities, they feel a sense of belonging and care to make them relate and interact more with people around them, including their peers. If these services and activities are lacking, the aged become disengaged.

Evans et al (2019) asserted that, although having the same level of social interaction with friends and family, older persons with depression or

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anxiety felt more alone and isolated than older persons without depression or anxiety. Furthermore, older persons who suffer from depression or anxiety have weaker social interactions and cognitive performance, as well as reduced levels of cognitive reserve, all of which can affect their sexual health. This condition indicates that loneliness and social isolation are frequently associated with depression.

Evans et al. (2019) reaffirm the Disengagement Theory of Ageing, where the aged withdraw as they grow old due to lack of social contact, thereby impacting successful ageing, including their sexual health. However, older people who engage their peers may face several social interaction barriers, such as limited mobility and travel, health issues, distance from others, living in rural places, impoverishment, and a lack of opportunities to participate in community activities. Furthermore, older people may recognise and engage in friendly exchanges with those around them. However, they may not feel at ease with them as activity partners or friends and relatives may withdraw (Fox et al., 2017). Again, because of their low physical demand and lack of social interaction, older people have activity patterns that are not optimal for their health. These challenges can also negatively influence their health, including sexual health.

Bahall and Bailey (2016) also linked the disengagement theory to the sexual health of the aged. Chronic illness, despair, and low life satisfaction were substantially correlated with multiple exclusion. Exclusion from the community was closely correlated with the prevalence of chronic illnesses in older adults (Kristensen, König, & Hajek, 2019). Further evidence suggests that depressive symptoms are linked to exclusion from housing, social

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interactions, neighbourhood, and essential services (Lee, 2021). However, low life satisfaction is not correlated with social marginalisation. Multiple forms of social exclusion can poorly influence older people's quality of life, well-being, and mental health, impacting their sexual health. Since its inception, the theory has been criticised for being "innate, universal, and unidirectional" (Bengtson & Putney, 2009).

The Disengagement Theory of Ageing has attracted criticism, especially on its assumptions. One of the criticisms is that the withdrawal of an ageing person is inevitable, natural, or beneficial. However, it is maintained that social withdrawal among the elderly is voluntary and that similar disengagement from society can happen at any time in a person's life as a result of various factors that influence social withdrawal. These factors include economic vulnerability, loss of a partner, medical conditions such as chronic illness, and psychological issues (Your Writers, 2019) and also influence the decision of an individual to disengage from society. The social disengagement process cannot be considered universal, as cultures and social systems differ worldwide. According to the disengagement hypothesis, culture does not directly affect the underlying principles of a belief system but rather influences how those principles are expressed and practised within that culture.

Recently, older men and women are engaged in various activities due to the changing social and economic situation and are not as withdrawn as the theory indicates. The disengagement theory examines how people change as they age by focusing on the social system's demands and requirements. According to activity theorists, particularly symbolic interactionists, the

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disengagement theory has unreal characteristics. Further thoughts on the Theory of Disengagement by Cumming (1963) offered a psychobiological explanation of why people with temperamental qualities are more prone to disengage in later life in response to the issue of individual differences or variable adjustment in the disengagement process (Cumming, 1963). The theory did not consider the influence of social class on ageing experiences (Olson, 1982), as differences in social class can determine early disengagement in later life.

Disengagement theory posits that ageing involves a natural withdrawal from social roles and activities, which can impact sexual health assessment in older adults. Recognising this theory helps the aged and healthcare providers understand potential declines in sexual activity and address factors like isolation and changing self-perceptions that affect sexual well-being.

Activity Theory of Ageing

Havighurst (1961) developed the Activity Theory of Ageing in 1961 (Havighurst, 1961; Loue & Sajatovic, 2008). The "Implicit Theory of Aging," "Normal Theory of Ageing," and "Lay Theory of Ageing" are also known as the Activity Theory of Ageing. Loue and Sajatovic (2008) propose that active ageing and sustained social contact signify successful ageing. The ageing process is postponed when the aged are socially engaged and their quality of life is improved (Schulz, 2006). The activity theory was developed instead of the disengagement theory (Bengtson & Putney, 2009). In 1964, according to Bengtson and Putney (2009), maintaining interpersonal relationships and endeavours was necessary for long-term happiness.

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Additionally, the idea presupposes a link between activity and life pleasure (Loue & Sajatovic, 2008). According to the activity theory, maintaining mental and physical exercise helps older people to stay healthy and happy. Despite a recent decline in popularity, the activity theory is still used as a standard to compare observed activity and life satisfaction patterns (Schulz, 2006). On the other hand, years of gerontological research suggest that the activity theory is more precise than the disengagement theory as the activity theory not only benefits the community but engages the aged physically and mentally. In addition, the aged participation in activities in the community allows them to socialise with other community members. Socialisation boosts their self-esteem and pleasure, essential for happiness and longevity (The Functionalist Perspective on Ageing, 2019).

Physical activity and older people's health are related. Volunteering, hobbies, connecting with friends, and exercise positively affect physical and mental health, lower the risk of disability, and protect the aged against cognitive decline and symptoms of depression throughout life (Fox et al., 2017). Furthermore, it has been proved that aged occupational engagement and health-related outcomes support this idea of active engagement and older people's health. The Disengagement Theory of Ageing is directly opposed by the Activity Theory of Ageing, which Havighurst created in 1961. According to the hypothesis, older people maintain their physical health and activity levels by participating in numerous social activities. According to the hypothesis, life satisfaction and the degree of social activity involvement of the aged are positively correlated. This correlation is predicated on the notion that as one ages from middle-old, the role required by that person's role

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requirements and demands from society stay largely consistent (Knapp, 1977). The Activity Theory of Ageing also suggests that being active can postpone the negative consequences of ageing and lengthen middle age. In circumstances where older persons may participate in social activities due to favourable economic and social conditions, the Activity Theory of Aging is likely to be supported (WHO, 2014).

According to McPhee et al. (2016), to keep the aged autonomous and mobile, frequent physical activity helps promote physical and mental abilities and reverses some of the implications of chronic diseases. Additionally, as individuals' physical capabilities improve, they engage more regularly in physical activities. It has been established that inactivity is the main contributor to ageing-related illness and low physiological fitness. A lower mortality risk exists in those with higher physical exercise and fitness levels. Zhaoyang et al. (2019) described the frequency of social interactions in more detail. They noted that older persons experience fewer physical symptoms than younger adults due to the quality of social relationships.

The Activity Theory of Ageing, which contends that good ageing occurs when older persons maintain their level of activity and social connections, suggests that high-quality social interactions are more crucial for older adults' health. Again, due to their physiological sensitivities to interpersonal discomfort and the important need for emotional intimacy during social encounters, older persons are more likely to be influenced by the quality of interactions (Zhaoyang et al., 2019). Although the aged may wish to engage in social interactions, health issues may limit interactions with spouses, family members, and caregivers, who are more inclined to offer comfort and

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assistance. However, these findings could also be attributed to active coping methods. A study by Hsien, Hui, and Hsu (2018) demonstrated a connection between the health of the aged and physical and social activities. Participating in a community care programme reportedly enhanced older persons reported health, quality of sleep, memory, familial ties, health care and literacy. The programme's older participants regularly met and engaged with community members, expanding their social networks and strengthening their social support, which led to this favourable outcome.

Promoting cognitive health is closely related to mental activity, optimistic thinking, interpersonal contact, and daily task management. (Bacsu, Viger, Johnson, and Novik, (2019) and Misawa and Kondo, (2019). Physical activity is essential for sustaining cognitive function in older adults. Older persons with reduced mobility, back pain, or difficulties bending down participate in activities to stay healthy. It was noted that there is a need to quantify and examine the influence of activities on older adults' cognitive health to determine how useful or effective different activities are at promoting and maintaining older people's cognitive health. Being physically unhealthy has been known to affect sexual health, as the aged may not be able to perform sexual activities and achieve life satisfaction effectively.

Activity Theory of Ageing supports the notion that being active makes the aged healthy in later life and reduces the risk of having psychologically related health issues. It has been discovered that greater depression in older persons is related to the social aspect of going through a life event, such as hobbies and hanging out with friends regularly. Additionally, it is perceived that interactions with one's environment significantly impact the human

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experience, even later in life (Misawa & Kondo, 2019). Physical health issues are direct risks to mental health, and practical obstacles are shown by the high correlation between social capital and physical constraints, such as chronic conditions and functional disability, as well as mental anguish, such as depressive symptoms and anxiety (Hamer et al., 2014).

Without social capital, physical health limitations could negatively affect mental health and possibly impact social functioning and the sexual health of the aged (Hamer et al., 2014). The likelihood of successfully ageing was highest for older persons who stayed physically active (Hamer et al., 2014). A lack of physical activity and the sedentary nature of these activities may put the elderly at risk of developing weakening and life-threatening chronic diseases, leading to psychological problems like depression. Although previous studies have demonstrated that social and cognitive activities aid in the prevention of mental health disorders, a low level of health awareness and inefficient promotion of a healthy lifestyle among the elderly may also be caused by the low level of leisure physical exercise (Zhao, Yu, & Liu, 2023)

The opposers of the activity theory argue that the theory ignores the health and economic disparities that prevent older individuals from participating in these activities (Bengtson & Putney, 2009). Some older people do not want to take on new challenges, which undermines the concept of maintaining activity and social interaction. Furthermore, some older persons do not want to encounter health challenges, so being active is a choice or will be determined by certain factors. Further, in later life, psychosocial needs may change for the aged. For instance, older people may strongly desire to focus on their inner or spiritual growth as they age. The activity theory reflects the view

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that the balance developed in middle age should be maintained in later life (Schulz, 2006). This balance is sometimes only attainable because resources may differ among socio-economic groups, and the level of activity the aged may be affected by their desires, or they may choose to disengage over time. Also, different activities occur at various stages of life. The idea that mid-life serves as the benchmark for later life is inconsistent. If older people are willing to take on different roles and there are roles available for them, the quality or personal significance of activities and roles needs to be acknowledged. Therefore, new activity may not replace old activity.

Activity theory suggests that staying active and engaged in various activities, including social and sexual activities, contributes to better overall health and satisfaction in ageing. This theory aids in assessing sexual health by encouraging older adults to maintain or enhance their sexual activities as part of a fulfilling, active lifestyle.

Continuity Theory of Ageing

Robert Atchley was the first to formally propose the Continuity Theory (Andrew & Albert, 1995), which was later revised to account for the growth of continuity's internal and exterior structures. The internal and external structure of continuity explains how individuals define their goals and adapt to their surroundings. The internal framework of a person, such as their personality, thoughts, and beliefs, continues throughout their lifetime and allows them to base their judgments on internal precedent from the past. Maintaining a solid self-concept and way of life is supported by an individual's external structure, such as relationships and societal positions.

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The continuity theory was developed in response to the finding that many older persons maintain their interests, personalities, and social networks despite physical, mental, and social changes (Schulz, Noelker, Rockwood, & Sprott, 2006). Also, the elderly typically continue with the same interests, habits, and social networks as done in their early years (American Society on Aging, 2007). The Continuity Theory states that the elderly attempt to maintain this continuity of lifestyle by implementing tactics based on their prior experiences (Atchley, 1989). In contrast to the disengagement and activity theories, the theory characterises normal ageing from a life span perspective. Since it focuses on the individual, the continuity theory is a micro-level theory. The theory can also be regarded from a functionalist perspective, in which the individual and society strive for balance. Adopting a physically active lifestyle in middle and later life is linked to better health in old age (Hamer, Lavoie, & Bacon, 2014).

Continuity is an elusive concept (Atchley, 1989). However, a dynamic perspective of continuity begins with the concept of a fundamental structure that remains over time. Within the confines of the basic structure, the theory allows several types of modifications to occur, such as displaying, remaining constant, and being uniform, homogeneous, and unchangeable. According to the Continuity Theory, middle-aged and older persons try to embrace and preserve existing internal and external structures by upholding those structures when making adaptive decisions. The decision to maintain a lifestyle impacts the health of the aged, particularly their sexual health. According to Hs, Ma, and Khadijah (2013), cognitive, social, and productive activities are strongly associated with past and present leisure engagement. The elderly who actively

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engaged in leisure activities were found to be more inclined to do so when they were younger. Very frequently, older people continue to engage in the same things they did when they were younger, but their time spent on those activities gradually decreases as they grow older.

The Continuity Theory of Ageing emphasises the persistence and consistency of thought, behaviour, and habit patterns as people age. Despite major changes in health and social conditions, the notion that older people engage in moderation of activities they were involved in during their younger years aligns with the Continuity Theory of Aging. Early involvement in frequent leisure activities may impact later involvement in a particular activity. The Activity Theory shows that leisure activities promote successful and healthy ageing, including older people's sexual health. However, some older people must select an alternate leisure activity to meet their changing condition due to various limitations, commitments, and life events, including retirement, diminishing health status, and physical function. Cook (2018), nevertheless, noted that self-narratives are not determined by chronological age but rather develop in response to biological and social occurrences that permit a person to negotiate, preserve, and build their identity.

The ability to interpret the present actively and subjectively through a connection to one's past fosters biographical continuity and an identity that develops from this continuum of existence. Identity formation was linked to the past and the present as well as the connections and activities in the future. Nilsen, Andel, Agahi, Fritzell, and Kåreholt (2020) found that being employed during middle age was linked to higher levels of intellectual/cultural, social, and physical activity later in life. These show the significance of the working

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environment in encouraging an active life after leaving paid employment. Older persons may have wanted to maintain a similar lifestyle with a comparable level of stimulation as in their acting profession to retain a sense of continuity after retirement. This lifestyle preservation is an adaptive response to ageing and may account for older adults' higher interest in intellectual and cultural leisure pursuits. Midlife physical activity persists throughout old age. However, declining physical function in old age may limit people's capacity for physical exercise (Chun, Heo, Lee, & Kim, 2016; Cook, 2018). People in an active job that reduces stress tend to perform better physically as they age, facilitating the continuation of an active lifestyle after retirement.

The Continuity Theory of Ageing ensures healthy ageing where the aged continue an activity that positively influences health and sexual health. The tendency for the aged with higher comorbidities to regularly visit physicians may contribute to the link between the number of chronic diseases and the continuity of lifestyle in ageing (Ryvicker & Russell, 2018). For instance, an aged who sees a physician regularly in the past life is more likely to continue to old age, reducing the risk of having a chronic disease and staying sexually active. In addition, older people with higher incomes are likely to continue with different physicians. Older people who reportedly had depression have lower continuity of activities than those without depression. Also, age guarantees continuation, and greater continuity is related to being older. Older people work to keep their identities consistent as they age, and how they navigate later life is influenced by cultural expectations of ageing.

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Continuity Theory insufficiently recognises societal expectations of ageing. The continuity of an older person's identity is affected by good and negative changes in their duties and responsibilities as they age. Also, older persons use a variety of strategies to support internal and external continuity (Breheny & Griffiths, 2017).

Chronic diseases like chronic heart failure impact individuals' daily lives, causing disruptions, losses, and setbacks, and it affects the health and well-being of the aged (Ortman, Ung & Falk, 2015). Chronic illness influences the sexual life of the aged. Despite ongoing health issues, familiarity gives older individuals a sense of security and predictability for themselves, others, and their environment, enhancing their sense of continuity in their daily lives. Living with chronic health conditions like heart failure and interacting with others in well-known environments to sense continuity is consistent with the continuity theory of natural ageing proposed by Atchley (1989). Functional impairments are perceived as a challenge causing fear and insecurity in daily life concerning health conditions. Continuity seems to be needed for human life, including the life of the aged.

Continuity is key to achieving personalities concerning social structures. Fischer, Træen, and Hald (2018) said that regularly and frequently exhibited past behaviour will likely predict present behaviour. It was also indicated that the frequency of sexual encounters among older persons and the assessment of their lifetime sexual activity are positively correlated. Both males and females continue to engage in sexual activities as they age. As their lives progress, some older married couples start to long for emotional

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closeness, stability, and continuity instead of or in addition to penetrating sex (DeLamater & Koepsel, 2015).

The continuity theory is criticised for separating healthy ageing from pathological ageing and ignoring older persons with persistent illnesses, which is critical in determining successful ageing. (Quadagno, 2007). The theory must illustrate how social institutions affect individuals' lives and ageing. Resources may differ between socio-economic groups, which could impact the degree of continuity. The idea that midlife is the benchmark for later life is unrealistic and inconsistent. Feminist ideas have criticised the continuity theory for basing its definition of normal ageing on a male role model (Quadagno, 2007).

The continuity theory of ageing suggests that individuals maintain consistent patterns in their behaviours and lifestyles as they age. In assessing sexual health among the elderly, this theory highlights the importance of understanding how individuals adapt their sexual expression over time, acknowledging continuity while addressing evolving needs and challenges.

Social Norms Theory

The Social Norms Theory, initially used by Perkins and Berkowitz in 1986, addressed students' drinking habits. The theory describes situations in which people mistakenly believe that the opinions and behaviour of their peers and other community members differ from their own. However, these opinions and behaviour do not differ. This phenomenon has been called "Pluralistic Ignorance" (Berkowitz, 2005). These misconceptions concerning issues or risky behaviours and beneficial or protective behaviours exist. Regarding pluralistic ignorance people alter their behaviour to resemble the false norm

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more closely. This attitude may lead people to justify problematic behaviour while impeding or suppressing constructive behaviour. However, perceived norms will almost certainly result in a decrease in unacceptable behaviour or an increase in desired behaviour. The theory is an evidence-based approach to solving critical health issues (Berkowitz, 2005).

The theory seeks to understand the environment as well as interpersonal influences. For instance, the theory focuses on peers changing behaviour rather than individuals changing behaviour. The role of peer influence in individual behaviour decision-making is the focus of the Social Norms Theory. The theory assumes that a person's behaviour is influenced by their misperception of how their peers think or act (LaMorte, 2019). Underestimating issue behaviour in peers will deter individuals from partaking in the problematic behaviour and overestimating it would drive individuals to escalate their problem behaviours.

According to social norm theory, most people will benefit from an intervention to dispel the myth by clarifying the real, healthier norm. These people will either cut back on potentially risky behaviour or be pushed to practise healthy behaviour-protective behaviours. The social norms theory can also be used when people with the right information choose not to address others' problematic behaviour. The idea was most recognised for its success in lowering alcohol use and accidents caused by alcohol in college students. However, the strategy has also been applied to public health issues like tobacco usage, preventing drunk driving, and, more recently, preventing sexual assault, among other things (LaMorte, 2019).

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According to Syme, Cohn, and Barnack-Tavlaris (2017), to compare self-reported sexual risk behaviours perceived risk in older persons, relevant data concerning the validity of opinions must be collected on the sexual behaviour and sexual health of the aged. It has been shown that sexual risk behaviours, such as vulnerability to STIs, were reported frequently with perceived risk. Accuracy categories were developed based on the agreement or disagreement between risk levels and perceived risk. The aged often engage in oral and vaginal sex without a condom because they think they are immune to STIs, which can negatively impact their sexual health. Also, more of the aged underestimate the risk of contracting STIs, which supports the Social Norm Theory.

The theory contends that misconceptions about what peers believe and do influence the behaviour of the aged. Further, it was discovered that accuracy decreased as sexual risk levels increased, with practically all high-risk older persons underestimating their risk. Many sexually risky behaviours are common among the aged, particularly men. However, older persons' perceptions of risk are incorrect and need attention and revision. According to social norm behaviour theory and research, accurate risk perception is crucial for motivating people to change their health behaviours, especially sexual risk behaviours. However, a slight positive association was anticipated between the actual and perceived sexual risk, which did not occur. This inaccuracy from the finding may have been due to several causes, such as a lack of sexual health education, a lack of sexual health dialogues, and ageist and paternalistic ideas that permeate our conception of sexuality in later life.

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Aside from social capital, Amin (2016) found that factors affecting the aged to have unprotected sex include age, gender, marital status, level of education, racial background, and sexual orientation. However, social capital positively correlated with other HIV/STD risk behaviours, such as sex with random strangers and multiple sexual partners. It was discovered that older persons are still having unprotected intercourse and engaging in other sexual risk behaviours, putting themselves at risk for STIs, including HIV. Older people believe that STIs and HIV are only contracted by younger people, hence putting themselves at risk because of the misperception. The perception of the risk of developing STIs is a powerful mediator of older persons having safer sex (Fileborn et al., 2018) and can significantly inform the sexual health and well-being of the aged.

Although evidence indicates that condom use decreases with age, sexual activity does not stop as people age because most of the aged are sexually active. Older men exhibit more sexually risky behaviour than older women, as they are more likely to use condoms and engage in sexual intercourse indiscriminately. Also, older married persons are less likely to wear condoms during sexual intercourse, making marital status a significant contributor to unsafe sex (Anglewicz & Clark, 2013; Lammers, Wijnbergen, & Willebrands, 2013). Older persons perceive marriage to be a committed partnership. Hence, there is the thought that unprotected sex is less dangerous. However, older married persons show a reduced inclination towards HIV/STD risks, suggesting stability with a partner diminishes such risks (Amin, 2016; Shisana et al., 2016). Additionally, older men tend to have more sexual partners, desire, and frequency compared to older women. Further, the sexual

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partners, sexual desire and sexual frequencies of older men are more than those of older women.

Buffel, Missinne, and Bracke (2017) explore the connections between older men and unemployment, mental health care, and medication use. According to the findings, which are consistent with the social norm theory, men who are displaced workers, who are men who have lost their jobs but found new employment, are less depressed and take fewer medications than non-displaced unemployed people, who are those who remain unemployed without finding new work. The causal association between unemployment and mental health is indicated by the fact that older unemployed men report more painful symptoms than those employed. This situation can influence the psychological aspects of their sexual health and good ageing. It was also mentioned that non-displaced unemployed men have a higher medication usage rate than displaced unemployed men. Concerns may exist when examining the consequences on mental health by utilising regional unemployment as a proxy for the social norm of unemployment. Instead of the unemployment rate, the regional unemployment rate is a more appropriate determinant for the labour market situation for the employed and the retired, especially during a recession.

Furthermore, the social norm theory claims that since non-displaced unemployed older men take more medication than anticipated, given their mental health, they experience stigmatisation and internalised responsibility for their unemployment. Older men view unemployment as a personal failure, so they may take medications as a customised coping mechanism. One of the theory's main advantages is its capacity to understand risky behaviour and

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respond to avert harm in various contexts (Dempsey, McAlaney, & Bewick, 2018). By focusing on correcting misconceptions at the group level, the social norms theory can be quite effective in altering individual behaviour. It does, however, have some drawbacks. People are inclined to contest the information initially offered when using the principle.

The theory's fundamental presumption is incorrect. Actions are frequently motivated by inaccurate knowledge of or misconceptions of the attitudes and behaviours of others (Real & Rimal, 2001). Others question the validity of social norms interventions since some had methodological flaws that might have tainted the effectiveness of the therapies (Wechsler et al., 2003). In certain cases, the theory has not worked. For instance, their drinking habits remained unchanged regardless of how their peers were evaluated (Wechsler et al., 2003). Numerous social norms programmes fail to address misconceptions or track improvements in normative beliefs. This challenge has resulted in a combination of interventions that openly test the theory's assumptions and those generated by societal norms (Dempsey et al., 2018). The theory places much emphasis on drinking habits and student behaviours. The hypothesis, however, has the potential to be applied to more general health issues, including protective and healthier behaviours like self-harm, suicidality, bullying and victimisation of schoolchildren, and violence in intimate relationships.

The social norm theory of ageing influences perceptions and behaviours regarding sexual health among the elderly. It highlights societal expectations and norms surrounding sexuality in later life, shaping attitudes, access to healthcare, and communication. Understanding these norms aids in

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tailoring interventions and support systems to address sexual health concerns effectively in older populations.

Biopsychosocial Model

The biopsychosocial (BPS) model was developed by George L. Engel in 1977 to more precisely describe how illnesses develop as a result of the complex interactions among biological and physiological factors (genetic, biochemical), psychological factors such as mood, personality, behaviour, and mental health and social factors, including cultural, family, and socio-economic (Engel, 1977;1980). The biopsychosocial model is a comprehensive, integrative framework for understanding human development, health, and functionality (Melchert, 2007, p. 37). The model offers a roadmap for study, instruction structure, and action plans in healthcare (Engel, 2009). The model was proposed in response to the reductionist approach employed in other medical professions and the perceived lack of research being used in psychiatry at the time, neither of which was sufficient for treating sickness (Engel, 1977).

Engel (1977) BPS claimed that "... a medical model must also consider the patient, the social environment in which he lives, and the additional system developed by society to cope with the negative repercussions of sickness...." (Kanning & Schlicht, 2008, p. 196). Engel (1977) added that in addition to the medical elements that affect a person's health, biological and psychosocial factors are essential, and excluding a factor would adversely affect a patient's treatment.

The biopsychosocial paradigm acknowledges that psychological and social elements affect an individual's beliefs, behaviours, and how they

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experience sickness. Instead of approaching health from a physiological standpoint, the BPS model emphasises having healthy and holistic development, cure, and maintenance of all three elements (Ghaemi, 2009; Henriques, 2015; Pilgrim, 2015). The BPS model notes that maintaining good health and being cured depends not solely on medical professionals but also on patients, families, and society. Patients and their families can support the process as medical professionals handle biological treatment, resulting in rapid social and psychological recuperation, and this makes it possible for better and faster physiological recovery and, ultimately, how they experience sickness. Instead of approaching health from a physiological standpoint.

Figure 1 presents the BPS model. The model underlines the need for healthy overall development, cure, and maintenance of the three components (Ghaemi, 2009; Henriques, 2015; Pilgrim, 2015). The BPS model emphasises that maintaining good health and achieving recovery relies not only on medical practitioners but also on the involvement of patients, their families, and the broader society, all of whom support the healing journey. Further, medical professionals handle biological treatment, resulting in rapid social and psychological recuperation, which makes it possible for better and quicker physiological recovery. The model promotes optimal mental and emotional health to sustain a healthy lifestyle.

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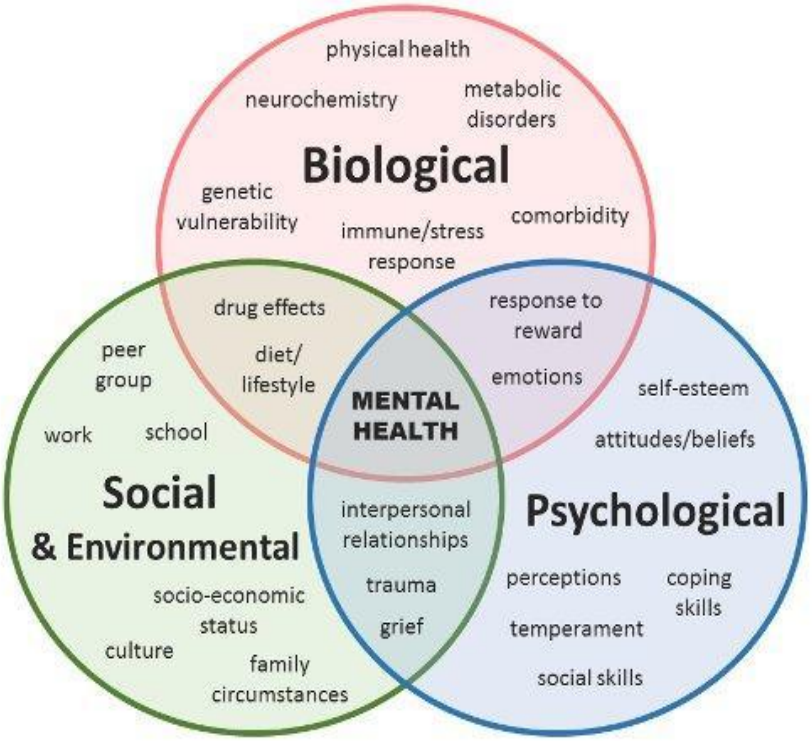

Figure 1: Biopsychosocial Model Framework

Source: Engel, 1977

In addition, the model is created to meet a certain patient's physiological, psychological, and social requirements. Contrary to the biological approach, which disregards a person's cognition, emotions, and social factors, the BPS model is applied at the individual level. The dissatisfaction with the biological concept of illness, which is still the predominant healthcare model, led Engel to introduce the biopsychosocial model in his classic research paper decades ago (Wade & Halligan, 2017). Applying the biopsychological model to healthcare management for ageing individuals prioritises understanding biological, psychological, and social aspects. Addressing these factors is crucial for enhancing sexual health in the elderly, promoting tailored interventions, and improving overall well-being and quality of life. Improved patient outcomes will require healthcare resources to address chronic conditions that influence the sexual health and

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functioning of the aged. Medical specialities have adopted the biopsychosocial model as a more advanced and comprehensive concept of illness, especially concerning patient-centred care.

Currently, the model is employed in various clinical guidelines and research on complex and chronic health therapies (Wade & Halligan, 2017). Age-related sexual health issues are impacted by the biopsychosocial effects of STDs, including HIV. Christopher (2016) showed that many interconnected biopsychosocial factors explain older individuals' increased risks of STIs and sexual activities. Due to biological variables, including weakened immune responses brought on by long-term illnesses such as cancer or diabetes, the body is more vulnerable to infection (Weyand & Goronzy, 2016). Indirectly or directly, a physiological transformation like decreased oestrogen may facilitate the risk of infection (Harding & Heaton, 2022). When testing and treatment of the aged are suspended, psychosocial factors (such as divorce and ageism) may worsen the symptoms of HIV/AIDS and other STIs (Roger, Mignone, & Kirkland, 2013).

Wade and Halligan (2017) provided evidence for the various relationships between behavioural results and subjective predictors. In applying the biopsychosocial model, it was discovered that although biological factors like age and social factors like living arrangements impact healthy behaviours, psychological factors are more likely to be the key contributors in high-functioning older people. According to the model, older persons constrained by their mental or physical health may experience increased self-efficacy and a feeling of better health, which will enhance their general well-being. The way people express themselves sexually as they age reflects the

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interaction of the body, mind, and social environment, although the biopsychosocial model prioritises health.

Most studies on the health of the aged have focused on the incidence of sickness. Older people frequently experience sexual dysfunction because of chronic illnesses such as diabetes, arthritis, depression, cardiovascular disease, prostate disorders, and malignancies of the reproductive organs (DeLamater & Moorman, 2007). The frequency of partnered and unpartnered sexual behaviour in older persons was not solely because of ageing, contrary to what the biopsychosocial model predicted for biological and psychosocial factors. Little impact was shown on the frequency of sexual behaviour by newly identified disorders and associated treatments. According to research, ageing is most likely a biological factor for women because hormonal changes brought on by menopause frequently lead to inadequate lubrication and vaginal atrophy, which can hurt when having sex and impact sexual health. Age is less visible for men, but these may involve a blend of biological and psychosocial factors (DeLamater & Moorman, 2007).

Iveniuk and Waite (2018) indicated that the aged with higher levels of reported marital quality, more extroverted personalities, larger networks of family, and better physical health indicated stronger sex desire. The psychosocial aspects of sex are of more interest to the aged. A stronger interest in the sex of the aged was linked to positivity, openness to new experiences, positive quality relationships, and social network connections. The increased desire for sex leads to increased sexual activity, enhancing sexual health. Further, depression, a psychological condition, was linked to a higher interest in sex. Rosenblat et al. (2019) have shown that depression is frequently

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ignored in healthcare services, and in the context of an adjustment disorder, there are depressive symptoms.

The model has, however, been criticised because it assumes that all mental illnesses are truly biopsychosocial (Varnerka, 2018), which does not reflect reality, especially with physical injuries. Critics of the BPS model used in treating mental disorders and other illnesses will increase the stigma associated with these conditions and illnesses rather than reducing the ailment (Varnerka, 2018). One method or treatment often produces better results or is more effective and valid than multiple approaches, especially for specific illnesses or diseases (Ghaemi, 2009).

Some critics argue that inappropriate behaviour, including antisocial behaviour, cannot be addressed as a medical condition because the cause of this improper behaviour is hardly due to biological reasons. The model considers a person's social interactions, including their religious beliefs, primary and secondary relationships, work history, and historical events. However, it could become extremely impractical to analyse a patient's problem while considering many social factors. In addition, it is challenging to consider the social factors besides the psychological and biological factors. Due to the assessment of many factors that cause illness, in treating illness, there is confusion and delay in therapy.

Also, the BPS model indicates that all three aspects should be applied in treatment or addressing illness. However, the concern is which element should be selected or prioritised. The concern of the selection is a challenge as the biopsychosocial model needs to give a direction on how to prioritise the three aspects of the model (Ghaemi, 2009). Benning (2015) argues that the

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model lacks philosophical justification. It is insensitive to patients' subjective experiences, creates an undisciplined diversity, offers no protections against either dominance, provides no defence against any of the three domains of biological, psychological, or social domains and depends on the practitioner's personal preferences for the target and focus (Ghaemi, 2009). Thus, the selection will be based on the health provider's discretion and not on any standard guide, causing a disconnection, misunderstanding and mistrust in treating illness (Benning, 2015).

The model predicts small parts of one aspect to generalise what pertains to medicine, for example, psychiatry (McLaren, 1988). Engel's biopsychosocial model offers a comprehensive framework for assessing sexual health in older persons, considering biological, psychological, and social factors. It facilitates a holistic understanding of sexual functioning, addressing physical health, psychological well-being, and social relationships. This approach enables tailored interventions that encompass all aspects of sexual health in older persons.

Conceptual Framework of the Study

A conceptual framework describes the logical development of the researched phenomena by linking concepts, empirical research and relevant theories. Further, the conceptual framework sets up the key ideas in the study in a logical form to offer a visual representation of how those ideas are connected (Adom, Hussain, Emad, Kamil & Joe, 2018). The conceptual framework, connected to the problem statement, serves as a basis for presenting specific research questions to guide the investigation into the phenomenon (McGaghie, Bordage & Shea, 2001; p. 923).

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The biopsychosocial model (Engel, 1977) was adapted as a conceptual framework (Figure 2) for this study due to the biopsychosocial model's universality and holistic approach to describing an individual's health status. Further, the Biopsychosocial Model was adapted as the conceptual framework because it comprehensively addresses the multifaceted nature of sexual health in the aged, integrating biological, psychological, and social factors. This comprehensive approach acknowledges the complex interactions between these dimensions, offering a more complete understanding of sexual health in the elderly. The original biopsychosocial model framework is shown in Figure 1.

Engel's biopsychosocial model (1977) is apt for assessing sexual health in the aged. It acknowledges the complex interplay of biological, psychological, and social factors influencing health outcomes. This holistic approach considers social contexts, physiological changes, and psychological well-being crucial in understanding and effectively addressing the sexual health concerns of the aged.

This study's conceptual framework considered two primary categories of factors: explanatory and outcome variables. The conceptual framework states that socio-economic, biological/physiological, and psychological factors may impact the sexual health of the aged. In particular, the framework requires the two variables to be linked horizontally. The framework indicates that the explanatory variables may impact on the sexual health of the aged. These variables often influences the sexual health due to differing experiences and behaviours of the aged. Also they affects socio-cultural and economic,

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biological/physiological and psychological factors, providing insights into how these factors collectively contribute to the sexual health of the aged.

In this study, the explanatory variables are the socio-economic factors (religion, influence of cultural practice, current marital status, place of residence, income quintile, current economic activity, and health insurance status), biological/physiological factors (sex, age, perceived health, chronic illness, number of chronic illnesses, ongoing treatment of illness) and psychological factors (subjective wellbeing, depression and living with a partner). Any of these factors could impact the sexual health of the aged.

For instance, depression may reduce the libido of the aged and affect the aged desire to engage in sexual activities. (Shigehara, et al., 2021). The outcome variable (sexual health) consists of three sexual health outcomes, which are sexual activity, sexual satisfaction, and sexual dysfunction. Based on the review of theories, the explanatory variables for each outcome variable were selected. The conceptual framework also contributed to the related literature review by guiding the organisation and analysing the literature on socio-cultural and economic, physiological, and psychological factors and the sexual health of the aged (Luft, Jeong, Idsardi, & Gardner, 2022). The framework also helped identify key concepts and variables studied in the literature and how they relate to the research problem. The conceptual framework also influenced how the data analysis was organised and provided direction for discussing the results (Salawu, Shamsuddin, Bolatitio, & Masibo, 2023).

Figure 2 shows how the Disengagement Theory of Aging, Activity Theory of Aging, Continuity Theory of Aging, Social Norm Theory and

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Biopsychosocial Model inform the conceptual framework. The framework makes it easier for the researcher to identify and define the concepts involved in the study's topic. It also clarifies which variables or constructs will be most important to examine and how they might be related.

The Disengagement Theory of Ageing indicates that as people age, they lose ties with people in society, including their family, relatives, and children. The abilities of the aged deteriorate with time, making them feel their capabilities are not needed again and withdrawing (Zhang & Lin, 2021). Sexuality among the aged is frowned upon as they are deemed asexual and are not supposed to engage in sexual activity. In this situation, sociocultural influences and perceptions affect the aged and, to an extent, their sexual health. The disengagement of the aged makes it difficult for them to express and discuss their sexuality freely. Disengagement in the ageing process differs by gender due to the socially assigned roles (Weiss & Zhang, 2020). The aged disengage when socio-economically assigned roles to men and women are abandoned, showing the implications and differences in the sexual health of older men and women.

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Conceptual Framework

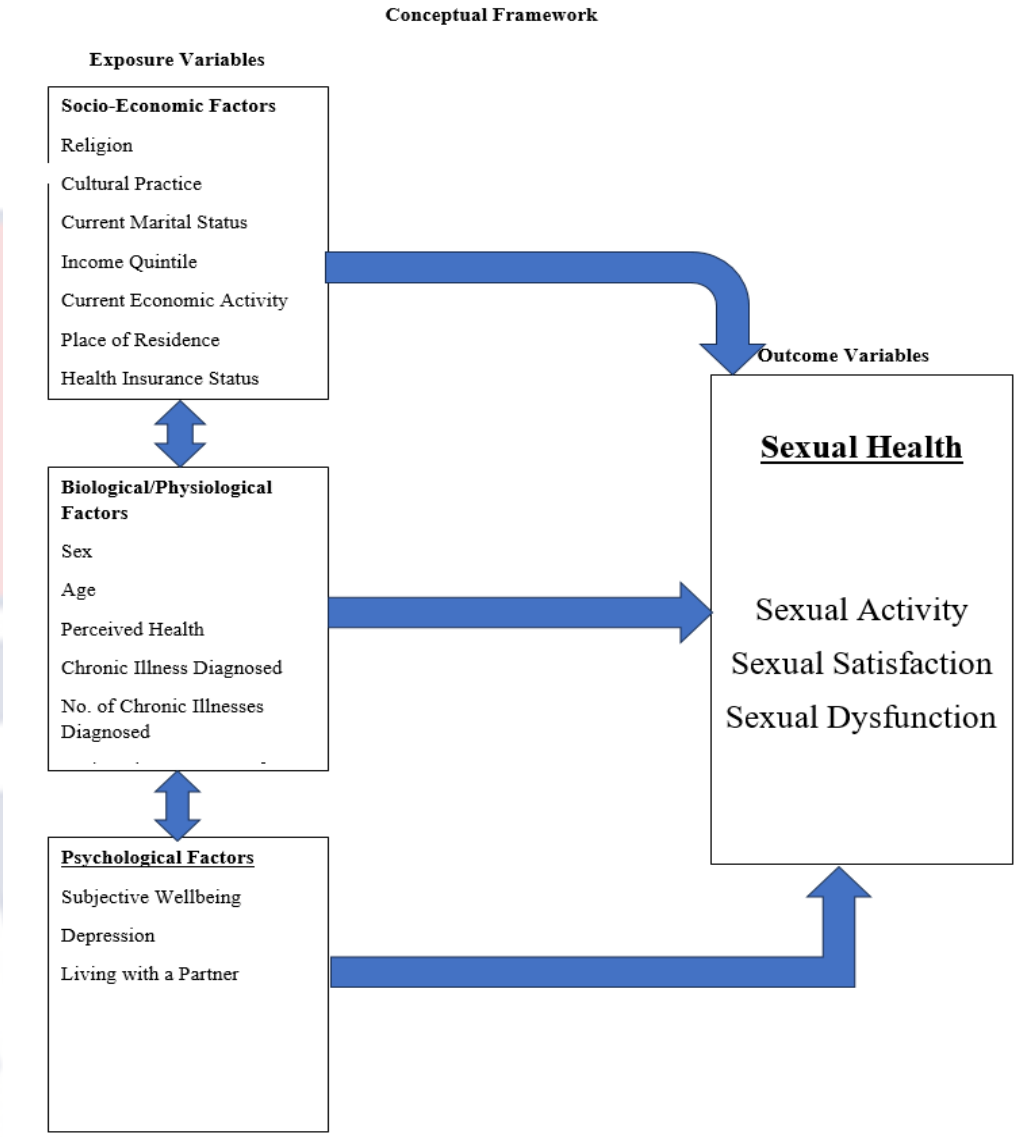

Figure 2: Conceptual Framework of the Study

Source: Adapted from Engel (1977), Cumming & William (1961), Havighurst (1961), Atchley (1989)

Sexual decline in old age is experienced more among women than men (Nickerson, 2023). Also, it is perceived that men are supposed to work and provide for the family, while women's roles are more of procreation (Valsecchi, Iacoviello, Berent, Borinca, & Falomir-Pichastor, 2023).

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As men age, the change or absence of the roles makes them disengaged unless these roles are replaced. A man's inability to work during old age psychologically affects his quality of life and sexuality in old age. After menopause, some older women cease childbearing as society perceives that there is no use engaging in sexual activities as sex is for procreation (Khalesi, Jafarzadeh-Kenarsari, Mobarrez, Abedinzade, 2020). The disengagement theory applies more to women than men. However, men become disengaged when they are unable to work, but usually, their sexual activity does not decline.

Interactions between people have an impact on individual freedom from norms in society. Some of the aged are not tied to these norms imposed by interacting with others, facilitating societal disengagement. Sociocultural factors such as social interactions and norms impact the sexual health of the aged through disengagement (Rao, Gopalakrishnan, Kuruvilla, & Jacob, 2012). The more people interact, the more they are constrained by cultural and societal conventions. Individuals who do not often interact are not bothered by the norms, and they live and express themselves freely. In some parts of the world, this may not apply as people may not be tied to the norms of society, and most people, including the aged, are more independent. Although some of the aged can express their sexuality more freely than others, their lifestyle and how they live are influenced by society and culture (Hidalgo, Dewitte, 2021). The more the elderly disengage, the more their sexual health is at risk.

Engaging in social activity has a role in ensuring successful ageing and the quality of life of the aged, including their sexual health, as stated in the Activity Theory of Aging (Winstead, Yost, Cotten, Berkowsky, &Anderson,

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2014). Social activities minimise the alienation of the aged from society, which can improve their health. Depression, anxiety, chronic illness, neglect, and disability associated with old age often make the elderly withdraw from society or people and make them unable to participate in social activities and interact with other people in society (Manjunath, Manoj, & Alchalabi, 2021). The reduction in social interaction and activities with others may affect their sexuality. Personal relationships play a crucial role in the sexual health of the aged. However, the Activity Theory of Aging may apply to older men more than women. For instance, in the long term, older men can substitute economic roles for social roles, such as sexual activity.

Unlike older women, after childbearing (gender roles), there seems to be reduced sexual activity. Society frowns upon older women engaging in sexual activity after menopause and childbearing, making older women shy away from such activities (Westwood, 2023). This attitude has an impact on the sexual health of older women compared to men, who relatively engage longer in sexual activities. With this attitude and perception, the older woman's role is deemed to end, leaving her with no alternative for engaging in sexual activity as her reproductive function has ceased. Maintaining personal relationships in old age is different for older men and women. Older women may withdraw earlier than older men (Ng, Huo, Gleason, Neff, Charles, Fingerman, 2021).

The lifestyle of the aged depends on continuing and maintaining activities from a past life, as indicated by the Continuity Theory of Aging (Gu & Dupre, 2022). With the aged, maintaining sexual activity into later years is critical to their sexual health. Further, it depends on the satisfaction derived

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from sexual relations and the emotional attachment to one's partner. However, this can be achieved with the support of the family, relationships, healthcare providers and society. As the critics of the Continuity Theory of Aging indicated, certain factors also affect the ability of the aged to continue to live the lifestyle of the past. Biopsychosocial factors such as chronic illness, treatment from an ailment, loss of a partner, physical disability, or cultural norms, among others, may influence older people to discontinue their activities of past life (Bahall & Bailey, 2022).

Being active economically could transition to later life. However, for some older persons, the skills and knowledge will wear off after retirement, and economic activity discontinues. Discontinuation from economic activities may prevent the aged from continuing or fulfilling their obligations to the family and society, causing them mental illness, and subsequently affecting their sexual health (Jarosz, 2022). Again, in managing their sexual health, financial limitations may prevent the aged from using sexual health services (Leung, Parial, Szeto & Koduah, 2022). On the other hand, financial ability may enable the aged to discontinue their physicians by changing them. Moreover, among the aged, particularly older men, the likelihood of having multiple sexual partners may increase with age, particularly if they are financially secure. (Grabovac, et al., 2020). This behaviour can adversely affect the sexual health of the aged, particularly if they engage in risky sexual behaviours.

Sexual behaviour determines the sexual health of the aged. Therefore, the perceived sexual behaviour of people could lead to the underestimation and overestimation of the sexual behaviour of the aged as stipulated in the

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Social Norms Theory (Lewis, Cronce, Blayney, & Gilmore, 2014). Regarding the sexual health of the aged, some perceive that risky sexual behaviour is associated with young people. For instance, the aged perceive that condom use is for younger persons and not for older people; hence, older people are not at risk of pregnancy. For instance, some older women, having reached menopause and thus unable to conceive, may engage in risky sexual behaviour, impacting their sexual health (Agunbiade & Gilbert, 2020). Also, older men believe that they cannot impregnate older women due to menopause and, therefore, do not use a condom during sexual intercourse as they perceive the use of a condom as related to pregnancy.

The aged who are married or in a union feel more committed to their relationships than their non-partner peers (Brown, S. L., Manning & Wu, 2022). Hence, during sexual intercourse, partnered older people are less inclined to seek for protection. Due to this misperception, the elderly perceive that they are not at risk of pregnancy and STIs, including HIV and engage in risky sexual behaviour such as having sexual intercourse without a condom and multiple sexual partners. These risky sexual behaviours may have implications for the sexual health of the aged. In linking it to the Social Norms Theory, the aged misperceive their peers' behaviour in using condoms and increase their risky behaviour with negative implications for their sexual health (Casey, Masters, & Beadnell, 2020).

As the biopsychosocial model indicates, the aged encounter complex interactions among biological, psychological, and social variables when coping with a persistent, distressing medical condition (Bolton, 2023). Biological, psychological, and social factors play significant roles in

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influencing older persons as they advance in age, and sometimes these factors affect their sexual health (Santos, Bashaw, Mattcham, Cutcliffe, & Giacchero Vedana, 2018). Biopsychosocial factors interrelate with each other, and in addressing issues of sexual health of the aged, emphasis should not only be focused on the medical aspects of their sexual health, but efforts should be channelled to addressing the psychosocial aspects that affect the sexuality of the aged. For instance, social factors such as societal norms, culture, perceptions, and isolation support the idea of asexuality among the aged. This perception may affect the rights and freedom of the aged to express themselves sexually. Society and family members may frown on the idea of the elderly expressing their sexuality, which will also negatively impact the sexual health of the aged (von Humboldt, Ribeiro-Gonçalves, & Costa, 2021).

Psychological factors associated with ageing, such as depression, anxiety, coping skills, and the attitude of health care providers, relatives, and caregivers, can adversely impact the sexuality of the aged. The elderly experience biological issues such as chronic illness, sexual dysfunction, impotence, and tissue damage as they increase in age, and this can reduce sexual desire and subsequently affect the sexual health of the aged (Fisher, Rezk, Nwefo, Masterson, & Ramasamy, 2020). For instance, the capacity of the aged to engage in sexual activity may be significantly impacted by health issues that typically affect older persons, such as urinary incontinence, pelvic organ prolapses, malignant prostate cancer, and cardiac arrest. Although life expectancy has increased due to better healthcare, the elderly with chronic conditions must endure discomfort for the rest of their lives, such as erectile dysfunction.

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Biological factors can impact social factors and psychologically affect the sexuality of the aged and vice versa. Delamater (2012) asserted that older men and women are still sexually active, and physical changes associated with ageing do not always result in a loss of sexual functionality. The biopsychosocial paradigm, which suggests that ageing affects older people's sexual health, is disproved by the fact that older people have good physical and mental health and favourable attitudes toward sex in later life.

In Figure 2, age indirectly affects physiological factors such as chronic illness, social factors, including loss of roles and isolation, and economic factors, such as economic vulnerability or poverty (Preston & Biddell, 2021). All of these intend to affect the sexual health of the aged. Economic factors also influence physiological, psychological, and social factors due to the ability or inability to treat chronic illnesses and other age-related diseases. Further, when an individual cannot effectively meet financial obligations and needs during the ageing process, there is less recognition and usefulness. When the aged lose their skills and knowledge and retire, they become depressed and stressed due to the inability to function as before and psychologically, which may reduce the desire for sexual activities (National Institute of Aging, 2023). Social factors are about the loss of roles, especially for the men when they retire from active jobs or service, with some of the aged having no regular income and having to rely on pension allowances.

Chapter Summary

In this chapter, four theories and a model were discussed. According to the Disengagement Theory of Ageing, as people age, their interactions with others in the social structure they belong to decline due to mutual separation or

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disassociation, an unavoidable process. According to this view, older persons' isolation from society is acceptable and appropriate. The Activity Theory of Aging argues that the most contented older people stay active and participate in social activities. When these pursuits are fulfilling, they can aid the aged to make up for lost obligations after retirement and enable them to fight social restrictions that could otherwise narrow their worldview. Based on the Continuity Theory of Aging, middle-aged and older people strive to retain and protect current internal and exterior structures when making adaptive judgements. The aged like to use methods related to their past interactions with themselves and their social environment to accomplish this goal. The Social Norms theory demonstrates that the perceptions of behaviour affect behaviour. Social norms interventions aim to alter people's perceptions of acceptable behaviour to modify actual behaviour. Finally, in addressing the health issue, the BPS model emphasises the relationship between the biological, psychological, and social aspects and its significance in maintaining the well-being of older persons.

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CHAPTER FOUR

RESEARCH METHODS

Introduction

This chapter provides a clear, comprehensive framework and account of how the study was conducted and establishes the foundation for the research. This section explains the research design, methodological approach, data collection techniques, and data analysis methods, establishes the credibility and validity of the research findings and demonstrates that the study was conducted rigorously and systematically. This chapter presents the philosophical paradigm and the research design of the study. The section also discusses the sample selection, recruitment of respondents and details of the steps to guarantee the study's validity and reliability. Ethical concerns associated with the study, such as confidentiality, informed consent, and privacy, were presented in this chapter.

Research Philosophy

A research philosophy is a set of fundamental principles that influence the design and conduct of a research study. Different research philosophies offer varied viewpoints on scientific research (Tamminen & Pouher, 2020).

The basis of these philosophies is the fundamental beliefs that provide a specific understanding of scientific research (Tamminen & Poucher, 2020). Different research philosophies offer various ways of understanding research, and researchers should consider which philosophy best aligns with their research questions and methodology. The primary research philosophies include Positivism, Interpretivism, Pragmatism, Realism, and Constructivism.

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Positivism emphasises using objective methods to gather and analyse data. It assumes that reality can be studied objectively, and researchers can use empirical evidence to develop generalisations and theories (Crossan, 2003). Positivism adopts a transparent quantitative approach to investigating a phenomenon (Alharahsheh & Pius, 2020). It focuses on generalising theory with large data sets without human bias. However, inappropriate statistical test selection might lead to misinterpretation of research and misuse of statistical testing.

Additionally, the results and significance of the test are significantly influenced by the sample size. Research generalisations may result in disregarding people's intentions and viewpoints. In this situation, it is also possible that people's behaviours have not been completely investigated and comprehended. It is difficult for researchers to get a deeper understanding of complex issues to be considered part of their research because positivism is more dependent on descriptive research findings (Alharahsheh & Pius, 2020).

Various philosophical paradigms shape social science research methodologies. Interpretivism underscores understanding social phenomena within their cultural and social contexts, rejecting positivism's objective stance (Alharahsheh & Pius, 2020). It highlights contextual depth and individual experiences, arguing that cultural factors construct social realities (Bhattacherjee, 2012). Conversely, pragmatism prioritises practical application and multiple realities, integrating diverse methodologies (AlGhamdi, 2013; Morgan, 2014). It posits that reality is constructed socially, yet some constructions align more closely with individual experiences (Yefimov, 2004). Realism posits an external reality that can be studied empirically, with

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variations like direct and critical realism (Bryman, 2010; Novikov & Novikov, 2012). Critics argue realism neglects spiritual aspects and downplays intuition (Chakma, 2022). Constructivism asserts that knowledge is constructed within individuals and is influenced by social forces (Hendry & Walker, 1999). It faces criticism for potentially promoting relativism and deterministic language perspectives (Kitching, 2008). These paradigms offer distinct lenses for understanding and conducting social research, each with strengths and critiques.

In reviewing the strengths and weaknesses of these philosophies, positivism was adopted as the philosophy underpinning the study due to its generalisation, prediction, validity and reliability, and parsimony characteristics. These characteristics informed the conduct of the study so that findings could be generalised and applied universally. Positivism is a philosophical school of thought that applies scientific methods to studying natural and social phenomena. This research method is distinguished by its objective, empirical, and quantitative nature. Auguste Comte (1798-1857) founded Positivism, a philosophy that guides research methodology (The Stanford Encyclopedia of Philosophy, 2008). In the nineteenth century, positivism emerged as a philosophical school due to Comte's rejection of metaphysics and argument that only scientific knowledge can reveal the truth about reality. The Vienna Circle, comprised of Gustav Bergmann, Rudolf Carnap, Herbert Feigl, Philipp Frank, Karl Menger, Otto Neurath, and Moritz Schlick, formally established positivism as the dominant scientific methodology early in the twentieth century (Kaboub, 2008). The positivist paradigm holds that real-world occurrences can be experimentally and

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rationally explained through analysis. A scientific theory's validity test is whether knowledge aligns with data gathered through the senses (Kaboub, 2008).

The positivist philosophy was used for this study on the sexual health of the aged because it emphasises objectivity, which means that the researcher was removed from the study to avoid subjective bias (Kaboub, 2008; Dudovskiy, 2022). Adopting this philosophy was critical for the research because the sexual health of the aged is a sensitive and potentially stigmatised issue that socio-cultural, religious, or personal beliefs can influence. Positivism employs quantitative research methods to comprehend a phenomenon. It collects and analyses data, which is appropriate for a study, as it provides a more comprehensive understanding of the prevalence of sexual health issues among the ageing population (Crossan, 2003). Furthermore, positivist philosophy seeks to generate knowledge transferable to other contexts or populations (Park, Konge, & Artino, 2020).

The study's use of this philosophy aided in identifying patterns and trends that were relevant to other cultural contexts. Finally, Positivism emphasises empirical evidence and proposes a hypothesis that can be confirmed or refuted using statistical data analysis. In research, positivism is focused on determining a relationship between two variables rather than the cause of the association (Proofed, 2022). The researcher tested hypotheses using observable and measurable data and identified the factors contributing to the sexual health of the aged, which was appropriate for the study. Finally, because positivism emphasises objectivity, quantitative methods, generalisability, and empirical evidence, the philosophy was a practical

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approach for a study on the sexual health of the aged. This approach provided a comprehensive understanding of sexual health issues among the aged and identified the factors influencing sexual health outcomes.

Research Design

The quantitative methodology was employed for this study. The study was non-experimental and used a cross-sectional design (Creswell, 2014; Rutberg & Bouikidis, 2018; Yannis & Nikolaos, 2018). Choosing the quantitative research methodology enabled the study to be conducted effectively (Mohajan, 2020).

Though several research designs are utilised in social science research, the study's objective determined the research design's suitability (Creswell, 2012). In this context, the cross-sectional design was applied to assess the socio-economic, biological/physiological, and psychological factors and the sexual health of the aged. Respondents in a cross-sectional study are mainly selected based on the study's established inclusion and exclusion criteria, as opposed to case-control studies, which select respondents or participants based on the status of the outcome, or cohort studies, which select participants based on the exposure status. This design allowed for data collection from the respondents (Creswell, 2012). For cross-sectional design, respondents were interviewed once during the study, and the outcome and exposures of study respondents and participants were examined concurrently (Setia, 2016).

According to Kumar (2011), cross-sectional designs are employed for population-based surveys, and this type of study design is typically affordable and relatively quick to conduct. Determining causal correlations from the cross-sectional analysis is challenging because the cross-sectional study design

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only allows for a single measurement of exposure and result. Nevertheless, by using a cross-section of the population, the design is important for determining the prevalence of an issue.

Data was employed using the quantitative approach for two reasons: running bivariate analysis and multivariate logistic regression analyses with exposure, explanatory, and outcome variables. Therefore, the design was suitable for the study's objective, which is to assess the factors that affect the sexual health of persons 60 years and older in the Greater Accra region.

Study Area

The study was conducted in the Greater Accra Region, specifically in the Accra Metropolitan Assembly (AMA). According to the 2010 Population and Housing Census, the Greater Accra Region had a population of 4,010,054, with 212,550 (5.3%) of the population aged 60 years and older. Among the region's population 60 years and older, males represent 5.0 percent, while females contribute 5.6 percent (GSS, 2013). The Greater Accra Region was selected to study the sexual health of the aged because of the region's significant population of the aged, providing a suitable sample size for the study. Additionally, the Greater Accra Region is known for its diverse demographic characteristics and urbanisation, which may influence the sexual health experiences of the aged. These characteristics include cultural diversity and the availability of healthcare facilities. The region also has the country's capital, ministries, departments, agencies, and significant governmental and non-governmental organisations. Most institutions have their headquarters in the region, attracting people from across the country to the region. As of 2010, the region has 16 metropolitan, municipal and district assemblies (GSS, 2013),

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with the Accra Metropolitan Assembly having the largest population of 1,665,086. Also, among the metropolitan, municipal and districts in the region, AMA has the largest number (97,644) of the ageing population, who are 60 years and older, making the Metropolis an ideal study area to assess the factors that affect the sexual health of the aged (Table1).

Overview of Accra Metropolitan Assembly

The Greater Accra Region has 16 MMDAs, including AMA. Accra Metropolis has served as Ghana's capital since its formation in 1898 and is the regional seat of the Greater Accra Region. Ga West Municipal, Ga South Municipal, the Gulf of Guinea, and La Dadekotopon Municipal form the Metropolis's northern, western, southern, and eastern boundaries, respectively. It has a total land area of 139.674 km2 (GSS, 2014).

Political and Administrative Structure

The Accra Metropolitan Assembly (AMA) is one of the Two Hundred and Sixty (260) Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana and among the sixteen (16) MMDAs in the Greater Accra Region. It was established in 1898 but has undergone several changes in name, size and number of Sub-Metros. When Ghana returned to constitutional rule in 1993, it derived its legal basis from the Local Government Act 1993 (Act 462), which currently has been amended as the Local Governance Act 2016 (ACT 936) and under Legislative Instrument (L.I) 2034. The AMA was founded in 2012 with L.I. 2034, following the construction of the La Dadekotopon.

Cultural Characteristics

Regarding culture and social structure, the word "Accra" originated from the Akan word "nkran," which means "an army of ants." The numerous

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anthills dotting the Accra plains are known as "nkran" or "nkranfo." There is no documented evidence to support the indigenous ancestry. According to conventional wisdom, the current inhabitants of James Town (Ngleshie) are believed to have left Nigeria at the beginning of the 15th century. The indigenous Ga people, known as the Ga Mashie, succeeded them. The initial location of these folks was Accra Central-James Town. For the people of Accra, Ga is their primary language, and the patrilineal method of inheritance is also practised. The Ga Mantse (Chief of Ga) presides over the Ga Traditional Council, the highest traditional institution. Eight chiefs from different towns in the Metropolis, including James Town, Osu, Abeka, and Sakaman, constitute its membership.

Three European forts built as trade stations are said to have contributed to Accra's expansion and development. The first of these forts was Fort Crevecoeur, constructed in 1650 by the Dutch and known as Ussher Fort. The second, Christianborg Castle, was constructed by the Danes in 1661 in Osu, roughly three kilometres outside Accra. The British constructed the third, Fort James, in 1673. The Christiansborg Castle was the official home of the Governors of the Gold Coast. However, once Ghana gained independence, it underwent renovations and a name change to become The Castle, suited for its capital.

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Table 1: Population 60+ by Metropolitan, Municipal and District Assemblies in Greater Accra Region

MMDAs	Population aged 60+
Ga South Municipal	18,964
Ga West Municipal	9,444
Ga East Municipal	6,650
Accra Metropolis	97,664
Adenta Municipal	2,961
Ledzokuku/Krowor Municipal	11,547
Ashaiman Municipal	7,507
Tema Metropolis	17,561
Shai Osudoku	3,808
Ada East	5,960
Ga Central Municipal	1,906
La Dade Kotopon Municipal	10,526
La Nkwantanang Madina Municipal	5,667
Kpone Katamanso	3,779
Ningo Prampram	4,691
Ada West	3,915

Source: GSS, 2010 Population and Housing Census, Greater Accra Region, 2013

Demographic and Socio-Economic Characteristics of Accra Metropolitan Assembly

Table 2 shows the demographic and socio-economic characteristics of the Metropolis. AMA is an urbanised area with a population of 1,665 086, with almost 52 percent of the population being females (GSS, 2014).

In terms of the age structure of the Metropolis, 28.7 percent are aged 0-14 years, 67.4 percent are in the working age group (15-64), and 6.6 percent are aged 60 years and older. Regarding religious affiliation, majority of the population were Christians. (78.7%), followed by Islam (17.0%), while the

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least was Traditional religion indicating (0.3%). Also, the majority (56.9%) of the population three years and older had basic education, 20.2 percent at the secondary level, and 11.2 percent at the tertiary level.

From Table 2, 60.7 percent of the population 12 years and older (1,275,440) were never married, 27.8 percent were formally married (customary, church, or ordinance), while 7.5 percent were not in union (separated, divorced, and widowed).

The Metropolis has the most diverse population aged 60 years and older, from various cultural and ethnic backgrounds, who may be at risk of sexual health problems. Similar to the pattern in the Greater Accra Region, most (39.4%) of the population in the Metropolis are Akans, followed by Ga Dangmes (23.2%). Ewes and Mole-Dagbanis comprise 17.1 percent and 14.5 percent, respectively (Table 2).

The Metropolis is the economic hub for the Greater Accra Region and the rest of the country (GSS, 2014). Numerous manufacturing businesses, oil corporations, financial organisations, telecommunications, tourist, educational and medical facilities, and other significant establishments are found in the city.

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Table 2: Demographic and Socio-Economic Characteristics of Accra Metropolitan Assembly

Variable	%
Sex	
Male	48.6
Female	51.9
Age	
0-14	28.7
15-59	67.3
60+	6.6
Religious Affiliation	
Christian	78.7
Islam	17.1
Traditional	0.3
Others	1.0
Level of Education	**%**
Pre School	7.1
Basic	56.9
Secondary/Vocational	20.2
Tertiary or Higher	11.2
Marital Status	
Never Married	60.7
Informal Consensual Union/Living Together	4.1
Married	27.8
Separated	1.9
Divorced	2.3
Widowed	3.3
Ethnicity	
Akan	39.4
Ga Dangme	23.2
Ewe	17.1
Mole-Dagbani	14.5
Economic Activity Status	
Employed	52.2
Unemployed	4.1
Not Economically Active	43.8

Source: GSS, Computed from 2010 Population and Housing Census, Accra Metropolitan, 2014

Majority of the residents of the Metropolis and people from other regions of the country work with these institutions. People from all parts of the country and beyond are drawn to the Metropolis to conduct various types of business due to the establishment of institutions and organisations and the availability of jobs (GSS, 2014). Most city dwellers are employed in the

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economy's basic, secondary, and tertiary sectors. They work in various professions and industries, including manufacturing, services, construction, fishing, and farming. Up until recently, the majority of the indigenous people's occupations were farming and fishing. For persons 15 years and older, unemployment is generally low (4.1%) in the Metropolis, and 52.2 percent were employed. Also, 43.8 percent of the persons 15 years and older were not economically active (Table 2).

Finally, the rapid urbanisation in the Metropolis is mainly contributed by migration and could change lifestyles and social norms, including sexual practices and the sexual health of the aged. About 47.0 percent (778,267) of the population (1,665,086) living in the Metropolis were migrants, meaning they were born outside Ghana or in another region other than the Greater Accra region. Additionally, it was found that 27.8 percent of those born outside the Greater Accra Region but lived in the Metropolis tended to be from the Eastern Region (183,426). In comparison, those from the Upper West Region had the least proportion of 1.2 percent (8,068). Further evidence shows that most migrants from countries other than Ghana have resided in the Metropolis for one to four years. Assessing the sexual health of the aged is pertinent, given the increasing longevity and changing demographics. Additionally, understanding the migration patterns, particularly the duration of residence in a specific location, provides context for studying sexual health among ageing populations, especially migrants from diverse backgrounds.

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Background Characteristics of Population 60 Years and Older in Accra Metropolitan Assembly

AMA is an urbanised area with a population of 1,665,086 (GSS, 2014), of which 5.9 percent are 60 years and older (Table 3). Most of the aged (32.5%) are between 60 and 64, and a few are between 75 and 79.

Results from Table 3 show that for the highest level of education, most of the aged had basic level education (57.7%), and few had tertiary or higher education (7.2%).

Table 3: Population 60+ in Accra Metropolitan Assembly by Background Characteristics

Background	(%)
Age	
60-64	32.5
65-69	21.3
70-74	18.5
75-79	11.6
80+	16.1
Sex	
Male	45.4
Female	54.6
Religious Affiliation	
No religion	3.2
Christianity	77.6
Islam	17.2
Traditional	1.9
Marital Status	
Never Married	6.3
Married	2.4
Informal/Consensual Union/Living Together	48.9
Separated	4.7
Divorced	7.3
Widowed	30.4

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Table 3 continued

Level of Education	
Basic	57.7
Secondary/Vocational/Technical	35.1
Tertiary or higher	7.2
Ethnicity	
Akan	33.6
Ga-Dangme	36.0
Ewe	17.3
Mole-Dagbani	13.1
Economic Activity Status	
Employed	40.7
Unemployed	2.3
Economically Active	57.0
Occupation	
Managers	7.3
Technicians and associate professionals	12.2
Clerical support/service and sales workers	43.4
Skilled agricultural, forestry and fishery workers	3.9
Craft and related trades workers	17.1
Plant and machine operators and assemblers	5.2
Others	10.9
Disability	
Sight	32.3
Hearing	7.4
Speech	9.8
Physical	16.4
Intellectual	11.0
Emotional	14.3
Others	8.8

Source: GSS, Computed from 2010 Population and Housing Census, 2014

Regarding religious affiliation, the majority of the aged are Christians (76.6%), and 1.9 percent were Traditional. In the Metropolis, 48.9 percent of the aged were in an informal/consensual union and living together, while 30.4 percent were widowed. Only 2.4 percent of the aged were married (Table 3). Most of the aged (36.0%) were Ga-Dangme, 33.6 percent Akans, and the least of the aged (13.1%) were Mole Dagbani.

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For economic activity status, the majority of the aged were not economically active (57.0%), 40.7 percent were employed, and 2.3 percent were unemployed. Of the employed aged, 43.4 percent were clerical support/service and sales workers, and 17.1 percent were craft and related trades workers. The least proportion of the aged were plant and machine operators and assemblers. Among the aged with a disability, most (32.3%) of them had difficulty seeing, 16.4 percent and 14.3 percent had physical and emotional difficulty, respectively, and 7.4 percent had difficulty hearing (Table 3).

Selected Communities in Accra Metropolitan Assembly

Two selected communities in AMA, which are Nima and Abeka, were considered for the study. Selecting Nima and Abeka to study the dimensions of sexual health among the aged in the Accra Metropolitan Assembly holds significant relevance. The name Nima has its etymology from the Ga Language, which means the "city of the King". *Nii* means *King* in the Ga language, while the word “city” is “mann” in the same language. Nima is a low-income neighbourhood located in the northeast of Accra’s city centre and about 5 km away from the central business district of Accra (Wrigley-Asante, Frimpong, Amu, Owusu, & Oteng-Ababio, 2019).

The socioeconomic challenges, demographics and structure that characterise the Nima community justify the study area to provide information on the sexual health of the aged. Despite inadequate infrastructure and stigmas associated with Zongos (Bandauko, Asare, & Arku, 2023), Nima is a multi-ethnic community, with most of its residents frequently seeking employment and other livelihood opportunities in other places (Ofori-Boateng, Adams, &

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Ohemeng, 2020). Also, Nima harbours diverse socio-economic groups, including professionals. The presence of informal businesses, suggest potential avenues for intervention and support for aged in the community. Nima is a Muslim-dominated area and understanding sexual health in this context can inform targeted policies and strategies to tackle the specific needs of older adults in Nima.

Further, exploring sexual health of the aged in Nima contributes to broader engagements on ageing and health disparities. Nima with a dense population and lower socio-economic status (Apeku, 2021), often faces challenges in accessing healthcare and sexual health education. These issues provide a chance to explore the socio-economic and various factors affecting the sexual health of the older population in Nima.

Abeka is an urban area located 7 km northwest of the Accra Metropolitan district in the Greater Accra Region of Ghana, which presents a compelling context for investigating the sexual health of the aged population. Abeka, bounded by the geographical coordinates 5º 36′ 0″ North and 0º 14′ 0″ West, is surrounded by neighbouring areas such as Lapaz, Fadama, and Tesano (AMA, 2020). With a population of 85,692 (males 41,091 and females 44,601), Abeka is the largest community within the Accra Metropolitan Assembly. From 2000 to 2021 (GSS, 2021), substantial population growth has been observed in the community, presenting significant demographic changes for the past two decades. Abeka has a mix of formal and informal settlements, potentially offering information into how varying levels of infrastructure and community resources influence sexual health behaviour, practices and access to care for the aged. Characterised by predominantly low-income households,

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Abeka's socio-economic landscape is mostly shaped by petty trading, which is the dominant commercial activity in the area. Also, the housing situation in the community shows that most residents live in rented accommodations, with relatively fewer private-owner houses (Nsiah, 2017). Despite its residential status, Abeka has essential amenities and facilities such as a market centre, shops, churches, health facilities, both public and private schools, which cater to the vary needs of its inhabitants (Accra Metropolitan Assembly, 2021; Nsiah 2017). However, with the growing population of the aged coupled with limited and inadequate resources and facilities, over-utilised health facilities indicate the need for holistic community development efforts and support for the aged.

The significance of studying the sexual health of the aged in Abeka extends beyond demographic structure and social and economic activities. This research will assess the factors that affect the sexual health of seniors in order to identify the issues faced by the community, especially the elderly. By analysing the dynamics and common perceptions surrounding ageing and sexual health, the study seeks to offer important insights that can encourage healthy ageing to improve the well-being of the aged..

In addition, Nima and Abeka's multicultural ethnic backgrounds offer a potential channel for researching cultural aspects related to sexuality in old age. The study will reveal detailed, informative parameters that drive sexuality at old age within the Greater Accra Region and, by extension, various thematic areas shaping urban health in Accra.

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Figure 3 shows the map of the AMA and the communities of study, Abeka and Nima. Both communities are urban areas with the Metropolis's largest population of 60 years and older.

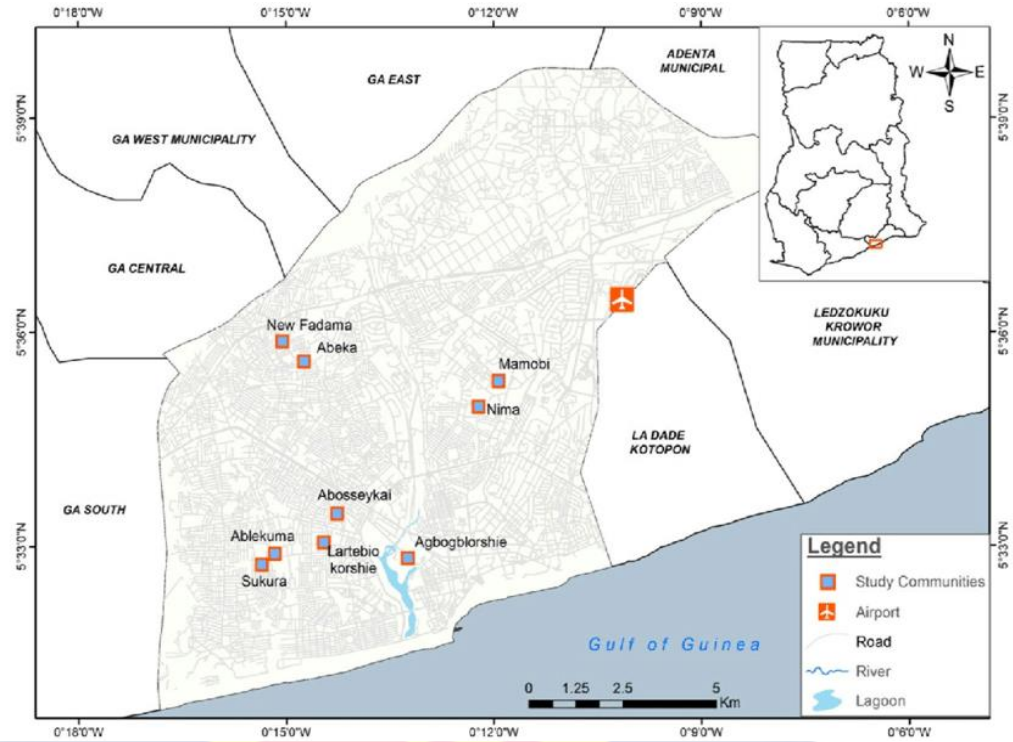

Figure 3: Map of the Accra Metropolitan Assembly

Source: Accra Metropolitan Assembly

Study Population

The study population consists of respondents aged 60 years and older, generally classified as the aged in this study. The United Nations agreed that the cutoff age for older or elderly persons is 60 years and older (WHO, 2019). At 60 years and older, most people are in retirement (except for the self-employed) and beginning old age. The study will focus on the aged who have indicated being sexually active, experiencing sexual satisfaction, and sexual dysfunction.

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Sample Size

A total of 817 respondents (365 males and 452 females) from Nima and Abeka in AMA were considered for the study. This sample size was more than the 740 initially targeted.

Table 4: List of Communities in the Accra Metropolitan Assembly and the Aged (60+)

Community	No. of Aged
Abeka	5,131
Nima	4,795
Darkuman	4,635
Achimota	4,502
Mamobi	3,708
Osu	3,185
Russia	2,768
Alajo	2,599
West Abbossey Okai	2,575
Bubuashie	2,559
South Odorkor	2,342
Adedenkpo	2,301
Adabraka	2,154
Sukura	2,149
Kokomlemle	2,084
Lartebiokorshie	2,076
Kotobabi	1,984
New Town	1,850

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Table 4 Continued

Kaneshie	1,837
Kwashieman	1,794
Korley Gonno	1,755
Mamponse	1,739
Dansoman	1,672
Usher Town	1,660
Sabon Zongo	1,632
Korle Dudor	1,626
Chorkor	1,606
Abbossey Okai	1,554
Mamprobi	1,519
Newtown	1,509
Avenor	1,379
North Kaneshie	1,226
Awoshie	1,115
North Okorkor	1,106
Gbegbeyisie	1,081
Sukura/Dansoman	1,002
Legon	984
James Town	957
Mataheko	876
Mpoase	794
Zoti	781

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Table 4 Continued

Asylum Down	755
Kissieman	702
Dzorwulu	681
Dansoman	632
New Fadama	600
Mempeasem	590
Christian Village	542
Old Dansoman	527
East Legon	523
Glefe	516
North Kaneshie	514
Korle-Bu	498
Kanda	473
Shiabu	470
New Mamprobi	445
Abelemkpe	436
Abofu	429
New Mamprobi	425
Abeka Lapaz	399
Accra Central	390
Tudu	381
Tesano	325
Ministries	323

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Table 4 Continued

Nii Boi Town	313
Airport Residential	300
Alogboshie	237
Kpehe	222
Ridge	217
Ringway	167
Roman Ridge	137
Legon Staff Village	117
Anumle	99
New Fadama	92
Darkuman	88
Okponglo	76

Source: GSS, Computed from the 2010 Population and Housing Census, 2014

The 2010 Population and Housing Census provided the sample frame for the selected communities in AMA. The communities in AMA were ranked from the highest population of persons aged 60 years and older to the lowest population of persons aged 60 years and older (Table 4). Based on the ranking and sampling technique, two communities, Abeka and Nima, with the highest estimated population of persons aged 60 years and older, were selected to determine the sample size for the study.

Using Yamane's (1967) simplified statistical table, the study's sample size was computed as follows;

$$n = \frac{N}{1+N(e)^2}$$

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Where “n” is the sample size, “N” is the population size, and “e” is the level of precision. The sample size assumes a sampling error of 5 percent, a confidence level of 95 percent and a 0.5 maximum variability (Israel, 1992). Yamane (1967) simplified statistical table assumes a normal distribution of important characteristics among the sample population being studied. The table was used to choose the sample size in this investigation (Israel, 1992). Applying Yamane’s computation for determining the sample size, the sample size for Abeka (n)= 5,131/ (1+5,131 (0.05^2), and that is 371. For Nima, the sample size is Nima (n)= 4,795/ (1+4,795 (0.05^2) and that is 369.

Sampling Technique

Systematic Sampling was used to identify the aged in the selected communities (Nima and Abeka).

Systematic sampling has been categorised as a "mixed" sampling design because it exhibits traits of both random and non-random sample designs (Kumar, 2011). Systematic sampling is a type of probability sampling in which each person in the population has an equal chance of being selected. This approach used a predetermined interval to choose respondents from a sample based on a systematic rule. After a random start, every "nth" case is chosen through systematic sampling. A systematic random sample procedure was adopted to select the respondents for the study.

Selection of Respondents

Abeka

- The sample interval was computed by dividing the total number of houses (7,318) by the sample size (371) of the population aged 60+, bringing the sample interval to 20.

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- The first house was selected randomly.
- Counting down the list, each 20th house was selected after the first house till 371 respondents from 371 houses were interviewed. This is based on the assumption that each house has a person 60 years and older.

Nima

- The sample interval was computed by dividing the total number of houses (4,268) by the sample size (369) of the population aged 60+, bringing the sample interval to 12.
- The first house was selected randomly.

Counting down the list, each 12th house was selected after the first house. Data was collected for both males and females. If a male was selected from the first house, a female was selected from the second house.

The systematic sampling method was applied to obtain a good sample for data analysis and eliminate the researcher's human biases in selecting familiar houses.

Data Collection Method

The study's data collection method was a face-to-face structured interview. A structured interview is a data-gathering strategy for studies that employ a predefined set of questions to obtain information from respondents. This method is mostly used in research studies to ensure that all respondents are precisely asked the same questions. It also gives the researcher more accurate comparisons of responses.

For this study, a structured interview allowed the researcher to ask a predetermined set of questions, using the precise wording and order of

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questions as specified in the interview schedule (Braun & Clarke, 2013; Creswell, 2014; Rubin & Babbie, 2016). This data collection method was appropriate as it provided uniform information, assured data comparability, and required fewer interviewing skills than unstructured interviews, mainly as research assistants supported the data collection for the study.

The structured interview enabled the researcher to collect reliable, valid, and comparable data to be collected from the respondents, enabling the researcher to draw conclusions and generalise about socio-cultural and economic, physiological, psychological, and sexual activity, sexual satisfaction and sexual dysfunction of the aged (Rubin & Babbie, 2016). Furthermore, with this data collection method, the researcher could reach many respondents efficiently using Computer Assisted Personal Interviews (CAPI), making the data collection method cost-effective (Rubin & Babbie, 2016). One limitation experienced using this data collection method was the inflexibility of the respondents to answer unexpected or unanticipated questions as the questions were pre-designed. This limitation, however, did not affect the quality of information gathered from the field.

Data Collection Instrument

An interview schedule was used as the study's data collection instrument, and the interviewer asked the respondents questions that were then recorded on the schedule. The interview schedule structured the conversation to gather information on socio-cultural and economic, physiological, psychological and sexual activity, sexual satisfaction and sexual dysfunction of the aged. The instrument had a list of open and close-ended questions posed to the respondents. The interview schedule was mostly customised to suit the

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research questions. The interview schedule enabled detailed data collection and clarified and probed responses. The instrument also allowed the collection of data from respondents on various demographic, socio-cultural and economic background characteristics, including religious affiliations, education, and ethnic groups and established a rapport with the respondents. Finally, the instrument was an effective way of collecting information from the aged, as most could not accurately read or write if the instrument was self-administered. However, using the interview schedule had its limitation of being time-consuming when looking at the sample size for the study.

Computer Assisted Personal Interviewing (CAPI) was used to facilitate data collection. The questions were programmed on the tablets for data collection. The interview schedule had five main components. The first section covered demographic, socio-cultural and economic variables, which were modified for this study from the questionnaire used for the 2010 Ghana Population and Housing Census (GSS, 2013). The socio-demographic characteristics included age, sex, level of education attended, religious affiliation, marital status, ethnicity, economic activity, and occupation.

Section Two of the interview schedule was on socio-cultural and economic factors, with questions on cultural norms and taboos, and sexual and marriage issues. The questions on marriage and sexual activity were adapted from the 2014 Ghana Demographic and Health Survey (GSS, 2015).

Section Three was on physiological factors, covering overall health, long-standing/chronic illness, the number of diagnosed chronic illnesses, and treatment of illnesses. Again, some questions were adapted from the Study on

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Global Ageing and Adult Health (SAGE) Wave 1: The Ghana National Report (WHO, 2013).

Section Four questions focused on psychological factors, including subjective well-being, depression, and living with a partner. The questions on subjective well-being were adapted from the Study on Global Ageing and Adult Health (SAGE) Wave 1: The Ghana National Report (WHO, 2013).

The final Section, Section Five, covered questions on economic factors regarding income, economic activity, and health insurance.

Recruitment and Training of Field Assistants

Eight field assistants were selected from the University of Cape Coast based on their ability to read and speak English fluently and translate data collection instruments into the four primary languages, Twi, Ga Dangme, Ewe, and Mole Dagbani and dialects. The field assistants were selected to ensure that the contents of the instruments were appropriately translated and their experience in collecting data on the related subject. Other criteria for recruiting research assistants included their aptitude for oral and written communication, attention to detail, critical thinking, technical skills, knowledge of statistical data analysis, ability to maintain quality and safety protocols, skills in planning and scheduling, interviewing skills, and some familiarity with issues of the ageing population.

The field assistants were trained to administer the interview schedule from 9th to 10th October 2020. In addition, they were trained to observe ethical issues and Covid-19 safety and health protocols before, during, and after the data collection exercise. During the training, field assistants engaged in a practical interview session using data collection instruments.

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Two groups of four field assistants were organised for data collection, with each group simultaneously collecting data in two communities. The field assistants administered the interview schedule to respondents.

To collect data on the sexual health among the aged in Nima and Abeka within the Accra Metropolitan Assembly using a structured interview schedule, the researcher and assistants approach potential respondents respectfully, explain the purpose of the study and obtain informed consent before proceeding with the interview.

Prior to initiating the interviews, obtaining informed consent is imperative, as well as ensuring respondents understand the nature of their involvement, potential risks, and benefits. It was crucial to emphasise the voluntary nature of participation, assuring respondents that they could withdraw at any interview stage without consequence. Moreover, confidentiality was assured, highlighting that their responses would be anonymised and used solely for research purposes, fostering trust and openness. Cultural sensitivity plays a pivotal role in acknowledging diverse beliefs and norms surrounding sexual health in these communities. Establishing rapport and demonstrating genuine interest in respondents' perspectives facilitated a conducive environment for sharing information. This ethical approach will not only uphold respondents' rights but also strengthen the integrity and validity of the research outcomes, ultimately contributing to informed interventions and policies tailored to the unique needs of the aged population in the Accra Metropolitan Assembly.

Following this, the researcher and assistant conducted structured interviews with selected respondents, following the predetermined interview

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schedule. Questions were asked sequentially, probing for additional information where necessary while maintaining a neutral stance. The responses were recorded accurately and comprehensively during the interview, using standardised digital data collection forms (Computer-Assisted Personal Interviews).

Pretesting

The research instruments were pretested. Pretesting preceded the data collection process (Hurst et al., 2015). This is to sort out the real data gathering on a small scale to detect data collection instruments, sessions, and methodology issues. According to Sheatsley (1983) and Sudman (1983), the principle of pretesting is to test the questionnaire on at least 12 to 50 people before the study, while 50 or more may be preferable to detect flaws in the questionnaire (Zukerberg, Thurn & Moore, 1996). It is reported that the power of pretests of questionnaires increased with the depth of the problem and sample size. For instance, if the prevalence of the problem was 0.05, a sample of 10 respondents had only 40 percent power to identify the problem, but a sample of 20 respondents had 64 percent power. If the prevalence of the problem was 0.05, 32 respondents were required to reach a power of 80 percent. Small samples of 5 to 15 respondents may miss common problems. As a result, a sample size of 30 respondents is advised for pretesting (Perneger et al., 2015). A pretest is only done for the structured questionnaire with a smaller sample size. Ideally, a pretest is conducted with two percent of the total sample (Malik, 2021). Based on the foregoing, fifty respondents from Darkuman, a community in AMA were considered in the pretesting of the instruments for the study.

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The instrument was pretesting from October 16th to 18th, 2020. Darkuman had the third-largest elderly population in AMA. The primary reason for pretesting the instrument in the community was its demographic and socio-economic similarities to the study communities. The researcher and two field assistants administered the interview schedule to 52 respondents, comprising 20 males and 32 females.

The pretesting was done to establish the validity and reliability of the instrument, as well as the appropriateness and acceptability of the approach. Furthermore, the pretesting was to determine the effectiveness of the field assistants in data collection. Before the main collecting data, the instruments were reviewed, examined, and updated.

Validation of the Interview Schedule

Principal Components Analysis (PCA) was used to validate the interview schedule. First, the PCA enabled the identification of the underlying components of the research instrument. To ensure internal consistency, the internal coherence of questions that load onto the same factors was examined. Ensuring the consistency of the instrument and measuring question reliability involved looking at the correlation between questions that load on the same factor. For the final stage of the validation process, the interview schedule was revised based on the information from the PCA and Cronbach's Alpha.

Data Collection Procedure

The data collection method for the quantitative study was a face-to-face structured interview using an interview schedule as the research instrument.

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Data was collected in the communities from 21st November 2020 to 11th January 2021. In each community, courtesy calls were made to the Municipal Assemblies to inform them of the data collection exercise. Furthermore, before data collection, the researcher addressed introduction letters outlining the study to the Municipal Assemblies.

Field assistants commenced the data collection exercise following the courtesy call to the Municipal Assemblies. All necessary data collection protocols, including Covid-19 protocols, were strictly observed. Before administering the interview schedule, respondents were identified and selected using a systematic sampling technique. Respondents were located for questionnaire administration.

The data collection exercise was conducted concurrently in both communities (Abeka and Nima). Before administering the questionnaire, informed consent was sought from the respondents involved in the face-to-face interview. Interviews were conducted with respondents willing to participate in the research, and they received assurances of voluntary participation, which permitted them to withdraw from the study at any time. For respondents to fully understand the questions and provide clear responses, the informed consent forms and questions in the instruments were translated verbally into local languages for respondents who did not understand the English language. For the face-to-face interview, each interview lasted 30 minutes to 40 minutes. The responses from the interview were duly recorded for each respondent. Where the questions have options, the researcher and field assistants mentioned all the options for the respondents to choose

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appropriately. Any respondent who decided not to participate in the study was free to decline.

COVID-19 Safety and Health Protocols

The COVID-19 pandemic emerged in Ghana in March 2020 and detrimentally affected Ghanaian social and economic well-being. To mitigate the spread of the disease, the Government of Ghana placed restrictions that were defined to curtail the spread of the virus. These directives and restrictions included wearing nose masks, washing hands under running water for some minutes, lockdowns, a ban on public gatherings, closure of schools, social and physical distancing and restricting movements outside, especially when it is not urgent to be out. Based on the information, COVID-19 safety and health protocols were implemented before, during and after data collection. Observance of the COVID-19 protocols was to ensure the safety and well-being of both the respondents and researcher amidst the ongoing pandemic. Also, the observance of the protocols was to ensure the safety of the respondents as the data collection involved a face-to-face interview.

During data collection, the privacy and confidentiality of the respondents were assured by conducting the interview away from the house and other household members who were within earshot of a place preferred by the respondents. A total of 817 interview schedules were administered to the aged in the AMA, which was more than the initial targeted sample size of 740. For example, in Abeka, 371 respondents were initially targeted, and 429 were interviewed, while in Nima, 369 were initially considered, and 388 were interviewed.

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Challenges from the Field

Challenges were encountered during the data collection. The data collection was done immediately after the 2020 elections, and some respondents were not in the "mood" to participate in the interview. As a result, data collection was suspended until January 2021.

Most respondents were reluctant to endorse the written consent form as they saw it as too "official" or legal. Moreover, even after comprehensive education on the purpose of the consent form, most respondents were still unwilling to endorse it. Therefore, verbal consent was adopted to address the challenge, and this solution was welcomed by the respondents who participated in the study.

Initially, the research team systematically selected every “nth” house as indicated in the sampling section. However, field assistants needed to get the respondents as planned for the duration of the data collection. Therefore, data collection was mapped out and spread across almost all the suburbs to avoid data clustering at a particular place.

Due to the necessity for respondents to be at home, interviews were conducted under harsh weather conditions. Occasionally, after the lengthy walk, no aged person would be encountered at home, or the household might not have an older person within the specified age group residing with them. However, this was typical of community surveys. Hence, this challenge was adequately anticipated.

Some interviews were aborted to ensure that data was effectively collected, especially with respondents whose voices were not audible enough due to old age and sickness.

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Data collection was done during the COVID-19 period, making it difficult to convince some of the respondents to participate in data collection.

Data Analyses

An interview schedule was developed, edited, and revised for the study based on the pretest, validity, and reliability test information.

In the study, the sexual health of the aged is measured by three outcome/dependent variables, which are sexual activity, sexual satisfaction, and sexual dysfunction. Self-reported sexual activity, sexual satisfaction and sexual dysfunction were assessed with an interview schedule developed for the study.

Sexual activity in this study is defined as an engagement in sexual intercourse in the past during the past 12 months (Traeen, Fischer & Kvalem, 2021). A “yes=1” response is being sexually active for the past 12 months, and “no”=0 is not active.

Sexual satisfaction is a subjective assessment of the positive and negative aspects of one's sexual relationship that results in an emotional response (Lawrance & Byers, 1995, p. 514). Sexual satisfaction is a key indicator of sexual health and is strongly linked to relationship satisfaction (Pascoal, Babara, & Pereira, 2014). Sexual satisfaction was assessed by the concentration of the aged during sexual activity, happy mood after sexual activity, partner’s sexual availability and body’s sexual functioning (Stulhofer, Buško, & Brouillard, 2011). A “yes” response to two of the items is termed sexual satisfaction. A variable named “sexual satisfaction” was developed (“yes”=1 and “no”=0). The binary "yes/no" approach with a threshold of two out of four "yes" responses was chosen to simplify the assessment of sexual

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satisfaction, ensuring clarity and consistency in responses. This method allows for a straightforward categorisation while capturing key factors contributing to overall satisfaction.

Sexual dysfunction is defined as a "person's inability to participate in a sexual relationship as they would wish" (WHO, 2010). For the study, sexual dysfunction was assessed under two areas, which are sexual desire disorders and sexual arousal disorders. A "yes" response to being diagnosed in any of these two areas is deemed sexually dysfunctional ("yes"=1 and "no"=0). This approach directly assesses the presence of diagnosed sexual dysfunction by asking respondents for a straightforward "yes" or "no" answer, ensuring clarity and minimising ambiguity. It provides a clear, objective measure of whether the individual has been formally diagnosed with sexual dysfunction, which is essential for accurate data collection.

In SPSS, an index variable called "Sexual Health" was created by summing values from three outcome variables: sexual activity, sexual satisfaction, and sexual dysfunctioning. Each variable had values of 0 or 1, resulting in an index range of 0 to 3. This sexual health index was then categorised into "Poor=0" (scores below 2) and "Good=1" (scores of 2 or above) sexual health. SPSS syntax was used to create and apply these categorisation criteria.

All the outcome variables (sexual activity, sexual satisfaction, and sexual dysfunction) were dichotomised, with No = 0 and Yes = 1 formats. The explanatory variables (socio-economic, biological/physiological, and psychological factors).

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For Socio-Economic: religion (no religion and religious affiliation, which is Christian, Islam and traditional), perceived influence of cultural practice on sexual activity (yes and no), current marital status (yes, currently married; yes, living with a man/woman; and no, not in a union), place of residence (Nima and Abeka), income quintile (first, second, middle, fourth, and fifth, current economic activity (employed and unemployed) and health insurance status (valid NHIS card and not valid NHIS card).

The independent variable “influence of culture on the continuity of sexual activity” was operationalised through demographic measures such as ethnicity or cultural background.

Income quintiles were created in SPSS based on respondents' reported average monthly income. First, the RANK command was used to assign individuals into five quintiles, creating a new variable, "income quintile," with values ranging from 1 to 5. Each quintile represented a different income group. Then, the VALUE LABELS command was applied to label these quintiles, with the 1st quintile labeled as the "Lowest" and the 5th as the "Highest" income group.

Biological/Physiological Factors: Age was captured in completed years and recoded into age groups (60-64, 65-69, 70-74, and 75 years and over). Perceived health was on the 5-point Likert scale. Mean scores were computed using SPSS and recoded into “poor”, “fair”, and “good”. However, in absolute terms, a mean score below 3 (1-2.99) was considered “poor”, a mean score of 3 was “fair”, and scores above 3 (3.1-5) were considered “good”. This classification was done for this study, chronic illness diagnosed (chronic

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illness and no chronic illness), number of chronic illnesses (1 and 2+) and ongoing treatment (yes and no).

Psychological Factors: Subjective Well-Being was on the 5-point Likert scale. The scores of 1, 2, 3, 4 and 5. Mean scores were computed using SPSS and recoded into "poor", "fair", and "good". However, in absolute terms, a mean score below 3 (1-2.99) was considered "poor", a mean score of 3 was considered "fair", and above 3 (3.1-5) was considered "good". Depression (yes and no) and living with a partner (partner living with me and partner living elsewhere).

International Business Machines (IBM) Corporation Statistical Product and Service Solutions (SPSS) version 22 (IBM Corporation, 2011) was used to analyse the data. The dependent variables in data processing were sexual activity, sexual satisfaction, and sexual dysfunction. The independent variables under consideration in the study were socio-cultural and economic, physiological, and psychological factors. The analytical strategy was divided into two stages. The descriptive analysis (univariate, bivariate, and multivariate techniques) was performed in the first step. Frequencies and proportions, including averages, were used to summarise the raw data and averages.

The Pearson chi-square test of independence was used to examine the association between independent variables, socio-economic factors (religion, influence of cultural practice, current marital status, income quintiles, current economic activity, and health insurance status), physiological (age, perceived health, chronic illness diagnosed, number of chronic illness diagnosed, undergoing treatment of illness) and psychological factors (subjective

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wellbeing, depression and living with a partner) and dependent variables (sexual activity, sexual satisfaction, and sexual dysfunction). Also, the chi-square test was used to establish the association between these independent variables and the dependent variable (sexual health). This study also observed the assumptions behind using the chi-square test for analysis. Hence, the variables were measured at ordinal or nominal levels, and the research variables comprised two or more categorical mutually exclusive groupings. The chi-square test was deemed suitable and appropriate since none of the predicted variable categories' had frequencies less than five. The second stage of analysis included inferential statistics. The chi-square test is commonly used to investigate the significance of a relationship and association between two category variables or attributes if the dependent and independent variables are also categorical. The chi-square statistic test was appropriate for the bivariate data analysis (Nadu, 2020).

Binary logistic regression was used to predict the probability or likelihood of the occurrence of the outcome variable (sexual health). Binary logistic function transforms predictor variables into probabilities, allowing for the interpretation of relationships between variables such as religion, economic activity, age, chronic illness, and subjective well-being and a binary outcome (sexual health) in terms of odds ratios. Logistic regression is a predictive analysis technique for describing data and illustrating the association between a dependent binary or dichotomous variable and one or more independent nominal, ordinal, or ratio-level variables (Connelly, 2020). The multicollinearity of the variables was investigated before the analysis by estimating the variance inflation factor to prevent redundancy of variables. A

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hierarchical strategy was used to create the logistic regression models (Table 5). On the presumption that the effects of explanatory and exposure variables on outcome variables differ, successive generations of models were developed. The hierarchical generation of the binary logistic regression models followed the pattern shown in Table 5.

The logistic regression method was used to measure how well the models fit. The Hosmer-Lemeshow (H-L) Test is a measure of goodness-of-fit. An H-L p-value greater than 0.5 indicates a successful fit of a model using this statistic. Also, indicated in the model is the pseudo measure of prediction (Pseudo R 2), which is used to describe the goodness-of-fit of the model. Wald Chi-Square examines the significance of interactions of explanatory variables within models.

Binary multiple logistic regression analyses were performed using a multilevel modelling approach to assess the effect of explanatory variables as potential confounders on the association between sociocultural and economic, physiological, and psychological factors and the sexual health of the aged. The various explanatory factors were added to the exposure variable to assess their influence on each outcome variable (sexual activity, sexual satisfaction, and sexual dysfunction). This action was done in alignment with the study's conceptual framework. Significant relationships were determined using a p-value < 0.05.

In Table 5, sexual health represents each dependent variable of this study (sexual activity, sexual satisfaction, sexual dysfunction). + (plus). Three logistic regression models (Model I, Model II, and Model III) were run for the analysis.

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Table 5: Procedure for Generation of Hierarchical Binary Models

Model	Loading Variables-Socio-Cultural and Economic Factors
Model I	Sexual Health + Socio-Economic Factors + Sexual Health of the Aged
Model II	Sexual Health + Socio-Economic Factors + Physiological Factors + Sexual Health of the Aged
Model III	Sexual Health + Socio-Economic Factors + Physiological Factors + Psychological Factors + Sexual Health of the Aged

Source: Field Survey, 2021

Ethical Considerations

The University of Cape Coast's Institutional Review Board granted ethical approval for the study. The researcher used an institutional review board approval letter and a permission letter from the Department of Population and Health, University of Cape Coast, to get authorisation from community authorities and respondents. Municipalities in the study areas were approached using introduction letters from the University of Cape Coast's Department of Population and Health, and permission was obtained before the commencement of the main fieldwork.

The researcher and field assistants presented themselves to the Municipality in each study community, explained the study's goal, and requested permission to gather data from the communities. In addition, the consent forms assured the respondents' voluntary involvement, confidentiality, and anonymity. According to the norms of confidentiality and anonymity (Berg, 2001), the names of the respondents were not listed on the interview

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schedule, and respondents were assured that their identities would not be mentioned in the data analysis.

The data from the study was kept confidential and protected to the best of the researcher's ability. The data was encrypted and properly stored on the computer and an external hard drive with password protection. The notes from the field were scanned and transferred to the computer and an external hard drive. The hard copies of the notes were shredded after the transfer. Due to the data's confidentiality, data storage access was limited to researchers and field assistants. The notes of the interviews were used as references by the researcher. Proper data storage will ensure that data is stored long-term and, with authorisation from the researcher, made available to third parties such as academic institutions, other interested institutions, and students.

Chapter Summary

This chapter presents a research methodology for collecting and analysing quantitative data on the aged 60 years and older. The positivist paradigm served as the study's philosophical framework. The use of chi-square test and binary logistic regression models to determine the relationship between the independent and dependent variables were also covered in this chapter.

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CHAPTER FIVE

SOCIO-ECONOMIC FACTORS AND DIMENSIONS OF SEXUAL HEALTH OF THE AGED

Introduction

A variety of intricate social, cultural, and economic issues have an impact on the sexual health of the aged. Religion shapes perceptions of sexuality among the elderly, particularly regarding sexual desire and physical intimacy (Alencar, Marques, Leal, & Vieira (2016). Cultural norms and beliefs about ageing and sexuality also play a significant role, as some cultures stigmatise and discourage sexual activity among the aged (Lindau et al., 2007). Additionally, the quality of marital relationships can impact the sexual well-being of older adults. Economic status is another influential factor, as financially disadvantaged older people may face barriers to accessing sexual healthcare services, resulting in untreated sexual health issues (Souza et al., 2020). Understanding these factors is crucial in addressing the unique sexual health challenges of older people.

This chapter presents background charateristics, knowledge, attitude and examines socio-cultural and economic factors and sexual activity, sexual satisfaction, and sexual dysfunction of the aged (60 years+). The socio-cultural and economic factors are religion, the influence of cultural practice, current marital status, place of residence, income quintiles, economic activity, and health insurance status. Proportions and a chi-square test were used to present the results.

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Background Characteristics of Respondents

Table 6 shows the percentage distributions of respondents by background, socio-cultural and economic, biological/physiological, and psychological characteristics and sexual health of the aged.

Generally, results indicate that a majority (54.8%) of the respondents had primary education (males 55.6% and females 54). Among the respondents, the least proportion of 8.9 percent, had tertiary or higher (males 13.7% and females 5.1%). Most (30.1%) of the respondents were Mole-Dagbani (males 28.2% and females 31.6%). Also, 25.2 percent of males were Ga Dangme, and females were 18.8 percent. Among males, 20.9 percent were in the professional industry compared to 2.7 percent of females. Also, a majority (72.4%) of respondents were into sales and services (56.1% men and 86.3% women). None of the women reported being plant and machine operators or assemblers.

For socio-economic factors, the majority of the respondents were affiliated with Christianity (55.2%), and there were more males (58.0%) than females (51.0%). Also, a few (2.7%) respondents were affiliated with traditional religion (males 1.1% and females 1.8%). For the perceived influence of cultural practice on the continuation of sexual activity among the aged, majority of respondents (70.1%) reported no influence of cultural practice (males 74.2% and females 66.7%). Over 50 percent (50.7%) of respondents were currently married, which was higher for males (52.7%) than females (49.1%), while 5.8 percent were living together (males 8.2% and females 5.8%). Table shows that, majority (52.5%) of the aged were resident

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in Abeka (males 52.6% and females 52.4%) and 47.5 percent were resident in Nima (males 47.4% and females 47.6%).

Table 6: Background Characteristics of the Aged (60+)

Variable	Background Characteristics		
	Male	Female	Total
	N=365	N=452	N=817
Background			
Education			
No Education	19.7	34.3	27.8
Basic	55.6	54.2	55.8
Secondary	11.0	6.4	8.4
Tertiary or Higher	13.7	5.1	8.9
Ethnicity			
Akan	25.2	27.9	26.7
Ga Dangme	25.2	18.8	21.7
Ewe	21.4	21.7	21.5
Mole-Dagbani	28.2	31.6	30.1
Occupation			
Manager	6.1	1.7	3.7
Professional	20.9	2.7	12.7
Sales and Services	56.1	86.3	72.4
Agricultural forestry and fishery Craft and related trades	6.8	6.3	6.5
Plant and machine operators and assemblers	10.1	0.0	4.6

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Table 6 continued

Socio-Economic Factors			
Religion			
No Religion	9.0	2.2	5.3
Christian	51.0	58.0	55.2
Islam	36.4	36.7	37.7
Tradition	2.7	1.1	1.8
Current Marital Status			
Percieved Influence of Cultural Practice			
Yes	25.8	33.3	29.9
No	74.2	66.7	70.1
Current Marital Status			
Yes, Currently Married	52.7	49.1	50.7
Yes, Living with a Man/Woman	8.2	3.9	5.8
No, Not in Union	39.1	47.0	43.5
Place of Residence			
Nima	47.4	47.6	47.5
Abeka	52.6	52.4	52.5
Income Quintiles			
1st Quintile (Lowest)	19.3	34.3	27.0
2nd Quintile	18.0	29.0	23.6
3rd Quintile	12.4	15.4	13.9

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Table 6 continued

4th Quintile	26.1	12.4	19.1
5th Quintile (Highest)	24.2	8.9	16.4
Current Economic Activity			
Employed	40.5	38.7	39.5
Unemployed	59.5	61.3	60.5
Health Insurance Status			
Valid NHIS Card	88.8	94.5	92.0
No Valid NHIS Card	11.2	5.5	8.0
Physiological Factors			
Age			
60-64	37.8	44.7	41.6
65-69	29.3	27.2	28.2
70-74	20.0	11.9	15.5
75+	12.9	16.2	14.7
Perceived Health			
Poor	41.4	47.2	44.5
Good	58.6	52.8	55.5
Chronic Illness Diagnosed			
Yes	39.9	43.6	42.0
No	60.1	56.4	58.0

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Table 6 continued

No. of Chronic Illnesses Diagnosed			
1	55.3	50.5	52.6
<2	44.7	49.5	47.4
Undergoing Treatment for Illness			
Yes	92.7	91.6	94.0
No	2.8	8.4	6.0
Psychological			
Subjective Well-Being			
Poor	17.3	17.0	17.1
Good	82.7	83.0	82.9
Depression			
Yes	7.1	3.7	5.1
No	92.9	96.3	94.9
Living with a Man/Woman			
Living with Me	82.2	77.3	79.6
Staying Elsewhere	18.0	22.7	20.4
Sexual Activity			
Yes	53.6	42.7	48.0
No	46.4	57.3	52.0

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Table 6 continued

Sexual Satisfaction			
Yes	52.1	35.9	43.1
No	47.9	64.1	56.9
Sexual Dysfunction			
Yes	4.5	0.0	4.5
No	95.5	0.0	95.5
Sexual Health			
Poor	56.5	75.4	66.9
Good	43.5	24.6	33.1

Source: Field Survey (2021)

Results from Table 6 further show that 27.0 percent of respondents were in the first income quintile. Among respondents in the first income quintile, the proportion of females (34.3%) was higher than males (19.3%). Also, the least respondents (13.9%) were in the third income quintile (males 12.4% and females 15.4%). Table 6 shows that the majority of respondents were unemployed (60.5%). Unemployment was higher among females (61.3%) than males (59.5%).

Regarding health insurance status, a majority (92.0%) of the respondents had valid NHIS cards, which was higher for women (94.5%) than men (88.8%).

Physiologically, 41.6 percent of respondents were aged 60-64 (males 37.8 % and females 44.7%). Among the respondents, 55.5 percent reported having good health (males 56.6% and females 52.8%), while 44.5 percent of respondents indicated having poor health (males 41.4% and females 47.2%). Again, 58.0 percent of respondents mentioned not being diagnosed with chronic illness (males 60.1% and females 56.4%), while 42.0 percent of

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respondents reported being diagnosed with chronic illness. From Table 6, a proportion of 52.6 percent had one type of chronic illness (males 55.3% and females 50.5%) compared to 47.4 percent of respondents diagnosed with two or more chronic illnesses (males 44.7% of and females 49.5%). The majority (94.0%) of respondents were undergoing treatment for illness (males 92.7% and females 91.6%).

Psychologically, 82.9 percent of respondents reported good subjective well-being (males 82.7% and females 83.0%), while 17.1 percent mentioned poor subjective well-being (males 17.3% and females 17.0%). Few (5.1%) of respondents reported not being diagnosed with depression (males 7.1% and females 3.7%). A majority (79.6%) of the respondents were living with a man/woman, and it was higher for males (82.2%) than females (77.3%).

For sexual activity, 52.0 percent of the aged are not engaging in sexual activity. Among the males, 46.4 percent were engaged in sexual activity, while females indicated 57.3 percent. A proportion of 43.1 percent of the aged reported being sexually satisfied, which was higher for males (52.1%) than females (35.9%). The majority of the aged (95.5%) mentioned experiencing sexual dysfunction. Only males report experiencing sexual dysfunction, with 4.5 percent indicating the presence of sexual dysfunction. Overall, majority of the aged had poor sexual health (66.9%). Also, 75.4 percent of males compared to 56.5 percent of females with poor sexual health.

Knowledge and Attitude of the Aged on their Sexual Health

Knowledge of sexual health is an important component of the general well-being of the aged. However, research consistently shows that knowledge of sexual health among the aged remains limited (Schaller, Traeen & Lundin

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2020). The fundamental reason for the inadequate knowledge might be a result of widespread bias against sexual stigma due to gendered ageism constructed by social stereotypes or myths about getting old (Syme & Cohn, 2020). For instance, stigmatisation is generally worsened for older men, who are typically expected to be more virile and sexually potent in society.

These prevailing myths often render the sexuality of the aged invisible or unimportant, exacerbating feelings of stigmatisation and inhibiting open discussion of their sexual health needs (Rebec, 2015). This issue is particularly acute for older women, who face more negative attitudes than their male counterparts (Soares & Meneghel, 2021). Comprehensively addressing the stigma is crucial, as negative attitudes toward the sexuality of older adults are likely to impact their sexual health and quality of life of the elderly. This section shows knowledge and attitudes on the sexual health of the aged.

Knowledge of the Aged on Sexual Health

Table 7 presents the distribution of knowledge of sexual health among the aged. Almost 56.0 percent of the aged showed high knowledge of sexual health, with a proportion of males (57.3%) slightly higher than females (54.9%). Also, 37.1 percent reported a fair knowledge of sexual health (males 38.6% and females 35.8%), showing a relatively balanced distribution. A few (7.0%) of the aged reported poor knowledge, and proportions were lower among males (4.1%) than females (9.3%). While almost 56.0 percent of the aged had high knowledge in sexual health, females showed a higher proportion of poor knowledge compared to males.

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Table 7: Knowledge of the Aged (60+) on Sexual Health by Sex

Variable	Knowledge of Sexual Health					
Level of Knowledge	Male		Female		Total	
	N	%	N	%	N	%
Poor	15	4.1	42	9.3	57	7.0
Fair	141	38.6	162	35.8	303	37.1
High	209	57.3	248	54.9	457	55.9

Source: Field Survey (2021)

How safe is it to engage in sexual activity?

Table 8 presents how safe it is for the aged to engage in sexual activity. Slightly more than 55.0 percent of the aged perceived sexual activity as safe. However, variations exist between males and females. Among the males, 64.8 percent perceived it is safe to engage in sexual activity, compared to only 47.5 percent of females. More than 26.3 percent of the aged considered sexual activity as unsafe, with 21.4 percent and 30.3 percent males and females respectively.

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Table 8: How Safe Is It to Engage in Sexual Activity by Sex

Variable	'How Safe is it to Engage in Sexual Activity					
Perceived safety in engaging in sexual activity	Male		Female		Total	
	N	%	N	%	N	%
Yes	230	64.8	207	47.5	437	55.2
No	76	21.4	132	30.3	208	26.3
Don't Know	49	13.8	97	22.2	146	18.5

Source: Field Survey (2021)

Who do you mostly discuss issues on sexual health?

Table 9 present findings on who the aged mostly discusses issues on their sexual health. Results show that 35.5 percent of the aged discussed issues on sexual health with partners. Among males 36.2 percent reported discussing their sexual health with partners, while females indicated 35.0 percent. Also, 5.6 percent of the aged mentioned discussing their sexual health with friends (7.7% of males and females 4.0%). Religious and traditional leaders (0.4%) played a minor role in discussing sexual health with the aged. Very few of the aged discussed their sexual health with religious or traditional leaders, with only 0.8 percent of males and none of the females. These results suggest that partners are the primary source of discussion on sexual health for the aged, with a small reliance on friends, relatives, and healthcare providers (Table 9).

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Table 9: Discussion of Sexual Health of the Aged (60+) with Primary Persons by Sex

Variable	Discussion of Sexual Health of the Aged					
Primary Persons	Male		Female		Total	
	N	%	N	%	N	%
Partner	132	36.2	158	35.0	290	35.5
Friend	28	7.7	18	4.0	46	5.6
Relative	3	0.8	18	4.0	21	2.6
Health Care Provider	13	3.6	16	3.5	29	3.5
Religious and Traditional Leader	3	0.8	0	0.0	3	0.4
No one	186	51.0	242	53.5	428	52.4

Source: Field Survey (2021)

How frequently do you discuss sexual health issues with the primary person?

Table 10 shows how frequently the aged discuss their sexual health with primary persons. Almost 56.0 percent of the aged discuss sexual health with primary persons "as and when necessary" with 29.3 percent of the aged discussing sexual health every month, with 25.1 percent of males and females indicating 32.9 percent (Table 10).

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Table 10: Frequency of Discussion of Sexual Health of the Aged (60+) with Primary Persons by Sex

Variable	Frequency of Discussion on Sexual Health with Primary Persons					
Frequency	Male		Female		Total	
	N	%	N	%	N	%
Daily	5	2.8	4	19.1	9	2.3
Weekly	23	12.8	22	10.5	45	11.6
Monthly	45	25.1	69	32.9	114	29.3
Bi-Monthly	1	0.6	5	2.4	6	1.5
Annually	1	0.6	1	0.5	2	0.5
As and When Necessary	104	58.1	109	51.9	213	54.8

Source: Field Survey (2021)

How do cultural practices influence your sexual activity?

Table 11 shows how cultural practices influence the sexual activity of the Aged. Results show that on the influence of cultural norms on the continuity of sexual activity of the aged, 48.7 percent of the aged reported difficulty in talking about sexuality as a challenge (males 45.2% and females 51.0%). Also, 34.5 percent of the aged mentioned that openly engaging in sexual activity was an issue (males 40.9% and females 30.3). Fear of stigmatisation was also a concern, particularly for females (15.9%) compared to males (11.8%). In addition, a few (2.5%) of the aged reported no influence from cultural norms.

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Table 11: Influence of Cultural Norms on Continuity of Sexual Activity of the Aged (60+) by Sex

Variable	Influence of Cultural Norms on Continuity of Sexual Activity					
	Male		Female		Total	
Influence of Cultural Norms	N	%	N	%	N	%
Difficulty in talking about sexuality	42	45.2	74	51.0	116	48.7
Difficulty in openly engaging in sexual activity	38	40.9	44	30.3	82	34.5
Fear of Stigmatisation	11	11.8	23	15.9	34	14.3
No Influence	2	2.2	4	2.8	6	2.5

Source: Field Survey (2021)

Most Affected by Continuation of Sexual Activity of the Aged

Table 12 presents the perceptions of who is most affected by the continuation of sexual activity of the aged. Regarding who is the most affected by the continuation of sexual activity of the aged, 68.2 percent of the aged identified older women as being most affected (males 58.8% and females 75.9%). Also, 31.8 percent of the aged indicated that older men are most affected with males reporting 41.2 percent and females indicating 21.1 percent (Table 12).

Table 12: Most Affected by Continuation of Sexual Activity in Later Years by Sex

Variable	Most Affected by Continuation of Sexual Activity in Later Years					
	Male		Female		Total	
Most Affected	N	%	N	%	N	%
Older Men	146	41.2	105	21.1	251	31.8
Older Women	208	58.8	331	75.9	539	68.2

Source: Field Survey (2021)

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Discussion

The findings from this study showed that a high proportion of the aged showed high levels of knowledge. Also, older men tend to demonstrate slightly higher knowledge rates than older women, indicating a potential gap between men and women in access to sexual health information. This gap could be due to variations among older men and women in sexual health regarding education, socialisation, or engagement in sexual activity (Peng, 2024; Zhang, 2023). However, the finding contrasts with the study by Cybulskii et al. (2018), who reported that women have higher knowledge scores concerning sexuality, suggesting that older women may be more aware of their sexual health than men. However, disparities persist, with a few of the aged, particularly older women, reporting poor knowledge, which suggests that older women may encounter unique barriers, such as societal stigma or inadequate education, affecting their understanding of sexual health (Ezhova et al., 2020).

Findings from the study show that the most of the aged perceive sexual activity as safe (Lochlainn & Kenny, 2013), although there are significant gender differences in these perceptions. Specifically, older men express a greater sense of safety in engaging in sexual activity compared to older women, who generally exhibit more caution or uncertainty (Freak-Poli, 2020). Freak-Poli (2020) reported that gender is a crucial factor influencing sexual behaviour in later life, with this disparity likely attributed to gender-specific health concerns, such as the effects of menopause on women's sexual health, as well as differing social attitudes toward ageing and sexuality (Scavello et al., 2019). These findings align with those of Steckenrider (2023), which

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demonstrates that older men consistently report engaging in sexual activity more often than their younger counterparts across all ages (Agochukwu-Mmonu et al., 2021). In contrast, Ports et al. (2014) found that the aged are less likely to practice safe sex.

Evidence from the study indicates that most of the aged discuss their sexual health issues with their partners, which could be attributed to the trust, emotional intimacy, and shared experiences defining such relationships (van Lankveld et al., 2021). The ease with which older people feel discussing their sexual health with partners encourages open engagement on health issues and enhances mutual support in handling these matters. This finding is consistent with Portellos et al. (2023), who noted that older adults navigate the changes and challenges related to their sexuality through meaningful relationships, among other factors (Ezhova et al., 2020).

Findings in the study suggest that most of the aged discuss sexual health with their primary person "as and when necessary". This may indicate that rather than engaging in regular or scheduled conversations, the aged may only address their sexual health when specific concerns or issues such as physical discomfort, health complications, or changes in intimacy emerge (Bourchier, Temple-Smith, Hocking, & Malta, 2024). In addition, this reactive approach could be due to diverse factors, including cultural norms that view sexual health as a private matter (Nyirenda, Sukazi, Buthelezi, & Hanass-Hancock, 2024), especially in older age or the belief that sexual health becomes less relevant over time. The findings were aligned with a previous study by Syme and Cohn (2021), who reported that aged discussions about sexual health are infrequent. The aged may prioritise discussing sexual health

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only when they perceive it to impact their quality of life. For some of the aged, this may reflect a reluctance to initiate conversations about sexual health due to societal stigma, discomfort, or generational attitudes that discourage open dialogue on the subject (Ezhova, Savidge, Bonne, Cassidy, Okwuokei, Dickinson, 2020). A higher proportion of females reporting daily discussions on sexual health with a primary person is observed in the study. This finding could be due to more healthcare engagement of older women and heightened awareness of age-related changes, such as menopause, leading to more frequent conversations about sexual health. Older women may also feel societal pressure to discuss sexual health more often, given the scrutiny around female ageing and sexuality. Findings from the study are inconsistent with Kingsberg et al., (2019), who reported that social stigma surrounding female sexuality persists in some societies, leading many women to feel uncomfortable or embarrassed discussing their sexual health with healthcare professionals.

Evidence from the study indicated that some of the aged expressed that openly engaging in sexual activity is a challenge (Hinchliff et al., 2021; Dominguez & Barbagallo, 2016). The reluctance of some of the aged to engage openly in sexual activity could be attributed to cultural or generational attitudes towards sexuality, feelings of embarrassment, or concerns about societal judgment (Gewirtz-Meydan et al., 2018). The fear of stigmatisation is a major concern among older women than older men. This finding could be attributed to societal norms that often portray female sexuality as declining with age, which can result in scrutiny and judgment (Cecil et al., 2022). In addition, gender roles and cultural expectations may further inhibit older

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women from openly discussing their sexual health (Peng et al., 2024). This finding contrasts with Syme and Cohn (2016), who reported that men, regardless of age or generation, tend to hold significantly higher stigmatic beliefs than women. Furthermore, the findings show that cultural norms impact sexual activity among the aged, with variations observed between older men and women (Rebec et al., 2015). However, Kenney (2013) reported that the influence of culture on the sexual lives of older people is gradually diminishing, influenced by advances in technology and social media.

From the study, most of the aged identified older women as being most affected by the continuation of sexual activity in later life. This gender disparity highlights a gendered view on sexual activity, with older women consistently viewed as more negatively impacted (Zhang, 2023). This finding supports a previous study by Ricoy-Cano (2023), suggesting that societal norms and expectations regarding sexuality disproportionately influence women, resulting in more perceived challenges in maintaining sexual activity as they age. Further, the findings confirm a study by Åberg et al. (2020), who demonstrated the double standard of ageing, showing that although both men and women experience deterioration with age, women are at a disadvantaged. Aberg et al. (2020) reported that ageing is perceived to diminish the physical attractiveness of women, which is often viewed as their primary social asset, while men's earning potential and public achievements may improve, with stricter appearance standards imposed on women than on men.

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Socio-Economic Factors and Sexual Activity of the Aged

This section presents the socio-cultural and economic factors and the sexual activity of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$).

Table 13 shows socio-economic factors and the sexual activity of the aged. The analyses only focus on the aged who were sexually active.

In regards to religion, Christians had the highest proportion (58.9%) of the aged engaged in sexual activity than other religions. Also, sexual activity was higher among Christian females (62.7%) than males (55.6%). Among the aged, 2.4 percent of the aged affiliated with traditional religion were engaged in sexual activity. Further, 4.5 percent of males who were engaged in sexual activity were traditionalists. The aged, with no religion, had the lowest proportion (4.2%) of sexually active.

Among the aged, sexual activity was highest (65.5%) among those who reported that cultural practices do not influence the continuity of sexual activity, and it was higher among males (78.6%) than females (52.3%). The majority (82.7%) of sexual activity was among the aged who are currently married. Also, among the males and females who are currently married, 75.7 percent and 90.8 percent of them were engaged in sexual activity, respectively (Table 13).

Table 13 shows that a majority of the aged in Abeka (61.0%) engage in sexual activity compared to those in Nima (39.0%).

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Table 13: Socio-Economic Factors and Sexual Activity of the Aged (60+) by Sex

Variable	Sexual Activity						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Socio-Cultural Factors							
Religion							0.018
No Religion	13	7.3	1	0.7	14	4.2	
Christian	99	55.6	96	62.7	195	58.9	
Islam	58	32.6	56	36.6	114	34.4	
Traditional	8	4.5	0	0.0	8	2.4	
Perceived Influence of Cultural Practice							0.149
Yes	41	23.2	73	47.7	114	34.5	
No	136	78.6	80	52.3	216	65.5	
Current Marital Status							0.000
Yes, Currently Married	134	75.7	139	90.8	273	82.7	
Yes, Living Together	25	14.1	11	7.2	36	10.9	
No, Not in Union	18	10.2	3	2.0	21	6.4	

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Table 13 continued

Place of Residence							0.001
Nima	70	39.3	59	38.6	129	39.0	
Abeka	108	60.7	94	61.4	202	61.0	
Income Quintile							0.000
1st Quintile (Lowest)	17	15.0	17	25.0	34	18.9	
2nd Quintile	20	17.7	21	30.9	41	22.2	
3rd Quintile	12	10.6	8	11.8	20	11.4	
4th Quintile	34	30.1	11	16.2	45	24.9	
5th Quintile (Highest)	30	26.5	10	14.7	40	22.2	
Current Economic Activity							0.000
Employed	113	65.3	69	45.1	182	55.0	
Unemployed	65	36.5	84	54.9	149	45.0	
Health Insurance Status							0.000
Valid NHIS Card	119	80.4	134	94.4	253	87.2	
No Valid NHIS Card	29	19.6	8	5.6	37	12.8	

Source: Field Survey (2021); $p<0.05$

Males in both communities report slightly higher levels of sexual activity (60.7% in Abeka and 39.3% in Nima) compared to females (61.4% in Abeka and 38.6% in Nima). However, the differences between males and females within each community were minimal, indicating similar patterns of sexual activity among men and women.

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In terms of income quintile and sexual activity, aged in the 4th income quintile had the highest proportion of sexual activity than aged in the other income quintiles. Also, among the men in the 4th quintile, 30.1 percent were engaged in sexual activity as compared to 16.2 percent of women in the same income quintile.

Further, among the aged, 11.4 percent in the 3rd income quintile were engaged in sexual activity (males 10.6% and females 11.8%). For current economic activity, among the aged, a higher proportion of 55.0 percent of those employed were engaged in sexual activity. Also, 65.3 percent of sexual activity was reported among males who were employed, while 45.1 percent of sexual activity was reported among females. In Table 13, regarding NHIS and sexual activity, a proportion of 87.2 percent of sexual activity was observed among the aged with valid NHIS cards (males 80.4% and females 94.4%). Also, among the aged, 12.8 percent of those with no valid NHIS cards were engaged in sexual activity with males recording 19.6 percent and females indicating 5.6 percent.

The chi-square test results in Table 13 show that, at a 5 percent significance level, there is a statistically significant association between religion, current marital status, place of residence, level of income, economic activity, health insurance status, and the activity of the aged.

Socio-Economic Factors and Sexual Satisfaction of the Aged

This section presents the socio-economic factors and the sexual satisfaction of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$).

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In Table 14, in terms of religion and sexual satisfaction, Christians (61.5%) had the highest proportion of sexual satisfaction. Among males who are Christians, 54.9 percent have experienced sexual satisfaction, while 69.2 percent of females indicated being sexually satisfied. Among the aged, 2.4 percent who were traditionalists reported sexual satisfaction, with men indicating 3.8 percent and women indicating 0.6 percent sexual satisfaction.

On the perceived influence of cultural practice on sexual satisfaction, the aged who perceived that cultural practice does not influence the continuity of sexual activity had the highest proportion (68.5%) of sexual satisfaction (males 76.6% and females 59.0%). Among the aged who are currently married, 79.5 percent reported being sexually satisfied. It is observed that 76.6 percent of males and 59.0 percent currently married mentioned sexual satisfaction (Table 14).

Table 14 shows that a higher proportion of the aged in Abeka (68.8%) were sexually satisfied compared to those in Nima (31.2%). In Nima, 35.9 percent of males reported sexual satisafction, while females indicated 25.6 percent. Also, in Abeka, females (74.4%) report higher rates of sexual satisfaction than males (64.1%).

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Table 14: Socio-Economic Factors and Sexual Satisfaction of the Aged (60+) by Sex

Variable	Sexual Satisfaction						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Socio-Cultural Factors							
Religion							0.006
No Religion	16	8.7	2	1.3	18	5.3	
Christianity	101	54.9	108	69.2	209	61.5	
Islam	60	32.6	45	28.8	105	30.9	
Traditional	7	3.8	1	0.6	8	2.4	
Perceived Influence of Cultural Practice							0.417
Yes	43	23.4	64	41.0	107	31.5	
No	141	76.6	92	59.0	233	68.5	
Current Marital Status							0.001
Yes, Currently Married	141	76.6	129	82.7	270	79.4	
Yes, Living Together	23	12.5	12	7.7	35	10.3	
Not in Union	20	10.9	15	9.6	35	10.3	
Place of Residence							0.001
Nima	66	35.9	40	25.6	106	31.2	
Abeka	118	64.1	116	74.4	234	68.8	

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Table 14 continued

Economic Factors							
Income Quintile							0.000
1st Quintile (Lowest)	17	15.6	19	27.1	36	20.1	
2nd Quintile	17	15.6	20	28.6	37	20.7	
3rd Quintile	12	11.0	8	11.4	20	11.2	
4th Quintile	32	29.4	11	15.7	43	24.0	
5th Quintile (Highest)	31	28.4	12	17.1	43	24.0	
Current Economic Activity Status							0.000
Employed	109	59.2	70	44.9	179	52.6	
Unemployed	75	40.8	86	55.1	161	47.4	
Health Insurance Status							0.000
Valid NHIS Card	132	83.0	133	92.4	265	87.5	
No Valid NHIS Card	27	17.0	11	7.8	38	12.5	

Source: Field Survey (2021); $p<0.05$

On the income quintile and sexual satisfaction, the highest proportion of sexual activity was among the aged in the 4th and 5th income quintile. Among males and females in the 4th income quintile, 29.4 percent and 15.7 percent indicated they were sexually satisfied. Also, 20.1 percent of sexual satisfaction was observed among the aged in the 1st and lowest quintile income. Also, among males in the 1st income quintile, 15.6 per cent reported sexual satisfaction, while females in the same group had 27.1 percent.

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Among the aged who were employed, majority (52.6%) indicated sexual satisfaction. Also, 59.2 percent of employed males, reported sexual satisfaction, while employed females were 44.9 percent. A proportion of 87.5 percent of the aged who had valid NHIS cards were sexually satisfied (males 83.0% and females 92.4%).

The chi-square test results in Table 14 show that, at a 5 percent significance level, there is a statistically significant association between religion, current marital status, place of residence, level of income, economic activity, health insurance status, and the sexual satisfaction of the aged (Table 8).

Socio-Economic Factors and Sexual Dysfunction of the Aged

This section presents the socio-economic factors and sexual dysfunction of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$). Only males responded to sexual dysfunction.

In this presentation of results on religion and sexual dysfunction, among males who are Christians, majority (53.3%) of them experienced sexual dysfunction, while among males with no religion 6.7 percent reported being sexually dysfunctional (Table 15). Also, 53.3 percent of sexual dysfunctionalities were observed among males who perceived that cultural practices influence the continuity of sexual activity.

On the perceived influence of cultural practice on sexual satisfaction, the aged who perceived that cultural practice does not influence the continuity of sexual activity had the highest proportion (68.5%) of sexual satisfaction (males 76.6% and females 59.0%).

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Table 15: Socio-Cultural and Economic Factors and Sexual Dysfunction of the Aged (60+) by Sex

Variable	Sexual Dysfunction						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Socio-Cultural Factors Religion							0.949
No Religion	1	6.7	n.a	n.a	1	6.7	
Christianity	8	53.3	n.a	n.a	8	53.3	
Islam	6	40.0	n.a	n.a	6	40.0	
Traditional	0	0.00	n.a	n.a	0.00	0.0	
Perceived Influence of Cultural Practice							0.015
Yes	8	53.3	n.a	n.a	8	53.3	
No	7	46.7	n.a	n.a	7	46.7	
Current Marital Status							0.096
Yes, Currently Married	2	13.3	n.a	n.a	2	13.3	
Yes, Living Together	0	0.00	n.a	n.a	n.a	n.a	
No, Not in Union	13	86.7	n.a	n.a	13	86.7	
Place of Residence							0.088
Nima	12	80.0	n.a	n.a	12	80.0	
Abeka	3	20.0	n.a	n.a	3	20.0	

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Table 15 continued

Economic Factors							
Income Quintile							0.217
1st Quintile (Lowest)	2	40.0	n.a	n.a	2	40.0	
2nd Quintile	3	60.0	n.a	n.a	3	60.0	
3rd Quintile	0	0.0	n.a	n.a	0	0.0	
4th Quintile	0	0.0	n.a	n.a	0	0.0	
5th Quintile (Highest)	0	0.0	n.a	n.a	0	0.0	
Economic Activity Status							0.973
Employed	5	33.3	n.a	n.a	5	33.3	
Unemployed	10	66.7	n.a	n.a	10	66.7	
Health Insurance Status							0.972
Valid NHIS Card	13	92.9	n.a	n.a	13	92.9	
No Valid NHIS Card	1	7.1	n.a	n.a	1	7.1	

Source: Field Survey (2021); $p<0.05$

Among the aged who are currently married, 79.5 percent reported being sexually satisfied. It is observed that 76.6 percent of males and 59.0 percent currently married mentioned sexual satisfaction (Table 15). Regarding marital status and sexual dysfunction, among the males who are not in a union, 86.7 percent mentioned they were sexually dysfunctional, among males currently married, 13.3 percent were also sexually dysfunctional (Table 15). Also, results show that sexual dysfunction among males is significantly higher

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in Nima (80%) compared to Abeka (20%). No responses were provided by females.

In Table 15, of the males in the 2nd income quintile, 60.0 percent were experiencing sexual dysfunction, while males in the 1st and lowest income quintile were 40.0 percent. In terms of economic activity, among the unemployed males, 66.7 percent indicated they were sexually dysfunctional compared to 33.3 percent reported sexual dysfunction among males who were employed. Almost 93 per cent (92.9%) of sexual dysfunction was observed among males with a valid NHIS card as compared to 7.1 per cent of males who did not have a valid NHIS card.

The chi-square test results in Table 15 show that, at a 5 percent significance level, there is a statistically significant association between perceived influence of cultural practices on the continuity of sexual activity and the sexual dysfunction of the aged (Table 15).

Discussion

Socio-cultural and economic factors and the sexual activity, sexual satisfaction, and sexual dysfunction of the aged were analysed.

Results show a statistically significant association between religion and sexual activity. Of the aged, the majority of Christians were engaged in sexual activity than among the aged with no religion. This finding suggests complex intersections of religious beliefs, social norms, and individual behaviours. Some of the factors that can contribute to this finding may include positive attitudes toward ageing, marital fidelity, and, most importantly, shifts in societal perceptions of sexuality within religious contexts (Malone & Dadswell, 2018; Ricoy-Cano, Obrero-Gaitán, Caravaca, & Fuente-Robles,

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2020) due to international conventions and globalisation. Further, none of the women in the traditional were sexually active. Evidence suggests that, although among the aged, few of the traditionalists were sexually active, none of the females reported sexual activity. This finding demonstrates how much religion affects older women's sexual health more than older men's. The conception of sexuality of the aged is mostly related to genitality and thought of sex, which was significant with religion (Alencar, Marques, Leal, &Vieira, 2016).

The study showed that the perceived influence of cultural practice on the continuity of sexual activity was not statistically significantly associated with the sexual activity of the aged. Even though the perception that cultural practices could influence sexual behaviour among the aged (Heidari, 2016; Rebec, Karnjuš and Ličen, 2015), findings from the study suggest that this perception did not align with the observed behaviour of the aged in terms of their sexual activity. Therefore, cultural practices, as perceived by the aged, did not seem to play a significant role in determining whether the aged remained sexually active.

In urban areas, norms and taboos have little effect on the continuity of sexual activity (sexual intercourse) among the aged because most of the communities in the urban are multicultural and have people from different ethnic groups. As such, people, including the aged, are not tied or bound by specific cultural practices, norms and taboos concerning their sexual activity. This finding collaborates with a study by Kenney (2013), who mentioned that the influence of cultural practice on the sexual life of older people is gradually weakening due to the changes in technology and social media. Also, results

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from the study show sexual activity was high among aged who did not perceive the influence of cultural practice on the continuity of sexual activity. Despite not perceiving cultural practices to influence sexual activity, a significant portion of the aged still engaged in sexual activity. This finding suggests that cultural influence might not be a determining factor in the aged decision to remain sexually active.

Evidence from the study also indicates that sexual activity was lowest among the aged, who are not in a union (not married, separated, divorced, and widowed) are sexually active compared to those who are currently married. Duration spent together and the likelihood of frequent sexual activity among the aged in the union may make the aged more sexually active than those not in a union. This finding supports a study by Freak-Poli et al. (2017), who indicated that most partnered older adults or adults in union are more sexually active than unpartnered older adults. Further, Freak-Poli et al. (2017) mentioned that one of the challenges of being sexually inactive at an older age is due to the loss of a partner, which particularly affects the aged, especially women, as sexuality is an important aspect of active ageing.

Also, a study by Yang and Yan (2016) reported that being married or in a union encouraged older women to engage in sexual activity. Also, regarding widowhood, some misconceptions restrict sexuality, impeding intimacy continuity when one partner dies. According to previous studies by Nyanzi (2011) and Yang and Yan (2016), the frequency of engaging in sexual activity by older people who are not in a union may be slow compared to those in a union. In contrast, Lee, Nazroo, Connor, Blake, and Pendleton (2016)

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reported that engaging in sexual activity by older men was independent of whether they were in a union.

The findings also show a slight gender difference in sexual activity levels, with older men in both communities reporting marginally higher levels of sexual activity than older women. The minimal differences between older men and older women in each community suggest that there are similar patterns of sexual activity among men and women in these urban areas. Also, findings in this study show minimal gender differences within both communities, suggesting that older women in these urban areas are as sexually active as men, challenging stereotypes that associate ageing in women with a decline in sexual interest or activity. This is in contrast with a study by Stentagg, Skär, Berglund and Lindberg (2021), who reported that older men than women more commonly reported sexual activity.

From the study, the majority of the aged in Abeka are more sexually active than the aged in Nima. The significant difference between the two communities, Abeka and Nima, could be attributed to social norms, economic conditions, and variations in health infrastructure. This finding is consistent with McMaughan, Oloruntoba, and Smith (2020), who demonstrated that urban communities with better access to healthcare services and higher socioeconomic status may have more favourable conditions supporting continued sexual activity in older age. This may partly explain the higher rates of sexual activity in Abeka compared to Nima, as Abeka could have a more enabling environment for elderly sexual health. These findings align with existing studies, which show that sexual activity among the aged is influenced

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by factors such as social and relational dynamics and access to sexual health information in a community Portellos, Lynch, Joosten (2023).

Furthermore, social and religious norms in different urban neighbourhoods can shape attitudes toward sexual activity among the aged Khumalo, Taylor, Makusha (2020). Nima, which is known for its predominantly Muslim population, may have more conservative views on sexual activity in later life, influencing reported levels of sexual engagement.

Findings also indicate that those aged who are in the 1st and 3rd income quintiles engaged in sexual activity more than those in the 4th income quintile. Higher income at later ages enables the aged to pay for their expenses as most are not economically active or retired. Income stability of the aged eases the worry of being a financial burden to the family and enables the aged to enjoy their sexual life. Further, the aged can access sexual health services and afford medical bills to ensure good health and improve their sexual health. The economic vulnerability of the aged can cause depression and psychologically worsen the already weak health condition due to physiological factors associated with ageing. A lower income for the aged may negatively impact the continuation of sexual activity, subsequently affecting their sexual satisfaction and sexual health.

Ama and Ngome (2012) indicated that challenges in the economic situation of the aged could affect their access to sexual health services. Evidence from the study indicated that economic activity was significantly associated with the sexual activity of the aged. Further, the study reported that among the aged who are unemployed, sexual activity was lower than among those employed. Financial stability ensures the continuity of sexual activity

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and sexual satisfaction among the aged. This finding was aligned with a previous study by (Sathyanarayana Rao, Shajahan, Darshan & Tandon, 2015), who assessed the prevalence of sexual disorders among individuals above 60 years.

Some studies have demonstrated that sexual inactivity and sexual problems were higher among the aged who were unemployed than daily wage labourers. Good and high economic status among the aged results in a higher frequency of sexual activity, more permissive attitudes toward their sexuality and quality of life (Even-Zohar & Werner, 2019). According to Tan et al. (2017), there is a relationship between the employment status of the elderly and their health. Paid employees were shown to have much lower chronic illness burdens and better health than retirees and the jobless. Aged with good health enjoy their sexual life more than those with poor health. Chronic illness negatively impacts sexual activity (Kalra et al., 2011), worsening their health and reducing sexual desire. Unlike retirees and the unemployed, the employed aged can financially address their health issues.

Being employed ensures financial stability among the aged, and they can treat illnesses and other health conditions that threaten their sexual health. According to Kim et al. (2017), the health condition of older people who receive a salary and those who are self-employed is better than those who are unemployed because most of the aged who are employed and receive income can afford treatment when they are ill to enhance their health, including sexual health. In addition, most of the aged who were sexually active had valid insurance cards. The ageing process may negatively impact the overall health of older people, particularly their physical health regarding movements. These

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challenges affect the sexual activity of the aged as illness, poor overall health and low energy make them lose interest in sexual activity. In Ghana, most elderly experience challenges in assessing healthcare services (Atakro et al., 2021) and this could be attributed to the economic inactivity of most of the aged and financial challenges. Due to their financial situation, the aged cannot undergo treatment when ill, which can subsequently impact their sexual health.

Healthcare benefits and health insurance support the aged to address some challenges in seeking healthcare to improve their sexual health. From the study, the majority of the aged, who have a valid NHIS card were sexually active than those with no valid NHIS cards. The sexual behaviour of the aged may drive them to secure and seek sexual health services to enhance their sexual life. A valid health insurance card enables the aged to access health services and pay their medical bills to improve their overall sexual health. Older persons who lack health insurance are more likely to have a decline in their general health (Baker, Sudano, Albert, Borawski & Dor, 2001).

Furthermore, older people who are continually uninsured have a larger chance of experiencing a significant decline in health than those who are continuously covered. Further, physically, continuously uninsured older people are more likely to develop new difficulties with mobility than continuously insured older people because most older people who are uninsured are often unaware of chronic medical conditions threatening their health. Older people who are uninsured tend to delay seeking care and treatment and go without the needed care and treatment for illnesses. All these issues with uninsured older people negatively influence their sexual health.

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Results show that religion had a significance on sexual satisfaction, and the majority of the aged who were affiliated with Christianity were more sexually satisfied than those with no religion. McFarland and Uecker (2011) suggested that religion is mainly unrelated to sexual frequency and satisfaction in married older people. However, religious inclusion in daily life has a slight but positive relationship with sexual pleasure. Other religions may encourage sexual activity among the aged to strengthen marital relationships, enhance emotional and physical intimacy and promote sexual satisfaction (McFarland & Regnerus, 2011).

In contrast to previous studies, for the aged, religion is one of the barriers to gaining sexual satisfaction. Ekundayo, Akanni and Oyedeji (2012) reported that religion had a significant influence on the sexual behaviour of older people. Also, findings by Kalra et al. (2011), Agunbiade and Titilayo (2012), and Uchôa et al. (2016) indicated that religion is one of the barriers to sexuality, sexual desire and sexual health of the aged and religious affiliation (Habib, Donald, & Hutchinson, 2018).

Evidence from the study also indicates that marital status can influence the sexual satisfaction of the aged. Findings show that the few of the aged who are not in a union (separated, divorced, and widowed) were sexually satisfied. Findings from the study show that current marital status was associated with sexual satisfaction. Psychologically, marital status impacts the continuity of sexual activity in old age. According to Trudel et al. (2013), although the aged are perceived to reduce sexual activity in old age, psychologically, marriage influences the continuity of sexual activity and subsequent improvement of sexual satisfaction and sexual health (Ivenuik & Waite, 2018). Fischer, Træen,

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and Hald (2018) mentioned that positive attitudes about sexual changes due to ageing, prior sexual activity, and relationship contentment were major determinants of partnered sexual engagement among older persons. However, the study's finding was inconsistent with the results reported by Liu and Su (2017), who indicate that the impact of marital status was less significant with the sexuality of the aged.

Findings from the study show that sexual satisfaction among the aged had significant disparities between the two communities, Abeka and Nima. The majority of the aged in Abeka reported being sexually satisfied compared to those in Nima. This marked difference may be attributed to various factors, including socio-economic conditions, healthcare access, and cultural attitudes toward sexuality in later life Zhang (2023). Abeka likely provides an environment that better supports sexual satisfaction among the aged. This is consistent with studies by Miguel, von Humboldt, and Leal (2024), who demonstrated that healthy ageing is linked to a more supportive social environment. Sexual satisfaction declines with age but is positively associated with how well individuals adapt to ageing. They indicated that social support is the most significant factor in the multifaceted process of adjusting to ageing.

In Nima, older men report higher levels of sexual satisfaction compared to older women. This gender gap may reflect broader inequalities in access to sexual health services or cultural norms that limit women's sexual agency in older age (Dessalegn et al. (2020), particularly in more conservative communities like Nima. Ramesh (2021) indicated that women, especially in conservative societies, face greater barriers to sexual satisfaction due to societal expectations, health issues, and the availability of a sexual partner

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(Gore-Gorszewska, 2021). In contrast, Abeka presents a different dynamic, where older women report higher sexual satisfaction than older men. This could be due to more progressive attitudes or better sexual health support for women in the community (Flynn et al., 2016). The findings align with findings from Ford et al. (2021), suggesting that women's sexual satisfaction increases when they have greater autonomy and access to supportive healthcare services.

From the study, income was significant in terms of sexual satisfaction. Findings indicate that most of the aged in the 4th income quintile are sexually satisfied. This finding could be attributed to most men being in formal jobs (GSS, 2021), which may earn them more income or ensure their financial stability, resulting in higher life and sexual satisfaction. Due to the financial stability and positive well-being of the aged, there is a high tendency to engage in sexual activity and be sexually satisfied. Foong, Sharifah, Koris, Hamid and Ibrahim (2021) reported that financial well-being is positively associated with the life satisfaction of the aged. Del Mar Sánchez-Fuentes, Salina, and Sierra (2016) also established that annual income is indirectly associated with sexual satisfaction. Findings show sexual satisfaction was lower among the aged who were unemployed.

Unemployment makes some of the elderly economically vulnerable, especially those who do not have a steady source of income and worsens their financial situation. The inability of the aged to cater for their needs can result in poor health conditions and sexual well-being. Poor sexual health results in the aged becoming depressed and moody, losing interest in sexual activities and reducing the frequency of sexual activity, affecting their sexual

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satisfaction. Further, findings from the study show that economic activity was significantly associated with the sexual satisfaction of the aged. The study reported that the occurrence of sexual satisfaction among the aged who are unemployed was lower than among those employed.

Being unemployed can psychologically affect the sexual health of the aged, as some are still sexually active. Also, resolving challenges with their sexual health has financial implications for the aged. The present study's findings are in collaboration with previous studies by Fonta et al. (2017) and Fenny (2017), who indicated that unemployment among older people is financial insecurity and is a potential risk to poor health. The aged who are poor most often experience the worst health outcomes in old age, which may impact their sexual health. Henning et al. (2021) stated that sexual satisfaction among the aged significantly decreased after the transition to retirement. Unemployed older men usually do not have life satisfaction due to their economic situation compared to those employed (Alden & Hammarstedt, 2018). Some become psychologically depressed, losing interest in sexual activities and desire. A similar finding was indicated by Erens et al. (2019) that employed older men were more sexually satisfied than those who were not working or retired.

Evidence from the study indicates sexual satisfaction among the aged who had valid NHIS cards. This finding could be due to the poor health of the aged, hence the need to have a valid NHIS card to access health services to enjoy sexual activity. The aged experience health issues that affect their sexual health and may need medical attention. With high unemployment among the aged, sexual health will be compromised without a valid NHIS card. Health

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insurance benefits to access sexual health services can improve the sexual satisfaction of the aged and enhance their sexual health. Having complementary and reduced financial burden access to health care can improve the sexual life, sexual satisfaction, and sexual health of the aged. With a valid NHIS card, the aged may not incur many expenses to address sexual health issues, including the affordability of medical bills. NHIS helps the aged to cover the cost of chronic illnesses such as cardiovascular diseases, diabetes and erectile dysfunction and their medications (Golomski, 2018). Blanchet et al. (2012) reported that access to medical aids by the aged improves their overall health, and sexual health and insurance affiliation is positively associated with healthcare usage. Continuous insurance coverage for the aged can transition the poor health state of the aged to good and improved health (Hadley & Waidmann, 2006).

From the results, among the aged who perceived that cultural practice influenced the continuity of sexual activity, majority of them had experienced sexual dysfunction. Promoting cultural norms in society can affect how the aged view their sexuality, and this may cause them to change their behaviour and attitude, which may result in sexual dysfunction. For instance, in some cultures, sex is considered taboo, especially for the aged, resulting in shame, guilt, stigmatisation and lack of communication around sexual issues. In addition, according to Fileborn, Thorpe, Hawkes, Minichiello, and Pitts (2015); Heidari (2016), rigid gender norms and expectations regarding sexual behaviour in some cultures may contribute to the aged experiencing inadequacy or nervousness regarding sexual performance. These societal

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expectations may have a detrimental effect on sexual function and result in sexual dysfunction.

The study's findings reflect the linkages between sociocultural and economic factors and the sexual health of the aged. The influence of factors such as cultural practice and marital status may cause the aged to suspend social activities, disengage from society, and become sexually inactive and dissatisfied, which can negatively impact their sexual health. Findings from the study also indicate that economic factors have an indirect relationship with the sexual activity of the aged. Illnesses associated with ageing, low-income levels, and unemployment may limit seeking medical assistance to address their sexual health. These linkages are conceptually relevant in this study and suggest that socio-cultural and economic factors influence the sexual health of the aged. Similarly, in other studies, socio-cultural and economic factors have been shown to affect the continuity of sexual activity (Atallah, 2016; Gorman & Zelma, 2018).

Chapter Summary

This chapter focused on knowledge, attitude, socio-economic factors and dimensions of sexual health of the aged 60 years and older. The results indicated that knowledge of sexual health among the aged shows high knowledge. Also, more of the aged perceive sexual activity as safe, and partners are the primary discussants on sexual health. Cultural norms influence sexual activity, affecting older women than men. Sexual activity among the aged was 40.5 percent, sexual satisfaction was 40 percent, and sexual dysfunction was 11.5 percent. The chi-square analysis showed that socio-cultural and economic factors (religion, current marital status, level of income,

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current economic activity, and health insurance status) were significantly associated with sexual activity. Also, religion, current marital status, level of income, current economic activity, and health insurance status were significant in sexual satisfaction. For sexual dysfunction, only the perceived influence of cultural practice on sexual activity was significantly associated with sexual dysfunction of the aged.

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CHAPTER SIX

BIOLOGICAL/PHYSIOLOGICAL FACTORS AND DIMENSIONS OF SEXUAL HEALTH OF THE AGED

Introduction

Sexual health issues among the aged mainly result from physiological changes, including ageing and chronic illness (Merghati-Khoei et al., 2016). Chronic illnesses contribute to declines in sexual desire and function of the aged. Diseases at later ages may affect the movement and physical activity of the aged, reducing their sexual desire and satisfaction (Camacho & Reyes-Ortiz, 2005). Furthermore, older people with a lower chronic disease burden had greater sexual frequency and less sexual dysfunction than those with a higher chronic disease (Shen, 2019). However, in some instances, sexual dysfunction such as decreased libido, lack of lubrication, or erectile dysfunction among the aged may result from illness treatment or medication. Also, interactions with these medications often go unnoticed and may pose a risk to the sexual functioning of older people (Camacho & Reyes-Ortiz, 2005).

This chapter analyses the association between physiological factors and sexual activity, sexual satisfaction, and sexual dysfunction of the aged 60 years and older. The physiological factors are age, perceived health, chronic illness diagnosed, number of chronic illnesses diagnosed, and ongoing treatment of illnesses. Proportions and chi-square tests were used to present the results.

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Biological/Physiological Factors and Sexual Activity of the Aged

This section presents the physiological factors and sexual activity of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$).

Table 16: Biological/Physiological Factors and Sexual Activity of the Aged (60+) by Sex

Variable	Sexual Activity						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Age							0.000
60-64	93	52.2	92	60.1	185	42.3	
65-69	57	32.2	44	28.8	101	28.0	
70-74	19	10.7	7	4.6	26	16.2	
75+	9	5.1	10	6.5	19	13.5	
Perceived Health							0.001
Poor	27	24.8	32	39.0	59	30.9	
Good	82	75.2	50	61.0	132	69.1	
Chronic Illness Diagnosed							0.000
Yes	46	26.0	28	18.3	74	22.4	
No	131	74.0	125	81.7	256	77.6	
No. of Chronic Illnesses Diagnosed							0.001
1	34	73.9	16	57.1	50	67.6	
≤ 2	12	36.1	12	42.9	24	32.4	
Undergoing Treatment for Illness							0.949
Yes	46	100.0	24	85.7	70	94.6	
No	0	0.0	4	14.3	4	5.4	

Source: Field Survey (2021); $p<0.05$

Table 16 shows the physiological factors and sexual activity of the aged. Among the aged, those aged 60-64 had the highest proportion (42.3%) engaged in sexual activity. Within females aged 60-64 years, 60.1 percent

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were engaged in sexual activity compared to males within the same age group (52.2%) were sexually active. Also, 13.5 percent of the aged 75 years and over engaged in sexual activity, with a similar trend observed among males (5.1%) and females (6.5%) 75 years and over.

In terms of perceived good health and sexual activity, results show that, majority (69.1%) of the aged who perceived good health were engaged in sexual activity. Among males with perceived good health, 75.2 percent were engaged in sexual activity, while among females with perceived good health, 61.0 percent were sexually active (Table 16). For chronic illness and sexual activity, the aged who were not diagnosed with chronic illness had the highest proportion (77.6%) engaged in sexual activity (males 74.0% and females 81.7%). Further, the results show that, among the aged, those who have been diagnosed with a type of chronic illness, majority (67.6%) of them engaged in sexual activity, and the proportion among males with a type of chronic illness was higher (73.9%) as compared to females (81.7%).

Regarding undergoing treatment for illnesses and sexual activity, a majority (94.6%) of those engaged in sexual activity were those undergoing treatment for illnesses. All the males undergoing treatment for chronic engaged in sexual activity, while among females undergoing treatment, 85.7 percent reported sexual activity (Table 16).

From the chi-square test results in Table 16, it can be concluded at a 5 percent significance level that there is a statistically significant association between age, perceived health, chronic illness diagnosed, number of chronic illnesses diagnosed and sexual activity of the aged.

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Biological/Physiological Factors and Sexual Satisfaction of the Aged

This section presents the physiological factors and sexual satisfaction of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$). Table 17 shows physiological factors and sexual dysfunction of the aged.

Among the 60-64-year-olds, most (49.4%) reported being sexually satisfied compared to those in the other age groups. Among males in the same age group, 46.7 percent indicated sexual satisfaction, while among females, 52.6 percent were sexually satisfied. It was also observed that with an increase in age, the number of aged, who are sexually satisfied decreases.

Majority (71.2%) of the aged who reported good health were sexually satisfied, with little difference in rates of sexual satisfaction among males who indicated good health (71.4%) and females (71.0%) who also perceived good health. Further, among the aged, 28.8 percent of those who reported poor health reported sexual satisfaction (males 28.6% and females 29.0%). Among the aged, a proportion of 27.1 percent of the aged diagnosed with chronic illness mentioned being sexually satisfied (Table 17). Among males who reported being diagnosed with chronic illness, 28.3 percent reported sexual satisfaction, while females indicated 25.6 percent. The aged diagnosed with a type of chronic illness had the highest (73.9%) proportion of sexual satisfaction (males 76.9% and females 70.0%) as compared to a proportion of 26.1 percent of those diagnosed with more than two types of chronic illness who reported sexual satisfaction (males 23.1% and females 30.0%).

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Table 17: Biological/Physiological Factors and Sexual Satisfaction of the Aged (60+) by Sex

Variable	Sexual Satisfaction						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Age							0.000
60-64	86	46.7	82	52.6	168	49.4	
65-69	59	32.1	52	33.3	111	32.6	
70-74	26	14.1	7	4.5	33	9.7	
75+	13	7.1	15	9.6	28	8.2	
Perceived Health							0.001
Poor	32	28.6	27	29.0	59	28.8	
Good	80	71.4	66	71.0	146	71.2	
Chronic Illness Diagnosed							0.000
Yes	52	28.3	40	25.6	92	27.1	
No	132	71.7	116	74.4	248	72.9	
No. Chronic Illnesses Diagnosed							0.004
1	40	76.9	28	70.0	68	73.9	
< 2	12	23.1	12	30.0	24	26.1	
Undergoing Treatment for Illness							0.821
Yes	52	100.0	34	85.0	86	93.5	
No	0	0.0	6	15.0	6	6.5	

Source: Field Survey (2021); $p<0.05$

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Among the aged undergoing treatment, the majority (93.5%) reported sexual satisfaction. Almost all the males were sexually satisfied as compared to the proportion of 85 percent of females undergoing treatment, were sexually satisfied (Table 17).

The chi-square test results in Table 17 suggest that, at a 5 percent significance level, there is a significant association between age, perceived health, diagnoses of chronic illness, number of chronic illnesses, and sexual satisfaction of the aged.

Biological/Physiological Factors and Sexual Dysfunction of the Aged

This section presents the physiological factors and sexual dysfunction of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$). Table 18 shows physiological factors and sexual dysfunction of the aged. Sexual dysfunction was reported and analysed by only males.

Regarding age and sexual dysfunction, among the males aged 65-69 years, most (40.0%) of them reported being sexually dysfunctional as compared to the other age groups. Also, among the males aged 75 years and over, a proportion of 33.3 percent indicated having been diagnosed with sexual dysfunction. Results from Table 18 show that the highest proportion (70.0%) of sexual dysfunction was among males who reported poor perceived, while among males who reported good health, a proportion of 30.0 percent was sexually dysfunctional.

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Table 18: Physiological Factors and Sexual Dysfunction of the Aged (60+) by Sex

	Sexual Dysfunction						
	Male		Female		Total		
Variables	N	%	N	%	N	%	P value
Age							0.272
60-64	3	20.0	n.a	n.a	3	20.0	
65-69	6	40.0	n.a	n.a	6	40.0	
70-74	1	6.7	n.a	n.a	1	6.7	
75+	5	33.3	n.a	n.a	5	33.3	
Perceived Health							0.370
Poor	7	70.0	n.a	n.a	7	70.0	
Good	3	30.0	n.a	n.a	3	30.0	
Chronic Illness Diagnosed							n.a
Yes	15	100.0	n.a	n.a	15	100.0	
No	0	0.0	n.a	n.a	0	0.0	
No. Chronic Illnesses Diagnosed							0.010
1	3	20.0	n.a	n.a	3	20.0	
≤ 2	12	80.0	n.a	n.a	12	80.0	
Undergoing Treatment for Illnesses							0.917
Yes	14	93.3	n.a	n.a	14	93.3	
No	1	6.7	n.a	n.a	1	6.7	

Source: Field Survey (2021); $p<0.05$

All the males diagnosed with chronic illness indicated being sexually dysfunctional. Among males who reported being diagnosed with two or more types of chronic illnesses, the majority (80.0%) were sexually dysfunctional.

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Also, a proportion of 93.3 percent of males, undergoing treatment for illnesses reported being sexually dysfunctional (Table 18).

From the chi-square test results in Table 18, it can be concluded that at a 5 percent significance level, there is a statistically significant association between chronic illness diagnosed and sexual dysfunction of the aged.

Discussion

The study analysed physiological factors and the sexual health (sexual activity, sexual satisfaction, and sexual dysfunction) of the aged. Findings show that physiological factors such as age, perceived health, chronic illness, and number of chronic illnesses diagnosed have implications for the sexual health of the aged.

Evidence from the study shows that the number of aged who are sexually activity decreased with age. Also, majority of the aged who are 60-64 years old were sexually active. Age was significantly associated with sexual activity. Similar studies such as (Darshan et al., 2015; Olatayo, Kubwa & Adekunle 2015; Thomas, Hess, & Thurston, 2015; Wang et al., 2015) show that changes in the physiology of older men and women which are due to ageing can generate sexual problems for the elderly including erectile dysfunction, causing a decreased interest in sexual relationships and discontinuation of sexual relations by the aged. At relatively lower ages, the aged are less burdened with diseases, and they are physically healthy to engage more in sexual activities than at later ages when they seem weak and sexually inactive.

The study showed that sexual activity was lower among the aged who reported poor perceived health compared to those who had good overall

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health. Perceived health was significantly associated with sexual activity. With good health, the aged would have enough energy to indulge in activities such as sports and fitness to keep in shape and enhance their health. Further, the aged with improved health may engage in frequent sexual activities. This finding is consistent with results reported in a study by Lee, Nazroo,' Connor, Blake, and Pendleton (2016), which found that poorer health is associated with decreased sexual activity and compound problems of sexual health of the aged. Ekström et al. (2018) also indicated that illnesses such as breathlessness increase the occurrence and duration of sexual inactivity in older people. As a result, a decrease in sexual activity can impact the sexual health of the aged.

Fonta, Nonvignon, Aikins, Nwosu, and Aryeetey (2017) indicated that the aged are more likely to report poorer health which has implications for their sexual health. Poor health can limit sexual activity. From the study, there was minimal difference in sexual activity among older men and women who reported good health, which could be attributed to the fact that healthy ageing enhances the sexual life of both men and women. From the study, the aged who reported being diagnosed with chronic illness were less sexually active. Evidence from the study also indicates that sexual activity occurs among men than among women. There is a widespread societal perception that older persons, particularly women, are asexual and that their sexuality is solely related to procreation. This perception can lead to limitations on the sexual expression and agency of older persons. According to a study by Fileborn, Thorpe, Hawkes, Minichiello, and Pitts (2015), older women are frequently stereotyped as disinterested in sex or unable to participate in sexual behaviour. However, older women oppose, resist, and navigate these standards.

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Edith (2014) and Chirinda and Zungu (2016) indicated that continuity of sexual activity is mostly seen among older men than women, and this may be because, in most communities, the sexual activity of women has been tied to youthfulness and procreation. In most cases, once the woman starts to age and experience menopause, she halts childbirth. Therefore, the woman is expected to cease sexual activities, which may subsequently result in older women's disengagement from sexual activities earlier than older men.

From the study, few of the aged who are above 65 years reported being sexually satisfied. Age was significantly associated with sexual satisfaction. The ageing process is associated with physiological changes, making them weak and vulnerable to chronic illness, often resulting in sexual dissatisfaction due to sexual inactivity. The finding from the study supports a study by Buczak-Stec (2021) that older people have lower sexual satisfaction than their younger counterparts and are less satisfied with their sex life.

From the study, age was positively associated with sexual satisfaction, which collaborated with the finding by Skałacka and Gerymski (2019), who stated that the majority of older people had recently engaged in sexual activity, and the amount of sexual engagement was found to be positively related to sexual pleasure. Nevertheless, different types of closeness were found to have distinct effects on sexual satisfaction. The study's finding was also in line with results from a study by Buczak-Stec et al. (2021) which indicated that older people are less satisfied with their sexual lives, and ageing was consistently connected with a decline in sexual satisfaction in older age groups. Also, according to Stentagg et al. (2021), the aged with good self-rated health are more likely to be content with their sex life than those with low self-rated

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health. Further, sexual satisfaction was positively associated with self-reported health, as indicated by this study.

Flynn et al. (2016) also indicated that men and women with good health status have higher sexual satisfaction than those with fair or poor health status. Furthermore, the study shows that women perceived poor health were less sexually satisfied than women with good health. This finding could be due to ageing and chronic illness, making them unable to enjoy their sex life. In contrast, a study by the University of California indicated that sexual satisfaction with overall sex life was not significantly different across all age groups (University of California, 2022). Forbes, Eaton, and Krueger (2017) indicated that the effect of age on sexual satisfaction is more on the quality of sex than quantity.

Evidence shows among older men a higher proportion of sexual dysfunction were those diagnosed with chronic illness. This finding is consistent with Darshan et al., (2015), who demonstrated that sexual problems are very much common among the aged. Among older men, erectile dysfunction is the most common sexual disorder. Pascoal, Slater, & Guiang (2017) also identified that, among older males, the most frequently addressed sexual health concern in health facilities is erectile dysfunction. Although according to the current study, ongoing treatment of illnesses was not significant with sexual dysfunction, it may have implications for the sexual health of the aged. Hinchliff, Tetley, Lee, and Nazroo (2018) indicated that prescribed medications like hypertensive drugs, many of which are prescribed to the aged, can have sexual side effects, which cause erectile dysfunction among the aged. Further, given their sensitivity to the side effects of the

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medications, older persons have a higher prevalence of drug-related sexual disorders.

Physiological factors influence the sexual health of the aged, as shown in the conceptual framework. These factors can alter the physiology and physical health of the aged, making them unable to engage in sexual activities and intimacy, ultimately affecting the sexual health of the aged.

Chapter Summary

This chapter focused on physiological factors and the sexual health (sexual activity, sexual satisfaction, and sexual dysfunction) of the aged 60 years and older. Evidence indicates that sexual activity among the aged was 40.5 percent, sexual satisfaction was 40 percent, and sexual dysfunction was 11.5 percent. From the results age, perceived health, chronic illness diagnosed, and number of chronic illnesses diagnosed were significantly associated with sexual activity and sexual satisfaction, while only chronic illness diagnosed was significantly associated with sexual dysfunction.

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CHAPTER SEVEN

PSYCHOLOGICAL FACTORS AND DIMENSIONS OF SEXUAL HEALTH OF THE AGED

Introduction

Ageing affects the sexual functioning of the aged as they undergo psychological changes that significantly impact their sexual health. Psychological factors play a critical role in the sexual well-being of older people (Gott, Hinchliff, & Galena, 2004). Older persons with good subjective well-being may engage more in sexual activity, have fewer sexual health problems and experience better sexual health outcomes than those with poor subjective well-being (Lindau et al., 2007). Depression affects the sexual desire of the aged, leading to decreased sexual desire (Din, Akahbar, Ibrahim, 2019). Being in a committed relationship boosts sexual experiences among older people (Lindau et al., 2007). Also, partnered older persons tend to have more positive sexual experiences and fewer sexual health issues than those unpartnered (Freak-Poli et al., 2017). Understanding these factors allows the aged to maintain a healthy and fulfilling sexual life. This chapter analyses the association between psychological factors and sexual activity, sexual satisfaction, and sexual dysfunction of the aged (60 years+). The psychological factors are subjective well-being, depression and living with a partner. Proportions and chi-square tests were used to present the results.

Psychological Factors and Sexual Activity of the Aged

This section presents the psychological factors and sexual activity of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$).

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Table 19: Psychological Factors and Sexual Activity of the Aged (60+) by Sex

Variable	Sexual Activity						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Subjective Wellbeing							0.001
Poor	23	13.0	19	12.4	42	12.7	
Good	154	87.7	134	87.6	288	87.3	
Depression							0.095
Yes	6	13.0	1	3.6	7	9.5	
No	40	87.0	27	96.4	67	90.5	
Living with a Partner							0.000
Living with Me	141	87.6	135	90.0	276	88.7	
Staying Elsewhere	20	12.4	15	10.0	35	11.3	

Source: Field Survey (2021); $p<0.05$

Table 19 shows psychological factors and the sexual activity of the aged. In terms of subjective well-being and sexual activity, among the aged who reported having good subjective well-being, a majority (87.3%) were engaged in sexual activity than among the aged who reported poor subjective well-being, where 12.7 percent of them were sexually active. In Table 19, among males who reported good subjective well-being, a proportion of 87.7 percent were engaged in sexual activity, while among females reporting good subjective well-being, 87.6 percent indicated being sexually active.

Regarding depression and sexual activity, it was observed that the aged with no depression had a higher proportion (90.5%) of sexual activity than the

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aged with no depression, where a proportion of 9.5 percent indicated sexual activity. Also, results show that among males with depression, 13.0 percent were sexually active higher than among females with depression, where a proportion of 3.6 percent were engaged in sexual activity (Table 19).

For living with a partner and sexual activity, results in Table 19, show that, among the aged who had their partners living with them, majority (88.7%) reported sexual activity than among the aged whose partners were living elsewhere, where a proportion of 11.3 percent was sexually active. Further, among males whose partners were living elsewhere, a proportion of 12.4 percent was engaged in sexual activity, while among females, whose partners were staying elsewhere, 10.3 percent were sexually active.

From the chi-square test results in Table 19, it can be concluded at a 5 percent significance level that there is a significant association between subjective well-being, living with a partner and sexual activity.

Psychological Factors and Sexual Satisfaction of the Aged

This section presents physiological factors and sexual activity of the aged (Table 20). The chi-square test of independence was applied to test for statistical significance ($p < 0.05$).

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Table 20: Psychological Factors and Sexual Satisfaction of the Aged (60+) by Sex

Variable	Sexual Satisfaction						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Subjective Wellbeing							0.668
Poor	27	14.7	29	18.6	56	16.5	
Good	157	85.3	127	84.1	284	83.5	
Depression							0.206
Yes	5	9.6	2	5.0	7	7.6	
No	47	90.4	38	95.5	85	92.4	
Living with a Partner							0.005
Living with Me	139	84.2	124	87.9	263	85.9	
Staying Elsewhere	26	15.8	17	12.1	43	14.1	

Source: Field Survey (2021); $p<0.05$

In terms of subjective well-being and sexual satisfaction, among the aged who reported having good subjective well-being, majority (83.5%) were sexually satisfied than among the aged who reported poor subjective well-being, where 16.5 percent of them were sexually satisfied. In Table 20, among males who reported good subjective well-being, a proportion of 85.3 percent who were engaged in sexual activity were satisfied, while among females reporting good subjective well-being, 84.1 percent indicated being sexually satisfied.

Regarding depression and sexual satisfaction, it was observed that, the aged with no depression had a higher proportion (92.4%) of sexual satisfaction than among the aged with no depression, where a proportion of 7.6 percent

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indicated sexual satisfaction. Also, results show that among males with depression, 9.6 percent were sexually active higher than among females with depression, where a proportion of 5.0 percent were sexually satisfied (Table 20).

For living with a partner and sexual activity, results in Table 20, show that, among the aged who had their partners living with them, majority (85.9%) reported sexual satisfaction than among the aged whose partners were living elsewhere, where a proportion of 14.1 percent was sexually satisfied. Further, among males whose partners were living elsewhere, a proportion of 15.8 percent were sexually satisfied, while among females, whose partners were staying elsewhere, 12.1 percent were sexually satisfied.

From the chi-square test results in Table 14, it can be concluded at a 5 percent significance level that there is a statistically significant association between living with a partner and satisfaction.

Psychological Factors and Sexual Dysfunction of the Aged

This section presents the physiological factors and sexual activity of the aged. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$). Sexual dysfunction was only reported among males.

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Table 21: Psychological Factors and Sexual Dysfunction of the Aged (60+) By Sex

Variable	Sexual Dysfunction						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Subjective Wellbeing							0.019
Poor	6	40.0	n.a	n.a	6	40.0	
Good	9	60.0	n.a	n.a	9	60.0	
Depression							0.000
Yes	4	26.7	n.a	n.a	4	26.7	
No	1	73.3	n.a	n.a	11	73.3	
Living with a Partner							0.435
Living with Me	3	100.0	n.a	n.a	3	100.0	
Staying Elsewhere	0	0.0	n.a	n.a	0	0.0	

Source: Field Survey (2021); $p<0.05$

In terms of subjective well-being and sexual dysfunction, in Table 21, among males who reported good subjective well-being, a proportion of 60.0 percent reported being sexually dysfunctional, while among males reporting poor subjective well-being, a proportion of 40.0 percent indicated being sexually dysfunctional.

Regarding depression and sexual activity, it was observed that among males with depression, a proportion of 26.7 percent reported being sexually dysfunctional lower than among males with no depression, where a proportion of 73.3 percent indicated being sexually dysfunctional (Table 21). For living with a partner and sexual activity, results in Table 21 show that all males whose partners were living with partners had experienced sexual dysfunctionalities.

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From the chi-square test results in Table 21, it can be concluded at a 5 percent significance level that there is a significant association between subjective well-being, depression, and sexual dysfunction.

Discussion

This section examines the psychological factors and sexual health (sexual activity, sexual satisfaction, and sexual dysfunction).

Again, findings from the study show that a higher proportion of the aged who perceived good subjective well-being were sexually active than those perceived to have poor subjective well-being. Subjective well-being was significantly associated with sexual activity. Findings from the study indicate that subjective well-being has implications for the sexual health of the aged (Gillespie, (2017). Aged with a happy and satisfying life are more likely to enjoy their sexual life and have enhanced sexual health (Smith et al., 2019). Therefore, findings from the present study on subjective well-being and sexual activity are consistent with Freak-Poli et al. (2017), who demonstrated that sexual activity and physical kindness with older people are related to psychological well-being, which has a beneficial influence and provides life pleasure.

Findings from the study indicate that a few of the aged who reported having partners living elsewhere (loneliness) engage in sexual activity. Living with a partner was also significantly associated with sexual activity. Living without a partner causes loneliness, which affects the sexual health of the aged, reduces the frequency of sexual activity among the aged, and, in some instances, causes low sexual desire and inactivity. A similar result was reported in a study by Kolodziejczak et al. (2019), who stated that older

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people who reported being very lonely indicated less sexual activity and less intimacy. Furthermore, Freak-Poli et al. (2017) reported that most older people in a union are engaged in sexual activity.

The availability of a partner encourages sexual activity among the aged and improves their sexual health (Thomas, Hess, and Thurston, 2015). Evidence from the study shows that living together with a partner, as reported by the aged, influences the continuity of sexual activity at later ages. This finding supports a study by Nyanzi (2011) and Yang and Yan (2016), who stated that for the aged who are not in a union and do not have partners living with them, the frequency of engaging in sexual activity may be slow due to the unavailability of partners. However, in contrast, Lee, Nazroo, Connor, Blake and Pendleton (2016) mentioned that engaging in sexual activity by older men was independent of whether they were in a union.

Evidence from the study indicates that, the majority of the aged with partners living with them reported sexual satisfaction. Regardless of the duration of relationships, the sexual satisfaction of the aged is the most significant factor influencing their perceived closeness with their partners (Træen, & Kvalem, 2023). In their study, Takbiri, Imeni, and Fini (2017) explored the intricate dynamics between sexual satisfaction and marital satisfaction among elderly individuals. They found that those who reported higher levels of sexual satisfaction tended to experience greater overall satisfaction within their marriages. This suggests that a fulfilling sexual life plays a crucial role in maintaining marital harmony and contentment, particularly in older age groups where intimacy often takes on heightened significance. The findings highlight the importance of addressing sexual well-

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being within the context of marital relationships, especially in the ageing population, to promote healthier and more fulfilling partnerships.

From the study, the majority of the older men with good subjective well-being reported being sexually dysfunctional than those perceived to have poor subjective well-being. The finding suggests a socially counterintuitive relationship between subjective well-being and sexual dysfunction among the aged. It implies that those with good subjective well-being are more likely to report sexual dysfunction compared to those with poor subjective well-being, indicating potential factors influencing perceptions of sexual health and well-being in older individuals. Possible explanations include health perception bias, relationship satisfaction, psychosocial factors, cultural norms, and healthcare access, highlighting the multifaceted nature of this association (Ricoy-Cano, Obrero-Gaitá, Caravaca-Sánchez, Fuente-Robles, 2020). This finding contrasts with previous studies where good subjective well-being of the aged can mentally and psychologically encourage the aged to engage in sexual activity and seek treatment for an ongoing illness, thereby improving their sexual functioning and sexual health.

A study by Lee, Vanhoutte, Nazroo, and Pendleton (2016), also shows that poor subjective well-being among older men was more strongly associated with difficulties in sexual function. There is an association between mental health and sexual health status in older persons (Hajek & König, 2023; Kleinstäuber, 2017). Physical and mental health issues can reduce sexual desire, make it more challenging to hold a sexual position, cause anxiety, and negatively impact one's sexual well-being (Hinchliff, Tetley, Lee & Nazroo, 2018).

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Findings also show that the majority of older men who reported not being diagnosed with depression were sexually dysfunctional compared to the aged with depression. Depression was significantly associated with sexual dysfunction. This finding suggests that factors beyond clinical diagnosis, such as age-related physiological changes or relational dynamics, may contribute significantly to sexual health issues among the aged, irrespective of mental health status. Also, the significant association between depression and sexual dysfunction indicate a strong link between mental health and sexual well-being among the aged. According to Wang et al. (2015), depressive symptoms are more strongly associated with poorer sexual health status of the aged than physical function, anxiety, stress, or age. For the aged, sexual activity and satisfaction are important aspects of life, and successful treatment of depression may positively impact the sexual health of the aged.

Depression among the aged, especially older men, could negatively affect their sexual behaviour by reducing sexual desire and activity. However, ongoing treatment may cause men experiencing depression to have good psychological well-being and engage in frequent sexual activity (Bakr, El-Sakka & El-Sakka, 2022).

Further, sexual dysfunctions are common in depression but are often underreported (Thakurdesai & Neena Sawant, 2018). On the contrary, similar studies have reported the influence of depression on the sexual function of the aged. Jerez-Roig et al. (2016) mentioned that depressive symptoms among the aged are associated with arterial hypertension and functional impairment. Slack and Aziz (2020) demonstrate a high correlation between sexual dysfunction and depressive symptoms such as low energy, motivation, self-

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esteem, and reduced libido. Further, the prevalence of sexual dysfunction is higher among the aged with depression than those who are healthy and do not have depression (Basson & Gilks, 2018; Jackson et al., 2019).

According to Yazdanpanahi et al. (2018), there is a relationship between stress, anxiety, depression, and sexual dysfunction in postmenopausal women in that the higher the anxiety, depression, and stress, the lower the sexual function. Furthermore, depression has a higher impact on the prediction of sexual dysfunction. In a study by Din, Akhabar, and Rahimah (2019), it was indicated that there is an occurrence of depression among older people, and most of them were not satisfied with their sexual lives. Jackson et al. (2019) reported that depression independently determines the prevalence of sexual dysfunction among the aged. Depressive symptoms associated with sexual dysfunction can affect the sexual health of the aged.

Findings from the study indicate that psychological factors such as subjective well-being and depression impact the sexual health of the aged, as shown in the conceptual framework. These findings support the conceptual framework where psychological factors affect the sexual behaviour, sexual dysfunction of the aged and the sexual health of the aged. For instance, the study has proven that there is a significant association between subjective well-being, depression living with a partner and the sexual health of the aged.

Chapter Summary

This chapter focused on psychological factors and the sexual health (sexual activity, sexual satisfaction, and sexual dysfunction) of the aged 60 years and older. The sexual activity among the aged was 40.5 percent, sexual satisfaction was 40 percent, and sexual dysfunction was 11.5 percent. The

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subjective well-being and living with a partner were significantly associated with sexual activity and sexual satisfaction. Living with a partner was significantly associated with sexual dysfunction.

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CHAPTER EIGHT

FACTORS INFLUENCING THE SEXUAL HEALTH OF THE AGED

Introduction

Socio-economic, physiological, and psychological factors shape the sexual health of the aged. Cultural norms can stigmatise sexual activity among the elderly, while partnered individuals often have more positive experiences and fewer issues (Dominguez & Barbagallo, 2016; Freak-Poli et al., 2017). Economic disadvantages can limit access to sexual healthcare, leading to untreated issues (Souza et al., 2020). Physiological changes and chronic illnesses significantly impact sexual health, with lower disease burden correlating with higher sexual frequency and less dysfunction (Merghati-Khoei et al., 2016; Shen, 2019). Treatments and medications can also cause sexual dysfunction, such as decreased libido and erectile difficulties (Camacho & Reyes-Ortiz, 2005). Psychological well-being plays a critical role; those with good mental health experience better sexual health outcomes, while depression reduces sexual desire (Gott, Hinchliff, & Galena, 2004; Lindau et al., 2007; Din, Akahbar & Ibrahim, 2019). Addressing the factors is crucial in supporting the sexual health of the aged.

This chapter examines the association between socio-economic factors, physiological factors and psychological factors and the sexual health of the aged 60 years and older. The chi-square test of independence was applied to test for statistical significance ($p < 0.05$). Also, multivariate analysis was conducted to identify factors that affect the sexual health of the aged.

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Socio-Economic Factors and Sexual Health of the Aged

Table 22 shows that among the aged, the highest proportion of Christians reported "good" sexual health. Also, among males who are Christians, 57.4 percent said they have "good" sexual health, while females indicated 71.0 percent. The least proportion of 2.3 percent of the aged who are traditionalists also reported "good" sexual health and among males it was 3.9 percent, however, none of the females perceived "good" sexual health.

Majority (68.3%) of the aged who indicated that the influence of cultural practice does not affect the continuity of sexual activity said they have "good" sexual health (males 78.1% and females 54.2%). Also, from Table 22, the highest proportion (83.2%) of the aged, who were currently married reported "good" sexual health, while among the aged who are not in union, 6.1 percent reported "good" sexual health (males 9.0% and females 1.9%).

Majority (64.5%) of the aged who were resident in Abeka reported "good" sexual health (males 51.9% and females 68.2%). Also, from Table 16, a lower proportion (35.5%) of the aged, who were resident in Nima reported "good" sexual health. Among the males in Nima, 38.1 percent of them reported "good" sexual health, while 31.8 percent of females in "Nima" reported good sexual health.

Regarding the level of income, among the aged, most (25.8%) in the 5th income quintile reported "good" sexual health. Among males in the 5th income quintile, 29.2 percent reported "good" sexual health, while 18.9 percent of females in the same income quintile reported "good" sexual health.

Among the aged, those in the 3rd income quintile had the least proportion (10.1%) who said they had "good" sexual health.

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Table 22: Socio-Economic Factors and Sexual Health by Sex of the Aged (60+)

Variable	"Good" Sexual Health						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Socio-Cultural and Economic Factors							
Religion							0.008
No Religion	12	7.7	1	0.9	13	5.0	
Christianity	89	57.4	76	71.0	165	66.0	
Islam	48	31.0	30	28.0	78	29.8	
Traditional	6	3.9	0	0.0	6	2.3	
Perceived Influence of Cultural Practice							0.454
Yes	34	29.1	49	45.8	83	31.7	
No	121	78.1	58	54.2	179	68.3	
Current Marital Status							0.000
Yes, Currently Married	120	77.4	98	96.1	218	83.2	
Yes, Living Together	21	13.5	7	6.5	28	10.7	
No, Not in Union	14	9.0	2	1.9	16	6.1	

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Table 22 continued

Place of Residence							0.001
Nima	59	38.1	34	31.8	93	35.5	
Abeka	96	51.9	73	68.2	169	64.5	
Income Quintile							0.000
1st Quintile (Lowest)	16	15.1	12	22.6	28	17.6	
2nd Quintile	16	15.1	19	35.8	35	22.0	
3rd Quintile	12	11.3	4	7.5	16	10.1	
4th Quintile	31	29.2	8	15.1	39	24.5	
5th Quintile (Highest)	31	29.2	10	18.9	41	25.8	
Economic Activity Status							0.000
Employed	100	64.5	51	47.7	151	57.6	
Unemployed	55	35.5	56	52.3	111	42.4	
Health Insurance Status							0.000
Valid NHIS Card	107	81.1	91	91.9	198	85.7	
No Valid NHIS Card	25	18.9	8	8.1	33	14.3	

Source: Field Survey (2021); $p<0.05$

Majority (57.6%) of the aged, who were employed had the highest proportion of "good" sexual health. Further, among males who were employed, a proportion of 64.5 percent of them reported "good" sexual health as compared to employed females who said they had "good" sexual health.

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Regarding health insurance status, among the aged, the highest proportion (85.7%) of aged who had valid NHIS cards reported "good" sexual health (males 81.1% and females 91.9%).

The chi-square test results in Table 22 show a statistically significant association $p<0.05$ between religion, current marital status, current economic activity, national health insurance status and place of residence.

Physiological Factors and Sexual Health of the Aged

In Table 23, results show that "good" sexual health decreases with an increase in age. Among the aged, majority (53.1%) of those who are aged 60-64 years said they have "good" sexual health. It was shown that, among males 60-64 years a little over 50.0 percent reported "good" sexual health, while among females in the same age group, it was 56.1 percent. Further among the aged, those aged 75 years and older had the least proportion of 6.5 percent (males 5.8% and females 6.5%).

In terms of perceived health, majority (73.1%) of the aged, who perceived "good" health reported "good" sexual health (males 78.6% and females 67.2%). Also, 23.7 percent of the aged who perceived poor health, reported "good" sexual health (Table 23). For chronic illness, a proportion of 76.3 percent of the aged who reported not being diagnosed with chronic illness, also reported "good" sexual health, while among those who reported being diagnosed with chronic illness, 23.7 percent said they have "good" sexual health (males 26.5% and females 19.6 percent). In addition, among the aged, who were diagnosed with one type of chronic illness, majority of them reported "good" sexual health (males 76.5% and females 66.7%).

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Table 23: Biological/Physiological Factors and Sexual Health by Sex of the Aged by (60+)

Variable	"Good" Sexual Health						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Age							0.000
60-64	79	51.0	60	56.1	139	53.1	
65-69	49	31.6	35	32.7	84	32.1	
70-74	18	11.6	4	3.7	22	8.4	
75+	9	5.8	8	7.5	17	6.5	
Perceived Health							0.000
Poor	22	23.2	20	32.8	42	26.9	
Good	73	78.6	41	67.2	114	73.1	
Chronic Illness Diagnosed							
Yes	41	26.5	21	19.6	62	23.7	0.001
No	114	73.5	86	80.4	200	76.3	
No. of Chronic Illnesses Diagnosed							0.000
1	31	76.5	14	66.7	45	72.6	
≤ 2	10	24.7	7	33.3	17	24.7	
Undergoing Treatment for Illness							0.659
Yes	41	100.0	18	85.7	59	95.2	
No	0		3	14.3	3	4.8	

Source: Field Survey (2021); $p<0.05$

Among the aged, the highest proportion (95.2%) of those who reported "good" sexual health were undergoing treatment for illness, while among those who were not undergoing treatment for illness, 4.8 percent reported "good" sexual health.

The chi-square test results in Table 23 show a statistically significant association $p<0.05$ between age, perceived health, chronic illness, number of chronic illnesses and the sexual health of the aged.

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Psychological Factors and Sexual Health of the Aged

Table 24 shows that among the aged, the highest proportion (87.0%) of the aged who reported good subjective well-being had poor sexual health, while 13.0 percent of the aged who had poor subjective well-being, also reported "good" sexual health. Further, among the males who indicated poor subjective well-being, 12.9 percent reported "good" sexual health, while among the females, who also said they had poor sexual health reported "good" sexual health.

For depression, among the aged, those who said they have not been diagnosed with depression, the majority of them reported "good" sexual health (males 87.8% and females 95.2%). Also, 9.7 percent of the aged who indicated having depression reported "good" sexual health (males 12.2% and females 4.8%). Regarding living with a partner, majority (81.5%) of the aged, who had partners living with them reported "good" sexual health, while among those whose partners were staying elsewhere, 10.5 percent reported "good" sexual health (males 12.0% and females 8.6%).

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Table 24: Psychological Factors and Sexual Health by Sex of the Aged (60+)

Variable	"Good" Sexual Health						
	Male		Female		Total		
	N	%	N	%	N	%	P value
Subjective Wellbeing							0.029
Poor	20	12.9	14	13.1	34	13.0	
Good	135	87.1	93	86.9	228	87.0	
Depression							0.072
Yes	5	12.2	1	4.8	6	9.7	
No	36	87.8	20	95.2	56	90.3	
Living with a Partner							0.000
Living with Me	125	88.0	96	91.4	229	81.5	
Staying Elsewhere	17	12.0	9	8.6	26	10.5	

Source: Field Survey (2021); $p<0.05$

The chi-square test results in Table 24 show a statistically significant association $p<0.05$ between living with a partner and the sexual health of the aged.

Factors Influencing with Sexual Health of the Aged

In this section, three logistic regression models (I, II, and III) were estimated to examine the likelihood of good sexual health among the aged 60 years and older (Table 25). In Model I, the explanatory variables (socio-cultural and economic factors) and sexual health of the aged were examined.

In Model II to Model III, biological/physiological and psychological were loaded hierarchically to assess their combined effects on the outcome variable (sexual health). In Model I, socio-cultural and economic variables and

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the outcome variable (sexual health) were regressed (Table 25). The aged affiliated with Christianity (OR = 0.964, 95% CI = 0.388, 2.393) had lower odds of "good" sexual health compared to the aged with no religion (reference category). Also, the aged affiliated with Islam (OR = 0.506, 95% CI = 0.198, 1.293) had lower odds of "good" sexual health compared to the aged with no religion (reference category). Religion was not statistically significant with the sexual health of the aged.

In Model I, the aged who believed that cultural practices do not influence the continuity of sexual activity (OR = 1.644, 95% CI = 0.425, 0.973) had higher odds of "good" sexual health compared to those who perceived that cultural practices do influence the continuity of sexual activity (reference category). In Model I, the aged who perceived no influence of cultural practice on the continuity of sexual activity was positively association with sexual health. Table 25 shows that the aged who are not in a union (OR = 0.044, 95% CI = 0.026, 0.078) had higher odds of good sexual health compared to those who were married (reference category). In model 1, a statistically significant ($p<0.05$) association between place of residence and the sexual health of the aged was observed.

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Table 25: Logistic Regression Model: Factors Influencing the Sexual Health of the Aged

Variable	Sexual Health		
	OR	AOR	AOR
Socio-Economic Factors			
Religion			
No Religion	1.00	1.00	1.00
Christianity	0.964 [0.388, 2.393]	1.236 [0.173, 8.833]	1.737 [0.249, 12.110]
Islam	0.506 [0.198, 1.293]	0.969 [0.133, 7.085]	1.570 [0.214, 11.524]
Traditional	1.028 [0.217, 4.864]	n.a n.a	
Perceived Influence of Cultural Practice			
Yes	1.00	1.00	1.00
No	0.644* [0.425, 0.973]	0.831 [0.282, 2.448]	0.928 [0.289, 2.985]
Current Marital Status			
Yes, Currently Married	1.00	1.00	1.00
Yes, Living Together	1.315 [0.675,2.560]	0.674 [0.145, 3.128]	0.785 [0.170, 3.627]
No, Not in Union	0.044** [0.026, 0.078]	0.033** [0.010, 0.107]	0.020** [0.005, 0.078]
Place of Residence			
Nima	1.00	1.00	1.00
Abeka	1.168 [0.790, 1.727]	0.242** [0.096, 0.610]	0.216** [0.084, 0.557]

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Table 25 continued

Current Economic Activity			
Employed	1.00	1.00	1.00
Unemployed	0.416 [0.286, 0.606]	0.227** [0.116, 0.658]	0.359* [0.145, 0.888]
Biological/Physiological Factors			
Sex			
Male	n.a	1.00	1.00
Female	n.a n.a	0.168** [0.070, 0.405]	0.176** [0.071, 0.435]
Age			
60-64	n.a	1.00	1.00
65-69	n.a n.a	0.194 [0.373, 2.241]	0.900 [0.357, 2.271]
70-74	n.a n.a	0.098** [0.024, 0.406]	0.091** [0.021, 0.392]
75+	n.a n.a	0.264 [0.056, 1.247]	0.231 [0.045, 1.177]
No. Chronic Illnesses Diagnosed			
1	n.a	1.00	1.00
≤ 2	n.a n.a	0.507 [0.206, 1.246]	0.318* [0.116, 0.870]
Undergoing Treatment for Illnesses			
Yes	n.a	1.00	1.00
No	n.a n.a	0.855 [0.158, 4.620]	0.162 [0.165, 5.611]

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Table 25 continued

Subjective Wellbeing			
Poor	n.a	n.a	1.00
Good	n.a	n.a	0.710
	n.a	n.a	[0.234, 2.153]
Depression			
Yes	n.a	n.a	1.00
No	n.a	n.a	0.080*
	n.a	n.a	[0.011, 0.604]
Wald X^2 (df)	4.306 (7)	5.572(13)	10.448(15)
Prob $<X^2$	0.038	0.018	0.001
Pseudo R^2	0.316	0.362	0.378
Hosmer-Lemeshow X^2 (df)	11.580 (8)	8.641(8)	9.480(8)
Prob > X^2	0.054	0.373	0.303

Source: Field Survey (2021); p<0.05* and p<0.01**

*1.00–Reference Category; OR – Crude Odds Ratio; CI- Confidence Interval in square brackets; *p< 0.05 and **p<0.01. Model I, Model II, III, III, IV and V-Multivariate Logistic Regression Analysis (Accounting for all variables). Pseudo R2 using Cox & Snell R Square*

The Aged residents in Abeka (AOR = 1.168, 95% CI = 0.790, 1.727) had significantly higher odds of "good" sexual health compared to those in Nima (reference category). The aged resident in Abeka were positively associated with sexual health. For current economic activity, the aged who reported being unemployed (OR=0.4111, 95% CI=0.282. 0.597) were less likely to have "good" sexual health as compared to the aged who indicated being employed.

In Model II, physiological variables (sex, age, no. of chronic illness diagnosed, and undergoing treatment for illnesses) were added to the socio-cultural and economic variables. At this stage, the effect of the perceived influence of cultural practices on sexual health became statistically insignificant. However, current marital status and current economic activity

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remained statistically significant (Table 25). There was a decrease in odds for the aged who were not in union (AOR=0.033 95% CI=0.010, 0.107) and the aged who reported being unemployed (AOR=0.277, 95% CI=0.116, 0.658). Increased in odds were observed among the aged living in Abeka (AOR=0.242, 95% CI=0.096, 0.610) and at the level, place of residence of the aged, gained significance with the sexual health.

In Model II, the likelihood of good health was lower among females (AOR = 0.168, 95% CI = 0.070, 0.405) than males (reference category). Also the aged between the ages of 70-74 years old (AOR=0.098, 95% CI=0.024, 0.406) had lower odds of "good" sexual health as compared to those who were 60-64 years old (reference category). Age was statistically significant with sexual health of the aged (Table 25). Further, the aged diagnosed with two or more types of chronic illnesses (AOR=0.507, 95% CI=0.206, 1.246) had lower odds of "good" sexual health than the aged diagnosed with only one type of chronic illness. Also, the odds of experiencing "good" sexual health among the aged who were not undergoing treatment for illnesses (AOR = 0.855, 95% CI= 0.158, 4.620) were approximately 14.5 percent lower compared to those undergoing treatment for illnesses (reference category). In this model, sex, the aged not in union", place of residence, unemployed and aged 70-74 years were negatively associated with sexual health of the aged.

In the final model (III), psychological variables (subjective well-being and depression) were included in the hierarchical model. Variables with statistically significant categories ($p < 0.05$) were marital status, place of residence, economic activity, sex, age, and number of chronic illnesses diagnosed). Variables such as religion, perceived influence of cultural

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practice, and undergoing treatment of illnesses were still statistically insignificant with the sexual health of the aged (Table 25). In model III, although current marital status, place of residence, current economic activity, sex, age and number of chronic illnesses diagnosed were statistically significant with the sexual health of the aged, some variables had an increase and decrease in odds. For instance, the aged not in union had a decrease in odds (AOR=0.020, 95% CI=0.005, 0.078) and the aged who have been diagnosed with two or more chronic illnesses had decreased odds (AOR=0.318, 95% CI=0.116, 0.870) in model III. Also aged who indicated being employed (AOR=0.359, 95% CI=0.145, 1.177), aged who are 70-74 years and aged resident in Abeka (AOR=0.216, 95% CI=0.084, 0.557) showed an increase in odds (AOR=0.091 95% CI=0.021, 0.392). Table 25 shows that the aged who reported good subjective well-being (AOR=0.710 95% CI=0.234, 2.153) had lower odds good sexual health than those who reported poor subjective well-being (reference category).

Also, the likelihood of the aged with no depression (AOR = 0.080, 95% CI = 0.011, 0.604) having “good” sexual health was significantly lower compared to the aged who reported being diagnosed with depression (reference category). In model III, the aged with no depression had a negative association with sexual health.

Model I, Model II, and Model III were statistically significant with the sexual health of the aged as indicated by low p-values for Wald X^2. The final model exhibited significant interaction of the explanatory variables (Table 25). Wald X^2 (10.448 (15) and Prob > X^2 indicate that the model fits the data well with a p-value of 0.001. For Pseudo R^2, the model explains 37.8 percent of the

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variability in sexual activity among the aged, an increase from 36.2 percent in Model II. For Hosmer-Lemeshow, X^2 (9.480 (8) and Prob > X^2 demonstrate that the final model fits the data well with a p-value of 0.303.

Binary multilevel logistic regression analysis on socio-cultural, economic, biological/physiological, and psychological factors and the sexual health of the aged showed some significant relationships. Results from the final model (III), indicate that the aged who are not in union (AOR=0.020, 95% CI=0.005, 0.078) had lower odds of "good" sexual health than the aged who were married (reference category). The aged who reported being unemployed (AOR=0.359, 95% CI=0.145, 0.888) had lower odds of "good" sexual health compared to the aged who are unemployed (reference category). Also, females had lower odds of "good" sexual health (AOR=0.176, 95% CI=0.071, 0.435) than males. In addition, the aged 70-74 years (AOR=0.091, 95% CI=0.021, 0.392) had a lower likelihood of having "good" sexual health than those aged 60-64 years (reference category). It was observed that the likelihood of having "good" sexual health among the aged who have been diagnosed with two or more types of chronic illness (AOR=0.318, 95% CI=0.116, 0.870) was lower than those diagnosed with a type of chronic illness.

Results from Table 25 indicate that the aged who are depressed (AOR=0.080, 95% CI=0.011, 0.604) had lower odds of "good" sexual health compared to those aged with depression (reference category). Further, the aged in Abeka (AOR=0.216, 95% CI=0.084, 0.557) were less likely to have good sexual health than the aged in Nima. Finally, aged females (AOR=0.176,

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95% CI=0.071, 0.435) had lower odds of having "good" sexual health than males.

In controlling for all the factors, current marital status, place of residence, current economic activity, sex, age, no. of chronic illnesses diagnosed, and depression were statistically significant with the sexual health of the aged.

Testing of Hypotheses

This section shows the conclusions for each hypothesis tested in the study. Findings indicate that at $p < 0.05$, variables such as current marital status, current economic activity, age, number of diagnosed chronic illnesses, and depression had statistically significant associations with the sexual health of the aged, resulting in rejecting the null hypothesis. On the other hand, the perceived influence of cultural practice and subjective well-being did not demonstrate a statistically significant association with the sexual health of the aged, thereby resulting in the acceptance of the null hypothesis.

Hypothesis 1

H_0: There is no statistically significant association between perceived cultural practices and the sexual health of the aged.

H_1: There is a statistically significant association between perceived cultural practices and the sexual health of the aged.

Conclusion: The analysis showed that the perceived influence of cultural practices did not demonstrate a statistically significant association with the sexual health of the aged ($p > 0.05$). Therefore, the null hypothesis (H_0) is not rejected and there is no significant association between perceived cultural practices and the sexual health of the aged.

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Hypothesis 2

H_0: There is no statistically significant association between current marital status and the sexual health of the aged.

H_1: There is a statistically significant association between current marital status and the sexual health of the aged.

Conclusion: The findings indicate that current marital status exhibited a statistically significant association with the sexual health of the aged ($p < 0.05$). Therefore, the null hypothesis (H_0) is rejected. Also there is a significant association between current marital status and the sexual health of the aged.

Hypothesis 3

H_0: There is no statistically significant association between current economic activity and the sexual health of the aged.

H_1: There is a statistically significant association between current economic activity and the sexual health of the aged.

Conclusion: The analysis revealed that current economic activity was statistically significantly associated with the sexual health of the aged ($p < 0.05$). Hence, the null hypothesis (H_0) is rejected, and there is a significant association between current economic activity and the sexual health of the aged.

Hypothesis 4

H_0: There is no statistically significant association between age and the sexual health of the aged.

H_1: There is a statistically significant association between age and the sexual health of the aged.

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Conclusion: The findings showed a statistically significant association between age and the sexual health of the aged ($p < 0.05$). Consequently, the null hypothesis (H_0) is rejected, and there is a significant association between age and the sexual health of the aged.

Hypothesis 5

H_0: There is no statistically significant association between the number of chronic illnesses diagnosed and the sexual health of the aged.

H_1: There is a statistically significant association between the number of chronic illnesses diagnosed and the sexual health of the aged.

Conclusion: The findings indicate that the number of chronic illnesses diagnosed exhibited a statistically significant association with the sexual health of the aged ($p < 0.05$). Therefore, the null hypothesis (H_0) is rejected and there is a significant association between the number of chronic illnesses diagnosed and the sexual health of the aged.

Hypothesis 6

H_0: There is no statistically significant association between subjective well-being and the sexual health of the aged.

H_1: There is a statistically significant association between subjective well-being and the sexual health of the aged.

Conclusion: The analysis showed that subjective well-being did not show a statistically significant association with the sexual health of the aged ($p > 0.05$). Therefore, the null hypothesis (H_0) is not rejected and there is no significant association between subjective well-being and the sexual health of the aged.

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Hypothesis 7

H_0: There is no statistically significant association between depression and the sexual health of the aged.

H_1: There is a statistically significant association between depression and the sexual health of the aged.

Conclusion: The results showed a statistically significant association between depression and the sexual health of the aged ($p < 0.05$). Therefore, the null hypothesis (H_0) is rejected, and there is a significant association between depression and the sexual health of the aged.

Discussion

This section discusses the analyses of multiple binary logistic regression. The dynamics that mould the sexual health of older people necessitate studying the association between socio-economic, biological/physiological, and psychological factors and the sexual health of the aged.

Findings show that current marital status was statistically associated with the sexual health of the aged. Despite perceptions that the aged reduce sexual activity in later years, marital status positively influences the continuity of sexual activity and subsequent improvement in sexual health (Ivenuik & Waite, 2018). Intimate relationships and good sexual health are considerably impacted by marital status, which significantly impacts the sexual desire, arousal, and overall sexual function of the aged. Additionally, relationship stress decreases with increased sexual engagement among older adults (Orr et al., 2019). Also, changes in marital status can either improve or worsen the sexual health of older people. This finding was consistent with Stokes,

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Gallagher, Kanyat, Bui, and Beaulieu (2020), who established the significance of marital status in sexual quality of life outcomes. Also, Thompson (2019) and Zhang, Xuehua, and Aiping (2023) found that sexual satisfaction substantially correlates with marital satisfaction.

The implications of the study on the aged, who were not in the union, were significant as the marital status of older people, particularly those separated, divorced, or widowed, had a significant association with the sexual health of the aged. The study showed that older persons who were not in a union were less likely to report "good" sexual health than those who were currently married. Findings from the study confirm a previous report by Karupiah (2020), who indicated that older widows experience feelings of guilt or shame when engaging in sexual activity outside of marriage, particularly if they have recently lost their partner, negatively affecting their sexual health. Further, societal attitudes and behaviour worsen the issues of the aged regarding their sexual health. Older widows face taboos and cultural practices regarding their sexual activities and remarriage. This situation results in isolation and poor sexual health of the aged (Molefi, 2021).

Furthermore, Nyanzi (2011) demonstrated that losing a partner is a social issue impacting the sexual health of the aged, and both older men and women experience a decline in sexual desire following the loss of a spouse. Ramesh et al. (2021) suggested that sexual relationships after the death of a spouse are often considered taboo, resulting in prolonged periods of abstinence and potential sexual dysfunction in subsequent relationships. This "widower's syndrome" shows the challenges the aged encounter in re-establishing intimate relationships, affecting their sexual health. Stokes et al.

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(2020) mentioned that marital status transitions, such as divorce and widowhood, impact the sexual health of the aged, especially older women. Also, older women are less likely to benefit from these transitions, highlighting stronger social and normative constraints that negatively affect the sexual health of unmarried older women.

A satisfying sexual life is often the result of many years of good relationships, among others. Zhang et al. (2023) emphasised that stable intimate partnerships are important for the sexual well-being of older persons. The presence of a partner enhances the feasibility and quality of the sexual lives of the aged, with many older women abstaining from sexual activity when not in a relationship. Freak-Poli (2020) confirms that partner availability influences sexual behaviour and sexual health in older persons, which has a greater impact on the sexual health of older persons than ageing. Changes in the proportion of widowed older women and the association between happiness and sexual frequency contribute to sexual frequency decline and poor sexual health (Karraker, DeLamater, & Schwartz, 2011).

The significant association between place of residence and the sexual health of the aged in the study suggests that geographical location can influence the aged access to healthcare services, social support networks, and cultural norms, all of which can impact sexual health outcomes among older adults. Place of residence provides insights into the complex relationship between characteristics of the aged, environmental factors, and sexual well-being of the aged. Societal influence on the sexual health of the aged cannot be underestimated. Society, family, and relations seem to associate sexuality with youthfulness and beauty, making older persons who internalise these

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values and norms often ashamed of their bodies (Khan & Kim, 2022). Due to the fear of judgement and stigmatisation, older people are less inclined to express their sexual demands and desires, causing them to disengage and shy from society, which puts their sexual health at risk (Flesia, Monaro, Jannini, & Limoncin, 2023). Although the aged would like to express their sexuality more freely, how they live is influenced by society and their culture, which has implications for their sexual health. The findings align with a study by Oduro (2024), which indicates that the higher the self-reported psychological and physical well-being level, the higher the social integration for older persons over 60 years. This situation can influence the sexual health of the aged, as social integration and psychological well-being are critical elements in maintaining a satisfying sexual life. High social integration most often provides emotional support and an enabling environment for intimate relationships of the aged, which enhances their sexual health.

Also, Barimah and Rosenberg (2021) found out that the location or place of residence of older people has implications on their sexual health experiences. For example, the elderly in the rural population often enjoy more social network support than their urban counterparts. It is also clear that rural areas emphasise family values like filial piety more than urban areas, resulting in strong community ties. In addition, older people living in more urbanised settings tend to have better domiciliary healthcare access, which may affect their overall sexual health. The influence of place of residence indicates that spatial considerations may affect the availability of healthcare services, the presence of social support, and the exposure to certain cultural norms, which may mould the sexual health outcomes among older adults. Place of residence

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brings to the fore the relationship between the environment and the sexual health of older persons.

Societal influence on the sexual health of the aged cannot be underestimated, as society, family, and relations seem to associate sexuality with youthfulness and beauty, making older persons who internalise these values and norms often ashamed of their bodies (Khan & Kim, 2022). Due to the fear of judgement and stigmatisation, older people are less inclined to express their sexual demands and desires, causing them to disengage and shy from society, putting their sexual health at risk (Flesia, Monaro, Jannini, & Limoncin, 2023). Although the aged would like to express their sexuality more freely, how they live is influenced by society and their culture, indicating how place of residence has implications for their sexual health.

From the study, the perceived influence of cultural practices on the continuity of sexual activity had no significant association with the "good" sexual health of the aged. Therefore, it can be concluded that, statistically, cultural norms do not have an impact on or dictate sexual interactions among the aged in Ghana. However, some factors may explain this finding. Social factors include living in an urban area with weak cultural practice, social networks and social perception, and health factors such as chronic health conditions and side effects of therapies. According to Ede, Chepngeno-Langat, and Okoh (2023), the sexual behaviour of older people in later life is not on the decline; instead, it goes through various adaptations and variations. Many older people have shifted their focus towards fostering emotional connections and nurturing relationships. Furthermore, the types of sexual activities engaged in by older people are often determined by a complex interaction of

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factors that influence their shared understanding and reaction to the changes in their sexuality due to ageing.

Also, psychological issues like depression and anxiety, personal factors in the form of individual preferences, distance from healthcare centres, and generational differences might disguise the cultural antecedents of sexual health of the aged. These factors may have a dominant influence on the sexual behaviours of the aged and their sexual health. According to Freak-Poli, although older age is often linked to traditional gender roles and health challenges, the current generation of older adults will be more empowered, less embarrassed about their sexual desires, and more active in their sexual lives compared to earlier generations.

Studies have demonstrated that cultural variables have significant associations in explaining the sexual health of the aged. Kenney (2013) mentioned that the influence of cultural practice on the sexual life of older people is gradually weakening due to changes in technology and social media. Also, Rebec, Karnjuš, and Ličen (2015) indicated that taboos and social pressure negatively influence the sexuality of the aged. Some societies regard the expression of sexuality or engaging in sexual activity by older people as immoral or perverted (Gewirtz-Meydan et al., 2018). Hidalgo and Dewitte (2021) demonstrated that strong socio-cultural beliefs are assumed to be a strong predictor of sexual dysfunctions, mainly erectile problems, because such beliefs induce performance demand, failure anxiety, and self-monitoring.

Cultural influences impact the sexual functioning of the aged, including how the aged from a specific culture express and manifest symptoms, distress, and willingness to seek medical assistance (Atallah et al.,

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2016). Zhang et al. (2023) demonstrated that socio-cultural factors significantly impact the sexual lives of older persons who face age discrimination, stigmatisation, and stereotypes. Society most often perceives the aged as asexual, sexually undesirable, and incompetent, with sex seen as a privilege for the young. These negative perceptions lead older adults to suppress their sexual needs and refrain from sexual relationships. They may feel ashamed or guilty about their sexual desires, fearing labels such as "inappropriate" or "dirty old people." Stowell et al. (2023) showed that cultural stigma is a barrier to sexual expression among the aged.

While the study did not find a significant statistical association between cultural practices and the sexual health of the aged, there is evidence indicating that socio-cultural factors influence the sexual health of the aged. In addition, the broader context provided by existing studies indicates that cultural factors play a significant role in the sexual health of the elderly.

Findings from the study indicated a significant association between economic activity and the sexual health of the aged. The economic status of older people emerges as a significant determinant of their sexual health. The study reveals a link between current economic activity and the sexual health of the aged. This finding emphasises the broader influence of economic conditions on various aspects of the lives of the aged, including their sexual behaviour, activity, and overall sexual health (Boyacıoğlu et al., 2023).

The study showed that the aged who were unemployed were less likely to experience "good" sexual health compared to those who were employed. Financial security or instability can influence the aged access to services, healthcare, and opportunities for intimacy by enhancing or complicating their

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sexual health (Erens et al., 2019). For instance, employment provides a sense of purpose, socialisation and financial security, which positively impacts the sexual activity of the aged (Brody et al., 2010). Findings were consistent with a study from Boyacıoğlu et al. (2023), who demonstrated that employment facilitates social interaction, increasing the likelihood of good sexual health among older people. Also, employed older people are more likely to be sexually active than those who are retired or unemployed, emphasising the benefits of employment in maintaining and enhancing sexual health. Similar findings by Wang et al. (2023) indicate a relationship between economic status and the sexual health of older persons. Those with lower economic status and unemployment experience higher rates of sexual dysfunction and lower quality of life, leading to poorer sexual health. Employment improves cognitive functioning and reduces stress, positively affecting the mental health of the aged (Kim & Kim, 2020), a crucial aspect of sexual health.

Economic challenges of the aged can hinder access to sexual health services as many older persons remain sexually active (Ama & Ngome, 2012). Findings confirm evidence from Fonta et al. (2017), indicating that lower-income negatively affects the self-reported health of the aged. Also, Zhang et al. (2023) found that economic status significantly influences the sexual desire of the aged. When the economic situation is favourable, sexual desire is enhanced, and financial constraints, often due to unemployment, can lead to a decline in libido and poor sexual health among older the aged. Hans (2021) also demonstrated that health deterioration is associated with retirement, which increases the chances of experiencing worsening health. Poor health has implications for the sexual health of the aged.

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Economic variables also influence the frequency of sexually transmitted infections (STIs) among the aged, contributing to poor sexual health. Ward, Disch, Levy, and Schensul (2015) found that older people living in poverty have a higher risk of contracting STIs, leading to poorer sexual health outcomes. Also, older people with higher incomes generally have better sexual health, attributed to better access to resources, including medical treatments and sex therapy. The use of sexual aids and therapies can promote satisfaction and sexual health among older persons experiencing age-related changes in sexual function (Fisher, Rezk, Nwefo, Masterson, & Ramasamy, 2020).

Evidence from the study shows a significant association between the sex and sexual health of the aged. Findings show gender disparities in sexual health experiences, indicating differences in socio-economic, biological/physiological and psychological factors. Also, the importance of sex emphasises disparities between the genders in experiencing sexual health. Sex played significant roles alongside other key factors in determining the sexual health of the aged. Gender roles and dimensions are vital aspects to consider when assessing the sexual health of older people. The expression, desires, and experiences of older persons, especially older women, in their sexual lives can be influenced by societal expectations, conventions, and the power dynamics regarding gender.

Gender roles and dimensions are important aspects to consider when examining the sexual health of the aged. The expression, desires, and experiences of older persons, especially older women, in their sexual lives can be influenced by societal expectations, conventions, and power dynamics

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related to gender. According to Zhang et al. (2023), women are traditionally defined as mothers who lose their ability to reproduce after menopause and believe that they have no reason to engage in sexual activity or related activities and must cease having a sexual life. Also, discussing sexuality remains offensive in some parts of Africa due to entrenched socio-cultural and environmental norms (Isoldi et al., 2014). However, the socio-cultural setting is changing due to technology and evolving societal structures. These changes have made older people, especially older women, more expressive about their sexuality through the internet and social media. This finding collaborates with a study by Edith (2014), who found that gender dimensions affect the sexuality of the aged, with male sexual prowess often considered uncontroversial, while the sexual activity of older women is frequently stigmatised.

According to Edith (2014), older men often perceive the sexual activeness of older women as shameful, believing that women should cease sexual activity earlier than men. In contrast, it is acceptable for men to be sexually active into old age, perpetuating the perception of older women as asexual (Lieberman, 2017; Li et al., 2022). Yang and Yan (2016) reported that older Chinese women follow traditional Confucian principles, which state that women should not be allowed to express their sexual interests. This results in differing sexual expectations for older men and women. Additionally, Agunbiade and Gilbert (2019) argued that older women may feel less obligated to engage in sexual activities due to menopause and the inability to have children. However, some older women reject the notion of asexuality in old age, expressing a desire to remain sexually active. The perception that

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older men continue sexual activity into later years, unlike older women, is rooted in traditional gender norms.

Older women may experience decreased sexual desire and satisfaction due to perceptions that they are no longer sexually attractive, resulting in poorer sexual health (Maestripieri, Klimczuk, Traficonte, & Wilson, 2014). According to Chirinda and Zungu (2016), older men tend to stay sexually active longer than women, attributing this to the cessation of sexual activity by older women post-menopause (Kalra et al., 2011; Nancy, 2020). Gender roles significantly influence the sexual health of older people. In most societies, men face pressure to remain sexually potent, while women experience shame and guilt about sexual desire, hindering their sexual activity and contributing to poorer sexual health outcomes.

Sexual health is essential to human life and remains significant in later years. As people age, physiological changes can affect their sexual health and quality of life. The study found that age was statistically significant in determining sexual health among the aged. Specifically, older persons aged 70-74 were less likely to report “good” sexual health than those aged 60-64. Ageing-induced physiological changes result in a decline in poor sexual health among the aged. Declining sexual desire and satisfaction correlate with age, indicating the link between desire and fulfilment (Chao et al., 2011). Age significantly influences the sexual pleasure of the aged, and age-related changes in sexual function were linked to decreased levels of sexual satisfaction (Mernone, Fiacco, & Ehlert, 2019). The finding was consistent with Freeman and Coast (2013), who demonstrated that sexual potency relies on endurance and frequency of orgasms, with ageing diminishing sexual

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prowess due to health issues. Both older men and women often experience poor sexual health as they age due to sexual dysfunction (Erens et al., 2019; Mernone, Fiacco, & Ehlert, 2019).

Findings are consistent with Lee, Nazroo, Connor, Blake, and Pendleton (2016) and Kirakoya et al. (2019), who indicated that sexual health issues increase with age and older persons experience decreased libido due to age-related declines in androgen levels, impacting erection quality in older men. Also, Jackson et al. (2019) concluded that declines in sexual desire, frequency of sexual activities, erectile function in older men, and arousal in older women have adverse effects on the sexual health of the aged, resulting in lower life satisfaction. Zhang et al. (2023) found that some older adults consider sex less significant as they age, believing it is more relevant for young people. The aged perceive that their sexual ability declines with age, limiting their sexual activities. As sexual function diminishes, older men often feel they "cannot," "should not," or "do not need" to express their sexuality, resulting in psychological doubts about their sexual capabilities and implications for their sexual health.

Similarly, the aged diagnosed with multiple chronic illnesses have lower odds of “good” sexual health compared to those with fewer chronic conditions. Chronic illness burden significantly affects sexual functioning (Rastrelli, Corona, & Maggi, 2020). Findings confirm a study by Shen (2019), who concluded that older persons with many chronic diseases are more likely to experience sexual dysfunction and poor sexual health. In addition, Merghati-Khoei, Pirak, Yazdkhasti, and Rezasoltani (2016) also stated that

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increased life expectancy and ageing could increase the burden of chronic diseases for the aged, adversely affecting their sexual health.

Chronic illness and medical conditions such as breathlessness affect the sexual health of the aged. The occurrence and duration of sexual inactivity may influence the sexual health of the aged (Ekström et al., 2018). Severe chronic diseases result in lower sexual satisfaction and poor sexual health (Shen, 2017). According to Smith et al. (2014), chronic diseases like diabetes and arthritis contribute to sexual unhappiness and poorer sexual health. Also, menopause and erectile dysfunction are common issues affecting sexual stability in older persons, with postmenopausal women often experiencing sexual dysfunction and issues with their sexual health (Jain, Mehra, Goel, & Chavan, 2019).

In contrast to findings from the study, Nienaber, Reis, Kropp, Meyer, and Mu (2014) found that the enjoyment of sexual activity for both men and women can remain constant over time, challenging the assumption that sexual activity increases with age. This finding suggests that maintaining a positive outlook and addressing factors that contribute to the sexual well-being of the aged could support sustained sexual health and satisfaction in later years. Ede, Chepngeno-Langat and Okoh (2023) indicated that empirical evidence challenged the misconceptions that old age is asexual. While physical and sexual behaviour may decrease among older people, some of them have maintained stable sexual interests towards more intimate relationships. This diversity reflects adjustments to age-related changes, influenced by mutual understanding and responsiveness to evolving needs in later life, impacting the sexual health of the aged.

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Polland, Zeymo, and Iglesia (2019) demonstrated that chronic illnesses like diabetes, cardiovascular disease, and neurological problems significantly affect sexual health. Also, conditions such as obesity, arthritis, and chronic pain worsen sexual dysfunction in older people. Further, chronic diseases are associated with lubrication issues in older women and orgasm difficulties in older men, resulting in serious sexual health implications (Shen, 2019). Findings by Politis et al. (2024) indicate that Erectile Dysfunction (ED) becomes increasingly prevalent with age, affecting most men over 70 years compared to those in their relatively young years. While age itself is a risk factor, other contributing factors among the aged include hypertension and diabetes. Jackson, Yang, and Koyanagi (2020) found that older men experiencing a decline in sexual desire had higher odds of developing long-standing illnesses and incident cancer compared to those maintaining their desire. Longitudinally, erectile dysfunction is connected with poorer health outcomes, such as coronary heart disease, cancer, and overall poor self-rated health. Zhang et al. (2023) emphasise that good health correlates with an active sexual life, yet illness often accompanies ageing, adversely affecting sexual function, confidence, and needs. Physical illness is a common reason for older persons to discontinue sexual activity, which is exacerbated by health anxiety, depression, liver failure, Parkinson's disease, and other conditions which can diminish self-esteem and libido, resulting in poor sexual health of the aged.

Findings from the study show that the aged with no depression were less likely to experience "good" sexual health. This conclusion is counter-intuitive. Several factors, such as mental well-being, the dynamics of

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relationships, and physical health, can enhance the sexual function and satisfaction of the aged. For instance, an older person might be in good physical condition but could struggle with sexual health due to factors like losing a partner and societal influences, which can lead to negative sexual health outcomes. Findings from the study were consistent with a study by Souza Júnior et al. (2023), which observed that older persons with severe depressive symptoms had better experiences in sexuality, though at the expense of effective relationships. It suggested that the severity of depressive symptoms might influence experiences differently in these two domains, affecting mood and feelings and potentially interfering more with affective relationships while leaving sexual experiences less impacted, leading the aged to seek solace in physical intimacy. According to Kleinstäuber (2017), positive psychological well-being may explain sexual activity among older persons rather than the absence of depressive symptoms.

This finding from the study was not consistent with previous studies that demonstrate that depression can negatively impact the sexual health of older people. Low mood, loss of interest, and tiredness can interfere with the sexual activity of the aged. Also, depression can reduce sexual activity and desire, making it challenging to achieve or maintain an erection and orgasm. Lee, Nazroo, O'Connor, Blake, and Pendleton (2016) demonstrated that sexually active men reported higher degrees of sexual dissatisfaction and were more concerned and stressed about their sexual health than older women. This indicates the strong relationship between mental illness and the sexual health of older persons (Lack & Aziz, 2020). According to Lu et al. (2020), older people with sexual dysfunction are more likely to have depression.

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A study by Alam and Fadila (2016) indicated that factors such as the fear of death and ill health affect the sexual activity of some older persons, subsequently affecting their sexual health. Despite these perceptions, some older persons engage in sexual activity and are satisfied with their sexual health (Wang et al., 2015). Among the aged, there is a connection between sexual health and mental health status, particularly adverse effects and depressive symptoms. Depression remains a major predictor of poorer sexual health in older men (Lay, Duarte, & Vilela Borges, 2022). Depressive symptoms, rather than physical function, worry or stress, or ageing, may be related to poorer sexual health outcomes among the aged (Wang et al., 2015). Din, Akhabar, and Rahimah (2019) demonstrated the occurrence of depression among older people, and most were not satisfied with their sexual lives, resulting in poor sexual health of the aged.

The study's findings indicated that subjective well-being was not a statistically significant predictor of the sexual health of the aged. This finding shows that subjective well-being, a multifaceted construct influenced by various personal, social, and psychological factors, may not directly be associated with the sexual health of the aged. Several factors could contribute to this lack of significant association. Firstly, subjective well-being involves broader aspects of life satisfaction that do not directly translate into sexual health outcomes. While subjective well-being is crucial for quality of life, its influence on specific aspects of sexual health in older people may be overshadowed by more direct physiological and social determinants. For instance, physiological changes with age, medical conditions affecting sexual

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function, and societal attitudes towards ageing and sexuality could play stronger roles in determining sexual health outcomes.

Although findings did not show a statistically significant association between subjective well-being and the sexual health of the aged, several studies have demonstrated a relationship between these variables and subjective well-being, which plays a role in the sexual health of the aged. Gillespie (2017) found that aged with a happy and satisfying life are more likely to enjoy their sexual life and have enhanced sexual health. Similarly, Smith et al. (2019) stated that psychological well-being, which includes a positive outlook and life satisfaction, is associated with sexual activity and physical tenderness among older people. Also, Freak-Poli et al. (2017) demonstrated that psychological well-being ensures life satisfaction and sexual satisfaction. Additionally, Lee, Vanhoutte, Nazroo, and Pendleton (2016) showed that poor subjective well-being among men is more strongly associated with difficulties in sexual function.

According to Freak-Pol (2020), not all the aged are interested in sexual activities. Some of the aged are struggling with sexual dysfunction, stress, and depression due to societal norms and perceptions surrounding their sexuality. Aligned with the conceptual framework model, the onset and experience of ageing are influenced by various factors, including societal norms and cultural, physiological, and psychological perceptions. Gilleard (2023) suggests that ageing can be more socially constructed than purely biological, meaning the biological process has no inherent cultural meaning. The study aligns with the psychosocial aspect of the conceptual framework, emphasising the interplay between social-economic factors (marital status, place of residence and

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economic activity), biological/physiological factors (sex, age and chronic illness) and psychological factors (depression) and the sexual health of the aged.

Furthermore, the BPS model emphasises that health outcomes are not solely determined by medical professionals but also influenced by patients, families, and broader societal factors. The limited social interaction and poor health experienced by some of the aged, as influenced by societal factors, can result in poor sexual health. Delamater and Karraker (2009) established that the prevalent belief in certain cultures is that the aged do not have sexual urges, and even if they do, discussions about such topics are discouraged. These societal views can contribute to feelings of isolation and hinder discussions about sexual health among the aged, demonstrating the interrelationship of socio-economic, biological/physiological, and psychological factors informing the sexual health of the aged within the biopsychosocial model. Additionally, the study found a significant association between economic activity and “good” sexual health, emphasising the multifaceted nature of influences on the sexual health of the aged within the biopsychosocial model.

Chapter Summary

This chapter indicates that "good" sexual health among the aged is highest among the aged who are Christians, currently married, with valid NHIS cards, and high level of income. "Good" sexual health declines with age, poor perceived health, chronic illness, and absence of treatment of illnesses. The aged with good subjective well-being, absence of depression, and living with a partner with “good” sexual health. Chi-square tests show statistically

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significant associations with religion, marital status, economic activity, insurance status, age, perceived health, and chronic illness ($p<0.05$).

Also, this chapter presents the factors associated with the sexual health of the aged using a binary multiple regression model. In this comprehensive analysis of socio-economic, biological/physiological, and psychological factors affecting the sexual health of the aged, some significant associations were identified. Socio-economic (marital status, place of residence and economic activity), biological/physiological factors (sex, age, number of chronic illnesses) and psychological factors (depression) emerged as key determinants of the sexual health of the aged, explaining their roles in determining sexual health of the aged. Perceived influence of cultural practices and subjective well-being did not show significant associations with sexual health of the aged.

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CHAPTER NINE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the study's main findings, conclusions, recommendations, contributions to knowledge, strengths, limitations and delimitation, and areas for further research. The main objective of the study was to assess the sexual health of the aged in selected communities in the Greater Accra Region of Ghana. The specific objectives were to:

1. Assess the knowledge of the aged on sexual health;
2. Examine the attitude towards the sexual health of the aged;
3. Examine dimensions of sexual health of the aged;
4. Determine the factors that influence the sexual health of the aged.

The study used the biopsychosocial model to guide and achieve the study's objectives. A cross-sectional survey was employed, and quantitative data were collected from 21st November 2020 to 11th January 2021 in the Metropolis. A total of 817 survey respondents were included in the study, and an interview schedule was used as the research instrument for data collection. The SPSS version 23 was used to analyse the quantitative data. The chi-square test and multiple logistic regression were also applied to determine the significant effect of sociocultural, economic, physiological, and psychological factors on the sexual health of the aged.

Summary of Main Findings

Regarding the knowledge of the aged on sexual health, almost 56.0 percent have high knowledge, with males slightly higher than females. Over 55 percent perceive the sexual activity as safe, and this was more among males

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(64.8%) than females (47.5%). Also, 35.5 percent of the aged discussed issues of sexual health with partners (males 36.2% and females indicated 35.0%). Regarding the influence of cultural norms on the continuity of sexual activity of the aged, 48.7 percent of the aged reported difficulty in talking about sexuality as a challenge (males 45.2% and females 51.0%). Older women (68.2%) were more affected by the continuation of sexual activity into later years.

In analysing dimensions of the sexual health of the aged, findings from the study show that 40.5 percent of the total number of the aged were engaged in sexual activity, 40.5 percent reported being sexually satisfied, while 4.5 percent of the aged were sexually dysfunctional. Overall, 33.1 percent of the aged reported "good" sexual health, while 66.9 percent indicated having "poor" sexual health.

For the factors and the dimensions of sexual health, socio-economic factors, Christians had the highest proportion (58.9%) of the aged engaged in sexual activity than other religions. Also, sexual activity was higher among Christian females (62.7%) than males (55.6%). The aged, with no religion, had the lowest proportion (4.2%) of sexually active. On the perceived influence of cultural practice on sexual satisfaction, the aged who perceived that cultural practice does not influence the continuity of sexual activity had the highest proportion (68.5%) of sexual satisfaction (males 76.6% and females 59.0%).

Among the aged who are currently married, 79.5 percent reported being sexually satisfied. It was observed that 76.6 percent of males and 59.0 percent of females currently married mentioned sexual satisfaction. Results shows that a higher proportion of the aged in Abeka (68.8%) were sexually

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satisfied compared to those in Nima (31.2%). Among males in the 2nd income quintile, 60.0 percent were experiencing sexual dysfunction, while males in the 1st and lowest income quintile were 40.0 percent. In terms of economic activity, among the unemployed males, 66.7 percent indicated they were sexually dysfunctional compared to 33.3 percent who reported sexual dysfunction among males who were employed. From the chi-square analyses of socio-cultural and economic factors and dimensions of sexual health, it was shown that at $p<0.05$.

For sexual activity, religion (p=0.018), current marital status (p=0.000), income (p=0.000), place of residence (p=0.001), current economic activity (0.000), health insurance status (p=0.000) were statistically significantly associated with sexual activity of the aged. With regards to sexual satisfaction, religion (p=0.006), current marital status (p=0.001), place of residence (0.001), income (p=0.000) current economic activity (p=0.000), health insurance status (p=0.000) were all statistically significantly associated with sexual satisfaction. Only the perceived influence of culture on continuity of sexual activity (p=0.015) had a statistically significant association with sexual dysfunction of the aged.

Regarding physiological factors, among the aged, those aged 60-64 had the highest proportion (42.3%) engaged in sexual activity. Within females aged 60-64 years, 60.1 percent were engaged in sexual activity compared to males within the same age group (52.2%) were sexually active. In terms of perceived good health and sexual activity, results show that, majority (69.1%) of the aged who perceived good health were engaged in sexual activity. Among the aged, a proportion of 27.1 percent of the aged diagnosed with

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chronic illness mentioned being sexually satisfied. Among males who reported being diagnosed with chronic illness, 28.3 percent reported sexual satisfaction, while females accounted for 25.6 percent. The aged diagnosed with a type of chronic illness had the highest (73.9%) proportion of sexual satisfaction (males 76.9% and females 70.0%) as compared to a proportion of 26.1 percent of those diagnosed with more than two types of chronic illness who reported sexual satisfaction (males 23.1% and females 30.0%). Also, a proportion; 93.3 percent of males undergoing treatment for illnesses reported being sexually dysfunctional. From the chi-square analyses of physiological factors, and dimensions of sexual health of the aged Statistical significance was set at $p<0.05$;

For sexual activity, age ($p=0.000$), perceived health ($p=0.001$), chronic illnesses ($p=0.000$), and number of chronic illnesses ($p=0.001$) were statistically significantly associated with the sexual activity of the aged at $p<0.05$. Concerning sexual satisfaction, age ($p=0.000$), perceived health ($p=0.001$), chronic illnesses ($p=0.000$), and number of chronic illnesses ($p=0.004$) were statistically significantly associated with the sexual satisfaction of the aged at $p<0.05$. Only a number of chronic illnesses ($p=0.010$) were statistically associated with sexual dysfunction.

In terms of psychological factors, subjective well-being and sexual activity, among the aged who reported having good subjective well-being, majority (87.3%) were engaged in sexual activity compared to the aged who reported poor subjective well-being, 12.7 percent of them were sexually active. Regarding depression and sexual satisfaction, it was observed that, the aged with no depression had a higher proportion (92.4%) of sexual satisfaction

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compared to the aged with depression, where a proportion of only 7.6 percent indicated sexual satisfaction. Also, results show that among males with depression, 9.6 percent were sexually active, compared to females with depression, where a proportion of 5.0 percent were sexually satisfied. Concerning living with a partner and sexual activity, all males whose partners were living with them had experienced sexual dysfunctionality. From the chi-square analyses of psychological factors and dimensions of sexual health of the aged. It was shown that at $p<0.05$;

For sexual activity, subjective well-being ($p=0.001$) and living with a partner ($p=0.000$) were statistically significantly associated with the sexual activity of the aged and only living with a partner ($p=0.005$) was statistically significantly associated with sexual satisfaction. Subjective well-being ($p=0.001$) and living with a partner ($p=0.000$) were statistically significantly associated with sexual dysfunction. Only living with a partner was statistically significantly associated with sexual satisfaction of the aged at $p<0.05$. Also, subjective well-being and depression were statistically significantly associated with the sexual dysfunction of the aged at $p<0.05$.

For the factors and sexual health of the aged, a majority (68.3%) of the aged who reported that cultural practices do not influence sexual activity indicated they have "good" sexual health (males 78.1%, females 54.2%). Among currently married aged individuals, 83.2 percent reported "good" sexual health, compared to only 6.1 percent among those not in union (males 9.0%, females 1.9%). "Good" sexual health decreases with age. A proportion of 53.1 percent of those aged 60-64 reported "good" sexual health, with 50.0 percent of males and 56.1 percent of females reporting good sexual health.

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Among those without chronic illnesses, 76.3 percent reported "good" sexual health, while 23.7 perccent were among those with chronic illnesses (males 26.5%, females 19.6%). Additionally, 87.0 percent of aged individuals with good subjective well-being had poor sexual health, while 13.0 percent with poor subjective well-being reported "good" sexual health. Finally, 81.5 percent of those living with a partner reported "good" sexual health, compared to 10.5 percent whose partners lived elsewhere (males 12.0%, females 8.6%). Majority (64.5%) of the aged who were resident in Abeka reported “good” sexual health (males 51.9% and females 68.2%).

From the chi-square analyses of all factors and the sexual health of the aged, it was found that at $p<0.05$, some socio-cultural and economic factors were statistically significantly associated with sexual health. These factors include religion ($p=0.008$), current marital status ($p=0.000$), current economic activity ($p=0.000$), and health insurance status ($p=0.000$). This indicates that these variables have a significant impact on the sexual health of the aged. For physiological factors at $p<0.05$, age ($p=0.000$), perceived health ($p=0.001$), chronic illness diagnosed ($p=0.001$) and number of chronic illnesses diagnosed ($p=0.000$). Finally for psychological factors at $p<0.05$, subjective well-being ($p=0.029$) and living with a partner ($p=0.000$) were statistically significant.

The multilevel logistic regression analysis presenting the factors associated with the sexual health of the aged showed some significant associations in the final Model III. The aged who are not in union (AOR=0.020, 95% CI=0.005, 0.078) had lower odds of “good” sexual health than the aged who were married (reference category). Also, aged individuals who reported being unemployed (AOR = 0.359, 95% CI = 0.145, 0.888) were

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approximately 64.0 percent less likely to have "good" sexual health compared to those who were employed (reference category). In addition, the aged 70-74 years (AOR=0.091, 95% CI=0.021, 0.392) had a lower likelihood of having "good" sexual health than those aged 60-64 years (reference category). It was observed that the likelihood of having "good" sexual health among the aged who have been diagnosed with two or more types of chronic illness (AOR=0.318, 95% CI=0.116, 0.870) was lower than those diagnosed with a type of chronic illness.

The aged who are depressed (AOR=0.080, 95% CI=0.011, 0.604) were less likely to have "good" sexual health compared to those aged with no depression (reference category). Further, the aged in Abeka (AOR=0.216, 95% CI=0.084, 0.557) are less likely to have "good" sexual health than the aged in Nima. Finally, aged females (AOR=0.176, 95% CI=0.071, 0.435) had lower odds of having good sexual health than males.

Conclusions

Based on the summary of findings, the following conclusions were drawn.

A high proportion of the aged have high knowledge of sexual health, and knowledge was slightly higher among men than women. While most of the aged perceive sexual activity as safe, gender differences persist, with more men being more comfortable to engage in sexual activity than women. Also, among the aged, partners were the primary persons of sexual health discussions, although cultural norms and stigma limit open communication, especially for older women. Older women are disadvantaged by the continuation of sexual activity in later life and have issues related to stigma

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and societal expectations, emphasising the importance of implementing specific strategies to tackle gender inequality. and cultural barriers in sexual health education for the aged.

Socio-economic factors influence the sexual health of the aged. Factors such as current marital status and economic activity were significantly associated with sexual activity among the aged. Regarding the aged, marriage is viewed as the standard to engage in sexual activities. Marital status or being in union plays a crucial role in the sexual satisfaction of the aged, enhancing their sexual health as they usually report more frequent sexual activity and higher sexual satisfaction. Factors such as the community impact the sexual engagement and expression of the aged. Place of residence influences the sexual health of the aged through social integration, emotional and psychological support and care, improving the sexual health and wellbeing of the aged. Although cultural practices were not a determinant of the sexual health of the aged, their impact on the aged could potentially result in their sexual dysfunction and disengagement from sexual activities due to stigmatisation and societal beliefs. Employment status is a key determinant of sexual health of the aged, as financial stability contributes to the sexual well-being of the aged and access to resources.

The physiological factors, such as sex, show the gender differences in the sexual life of the aged. Older women are more affected in managing their sexual life, especially in the continuity of sexual activities in old age. Age influences the sexual health of the aged in later life through the natural process of ageing, resulting in a decline in sexual desire, difficulty in maintaining an erection, lack of sexual satisfaction and, subsequently, sexual dysfunction.

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Age-related health issues often contribute to diminished sexual desire and sexual health of the aged. Furthermore, chronic disease burden impacts the sexual dysfunction of the aged, and the presence of chronic diseases has a significant association with the sexual health of the aged. Physiological factors and the sexual health of the aged emphasise the importance of addressing health concerns to improve the sexual health of the aged.

Psychological factors such as depression are significantly associated with the sexual health of the aged. However, the association between depression and the sexual health of the aged was counterintuitive, although significant. Aged with no depression were less likely to have good sexual health, indicating the influence of other factors in the sexual health of the aged. This could be due to socio-cultural factors such as societal influence, marital status or physiological factors such as chronic illness and other diseases. There was no statistically significant association between subjective well-being and the sexual health of the aged. However, maintaining and improving subjective well-being is crucial in enhancing the sexual health of the aged. A positive mental state can promote engagement in sexual activities and improve sexual health by reducing the risk of illness and promoting sexual activity among the aged.

The sexual health of the aged is influenced by socio-economic factors (marital status, place of residence and economic activity), biological/physiological factors (sex, age and the number of chronic illnesses), and psychological factors (depression). Also, place of residence affects the sexual health of the aged through factors such as socio-cultural norms and attitudes towards the ageing sexuality. These determinants are vital in

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understanding and supporting the sexual health of the aged. Understanding these factors is important for developing strategies and policies that support the sexual health of the aged to ensure they maintain a satisfying and healthy sexual life in later years.

Recommendations

Based on the findings of the study, the following recommendations are put forward:

1. Evidence from the study indicated that socio-economic factors such as current marital status have a significant association with the sexual health of the aged. Therefore, the Ghana Health Service should organise sensitisation forums and seminars in churches, mosques, and the community to create awareness of the sexual health of the aged by demystifying perceptions of the sexual health of the aged.
2. Also, findings show a significant association between economic activity and sexual health of the aged. In addition, the aged who were unemployed were likely to experience inactivity. Therefore, the Ministry of Gender, Children and Social Protection should continue financially supporting the aged through the Livelihood Empowerment against Poverty (LEAP) to improve their well-being to enhance their sexual health.
3. Findings from the study show that ageing is associated with poor sexual health among the aged. Therefore, the Ministry of Health and Ghana Health Service should sensitise the aged on the importance of regular medical check-ups to detect health issues such as depression

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for treatment. These check-ups will reduce the disease burden of the aged and enhance sexual health.

4. From the poor health status adversely influence the sexual health of the aged. Therefore, through health facilities, the Ghana Health Service should assess the sexual health of the aged as part of routine care and provide appropriate interventions to address other issues related to the sexual health of the aged. Attention should be focused on the prevention and treatment of chronic illnesses.
5. From the study, the burden of chronic illness has implications for sexual health of the aged. Ghana Health Service should also provide education on the regular physiological changes that occur with ageing and its associated illness to encourage the aged to seek regular care for their sexual health to address undetected illnesses to maintain sexual function in older age.
6. Findings from the study indicated that few of the aged with poor subjective wellbeing had "good" sexual health status. Therefore, the Ministry of Gender, Children and Social Protection should continue coordinating the implementation of the National Social Protection Strategy that addresses the well-being of older people to enhance community-based interventions that promote social engagement and support among the aged and reduce feelings of isolation, known risk factors for sexual activity.
7. From the study, few of the the aged whose partners were living elsewhere had "good" sexual health than those with partners living with them. Also, aged who were not in a union had lower sexual

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satisfaction. Therefore, the Ministry of Gender, Children and Social Protection should create a recreational facility accessible to the aged for social engagement. This facility will provide a social environment where the aged can learn and share experiences. This action can help reduce feelings of isolation and loneliness, known risk factors for sexual satisfaction.

8. From the study, most of the aged with depression had sexual dysfunction. Therefore, Ghana Health Service should organise a regular health screening to routinely assess the psychological health of the aged, including their subjective well-being to provide appropriate interventions to address depression and other psychological issues related to sexual activity.
9. Given the significant impact of socio-cultural and economic, physiological, and psychological factors on the sexual health of the aged, it is recommended that the Ghana Health Service should develop comprehensive healthcare programmes. These programmes should integrate support for socio-economic assistance, chronic illnesses, mental health services, and community engagement initiatives to address the multifaceted needs of the aged, ultimately improving their sexual health and overall well-being.

Strengths of the Study

Some strengths of this study have been identified. The study collected data from 817 respondents, offering a large sample size to produce high-quality results. The study aimed to achieve generalisability through a representative sample, providing valuable insights for the larger population.

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The study employed objective and measurable data, enabling precise measurement and statistical analysis. Further, the study used standardised procedures, reducing bias to enhance the objectivity and replicability of the study.

Additionally, the quantitative approach of the study saved the researcher time and cost, and its precise measurement of variables ensured consistency and comparability.

Overall, these strengths contributed to generating reliable findings that can inform policies and interventions for the sexual health of the aged in the region.

Limitations of the Study

Despite this study's contribution to empirical knowledge, there are some limitations. First, statistically, the study can only establish associations between the study variables.,However, causalities could not be examined since the study relied on cross-sectional data and the design does not allow for establishing causal relationships. Only older men reported sexual dysfunction and therefore the study could not assess the sexual dysfunction of older women as against older men.

Data on perceived health, chronic illness, sexual dysfunction, subjective well-being, and depression were self-reported through verbal reports by the aged. The information was not subjected to a clinical test for confirmation.

Contribution to Knowledge

Findings from the study on the socio-economic, physiological, psychological, and sexual health of the aged will contribute to a more

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comprehensive understanding of the sexual health of the aged to promote their well-being and quality of life.

In addition, the study findings will provide insights into the needs and preferences of the aged regarding their sexual health within their cultural and societal contexts.

Furthermore, the study adopted the Biopsychosocial Model in assessing the factors that affect the sexual health of the aged. This model proved that sociocultural, physiological, psychological, and economic factors are interrelated and influence the sexual health of the aged.

Finally, incorporating economic factors, which were not considered in the BPS Model, in the binary multiple logistic regression model revealed their significant impact on the sexual health of the aged. This insight extends the model's applicability, urging further exploration of economic influences on sexual health among the aged.

Areas for Further Research

This study used a quantitative approach to investigate the sexual health of the aged. Conducting a qualitative study to assess the socio-cultural, and economic, physiological, and psychological factors affecting the sexual health of the aged will gain an in-depth understanding of the unique challenges older persons encounter in maintaining sexual health and well-being and complement the findings of the quantitative study.

The study area is in an urban setting, limiting the study's findings to the urban areas. However, a comparative study on factors that affect the sexual health of the aged in rural and urban areas will enable researchers to compare findings and predict factors in these areas.

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Only the Greater Accra Region was considered for the study. However, different regions may have different cultural, social, economic, and environmental factors that can influence the sexual health of the aged and provide a broader understanding of these factors and their impact on sexual health outcomes.

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APPENDICES

Appendix A-Interview Schedule

UNIVERSITY OF CAPE COAST COLLEGE OF HUMANITIES AND LEGAL STUDIES FACULTY OF SOCIAL SCIENCES DEPARTMENT OF POPULATION AND HEALTH TOPIC: SEXUAL HEALTH OF THE AGED IN THE GREATER ACCRA REGION OF GHANA.

INTERVIEW SCHEDULE

The general objective of the study is to assess the factors that affect the sexual health of the aged in the Greater Accra Region. This study is purely for academic purposes. This information is confidential and you will not be identified individually or without your consent. Please feel comfortable in responding to the questions. Thank you in advance for your cooperation.

SECTION A: BACKGROUND CHARACTERISTICS

Region: ……

Metropolitan/Municipal/District Assembly: ……..

Community: ……...

1. **Age at last birthday** ☐ (in Years) ☐ Don't know ***(probe)***

2. **Sex**: Male ☐ Female ☐

3. **What is the highest level of education that you have attained?**

☐ No Education
☐ Less than Primary
☐ Primary
☐ Middle
☐ JSS/JHS
☐ SSS/SHS or Secondary
☐ Tertiary or Higher
☐ Others (Specify)…….

4. **What is your religious affiliation**?

☐ No religion
☐ Christianity
☐ Islamic
☐ Traditional
☐ Others (Specify)……

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5. **What is your current Marital Status?**

- ☐ Never married
- ☐ Informal/ Consensual Union/Living together
- ☐ Married
- ☐ Divorced
- ☐ Separated
- ☐ Widowed

6. **What is your Ethnic Group?**

- ☐ Akan
- ☐ Ga Dangme
- ☐ Ewe
- ☐ Mole-Dagbani
- ☐ Others (Specify)…….

7. **What is your current economic status?**

- ☐ Employed ***(Go-Qn.8)***
- ☐ Unemployed
- ☐ Not economically active

8. **What is your main occupation (that is if the respondent is employed)?**

- ☐ Manager
- ☐ Professional
- ☐ Service and Sales
- ☐ Agricultural, Forestry and Fishery, Craft and Related Trades
- ☐ Plant and Machine, Operators and Assemblers
- ☐ Others (Specify)…….

SECTION B: SOCIO-CULTURAL FACTORS

9. Have you visited the health facility since you attained age 60 years?

- ☐ Visited ***(Go-Qn.10)***
- ☐ Did not visit ***(Go-Qn.17)***
- ☐ Don't Know ***(Go-Qn.17)***

10. Have you visited the health facility in the last 12 months?

- ☐ Visited ***(Go-Qn.11)***
- ☐ Did not visit ***(Go-Qn.17)***
- ☐ Don't Know ***(Go-Qn.17)***

11. What was the purpose of your last visit to the health facility?

- ☐ Sick
- ☐ For Medication

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☐ Routine Checkup

☐ Others (Specify)…….

12. Specifically, did you access any of the sexual health services?

☐ Yes ***(Go-Qn.13)*** ☐ No ***(Go to Qn.14)***

13. What was the attitude of health care providers towards you seeking sexual health services?

☐ Very Poor (1)
☐ Poor (2)
☐ Fair (3)
☐ Good (4)
☐ Very Good (5)

14. In your opinion what is the attitude of health care providers towards the aged seeking sexual health services?

☐ Very Poor (1)
☐ Poor (2)
☐ Fair (3)
☐ Good (4)
☐ Very Good (5)

15. Do you feel comfortable accessing sexual health services at a health facility?

☐ Yes ***(Go-Qn.16)*** ☐ No ***(Go-Qn.17))*** ☐ Know ***(Go-Qn.17)***

16. Why do you feel uncomfortable accessing the sexual health services?

(i)
(ii)
(iii)
(iv)
(v)

SECTION C: KNOWLEDGE: STIs, CONDOM USE AND SEXUAL HEALTH

17. Have you heard of STIs?

☐ Yes ☐ No ☐ Don't Know

18. Indicate the any STI that you have heard (List).

(i)
(ii)
(iii)
(iv)
(v)

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19. Have been diagnosed with STI during the last 12 months?

☐ Yes ☐ No ☐ Don't Know

20. Have you ever heard of a disease called HIV?

☐ Yes ☐ No

21. Can Older people contract HIV?

☐ Yes ☐ No Don't Know ☐

22. Have you heard of any other ways or methods that women or men can use to avoid getting infected with HIV?

☐ Yes No ☐ Don't Know ☐

23.	Do you know about condoms?	**Yes**	**No**	**Don't Know**
24.	Condom use can prevent sexually transmitted infections.			
25.	The use of condoms can reduce sexual pleasure.			
26.	Younger people will find condoms more useful than elderly people.			
27.	Do you know of a place where a person can get condoms?			

No.	**Items**	**True**	**False**	**Don't Know**
28.	Sexual activity among aged persons is often dangerous to their health			
29.	Ongoing treatment affects the sexual relationship of the aged.			
30.	Is sexual relationship affected as a result of the presence of chronic disease such as diabetes/pressure/diseases etc?			
31.	Changes with advanced age (60+) in sexuality includes a reduction of interest in sex.			
32.	Most older people over the age of 60 unable to engage in sexual intercourse			
33.	There is a decrease in the frequency of sexual activity with older people as they age.			
34.	The ending of sexual activity in old age is most likely and primarily due to social and			

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	psychological causes rather than biological and physical causes.			
35.	Older people have physiological changes that affect sexual relationship.			
36.	There is no desire in the sexual relationship in women after menopause.			
37.	Old people should discuss their sexual problems with doctor or health personnel.			
38.	Sexual health is a more important component of overall physical and mental health for younger adults as compared to older adults.			

39. Who do you mostly discuss issues of sexuality with *(select one)?*

- ☐ Partner
- ☐ Friend (s)
- ☐ Relative (s)
- ☐ Healthcare provider
- ☐ Religious and Traditional Leader
- ☐ No one ***(Go-Qn.38)***
- ☐ Others (Specify)…….

40. How frequently do you discuss issues on sexuality/sexual health the person(s) *(based on respondent choice in Qn.*36?

- ☐ Daily
- ☐ Weekly
- ☐ Bi-weekly
- ☐ Monthly
- ☐ Bi-Annually
- ☐ Annually
- ☐ As and When necessary
- ☐ Others (Specify)…….

SECTION D: MARRIAGE AND SEXUAL ACTIVITY

41. Are you currently married or living together with a man/woman as if married?

- ☐ Yes, Currently Married ***(Go-Qn.44)***
- ☐ Yes, Living with A Man/Woman ***(Go-Qn.44)***
- ☐ No, Not in Union ***(Go-Qn.42)***

42. Have you ever been married or lived together with a man/woman as if married?

- ☐ Yes, Formerly Married ***(Go-Qn.43)***
- ☐ Yes, Lived with A Man/Woman ***(Go-Qn.43)***
- ☐ No, Not being in a Union ***(Go-Qn.45)***

43. What is your marital status now: are you widowed, divorced, or separated?

- ☐ Widowed ***(Go-Qn.45)***
- ☐ Divorced ***(Go-Qn.45)***
- ☐ Separated ***(Go-Qn.45)***

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44. Is your partner living with you now or is he/she staying elsewhere?

☐ Living with me
☐ Staying elsewhere

45. Do you have other partners or do you live with other partners as if married?

☐ Yes (more than one)
☐ No (only one) ***(Go-Qn.49)***

46. Altogether, how many partners or live-in partners do you have?
Total Number of Wives and Live-in Partners

☐☐

Now I would like to ask some questions about sexual activity to gain a better understanding of some important life issues.

47. Have you engaged in sexual activity such as kissing, fondling, touching, sexual intercourse in the last 12 months?

☐ Yes ☐ No

48. Have you ever had sexual intercourse?

☐ Yes ***(Go-Qn-49)*** ☐ No ***(Go-Qn.55)***

49. Specifically, have you had sexual intercourse in the 12 months?

☐ Yes ☐ No ***(Go-Qn.57)***

50. Indicate the duration for which you had sexual intercourse with the last 12 months? ***(Record number in duration as stated by respondents since last sexual intercourse)***

☐ Days Ago ***(Go-Qn.55)***
☐ Weeks Ago ***(Go-Qn.55)***
☐ Months Ago ***(Go-Qn.55)***
☐ More than a Year Ago ***(Go-Qn.51)***

51. Why have you stopped sexual intercourse? ***(If respondent indicate more than 12 months in Qn.47)***

☐ Health reasons
☐ Sexual dysfunction ***(Go-Qn.52)***
☐ Lack of sexual desire
☐ Loss of partner
☐ Partner's loss of interest
☐ Fear from death during sexual relation
☐ Anxiety
☐ Stress
☐ Negative view of body image
☐ Retirement/loss of job
☐ Others (Specify)…….

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52. Mention the type of sexual dysfunction?

(i)
(ii)
(iii)

53. How has sexual inactivity influenced your sexual relationship?

☐ Loss of interest in sex
☐ Decrease in the frequency of sexual activity
☐ Lack of sexual activity
☐ Others (Specify)…….

54. Do you discuss your sexual problems with a healthcare provider or sought clinical advice on your sexual issues?

☐ Yes ☐ No

55. The last time you had sexual intercourse was a condom used?

☐ Yes ***(Go-Qn.56)*** ☐ No ***(Go to Qn.57)***

56. Was a condom used every time you had sexual intercourse with this person?

☐ Yes ☐ No

57. Would you consider it safe to engage in sexual activity?

☐ Yes ☐ No ☐ Don't Know

58. Is the continuation of sexual activity by the aged influenced by cultural norms and taboos?

☐ Yes ***(Go-Qn.59)*** ☐ No ***(Go.Qn.60)*** ☐ Don't Know

(Go-Qn.60)

59. In what ways does cultural norms and taboos influence sexual activity including sexual intercourse of the aged?

☐ Difficulty in talking about issues of sexuality
☐ Difficulty in openly engaging in sexual activity
☐ Fear of stigmatisation
☐ It does not have an influence
☐ Other (Specify)…….

60. Who is more affected when it comes to the continuation of sexual activity in old age?

☐ Male ☐ Female

61. Give reasons why a man or woman (choice above) is more affected when it comes to the continuation of sexual activity in old age?

(i)
(ii)
(iii)
(iv)

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62. Is there a difference between males and females in the continuation of sexual activity as they age?

☐ Yes ***(Go-Qn.63)*** ☐ No ***(Go to Qn.64)*** ☐ Don't Know ***(Go to Qn.65)***

63. How is the continuation of sexual activity different from males and females as they age?

(i)

(ii)

(iii)

(iv)

(v)

SECTION E: PHYSIOLOGICAL FACTORS

64. How do you rate your overall health status?

☐ Very Poor (1) ☐ Poor (2) ☐ Fair (3) ☐ Good (4) ☐ Good (5)

65. Have you ever been diagnosed with any long-standing illness/chronic illness?

☐ Yes ☐ No ***(Go-Qn.72)***

66. How many chronic conditions do have you been diagnosed with?

☐ 0
☐ 1
☐ ≥2

67. Which type (s) of long-standing illness/chronic illness have you been diagnosed with?

Illness/Chronic Illness	**Yes**	**No**
Any cardiac or vascular		
Depression		
Hypertension		
Diabetes		
Arthritis		
Asthma		
Obesity		
Sexual Dysfunction (sexual desire disorders & sexual arousal		

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disorders)		
Broken hip or pelvis or hip replacement		
Backache, or bone or muscle disease		
Prostate disease or surgery		
Menopause (link to a female)		
Others (Specify)		

68. In general, are you currently been taking medications/undergoing treatment?

☐ Yes ☐ No

69. Are you currently been taking medications/undergoing treatment for the long-standing illness/chronic illness have you been diagnosed with?

Illness/Chronic Illness	Yes	No
Any cardiac or vascular		
Depression		
Hypertension		
Diabetes		
Arthritis		
Asthma		
Obesity		
Broken hip or pelvis or hip replacement		
Backache, or bone or muscle disease		
Prostate disease or surgery		
Menopause		
Others (Specify)		

70. Has your health condition affected your daily activities?

☐ Yes ☐ No ☐ Don't Know

71. How frequent is your visit to the health facility when you are experiencing poor sexual health?

☐ Daily
☐ Weekly
☐ Monthly
☐ Yearly
☐ Others (Specify)……

SECTION F: PSYCHOLOGICAL FACTORS

Now, I would like to ask for your thoughts about your life and life situation. I want to know how you feel about your health and quality of life.

72. How do you perceive your health status?

☐ Very poor perceived health (1)
☐ Poor perceived health (2)
☐ Fair perceived health (3)
☐ Good perceived health (4)
☐ Very Good Perceived (5)

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73. Do you perceive sexual expression an essential part of a relationship?

☐ Yes ☐ No ☐ Don't Know

74. Would you say you have a satisfying sex life (concentration during sexual activity, positive mood after sexual activity, partner's sexual availability and body's sexual functioning)?

74a… concentration during sexual activity

☐ Yes ☐ No ☐ Don't Know

74b…. positive mood after sexual activity

☐ Yes ☐ No ☐ Don't Know

74c… partner's sexual availability

☐ Yes ☐ No ☐ Don't Know

74d… body's sexual functioning

☐ Yes ☐ No ☐ Don't Know

Now, we would like to ask for your thoughts about your life and life situation. We want to know how you feel about your health and quality of life.

No.	Questions/Items	Not Completely	A Little	Moderately	Mostly	Completely
Life Situation		**1**	**2**	**3**	**4**	**5**
75.	Do you have enough energy for everyday life?					
76.	Do you have enough money to meet your needs?					
		Very Dissatisfied	**Dissatisfied**	**Neither Dissatisfied nor Satisfied**	**Satisfied**	**Very Satisfied**
Are you satisfied with ……		**1**	**2**	**3**	**4**	**5**
Health						
77.	…… your health?					
	……yourself ?					

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78.	… your ability to perform your daily living activities?					
79.	… your personal relationships ?					
80.	… the conditions of your living place?					
81.	Taking all things together, how satisfied are you with your life					
		Never	**Rarely**	**Sometimes**	**Fairly Often**	**Very Often**
		1	**2**	**3**	**4**	**5**
82.	How often have you felt that you were unable to control the important things in your life?					
	How often have you found that you could not cope with all the things that you had to do?					
83.	How would you rate your overall quality of life?	**Very Poor**	**Poor**	**Moderate**	**Good**	**Very Good**
		1	**2**	**3**	**4**	**5**

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84.	Taking all things together, these days are you…?	Very Unhappy	Unhappy	Neither Unhappy or Happy	Happy	Very Happy
		1	2	3	4	5

SECTION F: ECONOMIC FACTORS

85. Have you done any work since you attained the age of 60?

☐ Yes ☐ No ***(Go-Qn.92)***

86. Have you done any work for the past seven days for cash or kind?

☐ Yes ***(Go-Qn.87)*** ☐ No ***(Go-Qn.92)***

87. For your main job, what has been your main occupation?

88. On average, how many days a week do/did you work in your main job?

☐ **Days**

89. On average, how many hours a day do/did you work in your main job?

☐ **Hours**

90. Who is/was your employer in your current/most recent MAIN job?

☐ Public Sector (Government)
☐ Private Sector (For-Profits and Not for Profits)
☐ Self-Employed
☐ Informal Employments

91. What is your employment status? *(Choose only one)*

The position of a person in the establishment where he/she currently works or previously worked.

☐ Employee ***(Go-Qn.93)***
☐ Self-employed without employees ***(Go-Qn.93)***
☐ Self-Employed with employees ***(Go-Qn.93)***
☐ Casual Worker ***(Go-Qn.93)***
☐ Contributing Family Worker ***(Go-Qn.93)***
☐ Apprentice ***(Go-Qn.93)***
☐ Domestic Employee (Household) ***(Go-Qn.93)***
☐ Others (Specify)……

92. What is the main reason you are not currently working? *(Choose only one)*

☐ Homemaker and caring for the family
☐ Cannot find a job
☐ Do voluntary work (not paid or subsistence work)
☐ In Studies/Training
☐ Contributing Family Worker

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	Health problems/Disabled
	Have to take care of a family member
	Do not have an economic need
	My family/spouse do not want me to work
	Retired/Too old to work/Pension
	Laid off/Made redundant
	Seasonal Work ***(Go-Qn.96)***
	\Vacation/Sick Leave/Voluntary/Temporary time off ***(Go-n.96)***
	Others (Specify)……

93. Are/were you paid in cash or kind for your work or are/were you not paid at all?

	Cash only **(Go-Qn.94)**
	Cash and Kind
	In Kind Only
	Not Paid

94. On the average how much do you earn from your work in a month (GHC)

95. Any other sources of income?

	Owning a business
	Remittances
	Pension
	Family member/Relative
	Others (Specify)……

96. In this main job, do/did you receive any of the following benefits in addition to your payment in cash or kind? *(Record all mentioned)*

No.	Benefits	Yes	No.
a.	Retirement/Pension		
b.	Medical Services/Health Care		
c.	Food/Provisions		
d.	Cash Bonuses		
e.	No Benefits		
f.	Others (Specify)		

97. Currently, how will you describe your standard of living?

	Very Poor Standard of Living	(1)
	Poor Standard of Living	(2)
	Standard of Living not changed	(3)
	Good Standard of Living	(4)
	Very Good Standard of Living	(5)

99. Are you covered by any type of health insurance?

	Yes ***(Go-Qn.100)***		No

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100. What type of health insurance do you have (covered/registered)? (Record all mentioned)

- ☐ National Health Insurance Scheme (NHIS) ***(Go-Qn.104)***
- ☐ National Health through Employer
- ☐ Mutual Health Organisation/Community-Based Insurance
- ☐ Other Privately Purchased Commercial Health Insurance
- ☐ Others (Specify)……

101. Does the National Health Insurance Scheme (NHIS) cover **any of the following? (record all mention)**

- ☐ Treatment of chronic illness
- ☐ Surgery
- ☐ Geriatric Care
- ☐ Others (Specify)……

102. Do you have a valid National Health Insurance Scheme (NHIS) card?

☐ Yes ☐ No ***(Go-Qn.103)***

103. Why do you not have a valid National Health Insurance card? Scheme (NHIS)?

- ☐ Not heard of NHIS
- ☐ Cannot afford the premium
- ☐ Do not trust
- ☐ Don't need Health Insurance
- ☐ NHIS does not cover the health services I need
- ☐ Do not understand the Scheme
- ☐ Do not know where to register
- ☐ No easy access to a health facility
- ☐ Do not like the attitude of staff at the health facility
- ☐ Those with insurance are given substandard services and medicine
- ☐ No reason
- ☐ Others (Specify)…….

Thank you

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APPENDIX B
Informed Consent Form

INFORMED CONSENT FORM (QUANTITATIVE STUDY)

Title: Sexual Health of the Aged in the Greater Accra Region

Principal Investigator: Efua Kwaambaa Turkson
Address: Department of Population and Health, University of Cape Coast
Cape Coast
E-mail: efua.turkson@stu.ucc.edu.gh
Contact No.: 050-684-3406

General Information

This study is about the sexual health of the aged 60 years and older in the Greater Accra Region, specifically this district, which is the Accra Metropolitan Assembly. The research is being done to better understand and know how the cultural norms and taboos; physical changes; mental and emotional factors; and financial and issues affect the sexual health of the aged 60 years and older in the region. Further, the research is to assess the relationships between the issues mentioned above and how they affect sexual health of the aged.

Procedures

To find answers to these questions, we invite you to take part in this research project. If you accept, you will be required to participate in a face-to-face structured interview with the researcher or the field assistant assigned to the study (interviewer). You are being invited to take part in this discussion because we feel that with your experience as an older person and a stakeholder in the issues of the aged you can contribute much to this discussion. Some of the questions that will be asked include how ageing has affected your sexual health, the effect of your level of income on your sexual health, your marital status and your sexual health etc.

If you do not wish to answer any of the questions posed during the interview, you may say so and the interviewer will move on to the next question. The interview will take place in your house, and no one else but the interviewer will be present. During the interview, we will ask permission to audio record the interview for our future reference and accuracy in reporting data. The information recorded is considered confidential with the exception of the researcher, field assistants and my supervisors will have access to the information documented during the interview. We expect that the interview will be approximately 30 to 40 minutes.

Possible Risks and Discomforts

Your participation in the interview may involve some discomfort in responding to the questions on your health in general and challenges you may be having with your sexual health and recalling may be stressful. To minimise the possible risks and discomforts, we have in place two resource persons, who are part of the research team and experts in offering psycho-social support to respondents and participants during the data collection period.

Possible Benefits

The results and information of the study will provide (i) the researcher with an evidence-based information on the sexual health of the aged to adequately inform policy on the aged; (ii) to you as the respondent, there will be an increased in awareness of issues on the sexual health of the aged; and (iii) the study will enable the community to appreciate issues of the sexual health of the aged and adopt positive attitude towards the aged concerning their sexuality and sexual health.

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Confidentiality

The records of this study will be kept confidential and we will protect information about you to the best of our ability. You will not be named in any reports and we will not include any information that will make it possible it possible to identify you as part of the study and in any report. The data will be properly stored, password protected and encrypted. Access to the data storage will be limited to the researcher. The audio recordings of the interviews will only be used as references by the researcher when writing the results and findings of the study and will be erased from the computer hard drives upon completion of the research.

Compensation

No compensation in the form of money or otherwise will be given to respondents and participants.

Voluntary Participation and Right to Leave the Research

You may choose to decline participation in the interviews for this study at any time with no repercussions or penalties. If you choose not to participate, you will not be asked to do any alternative activities or studies. You are free to decide whether you wish to participate in this study. You can leave the research at any time and it will not be held against you.

Contacts for Additional Information

If you have any questions, concerns, complaints, or need clarifications, kindly contact Efua Kwaambaa Turkson on contact no. 0506843406 and email-efua.turkson@stu.ucc.edu.gh or the supervisor, Professor Akwasi Kumi-Kyereme on contact no. 0244255234 and email akkyereme@ucc.edu.gh.

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of the University of Cape Coast (UCCIRB). If you have any questions about your rights as a research participant you can contact the Administrator at the IRB Office between the hours of 8:00 am and 4:30 p.m. through the phones lines 0558093143/0508878309/0244207814 or email address: irb@ucc.edu.gh.

VOLUNTEER AGREEMENT

I have read the above document describing the benefits, risks and procedures for the research titled ***Sexual Health of the Aged in the Greater Accra Region***. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

_____ _____

Date Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

_____ _____

Date Name Signature of Person Who Obtained Consent

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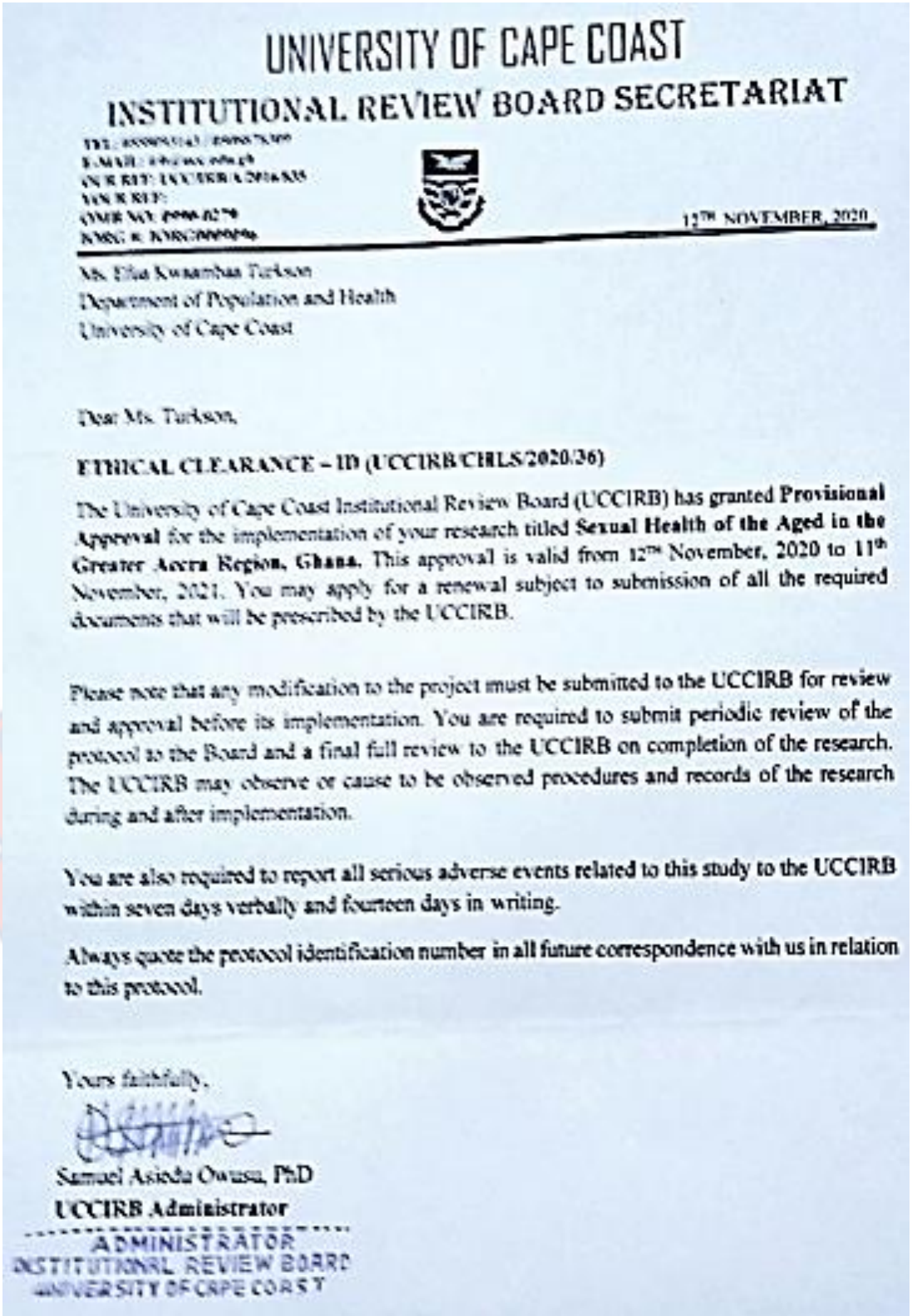
APPENDIX C

Ethical Clearance



UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

12TH NOVEMBER, 2020

Ms. Elsa Kwamboa Turkson
Department of Population and Health
University of Cape Coast

Dear Ms. Turkson,

ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2020/36)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research titled **Sexual Health of the Aged in the Greater Accra Region, Ghana.** This approval is valid from 12TH November, 2020 to 11th November, 2021. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asieda Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST

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