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Health-Seeking Behaviour Among Men Aged 15–54 Years: An Analysis of Socio-Economic and Demographic Determinants Using 2015–16 Angola Demographic and Health Survey

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HEALTH-SEEKING BEHAVIOUR AMONG MEN AGED 15-54 YEARS: AN ANALYSIS OF SOCIO-ECONOMIC AND DEMOGRAPHIC DETERMINANTS USING 2015-16 ANGOLA DEMOGRAPHIC AND HEALTH SURVEY



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A RESEARCH REPORT SUBMITTED TO THE FACULTY OF HUMANITIES, SCHOOL OF SOCIAL SCIENCES, UNIVERSITY OF THE WITWATERSRAND. JOHANNESBURG, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR A DEGREE IN MASTER OF ARTS IN DEMOGRAPHY AND POPULATION STUDIES.

DECLARATION

I, Motlhaume Moses Choeu, declare that this research report titled ***Health-Seeking Behaviour among Men aged 15-54 Years: An Analysis of Socio-economic and Demographic Determinants Using the 2015-16 Angola Demographic and Health Survey*** is my original work. It is being submitted to the Faculty of Humanities, School of Social Sciences at the University of the Witwatersrand, Johannesburg. This research report is submitted in partial fulfillment of the requirements for the Master of Arts Degree in Demography And Population Studies. The work has not been submitted before for any other degree or examination in any other university.

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ABBREVIATIONS LIST

AIDS	Acquired Immunodeficiency Syndrome
ADHS	Angola Demographic and Health Survey
DHS	Demographic and Health Survey
HIV	Human Immunodeficiency Syndrome
INE	National Institute of Statistics
SDGs	Sustainable Development Goal
SSA	Sub Saharan Africa
MINSA	Ministério da Saúde (Ministry of Health)
NDP	National Development Plan
WHO	World Health Organisation

ABSTRACT

Background: Health-seeking behaviour among men in Angola remains disturbingly low. According to the 2015–16 Angola Demographic and Health Survey, 87.2% of men did not seek medical care when ill or injured. Despite numerous national and international campaigns promoting the use of healthcare services to achieve good health and well-being for all, men as a distinct population group have received limited attention in Angola's public health agenda . This study aims to investigate the socio-demographic factors influencing health-seeking behaviour among men aged 15–54 in Angola.

Methodology: This quantitative study used secondary cross-sectional data from the 2015–16 Angola Demographic and Health Survey (ADHS), specifically the men's recode dataset (MR file), comprising a weighted sample of 5,684 men aged 15–54 years. The outcome variable was health-seeking behaviour, measured by whether respondents sought medical care in the past 30 days due to illness or accident. Data analysis was conducted using Stata version 14 and involved three stages: univariate analysis (frequencies and percentages), bivariate analysis (Pearson Chi-square test), and multivariate analysis (stepwise binary logistic regression) to assess associations between socio-demographic factors and health-seeking behaviour.

Results: Majority of respondents were aged 15-24 years old, accounting for 43.8%. The proportion of men in Angola varied by region, with the majority residing in Luanda region 45,5% and 71,7% living in urban areas. Only 15.2 % of men sought medical care in the last 30 days due to an illness or accident. Most men, 90.5% of them did not have health insurance. The multivariate analysis indicated that age groups 35-44 (aOR=1.75; 95% CI: 1.28:2.37), affiliation with the Catholic religion (aOR=0.65; 95% CI: 0.46:0.91), converse in Portuguese (aOR=1.68; 95% CI: 1.17:2.39), some media exposure (aOR=2.48; 95% CI: 1.26:4.86), full media exposure (aOR=1.96; 95% CI: 1.03:3.71) proved to be associated with Health-seeking behaviour among men aged 15-54 years in Angola. Geographical disparities were also evident, with men in rural areas and certain regions like Cabinda, Huambo, and Bie were found to be less likely to seek Health than those in urban centers like the region of Luanda. The study also highlighted the positive influence of health insurance (aOR=2.88; 95% CI: 1.75:4.72) and those with richer wealth status (aOR=1.75; 95% CI: 1.00:3.05) on Health utilization.

Conclusion: Health-seeking behaviour among men aged 15–54 in Angola is low, with factors such as religious affiliation, place of residence, region, wealth status, health insurance, and media exposure significantly influencing men's health-seeking behaviour. The findings

highlight the need for the Angolan government to strengthen health policies aimed at improving men's health-seeking behaviour. This study contributes to a better understanding of men's health-seeking dynamics in Angola, and it underscores the need for more comprehensive data collection and further research in this area

Keywords: Men, Health-seeking behaviour, socio-demographic, Demographic and Health Survey, Angola

CHAPTER 1: INTRODUCTION

1.1 Background

Men are critical members of households and society. They are playing key roles not only as economic providers but increasingly as caregivers and provide emotional support within families (Abaerei, 2016; UNDESA, 2011). In Angola, like in many other countries, men's health-seeking behaviour remains a significant public health concern. Men are often reluctant or less likely to seek healthcare services when needed, yet they face various health risks and contribute substantially to family and societal functioning, (Abaerei, 2016; Mthembu, 2015; Olanrewaju et al., 2019). This behaviour has direct implications for their well-being and indirectly affects the health and stability of their families and the economy (Ghaleiha et al., 2022; Likoko, 2020; UNDESA, 2011). As a consequence of poor health-seeking behaviour, men face increased vulnerability to illness and premature mortality. Mortality among men can profoundly disrupt household dynamics, creating economic, emotional, and developmental challenges for surviving family members (Abaerei, 2016; Likoko, 2020; Mthembu, 2015; UNDESA, 2011)

"Health-seeking behaviour is a process or action taken by any individual to sustain the state of physical well-being and fitness which allows such an individual to manage the social, physical, and biological environments to his or her gratification" (Olanrewaju et al., 2019). Other scholars define Health-seeking behaviour as any "remedial actions that are undertaken by individuals to rectify perceived ill health to find appropriate interventions" (Latunji & Akinyemi, 2018; Oberoi et al., 2016). Health-seeking behaviour is commonly conceived as how people behave about their health. It has also been conceived as the "use or utilization of health care services, which is an end-point of the process of seeking care". In the present study, Health-seeking behaviour refers to the notion of utilization of healthcare services rather than how people behave about their health (Abaerei, 2016).

The burden of disease in Angola further underscores the urgency of improving men's health-seeking behaviour. The leading causes of death among Angolan men include diarrheal diseases, HIV and AIDS, lower respiratory infections, malaria, tuberculosis (TB), stroke, road injuries, ischemic heart disease, and cirrhosis, many of which are preventable or manageable with timely healthcare access (WHO, 2019). The WHO estimated in 2019 that the main causes of death among men aged 15 years and above were TB (63,58 per 100 000), malaria (46.38 per 100

000), road injury (38,02 per 100 000), and HIV (28,43 per 100 000) (WHO, 2019). Given these realities, strengthening men's health-seeking behaviour is essential.

Global and regional studies on health-seeking behaviour consistently show that men utilize healthcare services less frequently when compared to women (Latunji & Akinyemi, 2018; Mthembu, 2015). This gender gap in health-seeking behaviour contributes to poorer health outcomes for men and shorter life expectancies (Abaerei, 2016; Adongo et al., 2022; Mthembu, 2015). In Angola, for example, life expectancy at birth in 2019 was 64.31 years for women and only 59.03 years for men (WHO, 2019; World Bank, 2022). . This life expectancy gap can be partly attributed to inadequate healthcare utilization among men (Abaerei, 2016; Adongo et al., 2022; Mthembu, 2015)

Reports and Studies out of Angola on the healthcare system in the country indicate that Angola has public and private healthcare system, with the majority of the population, almost 60%, using the free public healthcare system. However, the public sector is under-resourced, while the private sector is deemed to be very expensive (ITA, 2024). These challenges in accessing facilities and affordability pose substantial barriers to health-seeking behaviour among men, who are already less likely to engage with health services due to sociocultural norms and limited health awareness (Abaerei, 2016; Mthembu, 2015). As a result, men may delay necessary medical care, potentially putting more pressure to the already pressurized health facilities, and leading to the overall men's poorer health outcomes.

Given these challenges, improving men's health-seeking behaviour is important, not only to improve their personal health but also to support public health and national development in Angola. Although men play an important role in society, there is limited research that focuses specifically on how they use healthcare services. This study helps to fill that gap by exploring the socio-demographic factors that affect health-seeking behaviour among men aged 15 - 54 in Angola.

1.2 Problem Statement

Exclusive health care coverage is on the rise (WHO, 2017). However, globally, 50% of the population was unable to obtain basic health services, and each year, a high number of households are being pushed into poverty because they must pay for health care out of their own pockets (WHO, 2017). In Sub-Saharan Africa (SSA), it was found that Healthcare access

was at 42.6%, which is very low, regardless of Sustainable Development Goal 3.8, which targeted universal health coverage for everyone (Tessema et al., 2022). In 2019, Angola's universal healthcare services coverage score was 38.7%, and this is considered to be very low, however, signifying an increase between 2003 and 2016, indicating a response to government initiatives to promote health coverage (ITA, 2024; UNICEF, 2023). Despite the outlined healthcare services coverage of 38.7% in Angola, there is a lack of comprehensive, gender-disaggregated data that specifically provides estimates on men's health-seeking behaviour at the national level. The lack of data on men's health-seeking behaviour is a significant concern, as this may result in an inadequate understanding of prevalence and patterns of men's health-seeking behaviour, which may hinder efforts to achieve universal health coverage.

In Angola, the leading causes of death among men were HIV/AIDS, diarrheal diseases, lower respiratory infections, tuberculosis, malaria, stroke, ischemic heart disease, and road injuries, among other causes of death (Instituto Nacional de Estatística (INE), et al., 2017; WHO, 2019). Failure to address poor health-seeking behaviour among men may result in poor health outcomes and increased morbidity and mortality (Latunji & Akinyemi, 2018; Likoko, 2020; Olanrewaju et al., 2019). This is key to promoting a healthy workforce, noting that in 2023, the Angola labor force participation rate among males was 77.7% (World Bank, 2024). Thus, Poor health-seeking behaviour has the potential to diminish the contribution of men to the economy of Angola. Furthermore, Men who don't seek treatment for contagious illnesses such as Malaria and HIV/AIDS, amongst others, can spread them to others in the community. This may lead to increased strain on healthcare systems as a result of uncontrolled chronic conditions that can lead to hospitalizations and put more burden on the healthcare system.

Health-seeking behaviour among men in Angola remains disturbingly low. According to the 2015–16 Angola Demographic and Health Survey, 87.2% of men did not seek medical care when ill or injured (Instituto Nacional de Estatística (INE), et al., 2017). Despite the crucial role men play in families, communities, and the broader economy, little is known about their patterns of healthcare utilization. This lack of evidence presents a serious gap in health planning and policy. Without understanding the specific barriers men face in accessing healthcare, whether cultural or socio-economic, it becomes difficult to design effective interventions that promote early diagnosis, prevention, and treatment (Bila & Egrot, 2009).

Moreover, the absence of reliable, gender-specific data undermines Angola's efforts to meet broader national and global development goals, particularly the Sustainable Development

Goals (SDGs)- SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality), which emphasize inclusive and equitable access to healthcare services. If men, who form a significant portion of the adult population, remain underserved, health inequalities will persist, weakening overall public health outcomes and stalling progress toward universal health coverage (Ramos et al., 2022; WHO, 2019).

Studies on health-seeking behaviour among men in Angola are scarce. Most studies found were largely qualitative, others are at a regional/provincial level, and very few use a quantitative cross-sectional approach (de Carvalho Maquengo et al., 2025; Nascimento et al., 2014; Nunes, 2009; Ramos et al., 2022). This studies largely focused on reasons prohibiting men from seeking healthcare, which included, amongst others, sociocultural reasons, perceptions and practices of Angolan healthcare professionals (de Carvalho Maquengo et al., 2025; Nascimento et al., 2014; Nunes, 2009; Ramos et al., 2022).

In response, this study adopts a quantitative cross-sectional approach using nationally representative data to examine the socioeconomic and demographic determinants influencing men's health-seeking behaviour. By identifying these drivers, the study aims to contribute evidence that can inform gender-sensitive health policies and strategies that support Angola's development agenda and its commitment to achieving the SDGs.

1.3 Rationale of the study

In Angola, health-seeking behaviour among men remains critically low, contributing to significantly poorer health outcomes and higher mortality rates from preventable and treatable conditions when compared to women (Baptista, 2017; de Carvalho Maquengo et al., 2025; ITA, 2024; Nunes, 2009; Ramos et al., 2022). This gender disparity in healthcare utilization highlights an urgent need to understand the underlying patterns and determinants of men's health-seeking behaviour. Gaining such insight is essential for designing targeted and context-specific strategies that can encourage timely healthcare engagement among men. Doing so has the potential to reduce the burden of disease, lower preventable morbidity and mortality, and ultimately improve men's life expectancy in Angola (Bila & Egrot, 2009).

The healthcare needs and health-seeking behaviour of men are enshrined in the Sustainable Development Goal (SDG 3), which advocates for healthy lives and the promotion of well-being for all, and SDG 5, which emphasizes the importance of eliminating gender disparities in all areas of life, including access to health services. Furthermore, the health and social well-being of all in Angola are priorities in the Human Development Pillar of the National Development

Plan (NDP 2018-2022) and the National Plan for Health Development (PNDS). Although healthcare policies in Angola are developed, there is insufficient emphasis on men's healthcare needs and behaviour. Therefore, this study is positioned to inform policy and programs under the stewardship of the Ministry of Health in Angola (MINSA) to design evidence-based programs that address men's specific barriers to healthcare access by generating evidence on the socio-demographic factors influencing men's health-seeking behaviour.

Despite numerous national and international campaigns promoting the use of healthcare services to achieve good health and well-being for all, men as a distinct population group have received limited attention in Angola's public health agenda (ITA, 2024; WHO, 2023). Most health interventions in the country continue to focus predominantly on maternal and child health, leaving a critical gap in addressing the unique health needs of men (ITA, 2024; WHO, 2023). This imbalance reflects a narrow approach to healthcare planning that overlooks the role of men's health in broader public health outcomes.

To achieve true health equity and advance progress toward universal health coverage, it is essential to design and implement gender-sensitive health interventions that explicitly consider men's health-seeking behaviour. Addressing the barriers that limit men's engagement with healthcare services will not only improve individual health outcomes for men but also contribute to healthier families and communities, thereby strengthening the overall healthcare system.

It is important to have more insight into health-seeking behaviour of men in order to improve the utilization of modern healthcare services in Angola. The findings from this study are expected to contribute to the knowledge on the topic of seeking healthcare. Furthermore, the results of this study will provide more light on the practice of healthcare-seeking among Men. It would also assist policymakers as well as stakeholder organizations in designing appropriate programs and/or strengthening the existing ones that target and promote healthy behaviour.

1.4 Research Question and Objectives

1.4.1 Research questions.

1.4.1.1 Main research question

- What determines health-seeking behaviour among Men aged 15-54 years in Angola?

1.4.1.2 Sub-research questions.

- What is the prevalence of health-seeking behaviour among Men aged 15-54 years in Angola?
- What socio-demographic factors are associated with the health-seeking behaviour among Men aged 15-54 years in Angola?

1.4.2 Research objectives.

1.4.2.1 Main research objective

- To examine the socio-demographic determinants of health seeking among Men aged 15-54 years in Angola.

1.4.2.2 Sub-research objectives.

- To analyse the prevalence of health-seeking behaviour among Men aged 15-54 years in Angola.
- To identify socio-demographic determinants influencing health-seeking behaviour among Men aged 15-54 years in Angola.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a critical review of the literature on health-seeking behaviour and its relationship with socio-demographic characteristics. The review focuses on the global, Sub-Saharan Africa, and Angola perspectives on health-seeking behaviour among men. The chapter further presents the theoretical, and conceptual framework and concludes by showing the research hypothesis.

2.2 Global perspective of health-seeking behaviour among men

Globally, access to essential health care is a challenge. In 2021, an estimated 4.5 billion people did not have full coverage for essential health services (WHO, 2024). Although there is a challenge in accessing health care, the majority of developed countries reported higher proportions of access together with positive health-seeking practices when compared with developing countries. For instance, a study in Denmark showed that for medical patients with any symptoms, more than 40% of these patients sought healthcare service (Zhang et al., 2020). Furthermore, a study in Hong Kong investigating the health-seeking behaviour of persons with symptoms of respiratory and gastrointestinal-related infections found that 78% of the participants who had fever sought medical consultation, followed by those with rash (60%) and shortness of breath (58%) (Zhang et al., 2020). Another study conducted in Turkey reported that about 76.1% of male participants reported having consulted at medical facilities while they had any health problems (Abuduxike et al., 2020). Furthermore, it is worth noting that in most of the previous studies, females were found to practice positive healthcare as compared to males (Abuduxike et al., 2020; Zhang et al., 2020). Studies further postulated that the high proportion of positive care-seeking behaviour in developed countries is partly attributed to the availability of good-quality public and private health facilities (Abuduxike et al., 2020; Zhang et al., 2020).

Many studies on health-seeking behaviour demonstrate that various socioeconomic and demographic factors influence health-seeking behaviour.(Abaerei, 2016; Adongo et al., 2022; de Carvalho Maquengo et al., 2025; Mthembu, 2015). For instance, Literature on Marital status as an important predictor of healthcare utilization suggests that Marital status influences health, and this association might differ by time and/or country (Kim et al., 2018). This can be partly attributed to the spousal influence of being married as opposed to being unmarried (Adongo et al., 2022). A study in Korea found that men living without their spouses showed higher rates

of non-participation in regular health examinations and cancer screenings (Kim et al., 2018). As a result of poor healthcare utilization, men in this study were found to be more susceptible to nutritional deficiencies and mental illness (Kim et al., 2018). Kim and colleagues further found that men who are living without their spouses showed higher rates of hypertension, diabetes, hypercholesterolemia, hypertriglyceridemia, depressive mood, and suicidal ideation. Similar results were also observed in another study conducted in the United States and Puerto Rico, which found that married respondents had a trend toward higher odds of having a recent outpatient visit (OR: 1.11 CI 1.04–1.19) (Pandey et al., 2019).

A nationwide population-based study conducted in Denmark identified lifestyle and socioeconomic factors associated with Healthcare-seeking with bothersome lower urinary tract symptoms among men (Rubach et al., 2019). The study found that age was significantly associated with higher odds of visiting a medical practitioner. The limitation of the study was that they were using a web-based questionnaire, which had the potential to preclude the elderly or individuals without access to the internet.

Literature also shows that religious affiliation is a social determinant that influences health outcomes such as lower Mortality (Mthimkhulu, 2020). In a nationwide study conducted in Brazil focusing on religious affiliations influencing health-related and general decision-making found that most participants (66.5%) believed that their religious affiliations had moderate to high influences on their healthcare decisions such as the refusal of medical advice (Borges et al., 2021). Research focusing on culture and religious beliefs in relation to healthcare practice indicates significant differences across religious denominations. These differences can influence various aspects of healthcare, including patient care preferences, decision-making processes, and the acceptance of medical interventions (Arousell & Carlbom, 2016; Borges et al., 2021; Leijen & van Herk, 2021; Nunes, 2009). For instance, A study focusing on culture and religious beliefs concerning reproductive health among Muslim patients argued that the prohibition of alcohol intake and pork meat has the potential to prevent the intake of certain medicines among Muslim patients (Arousell & Carlbom, 2016). However, the study further argued that there is little evidence-based material that can help formulate “best practice” recommendations about correlations between religious practices and low health outcomes.

In terms of health insurance, a Korean study found that working men had fewer unmet healthcare needs than non-working men (Song et al., 2020), likely because men with health insurance are 4.33 times more likely to seek healthcare when compared to those without health insurance (Uwimana et al., 2023). Similar results were observed in a study conducted in the Kingdom of Saudi Arabia investigating the effects of health insurance on Health-Seeking Behaviour. The study found that health insurance leads to increased chances of going for medical check-ups. The study indicated that having health insurance increases the probability of going for a medical check-up by about 17% (Al-Hanawi et al., 2020).

A population-based study conducted in China using a multi-stage random sampling method surveying 16,938 Chinese individuals aged 46 and above found that having access to media exposure has a positive impact on health literacy and health-seeking practice. The study found that among individuals with media exposure, the odds of practicing positive healthcare-seeking increase by 9.1% when compared with those without media exposure (Jiang et al., 2024). In another study, conducted in rural India (in the State of Rajasthan), they assessed the Impact of mass media on the health-seeking behaviour of men and found that Exposure to radio and television significantly increased the likelihood of men seeking treatment for common illnesses. Media was found to improve awareness of available health services and challenge traditional masculine norms that discourage help-seeking(Sharma, & Gupta, 2016).

Another determinant found to be associated with health-seeking practice is individual lifestyle behaviours, such as smoking patterns and drinking behaviour. Research has found that individuals with these lifestyle practices may experience a lack of or delayed healthcare, leading to severe sickness and higher healthcare expenditures in the future (Li & Jing, 2022). A study conducted in China using the fixed effects logistic regression showed that among adults who reported physical distress, 65% of adults who reported smoking cigarettes were less likely to seek healthcare than those who did not smoke. Furthermore, compared to non-drinkers, adults who frequently drink alcohol had a decreased likelihood of seeking health care (Li & Jing, 2022). In contrast, a nationwide population-based study in Denmark found that there is no association between alcohol intake, smoking and health-seeking practice (Rubach et al., 2019).

2.3 Sub-Saharan Africa's Perspective of health-seeking behaviour among men

In Sub-Saharan Africa, health-seeking behaviour varies considerably across different regions and countries. For instance, a study in East Africa analysing data from Demographic and Health Surveys (DHS) across East African countries found that 71% of sexually active men sought care for sexually transmitted infections (Seifu et al., 2024). However, research indicates that men find it difficult to disclose or converse sensitive issues with female healthcare workers and find it embarrassing to share personal and private details with female healthcare workers (Mthembu, 2015; Seifu et al., 2024). In another study in Rwanda, in the Gasabo District revealed that 61.5% of men showed a high level of health-seeking behaviour (Uwimana et al., 2023). However, in Malawi, it was found that 57% of adults who reported symptoms during the two weeks preceding the survey sought care at a health facility (Ng'ambi et al., 2020). Although the high proportions, studies comparing healthcare practice among males and females are consistently indicating that females have a higher probability of seeking care from health centers when compared to males (Adongo et al., 2022; Ng'ambi et al., 2020; Uwimana et al., 2023).

Literature on health-seeking behaviour indicates that health-seeking behaviour varies according to various socioeconomic and demographic factors such as age, sex, education, employment status, geographical location, cultural beliefs, wealth status, and the availability of healthcare infrastructure (Abaerei, 2016; Mthembu, 2015; Nunes, 2009). For instance, a study in South Africa found that health-seeking behaviour is related and associated with age (Abaerei, 2016). The results of the studies have found that as age increases, the odds of healthcare-seeking also increases (Abaerei, 2016). The results indicated that when age increases by 10 years, the odds of seeking healthcare increase by 22% (Abaerei, 2016). Another study in South Africa indicated that males usually report experiencing illness during their early years. The study found that once they reach around sixteen years old, the frequency of using regular healthcare services declines and increases when they are 55 years and older (Mthembu, 2015; Statistics South Africa, 2013). This behaviour can be explained by the fact that children depend on their caregivers, who are typically mothers or female figures who generally prioritize and value the use of healthcare services and treatment (Mthembu, 2015; Sharma et al., 2022).

In terms of religious affiliation, a study conducted in Enugu state, Nigeria, found that religious affiliation was statistically significant with health-seeking behaviour (Ugwu, 2022). However, other studies have found that religious affiliation influences health-seeking behaviours differ

from one denomination to another (Du Toit, 2021). This is partially explained by the fact that some religious denominations have strict prayer times that may interfere with medical treatment (Swihart et al., 2024). Moreover, studies examining the relationship between religious affiliation and health-seeking behaviour indicate that highly religious individuals, including men, are more likely to prioritize spiritual remedies over utilizing formal healthcare services (Swihart et al., 2024).

Regarding geographical location in terms of type of place residence which is referred to as the place where an individual lives such as the urban or rurality of areas they reside in. Previous works have shown that the population in rural areas is less likely to engage with modern healthcare services (Nunes, 2009). This is partly due to the fact that healthcare services in rural areas are under-resourced and of poor quality (ITA, 2024). Furthermore, the research found that the population in rural areas has strong cultural preferences for traditional health practices hence modern health care service is poorly utilized in these settings (Nunes, 2009). For instance, A study in rural Ghana found that the population in rural areas were more likely to visit traditional healers more frequently to source treatment (Kumah et al., 2024). Furthermore, in rural Ghana, it was found that those with health insurance are not more likely than those without health insurance to visit formal medical institutions (Kumah et al., 2024).

Regarding employment status, research suggests that being in employment was found to be a barrier to seeking healthcare (Cooper et al., 2021; Literacy, 2011; Wynter et al., 2023). In Rwanda, employment status was significantly associated with health-seeking behaviour, with men not in regular employment being more likely to seek healthcare than those who were regularly employed (Uwimana et al., 2023). This is because employed men often spend more time working, leaving less time for healthcare (Uwimana et al., 2023).

This high correlation between employment and health insurance suggests that men in low-income or unemployed situations are often not covered by any health insurance and are more likely to depend on government health programs (Abaerei, 2016; Mthembu, 2015). In contrast, private and tertiary healthcare services are more commonly utilized by individuals with higher incomes and health insurance (Abaerei, 2016). A study in South Africa indicated that there is strong evidence that households with a better wealth index and health insurance are more likely to access healthcare as opposed to households with a low wealth index and without health insurance (Abaerei, 2016). Furthermore, a study in Ghana supported this finding when they also found that half (50 %) of the insured participants sought healthcare more often from formal

healthcare providers when compared to participants without health insurance (Kumah et al., 2024).

Wealth status is a tool widely used to measure the financial standing of households in developing countries(Kumah et al., 2024; Uwimana et al., 2023). The literature suggests that there is an association between wealth and health-seeking behaviour. A study in Nigeria focusing on civil servants found that members of the poorest quartile were 60% more likely to have inappropriate health-seeking behaviour than the richest quartile (Latunji & Akinyemi, 2018). These findings were also observed in an Ethiopian study where it was found that households in higher consumption quintiles were more likely to seek care in health centers and private/Non-Government Organization (NGO) clinics as opposed to public health facilities (Mebratie et al., 2014).

Media exposure in this study refers to accessibility to mobile telephone, reading newspaper or magazines, access to radio, and frequency of watching television. Media exposure is important as individuals can learn about access to healthcare facilities through them. Research showed that media was found to be crucial in reaching health messages to audiences, especially those who are distant and in rural areas (Aliyi et al., 2023). A study in eastern Ethiopia found that one in every three and one in every four rural communities in the study area had access to health messages through mass media thus improving health utilization (Aliyi et al., 2023).

2.4 Angola's Perspective of Health-Seeking Behaviour

Access to healthcare in Angola is available in different forms. Healthcare is available from private facilities, public facilities, and traditional healers (ITA, 2024). In Angola and other developing countries, the primary types of healthcare access include government primary healthcare, self-treatment through purchasing drugs, and visiting traditional healers (Abaerei, 2016; ITA, 2024). For instance, In Angola, 8 out of 10 households prefer to use public healthcare facilities (ITA, 2024; Nunes, 2009). Although most households prefer public healthcare, the utilization thereof is generally low. However, it is high among females, infants, and children brought by female caregivers as the focus is on reducing maternal, neonatal, and infant mortality yet poor among men (Abaerei, 2016; Aoki et al., 2023; Mthembu, 2015). Furthermore, a study conducted in Angola with a focus on investigating the availability, quality, and utilization of health services in two provinces of Angola (Luanda and Uíge) found that on average, a household had 0.75 illness episodes with children and 0.68 illness episodes with

adults. In this study, medical assistance was sought in more than 90 percent of the cases (Frøystad, 2011). However, this study was not specific about the rate of men seeking healthcare.

Generally, healthcare utilization among adult males is typically low. This can partly be explained by elements such as masculinity, bravery, and the perception of invulnerability among males (Mebratie et al., 2014; Mthembu, 2015). The delay in health-seeking behaviour is further apportioned to mainly the type of adult-related conditions and economic standing of households and individuals (Mebratie et al., 2014). Research has also found that delays in seeking healthcare are caused by Angola's strong cultural traditions that influence family roles and responsibilities (Nunes, 2009; Ramos et al., 2022). Furthermore, healthcare utilization is affected by the level of supply of health services, the costs, the distance, and the information they have from others who have already been assisted by those services (Nunes, 2009). For instance, a study conducted focusing on factors influencing access to primary health care in Luanda, Angola, found that nearly 70% of the study participants were not satisfied with the distance between the residence and the primary health care center (de Carvalho Maquengo et al., 2025).

The region of residence, which is referred to as the geographical area in which a respondent resides, can influence healthcare-seeking behaviours. For instance, in Angola, the best hospitals and clinics are found in the region of Luanda, and most public and private healthcare assistance is delivered there. Other provinces and cities outside of Luanda lack modern facilities (ITA, 2024). In a study that focused on the availability and quality of health services in two regions of Angola (Luanda and Uíge), it was found that Health facilities in Luanda provide a much broader range of health services than those located in Uíge (Frøystad, 2011). However, the utilisation of health services was found to be high in both provinces. More than 90 percent of study subjects had visited a health service provider (Frøystad, 2011). This study by Froystad suggests that there are disparities in the region of residence and the availability and utilization of health facilities.

In Angola, the official language of communication is Portuguese. A report coming from Angola indicated that Angola is a linguistically diverse country with over 40 national languages and dialects (Allianz, 2025). Research exploring the intersection of Portuguese language use and health-seeking behaviour in Angola is very limited. However, several studies and reports provide insights into how language dynamics influence healthcare access and utilisation in the country (Allianz, 2025; Baptista, 2017; Nunes, 2009; Timbane, 2020). Notably is a study titled *"For a Linguistic Policy in Health Services: A Sociolinguistic Study at the Regional Hospital*

of Malanje (Angola)". This study examined the impact of language policies on healthcare delivery. The research highlights that Portuguese, as the official language, is predominantly used in healthcare settings. The study found that the sole use of the Portuguese language is more likely to marginalise speakers of national languages, potentially hindering their access to and utilisation of health services (Timbane, 2020). This study is further supported by a cross-sectional study focusing on Portuguese expatriates in Angola and Mozambique, which explored self-reported health problems and healthcare utilisation. While the study primarily targets expatriates, it provides insights into how language familiarity (in this case, Portuguese) can influence health-seeking behaviour, potentially offering comparative perspectives for native Angolan populations with varying levels of Portuguese proficiency (Baptista, 2017).

Educational level has been extensively studied in both developing and developed countries, with research consistently showing that education significantly influences health-seeking behaviour as a key socio-demographic factor (Abaerei, 2016; Adongo et al., 2022; Mthembu, 2015). Numerous studies indicate that men with lower educational levels generally utilize healthcare services less frequently (Abaerei, 2016; Mthembu, 2015; Sharma et al., 2022). Differences in education and health literacy can influence men's awareness of healthcare needs and available resources(Cooper et al., 2021; Literacy, 2011; Wynter et al., 2023). For instance, a study in Angola found that males who completed their secondary education and above and who lived in urban areas were more likely to seek healthcare when compared with those with no education (Ramos et al., 2022).

2.5 Research gaps in the literature on health-seeking behaviour studies

Prior research has provided valuable insights into the cultural influences on seeking and accessing modern health care as well as health-seeking practice that is patient care-oriented, or restricted to a specific disease related to a few limited symptoms (Aoki et al., 2023; Nascimento et al., 2014; Nunes, 2009). In contrast, this study focuses on general health-seeking regardless of any symptoms, aiming to highlight and provide valuable data on the unique challenges and factors affecting men in seeking healthcare. Furthermore, previous studies have generally examined health-seeking behaviour at the entire population. At the time of writing, the researcher was not aware of any studies conducted in Angola that specifically focused on health-seeking behaviour among men and socio-demographic determinants, which is the focus of the current study (Nascimento et al., 2014; Nunes, 2009). Additionally, previous studies primarily employed qualitative approaches, while others used methods involving the direct enumeration of participants and self-administered data collection. Whereas, this study adopts

the quantitative approach to address the association between health-seeking behaviour and socio-demographic aspects. Furthermore, this study will provide an analysis that represents the entire Angola nation and addresses the scarcity of studies focusing on men and their health-seeking behaviour.

2.6 Theoretical and conceptual framework

2.6.1 Theoretical framework

The Study uses the healthcare services utilization framework by Andersen & Newman, also known as the Behavioural Model. Ronald M. Andersen, a health services professor at the University of California, Los Angeles, first introduced this framework in 1968. This model has been widely utilized in both developing and developed countries to provide insight into healthcare utilization (Chandrika & Pushpalata N, 2017). Further, the Anderson's healthcare behavioural model is suitable, as it argues that socio-demographic variables are key in health-seeking behaviour among other factors outlined in the model (Adongo et al., 2022). This Model indicates that three factors promote or prevent health-seeking behaviour (Andersen, 1995a; Andersen & Newman, 1968). The three factors are predisposing, enabling, and need factors.

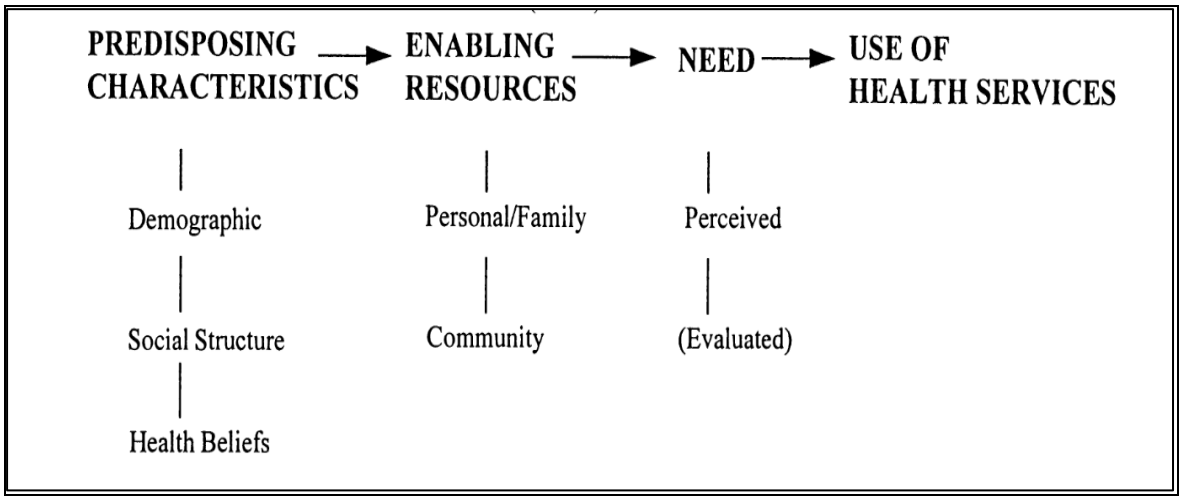
Predisposing factors: Predisposing factors explain an individual's desire to use health services before the beginning of illness. It consists of demographic, social structure, and health belief variables. Demographics include age and gender. Social structure includes education, occupation, ethnicity, social networks, social interactions, and culture. Whereas, health Beliefs include attitudes, values, and knowledge that people have concerning and towards the healthcare system (Andersen, 1995b; Andersen & Newman, 1968; Chandrika & Pushpalata N, 2017).

Enabling factors: These factors consist of variables that play a supporting role in order for an individual to access healthcare. These include elements related to family characteristics (such as household income, health insurance coverage, and education level of the household head) and community resources (such as availability of healthcare facilities, transportation, and distance to health services (Andersen, 1995a; Andersen & Newman, 1968; Chandrika & Pushpalata N, 2017).

Need factors: This is the primary and immediate cause of health service utilization, from functional and health issues that require health care services (Andersen, 1995b; Andersen & Newman, 1968; Chandrika & Pushpalata N, 2017). It consists of the perceived and the evaluated need for health care.

- Perceived: "How people view their general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help." (Andersen, 1995).
- Evaluated: "Represents professional judgment about individuals' health status and their need for medical care."(Andersen, 1995). Figure 1 on the next page shows a visual diagram of the theory.

Figure 2.1: The Initial Healthcare Services Utilization Framework Behavioural Model (1960s)



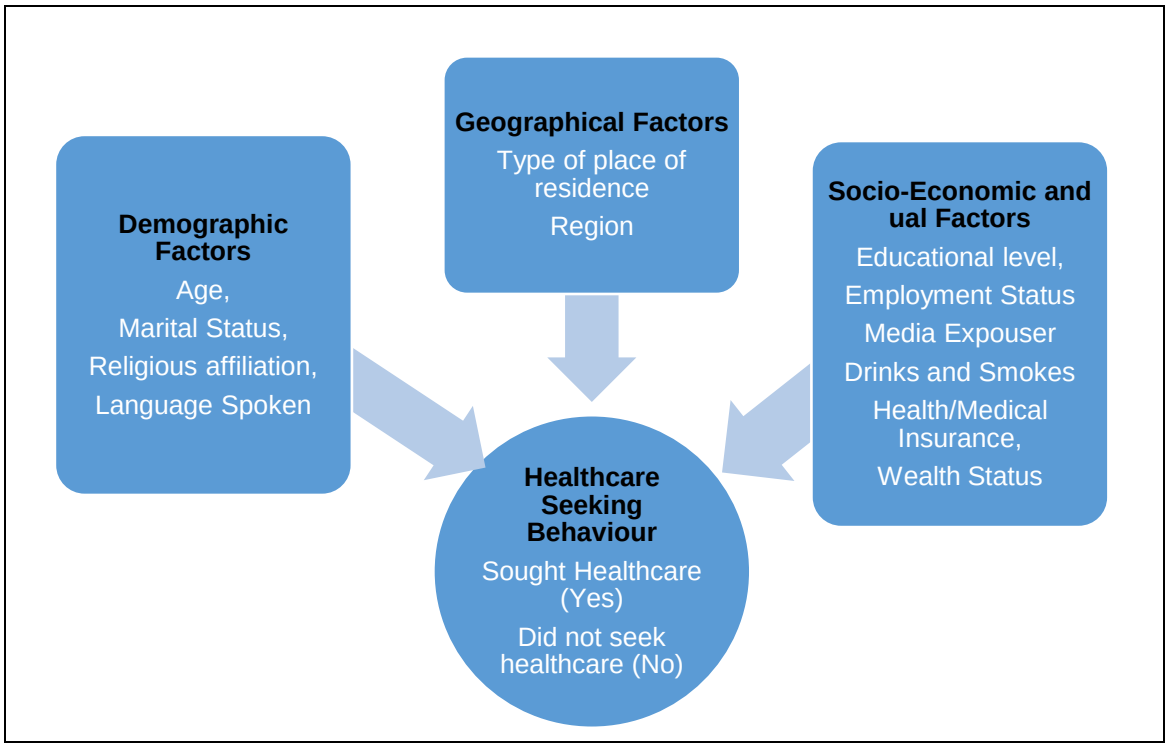
Source(Andersen, 1995b)

2.6.2 Conceptual framework

This study adopted the healthcare services utilization framework by Andersen & Newman, also known as the Behavioural Model, to examine the prevalence and socio-demographic characteristics associated with health-seeking behaviour among Men in Angola. The study adopted two levels from the Model, namely the predisposing and enabling factors, as outlined in the healthcare services utilization framework. The predisposing factors include Age, Educational level, Marital Status, Religion, type of place of residence, and region. The enabling factors include Health/Medical Insurance and Wealth Index. However in this study, predisposing factors such as age, marital status, religion are classified as demographic factors, other predisposing factors such as type of place residence, and region will be classified as geographical factors whiles enabling factors such as Health/Medical Insurance, education, employment status will be classified as socio-economic factors. Due to data limitations, the study did not use the Need factors from the framework by Andersen & Newman.

The conceptual framework presented in Figure 2 shows the factors that affect health-seeking behaviour among men in Angola. The arrow shows that there is a direct influence between independent factors such as demographic, geographical and socio-economic & and behavioural factors, and the outcome variable, which is health-seeking behaviour, which indicates if a man has sought Healthcare (Yes) and/ did not seek healthcare (No).

Figure 2.2: Conceptual framework of men's health-seeking behaviour



2.7 Research Hypothesis

Ha: Socio-economic and Demographic determinants are associated with health-seeking behaviour among Men in Angola.

Ho: Socio-economic and Demographic determinants are NOT associated with health-seeking behaviour among Men in Angola.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter presents the description of the methodology of the study, which consists of the study area, data source, the study design, the study population, the study sample, the study variables, and the analysis plan. The chapter concludes by providing the model diagnostic and ethical considerations.

3.2. Description of the study area

The figure below shows the map of Angola with the region names. The country is located in the South-Western Africa, and its population was projected to be 33,086,278 in 2022 (INE, 2022).The country is made up of 18 regions, namely, Cabinda, Zaire, Uge, Luanda, Cuanza Norte, Cuanza Sul, Malanje, Luanda Norte, Benguela, Huambo, Bie, Moxico, Cuanda Cubango, Namibe, Hula Cunene, Luanda Sul, and Bengo. The main language spoken in Angola is Portuguese.

Figure 3.1: Map of Angola



Source: Angola Instituto Nacional de Estatística (INE), 2017

3.3. Data source

The study is quantitative, and it used secondary cross-sectional data. The study used the 2015-16 Angola Demographic Health Survey (ADHS) dataset. The Demographic Health Survey (DHS) in Angola was first introduced and conducted in 2006, followed by 2011 and 2015-16. The 2015-16 Demographic and Health Survey is also known as the fourth Multiple Indicator

Cluster Survey conducted in Angola. The data used in the study was drawn from Angola DHS men's recode datasets (MR file). The men's recode dataset includes amongst other information on Alcohol consumption, Health insurance, HIV behaviour, HIV knowledge, HIV testing, male circumcision, and Tobacco use (Instituto Nacional de Estatística (INE), et al., 2017).

In this module, only one male aged between 15 and 54 years per household was randomly selected to be eligible for the interview (Instituto Nacional de Estatística (INE), et al., 2017). The survey data collection was implemented from October 2015 through March 2016. The Angola National Institute of Statistics (INE), was in charge of the survey (Instituto Nacional de Estatística (INE), et al., 2017) together with the Ministry of Health (Ministério da Saúde or MINSA), along with technical assistance from United Nations Children's Fund (UNICEF) and International Childrens Funds (ICF) through the Demographic and Health Surveys Program and the World Health Organization(WHO) (Instituto Nacional de Estatística (INE), et al., 2017).

3.4. Study Design

The DHS deployed a two-stage sampling technique. In the first sampling stage, 627 primary sampling units (PSUs) were selected, 345 urban areas and 282 rural areas from the results and cartography of the General Census of Population and Housing (GCPH) of Angola 2014 (Instituto Nacional de Estatística (INE), et al., 2017). In the second Stage, 26 enumeration areas in the primary urban and rural sampling units were selected. A sample of 16,302 households were selected, and only 50% of the selected households with men aged 15-54 years were interviewed. A total of 5,684 men aged 15-54 years who were permanent residents or visitors who stayed in the selected household a night before the survey were interviewed (Instituto Nacional de Estatística (INE), et al., 2017). This study design is suitable for this study because it helps the researcher to characterize health-seeking behaviour within a specific population.

3.5. Study population and Sample size

This research considered all men aged 15-54 years, in all regions of Angola. The total population used in the study consisted of a weighted sample of 5 684 men from the Angola DHS 2015-16. The underlying reason for choosing 15 years as a starting point in the study is that according to data from Angola National Institute of Statistics (INE), Angola has a youthful population - about 48% are under the age of 15 as of 2022 and the median age in the country was estimated to be 15.9 years in 2022 (INE, 2022).

3.6. Variables

3.6.1. Dependent variable

The outcome variable in the study is health-seeking behaviour. In the DHS all men aged 15-54 were asked a question *"In the last 30 days did you seek medical care due to an illness or accident"*. The outcome variable was labelled as "sm814" and coded as "Yes" = (1) and No = (0), where Yes (1) means one has sought medical aid and No (0), did not seek medical care. All responses indicated as "do not know", "unspecified" or "missing responses" were discarded from the analysis.

3.6.2. Independent variables

The independent variables selected for this study are socio-demographic. They include age, Marital Status, Religion, and language spoken, classified as demographic factors, whilst the type of place of residence, and region are classified as geographical factors. Lastly, employment status, wealth index, smoking, drinking alcohol, educational level, medical/health insurance, and media exposure are classified as socio-economic and behavioural factors. The selection of independent variables is guided by available literature.

Table 3.1: Categorization of the independent variables

Independent variable name	DHS - Variable Description	Original codes	How variables are coded in the study
DEMOGRAPHICS FACTORS			
Age(Age Groups)	mv012	15,16,17,18,19,20,21,22,23,24,25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, …….54	1=15-24, 2=25-34, 3=35-44, 4=45-54
Religion	Mv130	1 =catholic, 2 = methodist, 3=assembly of god, 4= universal, 5=Jehovah's witness, 6=protestant 7=Islamic, 8=animist, and 9=no religion	0= No religion 1= Catholic 2= Protestant 3=OtherReligion (Christian/Islamic/Animist religion)
Language Spoken	sm121	1=Portuguese, 2=chokwe/kioko, 3=fiote, 4=kikongo/ukongo, 5=Kimbundu, 6=kwanhama,	1=Portugues and 0= Non_Portugues

Independent variable name	DHS - Variable Description	Original codes	How variables are coded in the study
		7=luvale, 8=muhumbi, 9=nganguela, 10=nhaneca, 11=Umbundu, 12=gestural, 96=other	
Marital Status	mv501	0=never in union, 1=married, 2=living with partner, 3=widowed, 4divorced 5=no longer living together/separated	0=Never married 1= Ever married
GEOGRAPHICAL FACTORS			
Type of place of residence	Mv025	1= Urban, 2=Rural	1= Urban, and 2=Rural
Region	Mv101	1=Cabinda, 2=Zaire, 3=Uge 4=Luanda, 5=Cuanza Norte, 6=Cuanza Sul, 7=Malanje, 8=Luanda, Norte, 9=Benguela, 10=Huambo, 11=Bi, 12=Moxico 13=Cuanda Cubango, 14=Namibe, 15=Hula 16=Cunene, 17=Luanda Sul, and Bengo	1=Cabinda, 2=Zaire, 3=Uge 4=Luanda, 5=Cuanza Norte 6=Cuanza Sul, 7=Malanje 8=Luanda Norte, 9=Benguela 10=Huambo, 11=Bi, 12=Moxico 13=Cuanda Cubango, 14=Namibe, 15=Hula 16=Cunene, 17=Luanda Sul, and 18=Bengo
SOCIO-ECONOMIC &BEHAVIOURAL FACTORS			
Educational level	mv106	0=No education, 1=Primary, 2= Secondary, and 3= Higher	0=No education, 1=Primary 2= Secondary, and 3= Higher
Employment Status	mv714	0=no, and 1=yes	0=no, and 1=yes
Health insurance	mv481	0=no, and 1=yes	0=no, and 1=yes

Independent variable name	DHS - Variable Description	Original codes	How variables are coded in the study
Wealth Status	mv190	1=poorest, 2=poorer 3=middle, 4=richer, and 5=richest	=poorest, 2=poorer 3=middle, 4=richer, and 5=richest
Smoking	mv463a	0=No, and 1=Yes	0=No, and 1=Yes
Drink Alcohol	sm812	0=doesnt drinks, 1=every day, and 2=occasionally	0=doesnt drinks, 1=every day, and 2=occasionally
Frequency of watching television		0=No at all, 2=atleast once a week, and 3=almost every day	Combine the four variables into one variable: Media Exposure 1=No Exposure, 2=Some exposure and 3=Full exposure
Frequency of listening to the radio	mv158	0=No at all, 2=atleast once a week, and 3=almost every day	
Owns a mobile telephone	mv463a	0=No, and 1=Yes	
Read magazines or newspapers	sm812	0=No at all, 2=atleast once a week, and 3=almost every day	

3.7. Statistical analysis plan

This study used version 14 of the Stata software for analysis. Stata was used for data management, including selecting the study population and cleaning the data. Another software used in the study was Microsoft Excel 365. Microsoft Excel was used to enhance the presentation of tables and to create graphical presentations. To ensure nationally representative estimates, sampling weights were applied using the following specification: ***svyset mv021 [pw=weight], strata(mv022) singleunit(centered)***

The results are presented in three stages: univariate, bivariate, and multivariate analyses. This approach was employed to address the study's research objectives.

Objective 1: To analyse the prevalence of health-seeking behaviour among Men in Angola.

For the first objective, univariate analysis was presented using frequencies and percentages of Men aged 15-54 years. Furthermore, cross-tabulations was performed to examine the relationship between socio-demographic determinants and health-seeking behaviour.

Pearson Chi-square test was used to find if there is any association among variables that are used in statistical studies (Nihan, 2020). In this study, the Chi-square test assessed if there were any statistically significant associations between healthcare utilization among men and each independent variable.at α=0.05. The Chi-square test equation is :

$$x^2 = \sum \frac{(O_i - E_i)\text{^}2}{E_i}$$

Source: (Bonita et al., 2006)

Where O_i is the observed frequency for ith level of the categorical variable,
and E_i is the expected frequency for ith level of the categorical variable.

The prevalence is known "as the proportion of people with a particular attribute or existing cases in a certain population at a point in time" (Bonita et al., 2006). In the present study, prevalence is used to illustrate the **degree/level** to which men in Angola sought healthcare, based on data from the 2015–16 Demographic and Health Survey (DHS)

$$Prevelance = \frac{Number\ of\ people\ with\ a\ particular\ attribute\ at\ a\ time}{Number\ of\ people\ in\ the\ study\ at\ a\ time} * 100$$

Where the numerator represents the number of men who sought healthcare at a time, to be specific, the year 2015-16. The denominator was all men in the study. Proportions were multiplied by 100 and thus shown as a percentage, and therefore interpreted as a percentage in the results section. The prevalence in the results section was presented in a pie chart and a bar graph (Bonita et al., 2006).

Objective 2: To identify demographic and socio-economic determinants that influence health-seeking behaviour among Men in Angola.

The second objective was addressed by fitting a forward stepwise binary logistic regression. This regression model is chosen because the outcome variable is dichotomous with YES/NO response categories. The use of stepwise binary logistic regression in this study enabled a systematic and efficient approach to identifying the most significant predictors of health-

seeking behaviour among men. This method allowed the researcher to assess the individual and combined effects of multiple independent (explanatory) variables. The independent variables included in the analysis were categorized into three main groups: demographic, geographic, and socio-economic & behavioural factors. Using stepwise binary logistic regression, furthermore, allowed the researcher to use the groupings to facilitate a structured assessment of how different dimensions of men's backgrounds and characteristics influenced health-seeking behaviour. The stepwise binary logistic regression model allowed the researcher to study the impact of independent/explanatory variables on the odds ratio and health-seeking behaviour among men. "Binary logistic regression is used to predict the occurrence of an event using odds ratios. If the odds ratio be less than 1 (>1) the outcome is regarded to be less likely relative to the reference category whilst if the odd ration be greater than 1 (>1), the outcome is deemed to be more likely relative to the reference category" (Bonita et al., 2006).

The association between socio-demographic determinants and health-seeking behaviour was examined by conducting unadjusted and adjusted binary logistic regression. The unadjusted model will show odds ratios for each variable for health-seeking behaviour. The adjusted model will show odds ratios for health-seeking behaviour with socio-demographic determinants. For the adjusted model, the study deployed the forward stepwise regression to identify the best predictors without overfitting. consisting of three models.

- The first model (model 1) presented the demographics, such as the age of respondents, marital status, religion, and language spoken.
- The second model (model 2) presented Model 1 and geographical factors, including the type of residence and region.
- The third and final model (model 3) presented Model 2 and socio-economic & behavioural factors, including Educational level, Health/Medical Insurance, Employment Status, Wealth Status, Smoking, drinking alcohol, and media exposure.

This modeling strategy reflects a logical and theory-informed progression. Demographic factors are often the most basic and inherent characteristics of individuals, followed by geographic context, which may influence access and availability of health services. Socio-economic and behavioural factors are more dynamic and subject to change, often mediating or moderating the effects of demographic and geographic influences (Bonita et al., 2006).

The equation used for the Binary Logistic regression is presented below:

$$\text{In}\left[\frac{p}{1-p}\right] = \beta_0+\beta_1X_1+\beta_2X_2+\ldots+\beta_nX_n$$

Where p denotes the probability of the outcome, transformed into logarithms (In)

β_0 is the Constant,

$\beta_1 \ldots\ldots\ldots B_n$ are the regression odds ratio, and

$X_1 \ldots\ldots\ldots X_n$ are the independent variables

Source: (Bonita et al., 2006)

3.8. Model diagnostics

There were four model diagnostic tests applied in the study. First, the Correlation matrix was conducted to test multicollinearity among independent variables. The results of the correlation matrix are shown in the appendix section, *Appendix A*. In the Correlation matrix, it was found that there were *no strong, moderate, or strong correlations between independent variables*. The second test statistic was the Pearson chi-square test with P-values. The results are shown in Table 4.2 in the results section. The third model diagnostic test statistic calculated was the Hosmer and Lemeshow's test, the results are shown in the appendix section, *Appendix B*. The Hosmer-Lemeshow test -results indicate the goodness of fit test of the binary logistic model. The P-value as indicated in the table is more than 0,05 suggesting that the model does fit the data well. The last diagnostic test conducted was the Linktest and the result are in the appendix section, *Appendix C*. The linktest result indicates that the *_hat* was significant at p-values less than 0,05. This means that the model predictions are significantly associated with the outcome variable

3.9. Ethical issues

The study was conducted using secondary data acquired from the Angola DHS 2015-16. The data set is readily available on the DHS program accessible on https://dhsprogram.com/. The permission to use the DHS data was approved and provided upon an online application. Within 24 hours, the permission to use data was granted the DHS program. The study used anonymized data, meaning that study participants cannot be identified in the study, and therefore, consent forms were not necessary. Further, the study did not reveal any individual information. The ethics protocol for the research was approved by the University of the Witwatersrand and registered under number ***WDEMG2024/07/03***.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the results of the study. The results of the study are presented in line with the objectives of the study as outlined in the methodology section. First, the chapter presents the frequency and percentage distribution of the background characteristics of men. The chapter further presents the prevalence of health-seeking behaviour among men, followed by the distribution of health-seeking behaviour according to background characteristics. Lastly, the chapter presents the determinants of health-seeking behaviour among men.

4.2 Frequency and percentage distribution of background characteristics of men

This section presents results relating to the provides a detailed presentation of the socio-demographic characteristics of respondents in Angola, 2015-16

Table 4.1 provides a detailed presentation of the socio-demographic characteristics of respondents. In terms of age, results show that the largest proportion accounting for 43.8%, were men between 15-24 years old. This is followed by men aged 25-34 years, which constitutes 26.9%. In terms of marital status, most men were never married (83.6%), whilst only 16.4% of men were ever married. In terms of religion, about 38.2% of men were Catholic, while 30.3% of the Protestant religion affiliation. In terms of language spoken, majority of men (73.7%) were Portuguese speaking with only 26.3% indicating that they do not speak Portuguese. Regarding the type of place of residence, most men were living in urban areas (71.7%). A significant portion of men, 45.5%, hailed from the Luanda region, making it the most represented area. Following Luanda is the Cuanza region with 8.4% of men in the study. Men from regions such as Huila and Benguela each accounted for 7.5% in the study. Furthermore, regions with the lowest proportion of men were Bengo, Namibe, and Cuando with less than 1,5% of men. With regards to the level of education, over half (54.7%) of men indicated secondary education as their highest level of education followed by men who indicated primary education (30.1%) as their highest level of education. With regard to employment status, the results indicated that 70.3% of men were employed. Regarding wealth status, only 28,7% of men indicated that they belonged to the richest wealth status followed by men who indicated that they were of richer wealth status. Regarding health insurance, 90.5% of men did not have medical insurance.

With reference to smoking and drinking behaviour, majority of men (85.3%) indicated that they were not smoking cigarettes at the time of the survey while 56.0% of men were not drinking alcohol at the time of the survey.

Regarding media exposure results show that 49.0% of men did not have full exposure to media, while a paltry 9.4% said they had no media exposure.

Table 4.1: Socio-Demographic Characteristics of Men in Angola, 2015-16 DHS

Socio-Demographic characteristics	Frequency (n)	Percentage (%)
Sample size (n)	5 684	100%
DEMOGRAPHICS FACTORS		
Age		
	Median Age of men = 27 years	
15-24	2 489	43.8
25-34	1 529	26.9
35-44	983	17.3
45-54	683	12.0
Marital Status		
Never Married	4 750	83.6
Ever Married	934	16.4
Religion		
No religion	920	16.2
Catholic	2 171	38.2
Protestant	1 715	30.2
Other religion	878	15.4
Language		
Non_Portugues	1 495	26.3
Portugues	4 189	73.7
GEOGRAPHICAL FACTORS		
Type of place of residence		
Urban	4 077	71.7
Rural	1 607	28.3
Region		
Cabinda	142	2.5
Zaire	128	2.3
Uíge	268	4.7
Luanda	2 584	45.5
Cuanza	475	8.4
Malanje	167	2.9
Bengula	426	7.5
Huambo	348	6.1
Bié	218	3.8
Moxico	101	1.8
Cuando	82	1.4
Namibe	70	1.2
Huíla	425	7.5
Cunene	179	3.1
Bengo	71	1.2
SOCIO-ECONOMIC & BEHAVIOURAL FACTORS		
Level of education		
No education	428	7.5
Primary	1 709	30.1
Secondary	3 108	54.7
Higher	439	7.7
Employment Status		
No	1 686	29.7

Socio-Demographic characteristics	Frequency (n)	Percentage (%)
Yes	3 998	70.3
Wealth Status		
Poorest	845	14.9
Poorer	913	16.1
Middle	1 085	19.1
Richer	1 206	21.2
richest	1 634	28.7
Health Insurance		
No	5 145	90.5
Yes	539	9.5
Smokes cigarettes		
No	4 849	85.3
Yes	835	14.7
Drinks alcohol		
No	3 183	56.0
Every day	459	8.1
Occasionally	2 042	35.9
Media Exposure		
No media exposure	532	9.4
Some exposure	2 366	41.6
Full Exposure	2 786	49.0

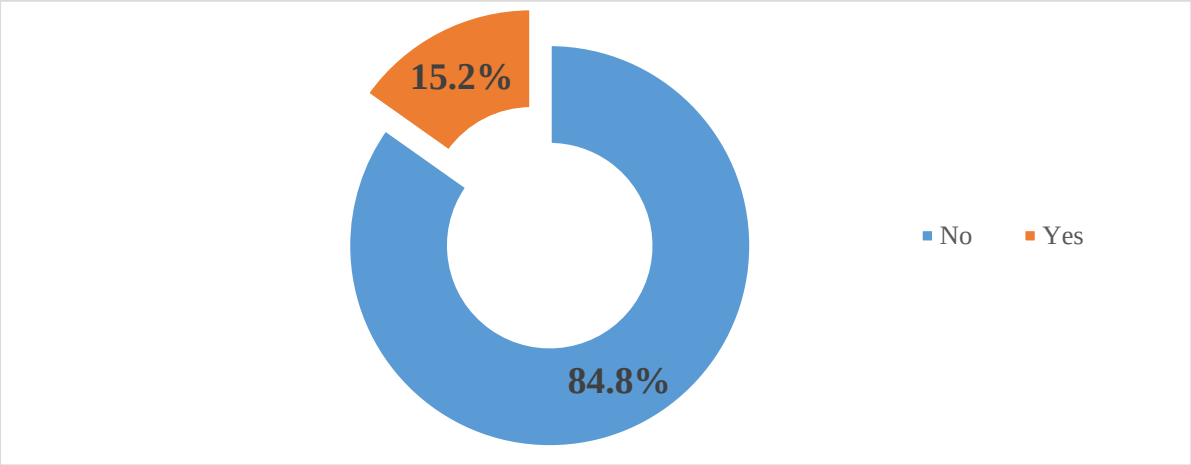
Source: Calculated from Angola DHS 2015-16 data
Note: The data is based on weighted analysis

4.3 Prevalence of Health-seeking behaviour among men in Angola, 2015-16.

This section presents results relating to the prevalence of health-seeking behaviour among men in Angola. The section first presents a pie chart that shows the overall prevalence of health-seeking behaviour among men in Angola. Lastly, the section presents a bar graph showing the Prevalence of Health-seeking behaviour of men by age in Angola, 2015-16.

Figure 4.1 illustrates the prevalence of men who sought medical care in the last 30 days due to an illness or accident in Angola, 2015-16. Out of a sample of 5,684 men who participated in the study, only 15.2 % sought medical care in the last 30 days due to an illness or accident (Yes), while 84.8% did not seek medical care (No).

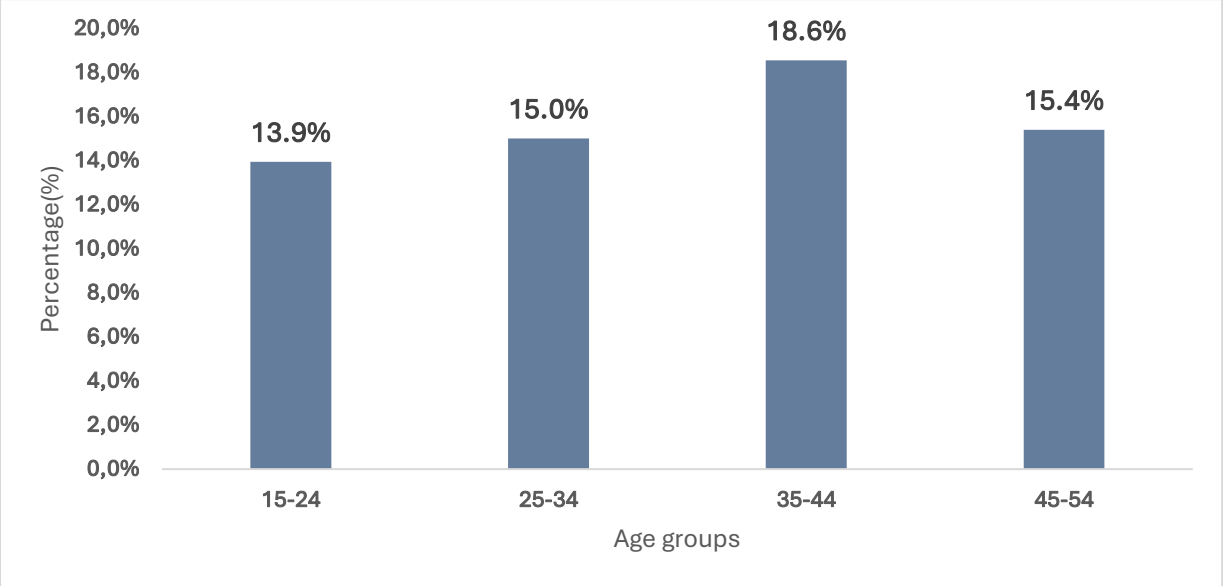
Figure 4.1: Prevalence of health-seeking behaviour of men aged 15-54 in Angola, 2015-16



Source: Calculated from Angola DHS 2015-16 data
Note: The data is based on weighted analysis

Figure 4.2 highlights the prevalence of health-seeking behaviour of men by age in Angola 2015-16. Results indicate that among men aged, 15-24, 13.9% sought health care. About 15.0%, of men aged 25-34 years sought healthcare. The prevalence of healthcare-seeking increased to 18.6% among men aged 35-44. This was followed by a considerable drop to 15.4% among men aged 45-54.

Figure 4.2: Prevalence of Health-seeking behaviour of men by age in Angola, 2015-16



Source: Calculated from Angola DHS 2015-16 data
Note: The data is based on weighted analysis

4.4 Distribution of health-seeking behaviour according to background characteristics

This section presents cross-tabulations of socio-demographic characteristics of men by health-seeking behaviour in Angola, 2015-16.

Table 4.2 below provides the socio-demographic characteristics of men by health-seeking behaviour in Angola, 2015-16. Results indicate that among men aged 35-44 years, the prevalence of health-seeking behaviour is the highest when compared to other age groups. When looking at the marital status of men, 16.0% of never-married men sought health care when compared to only 11.3% of ever-married men. The association between marital status and health-seeking behaviour was found to be statistically significant (p-value 0.0084). With regards to religious affiliation, 21.0% of men who were not affiliated with any religion had sought health care. Among men affiliated with other religions, 17.5% sought health care. The association between religion and health-seeking behaviour was found to be statistically significant at a p-value of 0.0002. About language spoken, 17.8% of men who indicated that they could converse in Portuguese sought medical care and the association between language spoken and healthcare seeking behaviour was found to be statistically significant at a p-value of 0.0000.

Regarding geographical factors, 18.0% of men residing in urban areas sought healthcare. In addition to that health-seeking behaviour among men was found to be high in Bengo (28.1%); Luanda (20.6%) and Zaire at 20.1%. The association between both types of places of residence,

region, and health-seeking behaviour were found to be statistically significant, both at p-value(s) of 0.0000.

With regards to Socio-economic factors, 21.6% of men who indicated higher as their level of education sought health care and among men with secondary education, 17.8% of them sought health care. The association was found to be statistically significant at a p-value of 0.0000. Looking at health insurance, of the men who indicated they had health insurance, 38.1% sought healthcare. In contrast, only 12.8% of men without health insurance sought health care services. This association was found to be statistically significant, with a p-value of 0.000. Looking at men's alcohol Drinking behaviour, results indicate that of men who were drinking every day, 26.7% sought healthcare, whilst only 14.1% of men who did not drink alcohol at all sought healthcare. This association was found to be statistically significant at 0.0062.

Regarding media exposure, results indicate that of men who had full media exposure, 20.2% sought healthcare, whilst only 13.2% of men with some media exposure sought healthcare. This association was found to be statistically significant at 0.0000.

Table 4.2: Distribution of socio-demographic characteristics of men by health-seeking behaviour in Angola, 2015-16.

socio-demographic characteristics	Sought medical care				Pearsons chi2	P value
	No		Yes			
	N	%	N	%		
DEMOGRAPHICS FACTORS						
Age						
15-24	2 142	86.1%	347	13.9%		
25-34	1 300	85.0%	230	15.0%	11.7063	0.2565
35-44	800	81.4%	182	18.6%		
45-54	578	84.6%	105	15.4%		
Marital Status						
Never Married	3 991	84.0%	759	16.0%	13.3879	0.0084
Ever Married	829	88.7%	105	11.3%		
Religion						
No religion	727	79.0%	194	21.0%		
Catholic	1 914	88.2%	257	11.8%	47.1182	0.0002
Protestant	1 455	84.8%	260	15.2%		
Other religion	724	82.5%	154	17.5%		
Language						
Portugues	3444	82.2%	745	17.8%	82.2561	0.0000
Non_Portugues	1376	92.0%	119	8.0%		
GEOGRAPHICAL FACTORS						
Type of place of residence						
Urban	3342	82.0%	734	18.0%	88.0178	0.0000
Rural	1476	91.9%	130	8.2%		

socio-demographic characteristics	Sought medical care				Pearsons chi2	P value
	No		Yes			
	N	%	N	%		
Region						
Cabinda	137	96.3%	5	3.7%		
Zaire	102	79.9%	26	20.1%		
Uíge	217	81.0%	51	19.0%		
Luanda	2052	79.4%	532	20.6%		
Cuanza	384	81.0%	90	19.0%		
Malanje	151	90.5%	16	9.5%		
Bengula	385	90.4%	41	9.6%	213.2579	0.0000
Huambo	342	98.1%	7	1.9%		
Bié	210	96.2%	8	3.8%		
Moxico	92	90.8%	9	9.2%		
Cuando	76	92.6%	6	7.4%		
Namibe	62	88.6%	8	11.4%		
Huíla	389	91.7%	35	8.3%		
Cunene	169	94.4%	10	5.6%		
Bengo	51	71.9%	20	28.1%		
SOCIO-ECONOMIC & BEHAVIOURAL FACTORS						
Level of education						
No education	406	94.9%	22	5.1%		
Primary	1515	88.7%	193	11.3%	84.3387	0.0000
Secondary	2554	82.2%	554	17.8%		
Higher	345	78.4%	95	21.6%		
Employment Status						
No	1442	85.6%	244	14.5%	1.0608	0.5083
Yes	3377	84.5%	621	15.5%		
Wealth Status						
Poorest	797	94.3%	48	5.7%		
Poorer	821	89.9%	93	10.1%	159.1253	0.0000
Middle	954	87.9%	131	12.1%		
Richer	937	77.7%	269	22.3%		
Richest	1311	80.2%	323	19.8%		
Health Insurance						
No	4487	87.2%	659	12.8%	32.8660	0.0000
Yes	333	61.9%	206	38.1%		
Smokes cigarettes						
No	4110	84.8%	739	15.2%	0.0371	0.8920
Yes	710	85.0%	125	15.0%		
Drinks alcohol						
No	2734	85.9%	450	14.1%	51.5481	0.0066
Every day	337	73.3%	123	26.7%		
Occasionally	1750	85.7%	292	14.3%		
Media Exposure						
No media exposure	512	96.2%	20	3.8%	108.2779	0.0000
Some exposure	2420	86.8%	367	13.2%		
Full Exposure	1889	79.8%	478	20.2%		

Source: Calculated from Angola DHS 2015-16 data
Note: The data is based on weighted analysis

4.5 Determinants of health-seeking behaviour among men

This section presents results relating to predictors of health-seeking behaviour among men in Angola. The section first presents the binary logistic regression analysis, which shows the binary association between the dependent/outcome variable and each of the independent variables. Furthermore, the section presents the multivariate logistic regression analysis, showing the association of the outcome variable with multiple independent variables.

4.5.1 Bivariate Logistics regression analysis

Table 4.3 below shows the unadjusted binary logistics regression of Socio-demographic Characteristics of men and their health-seeking behaviour in Angola 2015-16. The results show that a high number of selected variables such as age of men, marital status, religion, language spoken, type of place of residence, region, level of education, wealth status, health insurance, smoking, alcohol consumption, and owning a telephone were significant predictors of health-seeking behaviour.

The study results show that men in age groups 35-44 (OR=1.41; 95% CI: 1.04:1.89) were 40% more likely to seek healthcare compared to those in the age group 14-24. The study finding also revealed that men who indicated that they were ever-married were 33% less likely to seek health care as compared to never-married men (OR=0.67; 95% CI: 0.49:0.90). Regarding religious affiliation, the odds ratio of seeking health care were 50% less likely for men who indicated that they were of Catholic religion (OR=0.50; 95% CI: 0.37:0.68) and 33% less likely for men that were affiliated with Protestant religion (OR=0.67; 95% CI: 0.469:0.96). when compared to men who were not affiliated with any religion. Looking at the language spoken, men indicated that they could converse in Portuguese (OR=2.50; 95% CI:1.92:3.23) were 150% more likely to seek health care as compared to men who did not speak Portuguese.

Regarding geographical factors, results indicate that men in rural areas (OR= 0.40; 95% CI:0.29:0.54) were 60% less likely to seek health care as compared to men in urban areas with a p-value of 0.0000. On the other hand, men from region of residence such as Cabinda (OR= 0.15; 95% CI:0.07:0.28), Malanje (OR= 0.41; 95% CI:0.23:0.71), Bengula (OR= 0.41; 95% CI:0.26:0.62), Huambo (OR= 0.07; 95% CI:0.02:0.22), Bie (OR= 0.15; 95% CI:0.07:0.29), Moxico (OR= 0.39; 95% CI:0.21:0.69), Cuando (OR= 0.31; 95% CI:0.17:0.53), Namibe (OR= 0.50; 95% CI:0.32:0.76), Huila (OR= 0.35; 95% CI:0.20:0.60), and Cunene (OR= 0.23; 95% CI:0.11:0.45), were less likely to seeking health care as compared with men from Luanda. However, men who were residing in Beno were (OR= 1.51; 95% CI:1.02:2.23) 51% more likely to seek health when compared to their counterparts residing in Luanda.

With regards to socio-economic factors, results show that the higher the education level, the more the likelihood of seeking healthcare. Men in Primary (OR= 2.37; 95% CI:1.28:4.37), secondary (OR= 4.03; 95% CI:2.22:7.28), and higher education level (OR= 5.10; 95% CI:2.76:9.41) were more likely to seek healthcare when compared to men with no education. The results were statistically significant with a p-value(s) that were less than 0.05. With regards to wealth status results show that the higher the wealth status of men the more likely they will seek health care. Men of poorer wealth status (OR= 1.86; 95% CI:1.24:2.77), middle wealth status (OR= 2.26; 95% CI:1.46:3.49), richer wealth status (OR= 4.73; 95% CI:3.05:7.34), and richest wealth status (OR= 4.06; 95% CI:2.76:5.96) were more likely to seek health care as compared to men with poorest wealth status and the results are statistically significant with a p-value less than 0.05. Looking at health insurance, men who indicated they had health insurance OR= 4.22; 95% CI:2.48:7.10) were 322% more likely to seek health care as compared to men without health insurance and the results are statistically significant at a p-4value of 0,0000. When looking at drinking alcohol, the results show that men who were drinking alcohol every day (OR= 2.22; 95% CI:0.70:1.68) by the time of the survey were 1.22% more likely to seek healthcare as compared to men who did not drink at all. Regarding media exposure, the study findings show that men with full exposure to media (OR= 3.86; 95% CI:2.02:7.32) and men with some exposure (OR= 6.44; 95% CI:3.48:11.89) to media were more likely to seek health care when compared to men without media exposure. The results also indicate that they were statistically significant at a p-value of 0.000.

Table 4.3: Unadjusted Binary Logistic Regression of Socio-demographic Characteristics of Men and their health-seeking behaviour in Angola 2015-16

socio-demographic characteristics	Odd ratio	P value	[95% Conf, Interval]
DEMOGRAPHICS FACTORS			
Age			
15-24 (RC)	RC		
25-34	1.09	0.580	[0.80:1.48]
35-44	1.41	0.025	[1.04:1.89]
45-54	1.12	0.588	[0.74:1.71]
Marital Status			
Never Married (RC)	RC		
Ever Married	0.67	**0.009**	[0.49:0.90]
Religion			
No religion (RC)	RC		
Catholic	0.50	**0.000**	[0.37:0.68]
Protestant	0.67	**0.032**	[0.46:0.96]
Other religion	0.80	0.249	[0.54:1.17]
Language			
Non_Portugues (RC)	RC		
Portugues	2.50	**0.000**	[1.92:3.23]
GEOGRAPHICAL FACTORS			
Type of place of residence			

socio-demographic characteristics	Odd ratio	P value	[95% Conf, Interval]
urban (RC)	RC		
Rural	0.40	**0.000**	[0.29:0.54]
Region			
Luanda (RC)	RC		
Cabinda	0.15	**0.000**	[0.07:0.28]
Zaire	0.97	0.855	[0.71:1.32]
Uíge	0.91	0.624	[0.61:1.33]
Cuanza	0.90	0.590	[0.62:1.30]
Malanje	0.41	**0.002**	[0.23:0.71]
Bengula	0.41	**0.000**	[0.26:0.62]
Huambo	0.07	**0.000**	[0.02:0.22]
Bié	0.15	**0.000**	[0.07:0.29]
Moxico	0.39	**0.002**	[0.21:0.69]
Cuando	0.31	**0.000**	[0.17:0.53]
Namibe	0.50	**0.002**	[0.32:0.76]
Huíla	0.35	**0.000**	[0.20:0.60]
Cunene	0.23	**0.000**	[0.11:0.45]
Bengo	1.51	**0.038**	[1.02:2.23]
SOCIO-ECONOMIC & BEHAVIOURAL FACTORS			
Level of education			
No education (RC)	RC		
Primary	2.37	**0.006**	[1.28:4.37]
Secondary	4.03	**0.000**	[2.22:7.28]
Higher	5.10	**0.000**	[2.76:9.41]
Employment Status			
No (RC)	RC		
Yes	1.09	0.508	[0.84:1.39]
Wealth Status			
Poorest (RC)	RC		
Poorer	1.86	**0.002**	[.124:2.77]
Middle	2.26	**0.000**	[1.46:3.49]
Richer	4.73	**0.000**	[3.05:7.34]
Richest	4.06	**0.000**	[2.76:5.96]
Health Insurance			
No (RC)	RC		
Yes	4.22	**0.000**	[2.48:7.10]
Smokes cigarettes			
No(RC)	RC		
Yes	0.98	0.892	[0.71:1.31]
Drinks alcohol			
No (RC)	RC		
Every day	2.22	**0.007**	[0.70:1.68]
Occasionally	1.01	0.915	[0.56:0.93]
Media Exposure			
No media exposure (RC)	RC		
Some exposure	6.44	**0.000**	[3.48:11.89]
Full Exposure	3.86	**0.000**	[2.02:7.32]

Source: Calculated from Angola DHS 2015-16 data
Note: The data is based on weighted analysis
RC denotes Reference Category

4.5.2 Multivariate logistic regression analysis

Table 4.4 below presents the adjusted Stepwise Binary Logistics Regression of Socio-demographic Characteristics of Men and their Health-seeking behaviour in Angola 2015-16. Table 4.4 shows that there are three models. The first model (model 1) presents the binary logistics of the health-seeking behaviour of men by demographic factors only. The second model (model 2) presents binary logistics of the health-seeking behaviour of men by demographic factors and geographic factors. The third model (model 3) which is the full model presents the binary logistics of the health-seeking behaviour of men by demographic factors, geographic factors, and socio-economic factors.

Findings from model 1 show that the Likelihood Ratio Chi2 of 13.42, degrees of freedom of 589, and a p-value of 0.0000 indicate that model 1 fits the data significantly. Furthermore, the model also showed that the age of men, marital status, religious affiliation, and language spoken were significant predictors of health-seeking behaviour among men. The results show that men in age groups 35-44 (aOR=1.75; 95% CI: 1.28:2.37) were 75% more likely to seek healthcare compared to those in the age group 14-24. The study finding also revealed that men who indicated that they were ever-married were 34% less likely to seek health care as compared to never-married men (aOR=0.66; 95% CI: 0.47:0.93). Regarding religious affiliation, the odds ratio of seeking health care was 45% less likely for men who indicated that they were of Catholic religion (aOR=0.55; 95% CI: 0.40:0.75) when compared to men who were not affiliated with any religion. Looking at the language spoken, men indicated that they could converse in Portuguese (aOR=2.50; 95% CI:1.91:3.26) were 150% more likely to seek health care as compared to men who did not speak Portuguese.

Findings from model 2 show that the Likelihood Ratio Chi2 of 9.87, degrees of freedom of 589, and a p-value of 0.0000 indicate that model 2 fits the data significantly. Furthermore, the model also showed that age of men, religious affiliation, language spoken, type of place of residence, and region of residence were significant predictors of health-seeking behaviour among men. The results show that men in age groups 35-44 (aOR=1.54; 95% CI: 1.01:1.71) were 54% more likely to seek healthcare compared to those in the age group 14-24. Results further indicate that men who were of Catholic affiliation (aOR=0.68; 95% CI: 0.60:1.18) were 32% less likely to seek healthcare as compared to those who were not affiliated with any religion. In terms of language spoken, men who indicated that they could converse in Portuguese were 96% more likely to seek health care as compared to their counterparts who did not speak Portuguese. Model 2 findings also revealed that men residing in rural areas were

43% less likely to seek health care as compared to men who were residing in urban areas. Regarding the region of residence of men, results show that Cabinda, Malanje, Bengula, Huambo Bie, Moxico, and Cunene were less likely to seek healthcare as compared to men who were residing in Luanda. However, men who were residing in Zaire (aOR=0.68; 95% CI: 0.60:1.18) and Bengo (aOR=1.68; 95% CI: 1.17:2.39) were more likely to seek health care as compared to men from Luanda.

Findings from the full model, model 3, show that the Likelihood Ratio Chi2 of 7.5, degrees of freedom of 589, and a p-value of 0.0000 indicate that the full model fits the data significantly. Furthermore, the model also showed that religious affiliation, language spoken, region of residence, health insurance, wealth status, and media exposure were significant predictors of health-seeking behaviour among men. The results show that men who were affiliated with the Catholic religion (aOR=0.65; 95% CI: 0.46:0.91) were 35% less likely to seek health care as compared to men without religious affiliation. In terms of language spoken, men who indicated that they could converse in Portuguese (aOR=1.68; 95% CI: 1.17:2.39) were 42% more likely to seek healthcare as compared to men who did not speak Portuguese. In terms of the region of residence, men who were residing in Cabinda, Huambo, and Bie were less likely to seek healthcare as compared to men who were residing in Luanda. On the other hand, men who were residing in Zaire, Uige, Cuanza, and Bengo were more likely to seek health care compared to men who were residing in Luanda. Regarding wealth status, men who indicated that they were of richer wealth status (aOR=175; 95% CI: 1.00:3.05) were 75% more likely to seek health care as compared to men who were of the poorest wealth status. Results also show that men with health insurance (aOR=2.88; 95% CI: 1.75:4.72) were 188% more likely to seek healthcare compared with those who did not have health insurance. In terms of media exposure, the results indicate that men who had some media exposure (aOR=2.48; 95% CI: 1.26:4.86) were 148% more likely to seek healthcare, and men with full exposure to media (aOR=1.96; 95% CI: 1.03:3.71) were 96% likely to seek healthcare compared to men without any media exposure.

Table 4.4: Adjusted Stepwise Binary Logistics Regression of Socio-demographic Characteristics of Men and their health-seeking behaviour in Angola 2015-16

socio-demographic characteristics	Model 1			Model 2			Model 3		
	Odds Ratio	**P value**	**[95% Conf, Interval]**	**Odds Ratio**	**P value**	**[95% Conf, Interval]**	**Odds Ratio**	**P value**	**[95% Conf, Interval]**
DEMOGRAPHICS FACTORS									
Age									
15-24 (RC)	RC			RC			RC		
25-34	1.18	0.270	[0.87:1.56]	1.13	0.437	[0.83:1.51]	1.01	0.925	[0.74:1.37]
35-44	1.75	**0.000**	[1.28:2.37]	1.54	**0.007**	[1.01:1.71]	1.41	0.077	[0.96:2.05]
45-54	1.43	0.126	[0.90:2.27]	1.28	0.309	[0.89:1.62]	1.07	0.770	[0.66:1.72]
Marital Status									
Never Married (RC)	RC			RC			RC		
Ever Married	0.66	**0.018**	[0.47:0.93]	1.02	0.919	[0.88:1.60]	0.94	0.727	[0.67:1.31]
Religion									
No religion (RC)	RC			RC			RC		
Catholic	0.55	**0.000**	[040:0.75]	0.68	**0.018**	[0.60:1.18]	0.65	**0.013**	[0.46:0.91]
Protestant	0.74	0.195	[0.51:1.14]	0.75	0.170	[0.58:1.33]	0.88	0.464	[0.53:1.08]
Other religion	0.77	0.108	[0.51:1.06]	0.84	0.361	[0.58;1.19]	0.76	0.129	[0.61:1.24]
Language									
Non_Portugues (RC)	RC			RC			RC		
Portugues	2.50	**0.000**	[1.91:3.26]	1.96	**0.000**	[1.69:3.06]	1.42	**0.029**	[1.03:1.21]
GEOGRAPHIC FACTORS									
Type of place of residence									
urban (RC)				RC			RC		
rural				0.57	**0.004**	[0.38:0.83]	0.794	0.287	[0.51:1.21]
Region									
Luanda (RC)				RC			RC		
Cabinda				0.16	**0.000**	[0.08:0.31]	0.17	**0.000**	[0.08:0.33]
Zaire				1.68	**0.004**	[1.17:2.39]	1.71	**0.011**	[1.13:2.59]
Uíge				1.54	0.064	[0.97:2.41]	2.25	**0.001**	[1.37:3.68]
Cuanza				1.26	0.283	[0.82:1.93]	1.97	**0.002**	[1.28:3.00]
Malanje				0.53	**0.035**	[0.29:0.95]	0.79	0.446	[0.42:1.45]
Bengula				0.52	**0.005**	[0.33:0.81]	0.76	0.266	[0.46:1.23]
Huambo				0.09	**0.000**	[0.02:0.29]	0.16	**0.002**	[0.05:0.50]
Bié				0.26	**0.000**	[0.12:0.53]	0.47	**0.049**	[0.22:0.99]
Moxico				0.63	0.160	[0.33:1.19]	0.82	0.563	[0.41:1.60]

socio-demographic characteristics	Model 1			Model 2			Model 3		
	Odds Ratio	P value	[95% Conf, Interval]	Odds Ratio	P value	[95% Conf, Interval]	Odds Ratio	P value	[95% Conf, Interval]
Cuando				0.63	0.127	[0.35:1.13]	0.84	0.575	[0.46:1.53]
Namibe				0.66	0.057	[0.43:1.01]	0.95	0.807	[0.62:1.43]
Huíla				0.60	0.104	[0.32:1.10]	0.89	0.699	[0.49:1.59]
Cunene				0.47	**0.036**	[0.23:0.95]	0.73	0.367	[0.36:1.44]
Bengo				1.92	**0.005**	[1.21:3.03]	2.97	**0.000**	[1.82:4.81]
SOCIO-ECONOMIC & BEHAVIOURAL FACTORS									
Level of education									
No education (RC)							RC		
Primary							1.46	0.219	[0.79:2.67]
Secondary							1.72	0.100	[0.90:3.29]
Higher							1.64	0.162	[0.82:3.27]
Employment Status									
No (RC)							RC		
Yes							1.04	0.812	[0.74:1.45]
Wealth Status									
Poorest (RC)							RC		
Poorer							1.09	0.712	[0.70:1.67]
Middle							1.01	0.962	[0.57:1.79]
Richer							1.75	**0.048**	[1.00:3.05]
Richest							1.38	0.288	[0.76:2.50]
Health Insurance									
No (RC)							RC		
Yes							2.88	**0.000**	[1.75:4.72]
Smokes cigarettes									
No(RC)							RC		
Yes							1.07	0.698	[0.75:1.51]
Drinks alcohol									
No (RC)							RC		
Every day							1.57	0.070	[0.96:2.54]
Occasionally							0.83	0.228	[0.61:1.12]
Media Exposure									
No media exposure							RC		
Some exposure							2.48	**0.008**	[1.26:4.86]
Full exposure							1.96	**0.040**	[1.03:3.71]

Source: Calculated from Angola DHS 2015-16 data; Note: The data is based on weighted analysis; RC denotes Reference Category

4.5.3 Testing of Hypothesis

Literature review shows that socio-demographic factors are important in influencing the health-seeking behaviour of men. The hypotheses used in the study were tested using model 3 (the full model) of the multivariate analysis.

Ha: Socio-economic and Demographic determinants are associated with health-seeking behaviour among Men aged 15-54 years in Angola.

Ho: Socio-economic and Demographic determinants are not associated with health-seeking behaviour among Men aged 15-54 years in Angola.

Model 3 of the multivariate analysis indicated that the model has a p-value = 0.0000. This means that the entire regression model is statistically significant at 0.05 significance level. These results indicate evidence to reject the null hypothesis (Ho) because there is an association between socio-demographic determinants and health-seeking behaviour among men aged 15-54 in Angola. The analysis showed that religious affiliation, language proficiency, media exposure, health insurance, and wealth status as factors that were significantly associated with health-seeking behaviour among men aged 15-54 in Angola

CHAPTER 5: DISCUSSION

5.1 Introduction

The main aim of this chapter was to present the discussion of the findings of this research. This study was conducted to examine the socio-demographic determinants that influence the decision to seek healthcare among men aged 15-54 years in Angola. To achieve the main objective, the study used two sub-objectives. First, to analyze the prevalence of health-seeking behaviour among men in Angola, and lastly, to identify socio-demographic determinants that influence health-seeking behaviour among men aged 15-54 years in Angola. The factors included in the study were demographic factors such as age, marital status, religious affiliation, and language spoken. Geographical factors included the type of place of residence & region, and the socio-economic and behavioural factors included educational level, employment status, wealth status, health status, cigarette smoking, drinking alcohol, and media exposure.

5.2 Discussion of the findings

The findings from this study showed that the majority of men in Angola did not seek healthcare for illnesses or accidents. The prevalence of seeking health care was 15.2% among men aged 15-54 years in Angola. This low prevalence of health-seeking behaviour could be partially explained by the fact that men find it difficult to disclose or converse sensitive issues with female healthcare workers and find it embarrassing to share personal and private details with female healthcare workers (Mthembu, 2015). Furthermore, research has highlighted that masculinity plays a role in how men seek healthcare, hence the low rates(Abaerei, 2016; Mthembu, 2015). Mthembu (2015) indicated that the low prevalence of health-seeking behaviour among men is often perceived as a sign of weakness. Other possible explanations are that men could have a higher threshold for pain, were less willing to report pain, and could have waited longer before seeking care (Lim et al., 2019). This finding was highly inconsistent with the results from other studies globally, where men were found to have poor health-seeking behaviour (Lim et al., 2019; Mthembu, 2015). For instance, a study by Mthembu conducted in South Africa indicated 93.0% of men indicated that they use healthcare services when feeling unwell. Another study by Uwimana and colleagues in Rwanda found that 51.8% of men in their study used healthcare services whenever they felt sick (Uwimana et al., 2023).

The study found that men aged 35-44 years were more likely to seek health in Model 1 and Model 2 than men aged 15-24. However, Model 3 indicated that there was no statistical difference in health-seeking behaviour by age group. The results in models 1 and 2 were in line

with existing literature that indicated that as age increases, people tend to seek more healthcare. These findings were consistent with a study conducted in Rwanda that found that men aged 40 years and above were three times more likely to seek health care as compared to men aged 18 to 25 years (Uwimana et al., 2023). This finding from Rwanda indicates that as the age of men increases, the more likely they seek healthcare because older men are vulnerable to morbidity and mortality from chronic diseases as compared to young men (Uwimana et al., 2023). On the other hand, the results from model 3 suggest that the inclusion of socio-economic and behavioural factors might have influenced health-seeking behaviour in terms of age. Overall, the result suggests that while age appears to influence health-seeking behaviour, this relationship can vary depending on the factors included in the models.

In terms of religious affiliation, the multivariate analysis found that men who are religiously affiliated with the catholic religion were less likely to seek healthcare compared to men who are not religiously affiliated. This could be due to cultural, religious, or personal beliefs associated with their faith that may influence their health-seeking behaviour. Furthermore, the findings on catholic religious affiliation can suggest that catholic men prioritize spiritual remedies over seeking formal healthcare services. However, these results are a surprise as studies have argued that religiously affiliated people are more likely to adopt beneficial health behaviours. This is supported by a study conducted in a town known as Kuga in Nigeria, which also found that the religious domain is statistically associated with positive health-seeking behaviour among the respondents (Ugwu, 2022).

The results of the study show that Portuguese language proficiency significantly increases the likelihood of seeking healthcare, likely due to its role in accessing health services and understanding medical information. These findings are backed by literature that has indicated that communication between healthcare seekers and healthcare providers is key for the effective delivery of healthcare and health-seeking (Rasweswe et al., 2023). Furthermore, Rasweswe and colleagues argued that language barriers in healthcare lead to miscommunication between the medical professional and the patient (Rasweswe et al., 2023).

The multivariate analysis found in module 1 that men who have been married are less likely to seek health care. Models 2 and 3, showed that there is no difference between men who were married and men who were never married. This may be due to the inclusion of geographic, socio-economic, and behavioural factors in the models. However, the result from model 1 can be explained by the fact that men who are married can rely on their partners for support.

Findings on the Type of place of residence revealed that men from rural areas were less likely to seek healthcare when compared to men from urban areas. These disparities are a result of existing inequalities among rural and urban populations in terms of the quality and availability of healthcare facilities and services. These findings are in line with the existing literature. A study conducted in South Africa, North West province, supports this finding, where they found that urban participants were five times more likely to prefer a medical practitioner in private practice (van der Hoeven et al., 2012). This finding is further supported by a study using Cross-sectional data sourced from Demographic and Health Surveys in 36 SSA countries, which found that urban residents were one and a quarter times more likely to access healthcare than rural area residents (Tessema et al., 2022). Among other factors, these results imply that men living in urban areas are associated with better access to healthcare services, which could be due to factors such as better healthcare infrastructure, availability of medical professionals, transportation, and general socio-economic conditions that typically favour urban areas over rural ones. Thus, it is key for the government of Angola to improve healthcare facilities in rural Areas of Angola to match that of urban areas.

Health-seeking behaviour variations exist by region among men aged 15-54 years, as shown in the study. The disparities observed in the regions can be explained by disparities in healthcare infrastructure and cultural or systemic factors. For instance, models 2 and 3 of the multivariate analyses indicated that men who lived in Cabinda, Huambo, and Bie were less likely to seek healthcare compared to those who stayed in the Luanda region. This can be largely explained by the fact that Luanda hosts 3 national hospitals, namely Lucrécia Paim Maternity Hospital, Neves Bendinha Hospital, and Josina Machel Hospital, which is a general hospital with 480 beds, attending to approximately 200 emergency cases daily. Furthermore, Luanda is a region that is highly urbanized and hosts the country's best hospitals together with other private healthcare facilities hence there are healthcare-seeking is better as compared to Cabinda, Huambo, and Bie which are largely rural areas.

On the other hand, men from regions such as Cabinda; Zaire, and Uige were found to be more likely to seek healthcare as compared to men from the Luanda region. This tendency can largely be attributed to the tropical nature of these regions, where malaria is highly prevalent. The constant threat of contracting malaria may act as a strong motivator, indirectly encouraging men to seek healthcare more proactively. Furthermore, Cabinda, Zaire, and Uíge may have targeted public health campaigns or better community-based healthcare outreach programs compared to urban areas like Luanda.

The results of the study show that men from richer wealth status exercise better health-seeking behaviour when compared to men from the poorest wealth status. This finding was in line with other studies in Africa which indicate that the higher the wealth status the higher the odds of seeking healthcare (Abaerei, 2016; Mthembu, 2015; Uwimana et al., 2023). This is largely due to the fact men from higher wealth status can afford to visit healthcare facilities including hospitals, clinics, medical doctors, and pharmacies. A study in the region of Dande in Angola also found that healthcare needs were more common among the better-off than in the most deprived households (Rosário et al., 2021). This reflects the role of resources and knowledge in exercising better healthcare.

The results showed that men belonging to a healthcare insurance scheme were more likely to seek healthcare compared with those who did not have health insurance. These findings are highly consistent with results from other studies on healthcare which also indicated that men with health insurance were significantly associated with health-seeking behaviour (Abaerei, 2016; Mthembu, 2015; Uwimana et al., 2023). This is likely because being a member of health insurance often reduces the out-of-pocket costs for medical consultations, tests, and treatments. Men without insurance may avoid seeking healthcare due to the fear of high expenses, while those with insurance are more financially confident in accessing care. Furthermore, men without health insurance have high probability of delaying or avoiding medical examinations for illnesses, diseases, or symptoms because of the immediate financial implications of not having health insurance. However, men with health insurance are less likely to postpone medical visits because they can afford immediate attention using health insurance. Although these results are in line with findings from the literature. The public healthcare system in Angola is available for free. Therefore, the poor usage of healthcare facilities among men without health insurance can be attributed to the usage of public healthcare facilities which are under-resourced and the infrastructure is aging.

The study shows that men who had some/full media exposure were more likely to seek healthcare compared to men without any media exposure. This finding does agree with literature that argues that media accessibility is critical to promoting health-seeking behaviours among the population (Aboagye et al., 2022; Aliyi et al., 2023). This is because the media often disseminates health-related information, such as symptoms to watch for, the importance of preventive care, and the availability of treatments. Men exposed to media are more likely to recognize health issues and understand the benefits of seeking timely care. Exposure to media highlights the impact of health communication and information dissemination.

5.3 Applicability of the findings to the conceptual frameworks

The study successfully utilised the Healthcare Services Utilization Framework developed by Andersen & Newman, commonly known as the Behavioural Model. This model identified three key factors that influence health-seeking behaviour: predisposing, enabling, and need factors (Andersen, 1995a; Andersen & Newman, 1968). For this study, the predisposing and enabling factors were specifically adopted to explore their impact. Therefore, grouped as demographic, geographical, socio-economic, and behavioural variables.

The conceptual framework established a direct relationship between independent factors—such as demographic, geographical, socio-economic, and behavioural variables—and health-seeking behaviour, which was effectively applied in the analysis. Notably, the impact of socio-demographic characteristics on health-seeking behaviour among men varied significantly. This variability became clearer after applying forward stepwise logistic regression across three models. The effects of socio-demographic factors were best understood by examining how their influence changed across models, as other variables were progressively included.

Specifically, findings from the study offer an important insight into the applicability of the conceptual framework used to understand health-seeking behaviour among men in Angola. While some components of the framework, such as religious affiliation, language spoken, region of residence, health insurance, wealth status, and media exposure were found to be significant predictors of health-seeking behaviour, others did not show a statistically significant association. For example, factors such as education level or employment status, although commonly assumed to influence health-seeking behaviour, did not emerge as strong determinants in this context. This divergence from theoretical expectations underscores the importance of context-specific research and highlights the limitations of applying generalized models without empirical validation. It also suggests that interventions aimed at improving men's health-seeking behaviour in Angola should prioritise empirically supported factors such as wealth status and health insurance coverage, rather than assuming the universal relevance of all components in the conceptual framework.

5.4 Strengths of the study

This is one of the studies that investigated the association between socio-demographic determinants that influence the decision to seek healthcare among Men in Angola, using a nationally representative sample applying a quantitative approach. An additional strength is that this study focuses only on men, whereas studies in Angola that focus on men are very few.

Furthermore, by the time of writing this report, few studies applied stepwise multivariate logistic analysis to investigate the association between socio-demographic determinants that influence the decision to seek healthcare among men using cross-sectional DHS data in Angola. This is key for policymakers in Angola to develop targeted interventions as per the findings of the study.

5.5 Study Limitations

The study was dependent on self-reported data from men, without testing the reliability of the population, and is subject to recall bias, as participants were asked about their health in the 30 days prior to the survey. Men also did not report healthcare-seeking due to the absence of disease. Since the study uses cross-sectional data, only associations, not causal relationships, can be drawn (Wulifan et al., 2022; Yaya et al., 2021). Additionally, the study does not control for factors such as illness severity, distance to healthcare facilities, or type of illness, as these were not included in the DHS-men recode (Wulifan et al., 2022). Another limitation is the lack of data on reasons for not seeking care and the type of healthcare facility, as preliminary data suggests these variables are poorly measured and highly correlated with the outcome.

CHAPTER 6: CONCLUSION, RECOMMENDATIONS AND POLICY IMPLICATIONS

6.1 Conclusion

This study has identified socio-demographic characteristics that influence health-seeking behaviour among men aged 15-54 years in Angola. The main finding from this study revealed a significant gap in healthcare utilization, with only 15.2% of men seeking healthcare for illness or accidents. The socio-demographic differentials in the study highlighted that health-seeking behaviour is poor and a serious issue among men which will require a multi-sector intervention to assist men in improving their health-seeking practice.

The results emanating from the study show that the health of men in Angola is threatened by the type of behaviour men uphold. The results from the study show that health-seeking behaviour differs according to age. The age of men is important for seeking healthcare. Younger men were found to be less likely to seek healthcare. This is mainly because, as men age, the odds of healthcare-seeking also increase (Abaerei, 2016). Furthermore, religious affiliation was found to be negatively associated with health-seeking behaviour. This could be due to cultural, religious, or personal beliefs associated with their faith that may influence their health-seeking behaviour. This health-seeking practice is likely to leave men susceptible to diseases such as HIV and AIDS, diarrheal diseases, lower respiratory infections, tuberculosis (TB), malaria, stroke, ischemic heart disease, road and cirrhosis,

Men, particularly in rural areas, should receive appropriate healthcare education to build their knowledge and skills in terms of healthcare-seeking. In addition to that, healthcare infrastructure, availability of medical professionals, transportation, and general socio-economic conditions in rural areas should be prioritized. This is key as it will improve access to healthcare and reduce the potential burden to the health system as a result of delayed health-seeking practices among men, which may result in pressurising the healthcare system. These initiatives will be important in regions such as Cabinda, Huambo, and Bie. These efforts are likely to contribute to having a healthy nation that may contribute to the economy of Angola. Furthermore, these efforts are important to ensure that frameworks such as the Angola National Development Plan (NDP 2018-2022) and National Plan for Health Development (PNDS) prioritize the healthcare needs of all, including men.

The study highlighted the significant role of socio-economic and behavioural factors in shaping health-seeking behaviour among men. Specifically, findings on access to health insurance and

higher wealth status emphasize the increased ability to engage in positive healthcare practices. As a result of these findings, the government of Angola should make strategic financial investments in strengthening its healthcare infrastructure, while also working to establish a national health insurance fund to ensure greater access to care for its population.

Overall, the findings emphasize the importance of understanding health-seeking behaviour as a multifaceted issue shaped by a variety of demographic, geographical, and socio-economic factors. These insights provide valuable information for improving health-seeking behaviour among men in Angola.

6.2 Recommendations

The main findings from this study revealed that health-seeking behaviour among men is very low in Angola, at 15.2%. This finding calls for the Angola government to generate effective policies and plans that are aimed at improving health-seeking behaviour among men.

It is against this backdrop that the study highly recommends to the Ministry of Health in Angola, also known as MINSA for more financial investment in the health care system of Angola. To address the low health-seeking behaviour, particularly among men, health education campaigns should be tailored to challenge societal norms around masculinity that discourage seeking medical help. Public health messages should focus on the importance of early medical intervention and promote positive health-seeking behaviours, especially among younger men.

A further recommendation is to improve Media and Health Communication; this is as a backdrop of study finding were men with some/full media exposure were found to be more likely to seek healthcare compared to men without any media exposure. Media exposure plays a key role in promoting health-seeking behaviour. Public health campaigns should harness mass media, including radio, television, and social media, to disseminate health information and raise awareness about the importance of seeking healthcare. Targeted outreach through community-based media could be particularly effective in rural areas.

The study further recommends that an increase in funding to healthcare facilities in rural Angola be increased. This is as a result of the study findings where men from rural arears were found to be less likely to seek healthcare. Given the geographical disparities, efforts should be made to improve healthcare infrastructure in rural regions. Allocating more mobile health clinics could be effective in reaching rural populations, particularly men. Furthermore,

traditional leaders in rural areas should be mobilised to raise and highlight awareness about the importance of positive healthcare practices among all. This can assist in changing norms and traditional beliefs associated with the lack of healthcare seeking among men.

As a result of observed variations in health-seeking behaviour, specifically, the study found that men with higher wealth status and access to health insurance were significantly more likely to seek healthcare. Therefore, study recommends the implementation of targeted interventions to address these disparities. In particular, efforts should prioritise expanding access to health insurance and improving the affordability of healthcare services for individuals from lower socio-economic backgrounds. Such measures are essential to promoting more equitable health-seeking behaviours across all wealth quintiles and ensuring that financial barriers do not hinder access to necessary medical care.

6.3 Policy Implications

The study is beneficial to the MINSA (Angola Ministry of Health). The study will specifically contribute to the review of the Angola National Development Plan (NDP 2018-2022) and National Plan for Health Development (PNDS) which do not explicitly cater for the healthcare needs of men. The policies should develop chapters/sections that address the health care needs of men such as the men's health strategy that is aimed at supporting men and boys (young men) to live a long and healthy life. By so doing National health policies will now be gender-sensitive and address the unique barriers men face in seeking healthcare.

Furthermore, the study contributes to the amendment of the National Policy on Territorial Planning and Urbanism (PNOTU) and the National Housing Policy (PNH) by highlighting the urban-rural Health Inequalities. Priority to reduce the health disparities between rural and urban areas by accelerating rural healthcare infrastructure development. Policies should include building and equipping healthcare centers in rural regions, ensuring that they are staffed with qualified healthcare providers, and improving access to essential medicines and treatments.

The study is also beneficial to Instituto Nacional de Estatística of Angola by advocating for strengthening data collection and research. There is a need for more robust data collection and research on the health-seeking behaviour of men in Angola. The Instituto Nacional de Estatística needs to create a robust survey that will focus on health-related issues of men, including the collection of more variables such as health factors, distance to healthcare facilities, or the satisfaction and perception of the quality of health institutions. This will enhance a better understanding of men and their health-seeking behaviour. This initiative will

enable studies in future to investigate the underlying reasons for the observed patterns and identify specific barriers that prevent men from seeking healthcare. Furthermore, the studies recommend that future research on this topic should explore the types of illnesses affecting men and their associated health-seeking behaviours. A qualitative approach would be appropriate to gain a deeper understanding of men's perceptions of specific illnesses and how these influence their decisions to seek healthcare. Suitable qualitative methods for uncovering such insights include focus group discussions and in-depth interviews. This would help inform future policies and interventions. Insights gained from qualitative studies on men’s perceptions of illness and their health-seeking behaviours can significantly inform the development of targeted health policies and interventions.

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APPENDIX

Appendix A: Correlation Coefficient Matrix

Variables	Age	Marital Status	Religion	language spoken	type of place	Region	education level	emp status	Wealth status	health insurance	Drinks alcohol	smokes cigarettes	media exposure
Age	1.0000												
Marital Status	0.3202	1.0000											
Religion	-0.0059	0.0511	1.0000										
language spoken	-0.1395	-0.0249	-0.0245	1.0000									
type of place	0.0725	0.0707	-0.0611	-0.4280	1.0000								
Region	-0.0163	0.1211	-0.0148	-0.0640	0.2204	1.0000							
education level	-0.0635	-0.0265	0.1279	0.3604	-0.4337	-0.1872	1.0000						
emp status	0.3780	0.1921	-0.0585	-0.1190	0.1662	0.0304	-0.0742	1.0000					
Wealth status	-0.0922	-0.0418	0.0494	0.5540	-0.7034	-0.1985	0.5642	-0.1795	1.0000				
health insurance	0.0489	0.0052	-0.0722	0.1270	-0.1246	-0.1632	0.1263	0.0373	0.1994	1.0000			
Drinks alcohol	0.2287	0.0473	-0.1570	-0.0398	0.0361	-0.0256	0.0004	0.1789	-0.0340	0.0473	1.0000		
smokes cigarettes	0.2351	0.0430	-0.0750	-0.1263	0.1178	-0.0206	-0.1688	0.1219	-0.1554	-0.0114	0.2334	1.0000	
media exposure	-0.0672	0.0080	0.0275	0.0736	-0.0933	-0.0085	0.0307	-0.0748	0.0484	-0.0410	-0.0140	-0.0025	1.0000

Appendix B: Hosmer and Lameshows test

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Logistic model for sm814, goodness-of-fit test

                      F(9,581) =          0.83
                      Prob > F =        0.5850
```

Appendix C: : Linktest

Survey: Logistic regression

Number of strata	=	36	Number of obs	=	5,684
Number of PSUs	=	625	Population size	=	5,683.9999
			Design df	=	589
			F(2, 588)	=	132.03
			Prob > F	=	0.0000

sm814	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	.9663986	.2945503	3.28	0.001	.3879019	1.544895
_hatsq	-.0104023	.0705252	-0.15	0.883	-.1489138	.1281091
_cons	-.0202571	.2614765	-0.08	0.938	-.5337969	.4932826

Appendix D: Turnitin summary report

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