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SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

ASSESSING HOUSEHOLD WILLINGNESS AND ABILITY TO PAY FOR FORMAL RESIDENTIAL CARE FOR THE ELDERLY AT THE LA NKWANTANANG-MADINA MUNICIPALITY

BY

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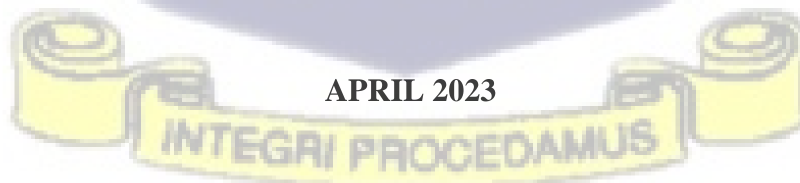
(10936723)

THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF HEALTH ECONOMICS DEGREE



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DECLARATION

This is to declare that this dissertation is the result of my own research. Published literature of other research which have been cited have been duly acknowledged by means of referencing.

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DEDICATION

I would like to dedicate this thesis to my late father, Mr. Sylvester Dakpui, who instilled in me the values of hard work, perseverance, and determination, which have been instrumental in helping me achieve this milestone. I would also like to dedicate this thesis to all the individuals who have contributed to the field of geriatric care, whose groundbreaking work has paved the way for new discoveries and advancements. Thank you to all those who have supported me throughout this journey.

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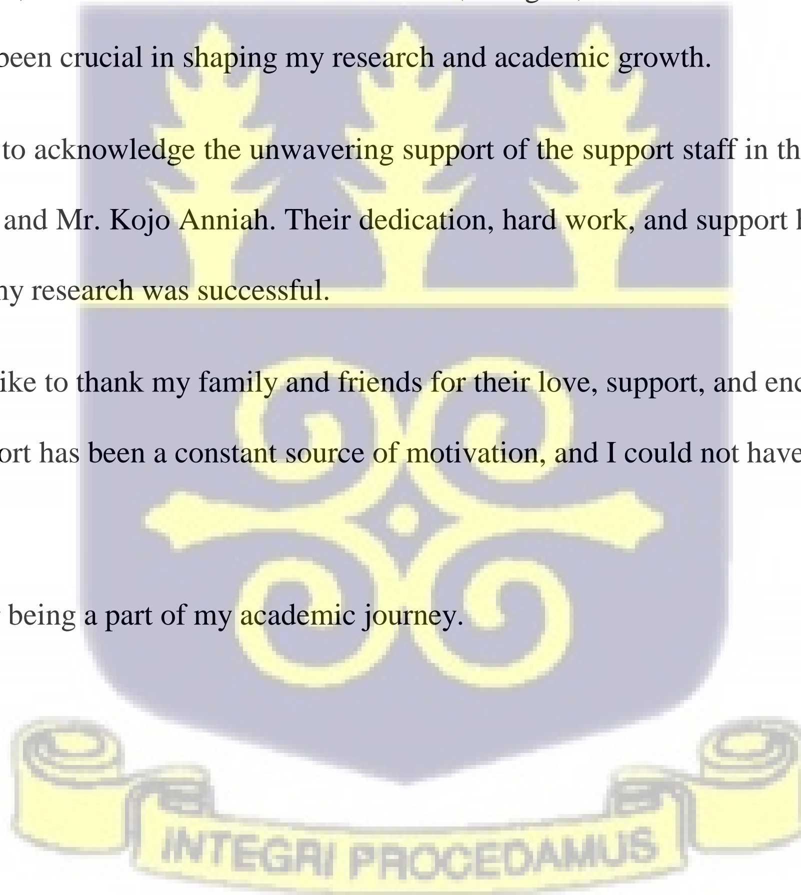

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ABSTRACT

Background: As populations age globally, there is a growing demand for formal residential care for the elderly i.e. persons aged 65 and above. However, in many low- and middle-income countries, such care is often inaccessible or unaffordable. In Ghana, little is known about households' willingness and ability to pay for formal residential care for the elderly.

Objective: The objective of this study is to determine the households' willingness and ability to pay for formal residential care for the elderly in the La Nkwantanang-Madina Municipality of Ghana.

Methods: A cross-sectional quantitative research design was employed to gather and analyze data from 460 households across three sub-districts of La Nkwantanang. The study used a multistage sampling design, combining purposive, stratified and random sampling techniques. A questionnaire was designed to obtain information on socio-economic, demographic, and health characteristics of the elderly, as well as their knowledge and perception of formal residential care homes and willingness to pay for such services. To determine the proportion of people willing to pay, the calculation involved determining the percentage of study participants who expressed WTP. Multiple logistic regression was employed to identify factors influencing households' willingness and ability to pay. Data were analyzed using STATA 17 version, and results were presented using tables and graphs.

Results: The study found that 28.5% had heard of formal residential care homes for the elderly in Ghana. About 72% of households indicated their willingness to pay for formal residential care for the elderly, with an average amount of Gh¢1,403.30 per month (minimum GH¢300, maximum Gh¢3,000.00). The highest percentage (38.9%) of households stated their ability to pay between Gh¢700 - Gh¢999 per month, while the lowest percentage (1.52%) between Gh¢300 - Gh¢499 per month. Multiple logistic regression analysis revealed that age of household head (OR=1.26, p=0.01), household income (OR=1.62, p<0.01), employment status of household head (OR=3.05, p=0.01), level of education, employment domain (OR=1.43, p=0.00), awareness of the existence of service (OR==8.81, p<0.01), whether or not there is an elderly member living in the household (OR = 10.3, p<0.01), and health status of the elderly (OR= -1.61, p<0.01) were all significantly associated with households' willingness to pay for formal residential care for the elderly. In general, higher income households are more likely to be able to pay higher amounts, while lower

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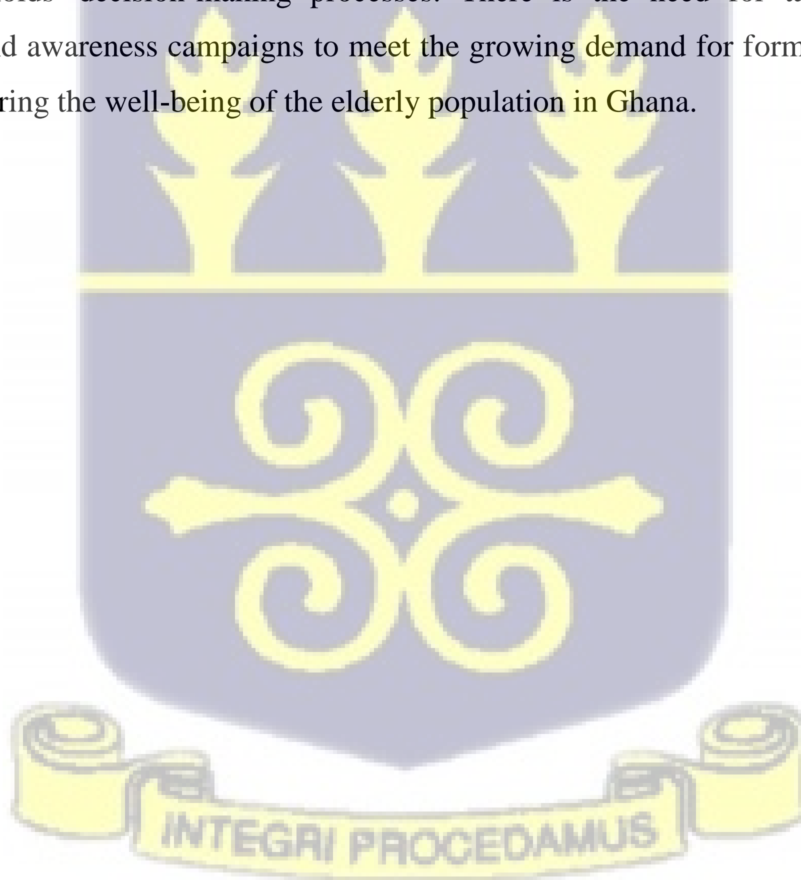
income households are more likely to be restricted to lower payment levels. This was demonstrated by the fact that the highest percentage of households stating ability to pay over GHS 1,000 per month are in the highest income group (5000+), while the lowest percentage of households able to pay over GHS 1,000 per month are in the lowest income group (600-999). The logit model for factors influencing household's ability to pay also revealed that household income (OR=1.02, p<0.01), household size (OR=0.125, p=0.04), employment status (OR=3.04, p<0.01), and level of education have statistically significant relationships with the ability to pay for elderly care homes, while age of head does not.

Conclusion: This study provides compelling evidence of a significant demand for formal care homes for the elderly in Accra, Ghana, with most of households expressing WTP. Factors such as age, income, employment status, presence of elderly and awareness of care options play crucial roles in households' decision-making processes. There is the need for targeted strategies, interventions, and awareness campaigns to meet the growing demand for formal residential care service and ensuring the well-being of the elderly population in Ghana.



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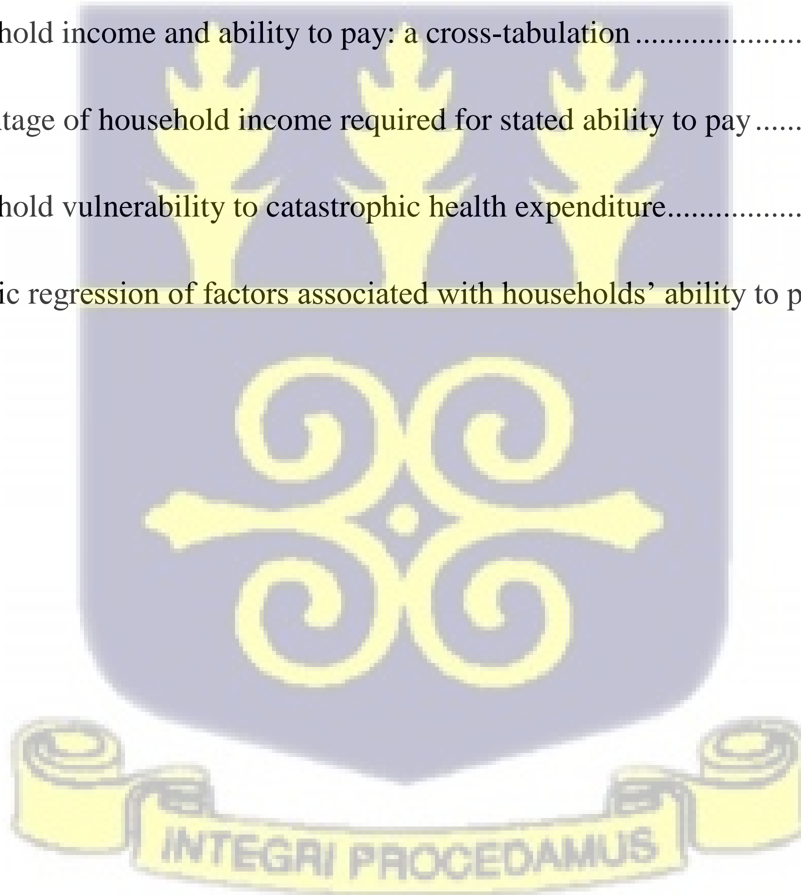

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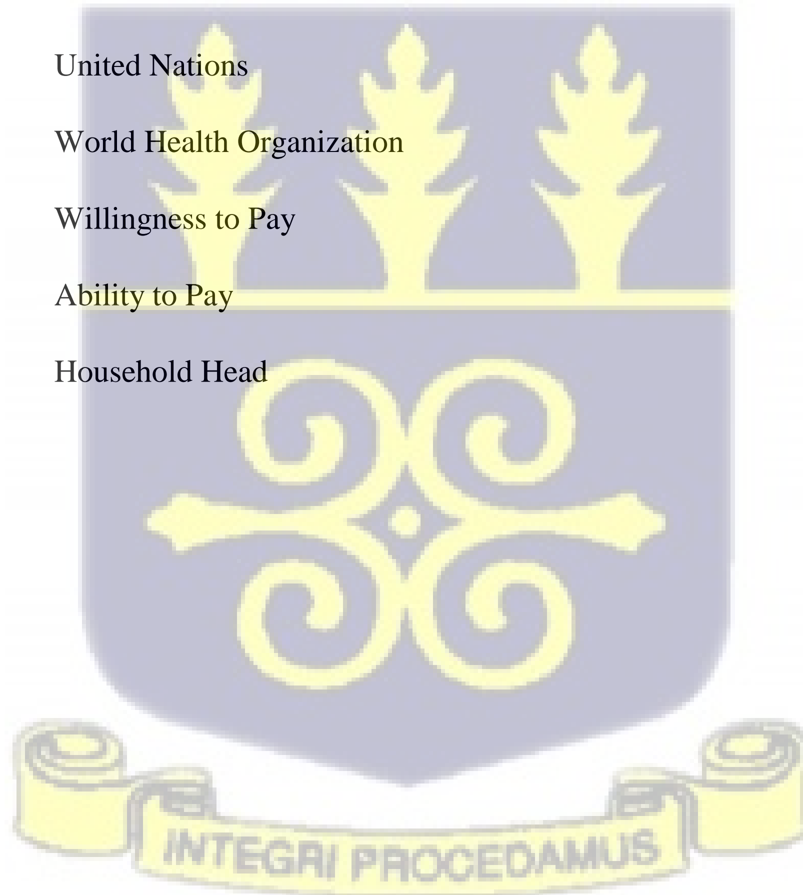
LIST OF ABBREVIATIONS

ATP	Ability to Pay
GSS	Ghana Statistical Service
IPAA	International Plan of Action on Ageing
LEAP	Livelihood Empowerment Against Poverty
LMICs	Low- and Middle-Income Countries
MIPAA	Madrid Plan of Action on Ageing
NGOs	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
UN	United Nations
WHO	World Health Organization
WTP	Willingness to Pay
ATP	Ability to Pay
HH	Household Head



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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The worldwide population of elderly individuals, i.e., those typically aged 65 and above, is rapidly increasing, with a significant portion of this growth expected to take place in the sub-Saharan African region. By 2050, the older African population is projected to triple from 74.4 million to 235.1 million (U.S. Census Bureau, 2020; UN Population Division, 2019). The rate of aging is rising due to a combination of factors including improvements in healthcare, public health policies, and socioeconomic development, which have led to a decline in mortality rates, as well as increased life expectancy and reduced fertility rates (WHO, 2016). As a result, in addition to projections made about the older African population, it is projected that by 2030, the global population of people aged 65 years and older will exceed one billion, and the population of individuals aged 50 years and older will surpass that of those under the age of 17 (Feng, 2019). However, these advancements and enhancements are accompanied by new challenges that societies need to adjust to, to ensure optimal health and functionality of older individuals, as well as promote their social inclusion and safety (World Health Organization, 2015).

As individuals grow older, they experience the buildup of various forms of molecular and cellular damage, which leads to a gradual decline in physical and mental functioning, increased susceptibility to illnesses, and ultimately, death (World Health Organization, 2021a). Some of the typical health issues experienced by older adults include hearing impairment, cataracts, refractive errors, osteoarthritis, and back and neck pain (World Health Organization, 2021a). Additionally, chronic non-communicable diseases such as diabetes, chronic obstructive pulmonary disease, depression, and dementia become more prevalent with age (Jaul & Barron, 2017). This indicates

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that there is a high likelihood of developing chronic non-communicable diseases with increasing age, which in turn leads to a growing need for care (Ayernor, 2012).

Globally, caregiving is recognized as a fundamental aspect of addressing the needs of elderly persons and those with chronic non-communicable diseases (Dowou et al., 2023). In developed countries such as Australia, USA, Germany, and the United Kingdom, majority of caregiving often includes formal support systems such as home health care services, assisted living facilities, and nursing homes, providing various levels of care tailored to the specific needs of the elderly (Das & Bhattacharyya, 2021; Trainum et al., 2023). These systems are often well-regulated, emphasizing trained and certified caregivers to ensure quality assistance. In many developing countries, however, caregiving is primarily information and the responsibility is traditionally borne by family members, rooted in cultural norms and familial reciprocity (Zarzycki et al., 2022). This approach often lacks organized training and support, placing a substantial burden on women and girls in particular (Sharma et al., 2016).

The phenomenon of caregiving is not an entirely new concept in Ghana (Ardayfio, 2014). In the Ghanaian context family members consider it a duty to provide care to elderly relatives in some form or another. When children are young, they are cared after by their parents. This is considered as parental obligation, and in return, the children look after their parents in their old age, a sort of reciprocity that is preserved in a customary system passed down from generation to generation (Oppong et al., 2009). Currently, families provide the most long-term care in sub-Saharan Africa and do so without any organized training and this places a particularly heavy burden on women and girls (WHO, 2017).

Low and middle income countries or developing countries must explore other forms of elderly care on a large scale to be able to meet the growing health demands of the elderly to avoid the

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tendency of urging families to continue shouldering eldercare responsibilities as they have done traditionally.

1.2 Problem statement

In Ghana, the traditional two-generation household model, known for its mutual support and long-term care of elderly family members, has gradually eroded due to the transformative impacts of modernization, urbanization, and globalization (Aboderin, 2006; Biritwum et al., 2013; de-Graft Aikins & Apt, 2016a; Doh et al., 2020; Dosu, 2014; Dovie, 2019; Kpessa-Whyte, 2018; Van der geest, 2016) This shift is occurring concurrently with a notable surge in the elderly population in Ghana and a corresponding increase in the prevalence of non-communicable diseases. According to data from the Ghana Statistical Service (GSS) in 2021, the elderly population, defined as individuals aged 60 years and older, has increased nearly tenfold in the past six decades, growing from just over 200,000 (213,477) in 1960 to almost 2 million (1,991,736) in 2021(GSS, 2021). This is further expected to increase to 9.8% by 2050 (United Nations, 2017)

This demographic shift has led to a rise in chronic conditions and the demand for care and support among the elderly, necessitating an exploration of the care needs of elderly persons in Ghana. These care needs encompass assistance in essential life activities, including both activities of daily living (ADL) and instrumental activities of daily living (IADL) (Beach & Schulz, 2017; Williams et al., 1997). According to a 2015 report by the World Health Organization, approximately 50% of individuals aged 65-75 in Ghana required assistance with their daily activities, a figure that increased to 65% for those older than 75. In a recent study conducted by Awuviry-newton et al., (2022), a significant 81% of elderly individuals, especially women (54%), reported the need for assistance in their daily tasks.

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Informal care, typically provided by family members, remains a prevalent source of elderly support in Ghana (Braimah & Rosenberg, 2021). While it offers familiarity and comfort, it places a significant burden on family caregivers, who experience physical and emotional strain, along with financial challenges. Additionally, this caregiving role faces growing challenges due to social changes like urbanization, migration, and changes in the family structure (Domfe & Aryeetey, 2016; Tonah, 2009). Research indicates that for many elderly individuals, family support is no longer sufficient to meet their essential needs (Aboderin & Beard, 2015; de-Graft Aikins & Apt, 2016b).

With the changing dynamics in informal caregiving and the absence of geriatric infrastructure in Ghana, formal care services have emerged as an alternative to address the growing needs of the elderly population (Dovie, 2019). Recognizing this need, not only non-governmental organizations but also private entrepreneurs have entered the sector (Dovie, 2019). Organizations such as Help Age Ghana, the Akrowa Aged-Life Foundation, Ripples Health Care, Society for the Aged Ghana, and Aged Help Foundation Ghana, along with private individuals, offer geriatric interventions, including recreational or residential homes for the elderly, and these interventions have witnessed high demand (Aboh et al., 2019). They come in three forms: occasional care, adult day care centers, and residential archetypes (Dovie, 2019).

The emergence and increasing demand for formal care services in Ghana raise important questions about individuals' and families' willingness and ability to pay for these care homes. Yet, there remains a notable knowledge gap in our understanding of the factors influencing their willingness and ability to do so, making it a crucial area for our study. This study thus examines factors that determine household willingness and ability to pay for formal care models for the in Ghana. These

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factors may inform the sustainability of this effective intervention of managing the growing health demands of the elderly in Ghana.

1.3 General objective

The general objective of this study is to determine the households' willingness and ability to pay for formal residential care for the elderly

1.3.1 Specific objectives

i. To determine the proportion of households willing to pay for formal residential care for elderly
ii. To ascertain the maximum price households are willing to pay for residential care services for the elderly
iii. To assess factors influencing households' willingness to pay for formal residential care for the elderly
iv. To measure households' ability to pay for formal residential care for the elderly
v. To assess factors influencing households' ability to pay for formal residential care for the elderly

1.4 Research questions

i. What proportion of households are willing to pay for residential care services for the elderly?
ii. What is the maximum price households are willing and able to pay for residential care services for the elderly?
iii. What are factors are influencing households' willingness to pay for residential care services for the elderly?
iv. What proportion of households are able to pay for residential care services for the elderly?

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v. What are factors are influencing households' ability to pay for residential care services for the elderly?

1.5 Conceptual framework

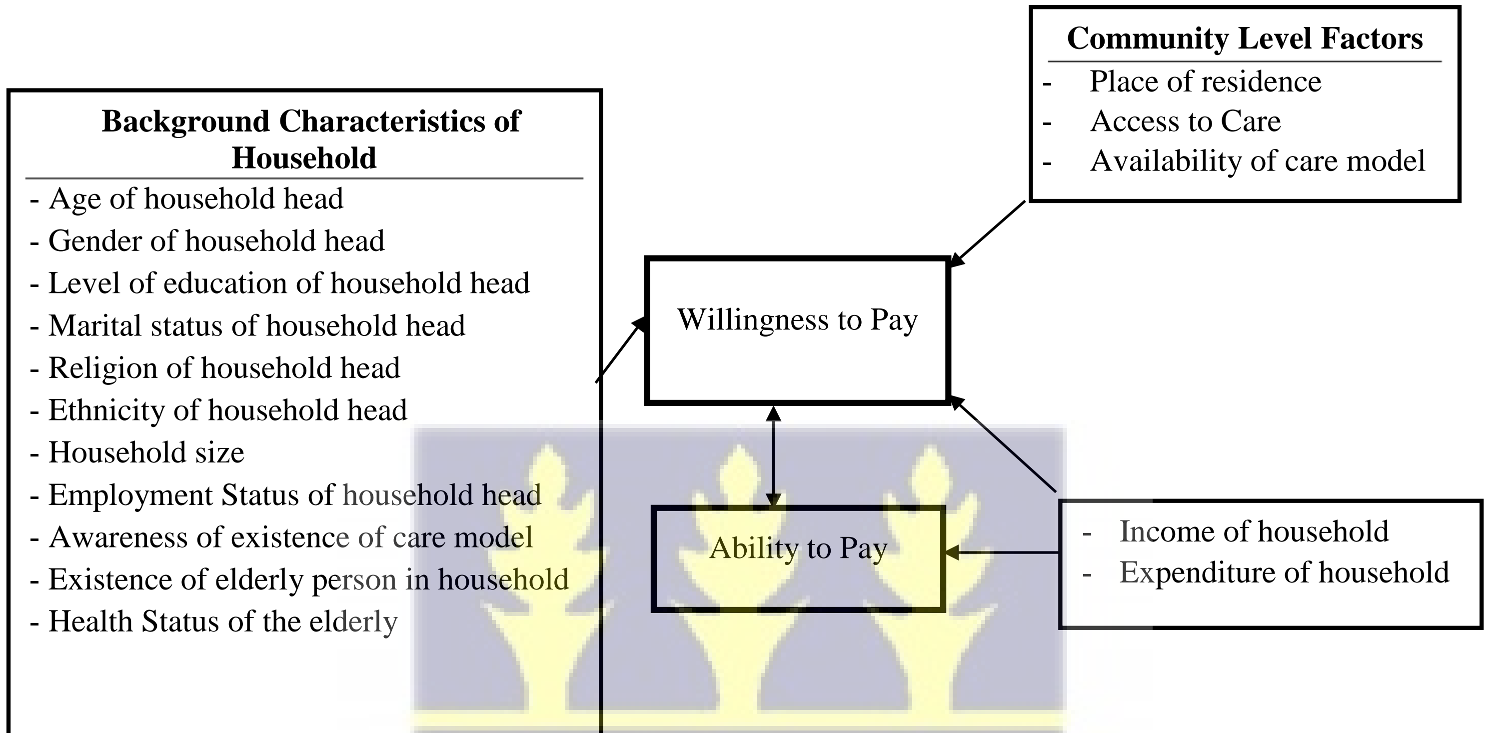

Figure 1.1 Conceptual framework

Source: Authors construct from literature review

The conceptual framework for this study is based on the understanding that willingness to pay (WTP) for formal residential care for the elderly is not synonymous with ability to pay (ATP). While WTP represents the consumers' valuation of non-market goods, ATP is the actual ability to pay for a service obtained according to deemed ideal income (Luthfi et al., 2017). WTP can be influenced by factors such as age, education, income, dependency ratio/household size, perception, healthcare service quality, and locality rural/urban. However, actual demand for the service is dependent on the consumer's ability to pay. Factors that influence ATP for health services include the availability of cash and affordability of the service, which is primarily influenced by the consumer's income (Noor Aizuddin et al., 2012).

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The study by Ogundeji et al. (2019) found that household size, level of education, occupation, and household income are significant influencers of WTP and ATP for social health insurance in Nigeria. Additionally, Dong et al. (2020) found that occupation is the main factor affecting urban residents' ability to live in an elder-care institution, while the main demographic factor predicting rural residents' willingness is the level of education.

Furthermore, the health status of the consumer is a key influencer of willingness to pay for health services, as found by Alsubhi et al. (2023) in their study to determine consumer characteristics that demonstrate greater willingness to pay for functionality. Other factors that influence WTP and ATP include people's perception of a disease, the availability and accessibility of the service, the quality of the service, current use of the service, and the availability of other alternative services, as well as people's priorities for expenditure (Hsu et al., 2021; Jeetoo & Jaunky, 2021; Reckers-Droog et al., 2021)

Overall, the conceptual framework for this study will consider both WTP and ATP as distinct factors that influence household decisions to pay for formal residential care for the elderly. The framework will also take into account various demographic and socioeconomic factors, as well as health status, perception, and the availability and accessibility of services. This will enable a comprehensive assessment of household willingness and ability to pay for formal residential care for the elderly at the LA Nkwantanang-Madina Municipality.

1.6 Justification of the study

This study is crucial as it addresses the evolving demographic landscape in Ghana, marked by a growing elderly population and changing care dynamics. The emergence of formal care services highlights the need to investigate individuals' and families' willingness and ability to pay for these services, a domain where a knowledge gap exists. Bridging this gap is imperative for informing

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policies that can enhance the accessibility and affordability of care options, thus improving the well-being of the elderly population in Ghana.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Defining ageing

Aging is a complex phenomenon that involves biological, psychological, and social changes in individuals. Atchley & Barusch (2004) describe aging as a broad concept that encompasses physical and psychological changes in the bodies of adults, as well as social changes in how humans are viewed, what they can expect, and what is expected of them. Biologically, aging refers to an age-dependent or age-progressive decline in essential physiological function, leading to an increase in age-specific mortality rate and a decrease in age-specific reproductive rate (Bronikowski & Flatt, 2010; Fabian & Flatt, 2011; Flatt & Schmidt, 2009). This steady decline in mental and physical capacity increases the risk of developing diseases and dying (Flatt, 2012).

Social aging, on the other hand, refers to changes in a person's duties and connections, both within their networks of relatives and friends and in formal organizations such as the workplace and places of worship (Novak, 2012). The definition of elderly individuals varies depending on the country's culture, with developed nations defining it as those aged 65 and above and developing nations defining it as those aged 60 and above, with some recommending including those aged 50 or 55+ in extremely impoverished sub-Saharan African nations (WHO, 2017).

Culture and social environment have a significant impact on how aging is perceived, with different regions of the world holding different views on the value placed on the elderly. In sub-Saharan African societies, aging is highly valued due to the importance placed on interdependence and values of filial piety (Lagacé et al., 2012). The elderly are seen as a storehouse of knowledge and guardians of society's rules and conventions, and they tend to reside with their offspring (J. Hoffman et al., 2016; National Research Council, 2006).

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In contrast, regions like the global north place high value on individuality and independence, resulting in a different perception and valuation of the elderly, which is often negative and referred to as ageism (Ayalon & Tesch-Römer, 2018; Lagacé et al., 2012; Palmore, 2004; Yeboah, 2019). The Ghana National Ageing Policy, 2010, highlights how older people are still regarded as the custodians of culture and tradition in rural areas but have diminishing roles in urban areas due to urbanization (Ministry Of Employment and Social Welfare, 2010).

2.2 Challenges facing the elderly

Aging in this modern day comes with many challenges which include health, socioeconomic, and discrimination among others. Due to globalization and modernization, conventional systems that provided assistance to the elderly are no longer adequate to meet the needs of an aging population. This has created a lot of challenges for the elderly in recent times. In Africa, studies in countries like Ghana and Nigeria have revealed that the status accorded to older people in the traditional society is gradually declining (Kaur & Randhawa, 2021; Tanyi et al., 2018; Animasahun & Chapman, 2017). In the next paragraphs, several health and economic issues of aging will be discussed.

2.2.1 Health challenges

The aging process brings about significant changes to physical, physiological, psychological, and immune system function, which result in continuous generalized impairment and make individuals more susceptible to infectious diseases (Aganiba et al., 2015). According to the World Health Organization, health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity (World Health Organization, 1948). As such, the state of health of an individual is crucial in determining their ability to fully participate in a community.

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Aging is often associated with a higher prevalence of chronic and non-communicable diseases such as diabetes, hypertension, cancers, and stroke, leading to high rates of disability and premature death among the adult populations (de-Graft Aikins & Koram, 2017; Yu et al., 2018). In Africa, studies have shown that the burden of chronic diseases has doubled and accounts for 70% of deaths on the continent, with age-specific mortality rates from chronic diseases being higher in sub-Saharan Africa than in all other regions of the world (de-Graft Aikins et al., 2010, 2014; de-Graft Aikins & Koram, 2017; Reniers et al., 2011).

Furthermore, the prevalence of infectious diseases, such as HIV/AIDS, malaria, and tuberculosis, remains high in Africa and poses significant challenges to the health of the elderly population (Tanyi et al., 2018). The risk of contracting and dying from infectious diseases increases as people age due to the weakened immune system that comes with aging (Aganiba et al., 2015)

In addition to chronic and infectious diseases, age-related conditions such as macular and muscular degeneration, cardiovascular disease, osteoarthritis, and other geriatric illnesses also significantly affect the health of the elderly population (Jing et al., 2016; Yu et al., 2018). The prevalence of these age-related conditions is expected to rise with the growing aging population, posing significant challenges to health systems and health and social care at the community and family levels (Addo et al., 2012; de-Graft Aikins & Apt, 2016).

Mental health issues are also a major concern among the elderly. Depression, anxiety, and dementia are common mental health problems experienced by older adults. According to the World Health Organization, around 15% of adults aged 60 and over suffer from a mental disorder, and this percentage is expected to rise as the global population ages (World Health Organization, 2021b). In Nigeria, a study found that depression was prevalent among 22% of elderly participants, with a significant association between depression and loneliness and chronic medical conditions

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(Damagum et al., 2022). In Ghana, depression was also found to be common among the elderly population, with 37.9% of participants experiencing depressive symptoms (Gyasi, 2020). Addressing mental health concerns in the elderly is crucial to ensure their overall well-being and quality of life.

Overall, the health challenges facing the elderly are complex and multi-dimensional, with mental health issues, chronic and non-communicable diseases, infectious diseases, and age-related conditions significantly affecting the health and well-being of the elderly population.

2.2.2 Socio-economic challenges

The elderly population in Africa faces a range of socio-economic challenges that have significant impacts on their well-being. These challenges include limited access to contributory pension schemes, asset-poverty, early retirement, and limited employment opportunities. Additionally, access to healthcare services is often limited for elderly persons, further exacerbating the impact of these challenges.

A large share of Africa's adult population operate within the informal economy, resulting in limited access to contributory pension schemes during their working lives. In Ghana, for example, approximately 80% of the workforce is in the informal sector (Osei-Boateng & Ampratwum, 2011), which is characterized by low earnings, poor working conditions, and unstable work relationships. This results in inadequate pensions, leaving many retirees seeking informal employment to support themselves. In 2021, the Ghana Statistical Service reported that only 37.5% of the elderly population is employed, with 90.1% of these individuals working in the private informal sector, often self-employed (80.0%). Alarmingly, a considerable 53.2% of the employed elderly population is engaged in vulnerable employment.

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Moreover, asset-poverty affects a significant proportion of older persons, with 54.8% of individuals between 75 and 79 years experiencing liquid wealth asset poverty and 29.1% experiencing net worth asset poverty (Rank et al., 2014). Early retirement is also linked to financial difficulties for the elderly, with many retirees forced to deal with financial and emotional problems without much help or planning (Van der Elst et al., 2021). Additionally, the elderly are often deprived of employment opportunities, making it difficult for them to engage in active service, and most work in agriculture without any protection in old age (Braimah & Rosenberg, 2021). Despite the National Health Insurance Scheme (NHIS) covering elderly persons over 70 in Ghana, those between the ages of 60 and 69 are not covered, and the NHIA's inability to reimburse health facilities on time poses a challenge for the elderly to bear the cost of health services (Atakro, Atakro, Aboagye, Blay, Addo, Agyare, Adatara, Amoa-gyarteng, et al., 2021; National Health Insurance Scheme, 2018). These challenges highlight the need for policies that provide social protection to the elderly, particularly those in the informal sector, to improve their socio-economic wellbeing.

2.3 Policies that influence elderly caregiving

The growing population of elderly persons has led to the development of policies aimed at addressing their socioeconomic and health challenges. The original premise of elderly care policies was that the responsibility of caring for the elderly fell on the individual as societies modernize and extended families give way to nuclear families. However, the need for a more concerted effort towards addressing the needs of the elderly led to the establishment of policy solutions at the global level.

In 1797, Thomas Paine called for the establishment of a national fund funded by a tax on inherited property that would pay every citizen 10 pounds per year once they reached the age of 50 (Paine,

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1797). In 1992, the United Nations (UN) enacted the International Plan of Action on Ageing (IPAA) with the goal of establishing policy solutions to ensure the well-being of individuals as they age (Hamid & Yahaya, 2008). This was followed in 2002 by the adoption of the Madrid Plan of Action on Ageing (MIPAA), which marked the beginning of taking concrete steps towards addressing the needs of the elderly with a globally concerted effort (Sidorenko & Walker, 2004). The main elements of the plan indicate that the main needs of the elderly that require public attention are health, nutritional status, living arrangements, and conditions, as well as better access to amenities.

In line with the objectives of these conventions, Ghana adopted the National Ageing Policy for the country in July 2010, which has all the elements of the Madrid Plan of Action (Ashirifi et al., 2022; Yiranbon et al., 2014). The overall objective of this policy is to achieve the overall social, economic, and cultural reintegration of older persons into mainstream society, to enable them as far as practicable to participate fully in the national development process through the implementation of programs and projects in consonance with policy recommendations.

One of the programs that Ghana has implemented is the Livelihood Empowerment Against Poverty (LEAP) program, a non-contributory social transfer for some elderly persons (Ministry of Gender Children and Social Protection, 2011). Under this program, extremely poor households in Ghana are given conditional and unconditional cash transfers on a bi-monthly basis. The cash transfer is expected to insulate beneficiaries from livelihood shocks and enhance their access to basic social services like health and education. Old age is a criterion for targeting and benefitting from the program, with persons aged 65 years and above without productive capacity being eligible for coverage. However, the amount of cash transfers provided may not be enough to cover all the basic needs of the elderly (Sackey, 2019).

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The Ghana National Health Insurance Scheme (NHIS) is another program that influences elderly care in Ghana since it covers the healthcare needs of older persons 70 years and above for free (Atakro et al., 2021). The NHIS was implemented to expand access to healthcare for the elderly in Ghana. However, those between the ages of 60 and 69 are not covered, even though the mandatory retirement age in Ghana is 60 and the average life expectancy is 63 (Atakro et al., 2021). The NHIS also faces challenges in reimbursing health facilities on time, which poses a challenge for the elderly to bear the cost of health services (Addae-Korankye, 2013; Atakro et al., 2021). The National Pension Scheme is also a scheme designed to aid Ghanaians, notably the elderly. The National Pension Scheme designed a three-tier pension system to capture the 84 percent of Ghana's informal sector, where the majority of elderly people are employed (Ofei-Kwapong, 2013).

In South Africa, the Older Persons Act (No. 13 of 2006) provides for the promotion and protection of the rights, dignity, and well-being of older persons (Lombard & Kruger, 2009). The act establishes the Older Persons' Fund to support the implementation of programs and services aimed at improving the lives of older persons. The act also establishes the Older Persons Advisory Forum to advise the Minister responsible for older persons' affairs on matters affecting older persons.

In Nigeria, the National Policy on Ageing and Older Persons was launched in 2013 to address the socio-economic and health challenges facing the elderly (Adisa, 2019). The objective of the policy is to enhance the well-being of senior citizens by granting them access to healthcare, social security, and additional support services. Additionally, the policy strives to establish favorable conditions for older people to engage in the economic, social, and cultural aspects of society.

While some policies have been implemented, there is still room for improvement, particularly in extending coverage to those in the informal sector and addressing the challenges faced by the

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NHIS in reimbursing health facilities. Further research is needed to evaluate the effectiveness of existing policies and identify areas for improvement.

2.4 Caregiving

Caregiving is a crucial public health issue that impacts the quality of life of millions of people worldwide. Caregiving entails emotional support and care for individuals with long-term disabilities and illnesses, and as the recipient's needs grow, so do the caregiver's responsibilities, leading to increased stress on the caregiver (Hoffman & Zucker, 2016; Talley & Crews, 2007). Caregivers assist others in fulfilling their social and health needs, which could include crucial daily activities such as bathing, dressing, shopping, paying bills, and transportation (Center for Disease Control and Prevention, 2018).

There are two primary ways in which people receive long-term care: informal care providers, such as family members who do not receive any compensation, and formal care providers, such as nursing assistants, home care assistants, and other paid caregivers. In many countries, families play a crucial role in providing care for the elderly.

In sub-Saharan African countries like Ghana, families are the primary caregivers of the elderly, and they also provide other forms of support (Yiranbon et al., 2014). Atobrah's (2009) study of the Ga in Ghana found that caregivers of chronically ill relatives considered care as doing household chores, finding treatment and cures, and providing emotional support. The individuals being cared for also thought of care as doing household chores, finding treatment and cures, and providing emotional support.

Gender also plays a critical role in determining who provides and receives care, with women (wives/children) typically being caregivers (Sharma et al., 2016). According to the Ghana National

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Ageing Policy, older women are the primary caregivers in Ghana (Ministry of Employment and Social Welfare, 2010). The psychological, social, and health consequences faced by caregivers of elderly individuals include difficulties raising their own children, living their lives, and caring for their elderly parents (Nortey et al., 2017; Sharma et al., 2016). This has resulted in the creation of social programs in several nations to support caregivers.

In many societies, caring for elderly or sick relatives is considered a moral obligation, and thus family members feel compelled to provide care, even if it causes them stress or financial strain. This can lead to caregiver burnout, which can negatively affect the caregiver's mental and physical health (Navaie-Waliser et al., 2002). Furthermore, the COVID-19 pandemic has brought even more challenges to caregiving. Caregivers have had to navigate new safety protocols and restrictions, as well as increased isolation and financial strain (Bergmann & Wagner, 2021; Dellafiore et al., 2022). In some cases, caregivers have also had to take on additional caregiving responsibilities due to the pandemic, such as helping with virtual learning for children or providing care for family members who have contracted the virus (Beach et al., 2021; Russell et al., 2020)

To address these challenges, many countries have implemented social programs to assist caregivers, such as respite care, caregiver training, and financial assistance (Swartz & Collins, 2019). However, there is still a need for more support and recognition for caregivers, especially in low-income countries where resources are limited (Liu et al., 2020).

2.5 New and emerging forms of caregiving

New programs and interventions have been created throughout the years to help family caregivers cope with the responsibilities of caregiving. Such interventions include support with caring or associated duties, as well as psychological or educational support provided by healthcare professionals and community service providers to family caregivers. Interventions such as the

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Further Enabling Care at Home (FECH) program in Australia was developed with family caregivers of older patients discharged from a Medical Assessment Unit (MAU) within Australian hospitals to systematically address support needs of family caregivers of older people after hospital discharge to sustain their home-based caregiving (Slatyer et al., 2019; Toye et al., 2016). Information and referral, education, support groups, counseling, feeding programs, and personal care services such as homecare or adult day centers are examples of emerging support services for the elderly (Eifert et al., 2015), thus, the world's rapidly ageing populations has place additional expectations on societies to provide comprehensive long-term care systems at home, in communities, or in institutions (Dovie, 2019). According to Hussein & Ismail (2017), this phenomena is certainly increasing in the Arab region as well. This means that indeed, the growing number of the elderly has resulted in a new sort of elder care in communities that have historically prized rules of reciprocity (Coe, 2016).

In urban Accra, the elderly can choose between two types of care: to be cared for at the comfort of their homes or away from home. Non-residential and residential aged care establishments provide eldercare away from home. Individuals who have once lived and worked overseas own the residential aged care establishments (Kwabena-Adade, 2018). At any given moment, the residential elderly care institutions employ no more than six caregivers, with the bulk of them being females (Kwabena-Adade, 2018; Sun et al., 2021).

As the demand for elderly care continues to grow in Ghana, it is important to understand how individuals value different types of care and the extent to which they are willing to pay for these services. In the next section, we explore the concept of willingness to pay and its relevance to the provision of elder care.

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2.6 Willingness to pay (WTP) concept

Willingness to pay (WTP) is a crucial concept in marketing that determines the value consumers place on non-market goods. It involves estimating the amount consumers are willing to pay for a product or service, which guides pricing and marketing decisions. Klose (1999) coined the term WTP, and Anderson et al. (1992) argue that estimating WTP is a core marketing strategy. One critical factor in pricing is the introductory price of a new product, which must be chosen carefully to avoid jeopardizing development investments and innovation failures (Ingenbleek et al., 2013). WTP can be quantified by analyzing consumers' purchasing patterns, disclosing pricing, or presenting specific amounts to potential customers. Both open-ended and closed-ended questions can be used to elicit consumer responses. Respondents can either indicate an amount they are willing to pay for a service in open-ended bids or answer a series of questions in closed-ended bids to determine the highest price they are willing to pay for a good or service (Aizuddin et al., 2014; Wilson, 2019).

There are several methods for estimating WTP, including Conjoint Analysis (CA), Contingent Valuation (CV), and Choice Modelling (CM). In the subsequent paragraphs, each of these methods is discussed in detail.

2.6.1 Conjoint Analysis

Conjoint Analysis (CA) is a widely used research method in marketing, economics, and social sciences for understanding consumer preferences and decision-making (Al-Omari et al., 2022). It was developed in the 1970s and has since evolved into a versatile tool for assessing the relative importance of product attributes and their impact on consumer choices (Green & Srinivasan, 1990). It involves assessing preferences by deconstructing a product or service into its various

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attributes and evaluating how individuals prioritize these attributes when making choices (Al-Omari et al., 2022; Bellundagi et al., 2017).

There are two primary methods of conducting Conjoint Analysis: **Full-profile Conjoint Analysis,** where respondents are presented with a set of full product profiles, each consisting of multiple attribute levels and are then asked to rank or rate these profiles in terms of preference, and **Choice-based Conjoint Analysis (CBC),** where respondents are presented with a series of choices between different product profiles, and are asked to choose their preferred option (Asioli et al., 2016; Green & Srinivasan, 1990; Kirchhoff et al., 2014). This method allows for more realistic simulations of consumer choices and is widely used in market research.

The key strength of CA lies in its ability to realistically model how individuals make choices by evaluating the trade-offs among different product attributes (Al-Omari et al., 2022). By dissecting a product or service into its constituent features and assessing the relative importance of these attributes, CA provides valuable insights for businesses.

Conjoint Analysis (CA) is a powerful method for understanding consumer preferences, but it comes with some weaknesses. CA surveys can be complex and may impose a cognitive burden on respondents, leading to potential errors or fatigue(Al-Omari et al., 2022). The assumption of independence between attributes might not always reflect real consumer decision-making, and CA's data collection and analysis can be resource-intensive. Additionally, CA is limited to the attributes included in the survey and might not account for preference heterogeneity, external factors, or real-world behavior (Al-Omari et al., 2022). Survey length and respondent fatigue can also be concerns, and CA studies can be costly and time-consuming.

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2.6.2 Choice Modelling

Choice modelling is a statistical technique used for measuring willingness to pay (WTP) in various research fields, including environmental economics and transportation planning. It is a popular method because it allows researchers to estimate individuals' preferences and values for different attributes of a product or service by simulating their decision-making process (Koemle & Yu, 2020). By analyzing the data obtained from choice experiments, which involve presenting participants with sets of hypothetical, but realistic, choice scenarios, researchers can determine the trade-offs individuals are willing to make in terms of price and other attributes (Hensher et al., 2005). This information is crucial for understanding consumer behavior, market demand, and policy analysis, as it provides insights into the monetary value individuals place on certain goods or services (Louviere et al., 2000).

Previous studies have shown that choice modeling is a reliable method for measuring willingness-to-pay (WTP) in various contexts (Klemperer, 1995; Louviere et al., 2000) Choice modeling allows researchers to elicit preferences and estimate WTP by presenting individuals with hypothetical scenarios and asking them to make choices among different options, each associated with a specific price (Hensher et al., 2005; van Cranenburgh et al., 2022). The basic premise underlying choice modeling is that individuals reveal their preferences and trade-offs through their choices, allowing researchers to infer their WTP for different attributes or goods (Hensher et al., 2005; Rose & Bliemer, 2014). This method has been widely applied in various fields, such as transportation, environmental economics, healthcare, and consumer behavior, to capture individuals' preferences and estimate their WTP for different goods or services (Carlsson et al., 2012; de Bekker-Grob et al., 2012; Klemperer, 1995; Rose & Bliemer, 2014).

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One limitation of Choice Modeling is that it can be complex and resource-intensive, both in terms of survey design and data analysis (van Cranenburgh et al., 2022). Constructing choice sets that accurately reflect real-world decision scenarios can be challenging, and mis-specification of these sets can lead to biased results. Additionally, the method relies on the assumption that respondents provide consistent and truthful responses, which may not always hold true due to factors like social desirability bias or cognitive limitations.

2.6.3 Contingent Valuation

Contingent Valuation is an approach in economics used to assess the value of public goods that are not typically exchanged in markets. When evaluating non-market goods, such as environmental amenities or healthcare services, it's essential to understand the trade-offs between the value of providing these amenities and their associated costs. Monetary values are often the most intuitive way to express these values (Carson & Hanemann, 2005). Contingent Valuation seeks to estimate these values by collecting preference information from individuals, which is considered "contingent" on the characteristics of the "built market" for the item under consideration. (Carson et al., 1993; Carson et al., 2001; Carson & Czajkowski, 2019).

In Contingent Valuation, respondents are presented with questions regarding their willingness to pay (WTP) for a specific service or amenity. The questions are typically structured in two phases: first, respondents are asked if they would be willing to pay a fee for the service or amenity, and if they answer affirmatively, they are then asked to specify the amount they are willing to pay (Pavel et al., 2015a). Various methods are employed to elicit these values, including bidding games, open-ended questions, payment cards, and discrete choice questions. Bidding games involve a two-step process, where respondents are asked if they would pay a specified amount for the amenity and then whether they would pay more or less (Smith, 2000). This method captures a range of WTP

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values and provides insights into upper and lower bounds of valuation. It's valuable for understanding nuanced preferences. Open-ended questions are more qualitative, allowing respondents to express their WTP without predefined options. While this approach offers flexibility, it can be challenging to analyze due to the diversity in responses, requiring categorization and interpretation (Frew et al., 2004; Smith, 2000). Payment cards present predefined payment options for respondents to choose from. This simplifies the response process and streamlines data collection. However, it may limit the range of values expressed and might not capture nuanced preferences effectively. Discrete choice questions require respondents to make choices between different bundles of goods or services, each associated with a different cost (Dieng et al., 2020; Smith, 2000). This method illuminates trade-offs between various attributes and costs of the amenity, making it suitable for understanding priority setting but potentially introducing complexity in analysis

The CV approach has been widely utilized in fields such as healthcare, social sciences, and environmental studies to understand the perceived value individuals place on specific services or goods (Bamwesigye, 2019; Markandya et al., 2018).

Contingent Valuation does have limitations, including the potential for hypothetical bias, where respondents may not accurately reflect their actual behavior when faced with real financial decisions (Carson & Hanemann, 2005). The method also heavily relies on the quality of survey design, questioning techniques, and the ability to ensure respondents understand the contingent nature of the questions. In some cases, CV can be resource-intensive, requiring skilled survey designers and analysts, and its results are sensitive to how questions are framed and presented to respondents.

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The choice of Contingent Valuation (CV) as the method for assessing households' willingness and ability to pay for care homes in Ghana is well-justified because of the nature of the service, where market-based transactions are often inadequate, as they serve a critical social and healthcare need. There is often limited or no existing market for such services, making traditional price determination impossible. CV, by its design, allows for the valuation of non-market goods or services, precisely in situations like this where determining a market price is challenging or infeasible.

2.7 Empirical studies on willingness to pay for long term care

According to a study on stated preferences for long-term care (LTC) conducted by Lehnert et al. (2019), a substantial majority of respondents chose to receive LTC in their known physical and social surroundings when care needs were minimal, but residential care when care needs were extensive. Preferences were revealed to be influenced by a number of personal, environmental, social, and cultural factors. Another study on willingness to pay for long-term home care services conducted by Amilon et al. (2020) indicated that respondents expressed strong preferences for enhanced long-term home care services. These results, however, were heavily influenced by positive WTP among respondents with left-wing political beliefs. Furthermore, WTP was positively related to age, implying that as people live longer, there will be a greater need for better long-term care services. Similarly, Lapsomboondee et al. (2020) found that individuals in Bangkok were prepared to pay for both full-time and temporary residential services at the maximum 629.90 baht/month and 332.50 baht/month, respectively, because these services support care that surpasses the capacity of the family. Even though there are several studies on elderly care (Dovie, 2019; Nortey et al., 2017; Yeboah, 2019), there is no study on willingness to pay and ability for residential care homes for the elderly in Ghana. This study will be one of the first WTP studies for

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elderly care in Ghana. However, these findings suggest that there is a growing demand for better long-term care services, and understanding consumers' willingness to pay for such services is crucial for developing effective pricing and marketing strategies in this field.

2.8 Factors affecting willingness to pay

Different studies have shown several factors that affect an individual's willingness to pay an amount for goods and services. Factors include product or service characteristics, knowledge of the good or service, demographics, socio economic status, income and health status (Y.-T. Chen et al., 2016; Herold, 2010; Liso et al., 2017; Meier et al., 2015; Wilson, 2019).

Product characteristics such as quality, features, and brand have a significant impact on WTP. According to Jo et al. (2019), product quality positively affects WTP, with consumers willing to pay more for high-quality products. Similarly, features such as durability, reliability, and convenience influence WTP positively (Loureiro & Umberger, 2007). Additionally, brand equity also affects WTP, with consumers willing to pay more for products with well-established brands (Chen & Chang, 2012).

Income level is another important factor that influences WTP. Consumers with higher income levels are generally willing to pay more for goods and services (Hanley et al., 2001). In a WTP study for TB in Nigeria, income was identified as factor influencing WTP positively but the COPD study in Taiwan showed income had no correlation with willingness and income was not a positive factor (Chen et al., 2016; Ochonma & Onwujekwe, 2017).The relationship between income and WTP is positive, indicating that as income levels increase, so does WTP.

Different demographic variables like age, gender, and education may affect an individual's willingness to pay (WTP). In a study focused on WTP for medical services, variables like

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education, income, size of the household/dependency ratio, perception, and the quality of healthcare services were discovered to have an impact on WTP. Surprisingly, the cost of the service did not appear to influence WTP for medical care. (Aizuddin et al., 2012). A research conducted in Taiwan on the willingness to pay (WTP) for a remedy to chronic obstructive pulmonary disease revealed that patients with more severe forms of the illness and accompanying medical conditions were ready to spend more on treatment. Moreover, younger patients were discovered to be more inclined to pay for a cure as opposed to older patients. (Chen et al., 2016). However, other studies did not show a strong correlation between age and WTP (Herold, 2010). Willingness to pay (WTP) is impacted by gender, with some research indicating that men are more inclined to pay for their own remedy compared to women. (Javan-Noughabi et al., 2017). In contrast, different studies have demonstrated that caregivers are more likely to pay for a cure for their male children in comparison to their female children. This was revealed in a research focused on WTP for a treatment for childhood diarrhea. (Amin & Khondoker, 2004). Furthermore, it has been observed that educational attainment also has an impact on WTP. Individuals with higher levels of education are generally more inclined to pay for health insurance compared to those with lower levels of education. This finding has been reported in several studies that have investigated the relationship between educational level and WTP for healthcare services. (Chatterjee et al., 2017; Hsu et al., 2021; Jeetoo & Jaunky, 2021; Jordan & Elnagheeb, 1993; Reckers-Droog et al., 2021). Health status of respondent has also been found to influence willingness to pay. Poor health status that is, individuals who suffer more, are more likely to be willing to pay for a cure (Oremus et al., 2013), as compared to individuals with fair health. A WTP study for malaria insurance premium in Ghana revealed that income, educational level and number of people per household

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influenced WTP (Asafu-Adjaye & Dzator, 2003). Understanding these factors is essential for businesses to set appropriate prices for their products and services.

2.9 Ability to pay (ATP) concept

People in many developing countries are required to pay for health care out of their own pockets. As a result, people's ability to pay (ATP) for health care, also known as healthcare affordability, has emerged as an important policy issue and a fundamental concept in health policy and financing in developing countries, especially in the areas where households face combined user fee burdens from multiple essential service sectors such as education, water, and health (S. Russell, 1996). It refers to the ability of individuals or households to afford healthcare services without incurring financial hardship (Wagstaff, 2009). In many countries, including developing countries, the ability to pay for healthcare is a major challenge due to poverty, unemployment, and inadequate health insurance coverage. The concept of willingness to pay (WTP) for essential services has been a topic of much research and policy discussions. It has been assumed that WTP is equivalent to the ability to pay (ATP), but this may not always hold true (Akweongo, 1999; S. Russell, 1996). The reason behind this is that in some instances, paying for household health expenses may force individuals to sacrifice essential needs such as food and education. Thus, the cost of paying for healthcare (opportunity cost) makes it unaffordable for them (S. Russell, 1996). This literature review examines the various definitions and measurements of the ability to pay for healthcare, its determinants, and the policy interventions aimed at improving it.

The ability to pay for healthcare is a multidimensional concept that can be defined and measured in different ways. One definition of ability to pay is the proportion of household income spent on healthcare. This definition considers healthcare expenditure as a percentage of household income and is commonly used in health financing research (van Doorslaer et al., 2007). Another definition

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is the extent to which individuals or households are financially protected against the cost of healthcare services. Financial protection refers to the ability of households to obtain needed healthcare without suffering financial hardship (Wagstaff, 2009). This definition considers not only the cost of healthcare but also the ability of households to cope with unexpected healthcare costs. Studies in the past have examined health expenditure and utilization to determine whether health care was affordable, however, other significant variables such as financial limitations, accessibility, availability of other providers, and quality of healthcare, all of which play a role in the demand for health care, have tended to be overlooked (Kalichman et al., 2015; Musinguzi et al., 2015; Nelson et al., 2016; Russell, 1996).

2.9.1 Measuring ability to pay

Two methods can be used to evaluate the amount people are willing and capable of paying for a good or service: (a) by analyzing and modeling healthcare utilization, expenditure, and sensitivity to prices in the past, or (b) by directly inquiring from individuals how much they are willing and capable of paying for a specific healthcare product or service (Russell, 1996).

The first method of obtaining information on healthcare spending informs decision-makers about potential markets, but using past healthcare spending to predict future willingness to pay may not always be appropriate. There are three reasons for this: (i) the absence of a prior market due to free healthcare or a new service; (ii) past prices may not reflect maximum willingness to pay; and (iii) willingness to pay can vary depending on the situation and non-price factors, such as quality of care, accessibility, and trust in providers.

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The second way to measure willingness to pay for healthcare services involves directly asking people how much they are willing and able to pay for a particular service. This method avoids the problems associated with using past healthcare spending to predict future willingness to pay. It

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assumes that individuals do not have previous experience with the service and inquires about their willingness to pay based on their expectations. This method uses hypothetical markets to account for the absence of markets for public goods, allowing consumers to virtually purchase the good in question and obtain their willingness to pay. However, the elicited values of willingness to pay depend on the specific hypothetical market described to the respondent. Hence, this method is called contingent valuation (Diener et al., 1998; Pavel et al., 2015b; S. Russell, 1996).

2.10 Conclusion

This review has explored the various concepts, methods, and empirical studies related to willingness to pay and ability to pay for healthcare services. It is evident that these concepts are essential in assessing healthcare financing and policy decisions, as they provide valuable insights into consumers' preferences and capabilities. Empirical studies conducted in different countries have demonstrated that willingness to pay and ability to pay are influenced by various factors, including income, age, health status, and cultural beliefs. However, there is a research gap in the context of Ghana, as no studies have been conducted on willingness to pay for any form of long-term care for the elderly in the country. This presents an opportunity to contribute to the existing knowledge on geriatric care in Ghana. Such a study could provide insights into the demand for long-term care services, the factors influencing willingness to pay, and the affordability of long-term care services in Ghana.

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CHAPTER THREE

METHODS

3.1 Study design

This study employed a descriptive cross-sectional research design with a quantitative approach to gather and analyze the data

3.2 Study area

The study was carried out in the La Nkwantanang-Madina Municipality. The study area was chosen primarily because it is socially and economically diverse and has all the variables based on the conceptual framework adopted for the thesis. The La Nkwantanang-Madina Municipality is located in the Greater Accra Region. It is one of the region's 16 Metropolitan, Municipal and District Assemblies. It was created in 2012 as part of the newly created Assemblies aimed at deepening decentralization and bringing development to the door of citizens. La Nkwantanang-Madina Municipal was established by Legislative Instrument (L.I.) 2131 and inaugurated in June 2012. It was carved out of the Ga East Municipality. The La Nkwantanang -Madina Municipality is located in the northern part of the Greater Accra Region. It covers a total land surface area of 70.887 square kilometers. It is bordered on the West by the Ga East Municipal, on the East by the Adentan Municipal, the South by Accra Metropolitan Area and the North by the Akwapim South District (see figure 2).(GSS, 2010). According to the Ghana 2021 population and housing census, the municipal has a household number of 79,614 and a population of 244,676. (GSS, 2021)The municipality has twenty-three (23) communities divided into three sub-districts: Madina, Danfa, and Pantang, which include urban (84%), and rural areas (16%). Trading is one of the main economic activities in the Municipality with the Madina market as the main trading center which generates employment and revenue for the people in the Municipality (GSS, 2021). The

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Municipality currently has thirty-nine health facilities, two of which are government polyclinics, namely, Madina Polyclinic-Kekele and Madina Polyclinic Rawlings Circle. Pantang, a suburb of the Municipality has a specialized Psychiatrist Hospital.

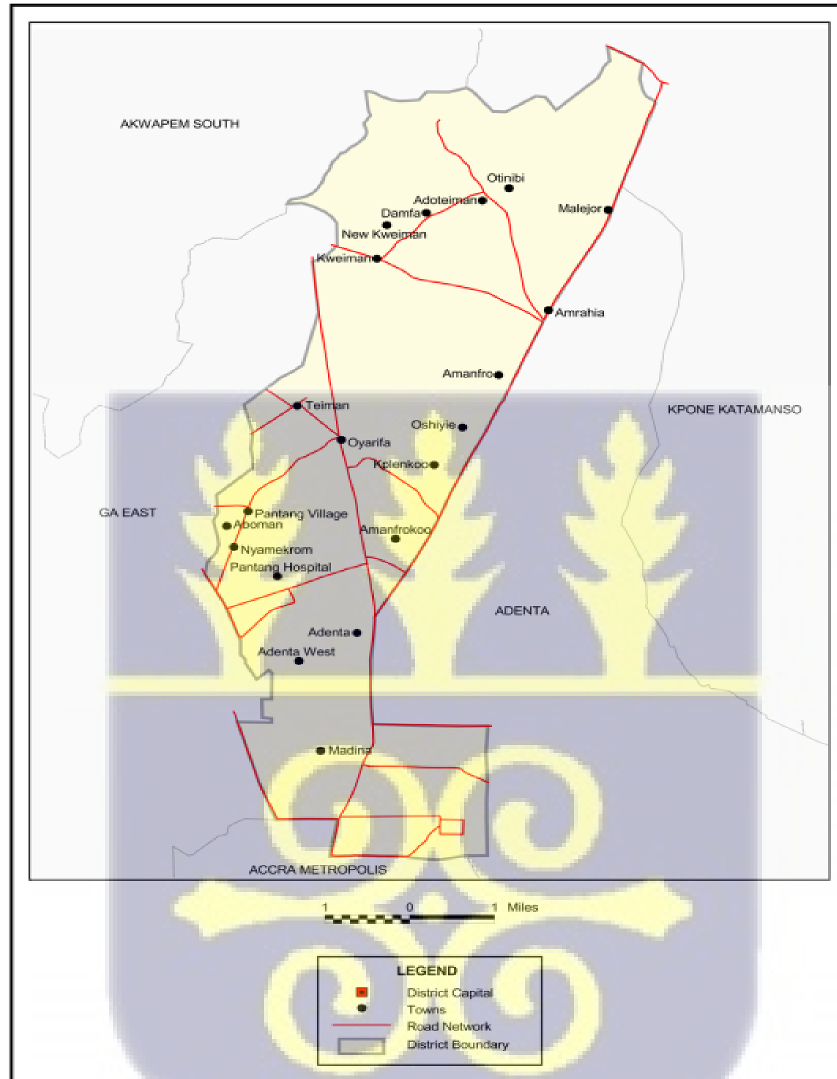

Figure 3.1: Map of La Nkwantanang - Madina Municipality

3.3 Study population

The research population from which the sample was derived was all households across the three sub-districts in the La Nkwantanang Municipality; Madina, Danfa, and Pantang.

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3.4 Eligibility criteria

3.4.1 Inclusion criteria

All household heads residing within the La Nkwantanang Municipality, and were readily available to participate were included in this study

3.4.2 Exclusion criteria

i. Household heads residing outside of the defined sub-districts within the La Nkwantanang Municipality.
ii. Household head within the municipality but not readily available to participate in this study
iii. Household heads who do not provide informed consent to participate in the study.
iv. Household heads who have moved out of the La Nkwantanang Municipality during the course of the study and are no longer accessible for data collection

3.5 Estimation of study sample size

Taro Yamane's formula for sample size determination is employed for the study. At 95% confidence level and a margin of error of 5%. (According 79,614 households from the Ghana National Population and Housing Census Report 2021). The minimum sample size of households of interest is determined as follows:

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

Where:

N = number of people in the population

n= sample size required

e = margin of error (%)

Substitute numbers in formula:

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$$n = \frac{79{,}614}{1 + 79{,}614(0.05)^2}$$

n = 398

Based on the calculation above, the minimum sample size is 398. Assume incomplete response and non-response rate of 10 percent, this 40 is added to 398 to give 438. A 10% non-response rate was chosen to strike a balance between mitigating potential data collection challenges, such as incomplete responses or difficulty in reaching participants, and maintaining a manageable sample size that remains statistically valid and representative of the target population.

3.6 Sampling procedure

The study used a multistage sampling technique, which involved using purposive and stratified, random sampling techniques (Kothari, 2004). The initial step in the sampling process involved deliberately choosing the La Nkwantanang Municipality because it consists of a diverse mix of individuals with varying occupational, educational, ethnic, and cultural backgrounds, which is a result of the influx of people from different regions (Agyei- Mensah & Owusu, 2010; GSS, 2014; Senna, 2021). The second step in the sampling procedure was to stratify the three sub-districts based on their population size and number of enumeration areas (EAs), and a proportional allocation method was used to determine the number of households to be selected from each sub-district (Madina = 368, Pantang = 77 and Danfa = 15).

The municipal has a total number of 177 EAs, with Madina being the largest sub-district, with 163 enumeration areas (EAs), while Pantang has 11 EAs and Danfa has 3 EAs (GSS 2021). To sample the number of households needed from each sub-district, EAs were randomly selected with the help of a randomizer tool in the selection 10 EAs from Madina District accounting for the fact that it has a larger population than the other sub-districts, 5 EAs from Pantang District which has a

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significantly smaller number of EAs than Madina sub-district, and 3 EAs from Danfa District, which is the smallest of the three sub-districts, to ensure that the sample was representative of the entire municipality.

Table 3.1 List of EAs selected for the study

Enumeration Area	Population size	No. of households	No households selected
Madina District			
New Road Market	777	343	56
The Church Of Pentecost	783	494	81
Verbs Drinking Spot	673	234	38
Mama Lit Special	771	293	48
Madina Estate Basic School	536	190	31
Melcom	460	201	33
Central Mosque	431	140	23
Alhaji Salifu Wango(Hno.H 1/1)	248	75	12
Majidi Billa Mosque(Hno.206)	561	175	29
Doku Clinic	262	95	16
Sub total	**5502**	**2240**	**368**
Pantang District			
Shell Filling Station	819	296	11
God's Ministry International Church	1,319	742	29
Universal Oil Filling Station	913	335	13
Pantang Hospital Administration Block	1,053	289	11
Christ Apostolic Church International	912	336	13
Sub total	**5,016**	**1998**	**77**
Danfa District			
Dove Hill Grand School	1,407	408	4
The Methodist Church, Ghana,	1,937	562	6
The Royal Academy	1,348	438	5
Sub total	4,692	1408	15
Total	**15,210**	**5,646**	**460**

Source: Ghana Statistical Service (2021)

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368 household were selected across the 10 selected EAs in the Madina sub-district , 77 households from the 5 EAs selected from the Pantang sub-district, and 15 household from the 3 EAs selected from the Danfa sub-district, to make up the 460 households sampled for the study.

Due to lack of reliable EA maps, the third stage of sampling involved the use of the random walk sampling technique to identify our target population. Other household studies have also employed this sampling technique (Avrachenkov et al., 2018; Etwire et al., 2013; Hahn et al., 2009; Lau et al., 2021). All households eligible for the study were randomly selected by using the skipping a household method until the number required to for each EA was obtained. The random walk sampling technique avoids the costly and time-consuming expense of listing all the households in the study area; and also it is unbiased as the starting point along the path of travel is determined randomly.

3.7 Study variables

Table 3.2 outlines the various variables to be used in the study.

Table 3.2 Study variables

Variables	Description	Measurement Scale
Dependent Variable		
Willingness to Pay	Whether respondents are willing to pay for formal residential care for the elderly or not	Nominal
Maximum Price	The maximum price the household is willing to pay	Continuous
Ability to Pay	Whether respondent is able to pay for formal residential care services or not	Nominal
Independent Variables		
Household Characteristics		
Gender of Household Head	Gender of the household head	Nominal

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Age of Household Head	Age of the household head in completed years	Continuous
Educational Status	Educational status of the household head	Ordinal
Ethnicity	Ethnicity of the household head	Nominal
Religion	Religion of the household head	Nominal
Marital Status	Marital status of the household head	Nominal
Employment Status	Current employment status of the household head (i.e. unemployed, employed, retired)	Nominal
Domain of Employment	Type of employment if employed (i.e. public, private or self-employed)	Nominal
Household Size	Size of the household	Discrete
Elderly Health Status	Whether the elderly household member has any underlying health condition	Nominal
Healthcare History	The number of times the elderly household member received curative and preventive care in the past 12 months	Discrete
Knowledge of Residential Care Model	Whether the respondent has knowledge of the existence of residential care models and their benefit package	Nominal
Availability of Service	Whether the respondent is willing to pay if the service is available	Nominal
Household Assets		
Electricity	Whether the household has access to electricity	Nominal
Television	Whether the household has a television	Nominal
Radio	Whether the household has a radio	Nominal
Cooking Fuel	The type of cooking fuel used by the household	Nominal
Toilet	The type of toilet facility used by the household	Nominal

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3.8 Data collection

A contingent valuation quantitative questionnaire was designed to obtain information on the socio-economic, demographic and health characteristics of the elderly from the sample population. Their knowledge and perception of formal residential care homes was elicited, as well as their willingness to pay. The questionnaire was face-to-face administered by research assistants. Qualification for research assistants was high school graduates, and fluency in Ga and Twi since they are the dominant languages spoken in the area. Training was then given to recruited research assistants to administer the questionnaire in a standardized way to reduce interviewer bias. The questionnaire was made up of close ended question and in simple language that was easily understood by the respondents and straight forward though not leading.

3.9 Quality control

Pre-testing of the questionnaire was done in the Ga East Municipal District to help fine-tune the questionnaire to be able to elicit the right responses and information sufficient for the purpose of the study4. Ga East Municipal District was selected for pre-testing because of its proximity to La Nkwantanang-Madina Municipal and share similar characteristics with La Nkwantanang**.** Validity and reliability was ensured during the entire course of data collection. Returned questionnaires were examined for completeness. Data were entered by the researcher himself within 24hours of collection to minimize the risk of losing any of the information or the data. Data entry checks was carried out to ensure completeness and accuracy.

3.10 Data analysis

Data from the study were analyzed using STATA 17. The results are presented in the form of tables and graphs. A descriptive analysis was used to analyze the demographic and socio-economic characteristics of the respondents. Frequency distribution was used to describe how the values of

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the data set are distributed. Measures such as mean and standard deviation was used to describe the dispersion of the values from the data collected.

To determine the proportion of households willing to pay for formal residential care for elderly

To determine the proportion of households willing to pay for formal residential care for the elderly, we calculated the proportion of respondents who express a willingness to pay. This proportion was represented as a percentage of the total number of study respondents.

To ascertain the maximum price households are willing to pay for residential care services for the elderly

To ascertain the maximum price households are willing to pay for residential care services for the elderly, an estimation of the average maximum and minimum financial cost households are willing to bear for residential care for the elderly was done at a 95% confidence interval

To assess factors influencing households' willingness to pay for formal residential care for the elderly

A simple logistic regression model was used to analyze the various independent variables against willingness to pay to identify the factors that are significantly associated with the willingness to pay. Only variables associated with a P value < 0.05 in simple logistic analysis was considered eligible for inclusion in multiple logistic regression analysis. A multiple logistic regression model where all the factors identified from the bivariate model was analyzed together against the willingness to pay to identify the factors that have a statistically significant association with willingness to pay. Level of statistical significance is set at $P < 0.05$. The factors that show a statistically significant association was then said to affect people's willingness to pay for formal residential care for the elderly.

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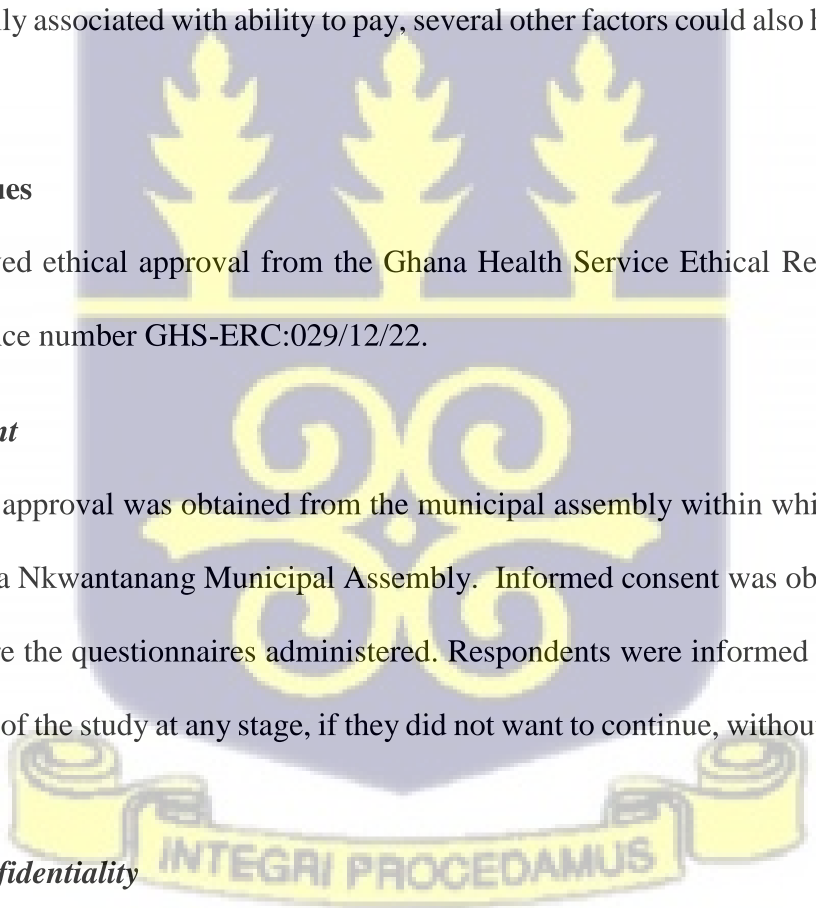
To measure households ability to pay for formal residential care for the elderly

To assess households' ability to pay for formal residential care for the elderly, we directly inquired about the amount they are able to allocate for the service.

To assess factors influencing households' ability to pay for formal residential care for the elderly

A simple logistic regression model was used to analyze the various independent variables against stated ability to pay to identify the factors that are associated with the ability to pay. A multiple logistic regression model was then used to determine which of the factors identified from the simple logistic regression have a statistically significant association with ability to pay. Although income is normally associated with ability to pay, several other factors could also have a significant association.



3.11 Ethical issues

The study received ethical approval from the Ghana Health Service Ethical Review Committee under the reference number GHS-ERC:029/12/22.

Informed consent

Oral and written approval was obtained from the municipal assembly within which the study will carried out i.e. La Nkwantanang Municipal Assembly. Informed consent was obtained from each respondent before the questionnaires administered. Respondents were informed that they were at liberty to opt out of the study at any stage, if they did not want to continue, without any explanation whatsoever.

Privacy and confidentiality

The participants were contacted on one on one basis and then given sufficient information about the study. Permission was then sort from them before they participated in the study. They were

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also given informed consent form which they either had to sign or thumb print. Privacy and Confidentiality of any information provided is assured by stating that in reporting results of this study, no names would be linked to a respondent, and that information gathered would be reported in a manner that does not personalize any of the findings.

Potential risk / benefit

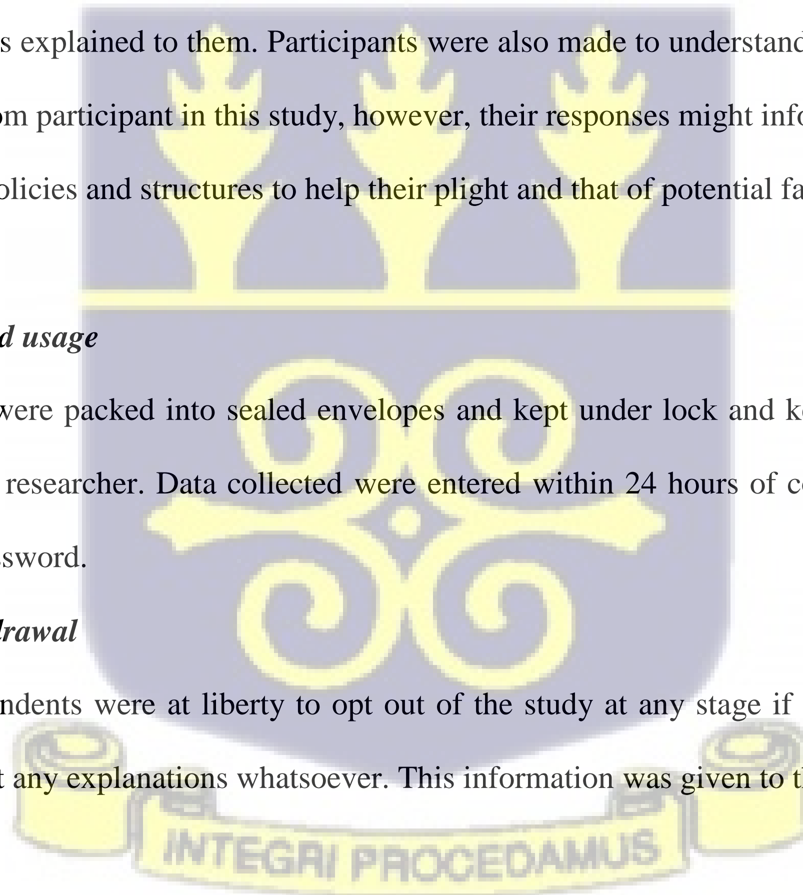
This study posed minimal risk to the participants as some participants felt uncomfortable answering some questions, and this might have posed psychological risk to the participants. Questions that posed this risk were skipped should the participant feel uncomfortable responding. Also, participants who wished to opt out of the study because of such risks were at liberty to do that, and this was explained to them. Participants were also made to understand that there was no direct benefit from participant in this study, however, their responses might inform policy makers to put in place policies and structures to help their plight and that of potential family caregivers in the future.

Data storage and usage

Questionnaires were packed into sealed envelopes and kept under lock and key in the personal cupboard of the researcher. Data collected were entered within 24 hours of collection and well secured with password.

Voluntary withdrawal

The study respondents were at liberty to opt out of the study at any stage if they did not want continue without any explanations whatsoever. This information was given to them



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Cost/compensation/payment

No financial or non-financial payment or compensation of any kind was given to any study participant before, during or after the interview or administration of the questionnaire. Their input and contribution to the study were however recognized, acknowledged and appreciated.

Conflict of interest

There is no conflict of interest in the study

3.12 Source of funding for this research

The study was entirely funded by the researcher.

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CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

The socio-demographic characteristics of the 460 household heads were examined with respect to sex, age, household size, marital status, ethnicity, religion, main income generating job, and highest educational qualification attained presented in Table 4.1. The average household size of the study area was 3.6. With regards to age, the study revealed that a greater proportion (n= 332, 72.2%) of the respondents were males with the remaining (n=128, 27.8%) being female headed households. The modal age category was 30 years to 39years representing 37.2% of the respondents (n=171). Respondents who were below 30 years constituted 18.7% of the sample (n=86) while 26.1% were between the ages of 40years and 49 years (n=120). About 57 respondents (12%) were between the ages of 50 years to 59 years inclusive with the senior citizens aged 60years and above representing 5.7% of the sample (n=26).

Majority of the respondents (n=201, 43.7%) had never been married while 170 (36.96%) of them were married. In addition, 43 out of the 460 household heads representing 9.35% were cohabiting, 7.6% were widowed (n=35), and 2.4% were divorced (n=11). The sample consisted of different ethnic groups, with the majority being Akan (n=152, 33%), the least being Dagarti (n = 1, 0.2%). Majority of the sample had completed secondary education (n=266, 57.8%), and only a few completed primary education (n=29, 6.3%). Furthermore, majority (n=246, 53.5%) of participants were Christians. A small proportion of participants, 4 (0.9%), reported having no religious affiliation, and 17 participants (3.7%) reported belonging to a traditional religion

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Table 4.1 Distribution of socio-demographic characteristics of Respondents

Variable	Frequency (n = 460)	Percent	Cum.
Age			
20-29 years	86	18.70	18.70
30-39 years	171	37.17	55.87
40-49 years	120	26.09	81.96
50-59 years	57	12.39	94.35
60+ years	26	5.65	100.00
Sex			
Female	128	27.83	27.83
Male	332	72.17	100.00
Marital Status			
Co-habiting	43	9.35	9.35
Divorced	11	2.39	11.74
Married	170	36.96	48.70
Single	201	43.70	92.39
Widow / Widower	35	7.61	100.00
Ethnicity			
Other	1	0.22	100.00
Dagarti	6	1.30	34.35
Nzema	9	1.96	99.78
Mole-Gagbani	14	3.04	97.83
Dagomba	35	7.61	41.96
Guan	35	7.61	94.78
Frafra	42	9.13	75.22
Ga-Adangbe	55	11.96	87.17
Ewe	111	24.13	66.09
Akan	152	33.04	33.04
Level of education			
JHS/Middle School	69	15.00	15.00
No schooling completed	9	1.96	16.96
Primary	29	6.30	23.26
Secondary	266	57.83	81.09
Tertiary	87	18.91	100.00
Religion			
Christianity	246	53.48	53.48
Islam	193	41.96	95.43
No Religion	4	0.87	96.30
Traditional Religion	17	3.70	100.00
Area of Residence			
Peri-Urban	77	16.74	16.74
Rural	15	3.48	20.22
Urban	368	79.78	100.00

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Employment Domain			
Formal sector	197	42.83	42.83
Informal sector	258	56.09	98.91
Unemployed	5	1.09	100.00
Presence of Elderly in Household			
No	332	72.17	72.17
Yes	128	27.83	100.00
Wealth Quintile			
1st Quintile	95	20.65	20.65
2nd Quintile	89	19.35	40.00
3rd Quintile	94	20.43	60.43
4th Quintile	91	19.78	80.22
5th Quintile	91	19.78	100.00
Asset index			
Poorest	93	20.2	20.2
Poorer	91	19.8	40.0
Middle	95	20.7	60.7
Richer	97	21.1	81.7
Richest	84	18.3	100.0
Total	**460**	**100.00**	

Majority of participants lived in urban areas, with 367 participants (79.8%) reporting this residential status, and only 16 participants (3.48%) lived in rural areas. A greater proportion (56.20%) employed in the informal sector while the remaining 42.4% employed in the formal sector. Out of 460 households sampled, 332 (72.17%) do not have any elderly individuals living with them, while 128 (27.83%) have at least one elderly person residing with them. Results in Table 4.1 also shows that 84 (18.3%) belong to the richest quintile while 93 (20.2%) belonged to the poorest quintile.

4.2 Willingness to pay and factors influencing willingness to pay

4.2.1 Proportion of households willing to pay for formal residential care for elderly

Overall, 329 out of 460 respondents, representing 72% of the sample were willing to pay for formal residential care for the elderly while the remaining 131 (28%) indicated they were unwilling to pay as shown in Figure 4.1.

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Figure 4.1 Proportion of households willing to pay for formal residential care home for the elderly

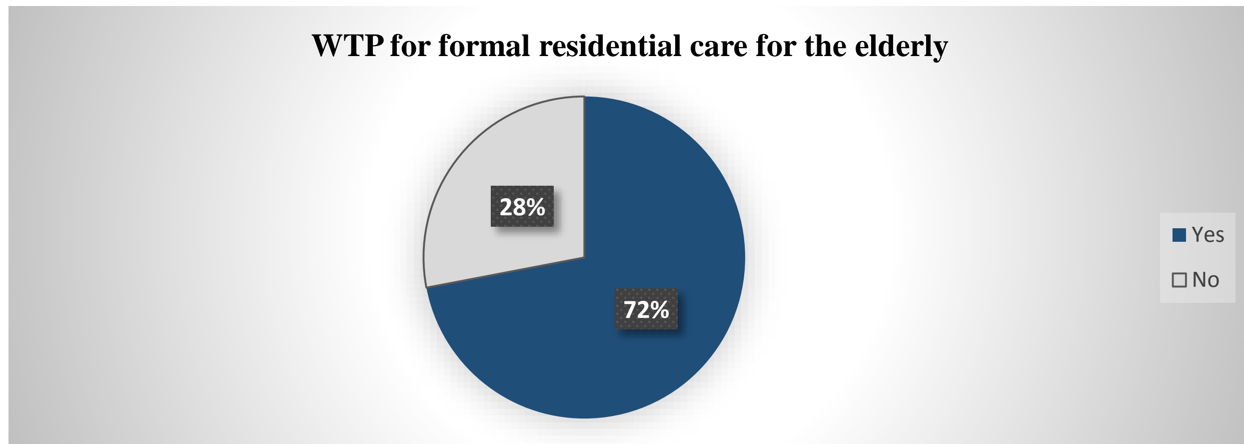

Table 4.2 Demographic and social characteristics of the respondents and factors associated with willing to pay formal residential care for the elderly

Variable	Willing (n=329, 72%)	Unwilling (n=131, 28%)	Total (n=460)	χ^2 (p)
Age group (years):				**6.91 (0.00*)**
20 – 29	76 (88.37%)	10 (11.63%)	86 (100%)	
30 – 39	103 (60.23%)	68 (39.77%)	171 (100%)	
40 – 49	84 (70.00%)	36 (30.00%)	120 (100%)	
50 – 59	40 (70.18%)	17 (29.82%)	57 (100%)	
60 +	26 (100.00%)	0 (0.00%)	26 (100%)	
Sex:				1.19 (0.28)
Female	95 (74.80%)	32 (25.20%)	127 (100%)	
Male	234 (70.27%)	99 (29.73%)	332 (100%)	
Household size				1.82 (0.77)
1-3	248 (71.88%)	97 (28.12%)	345 (100%)	
4-8	81 (70.43%)	34 (29.57%)	115 (100%)	
Marital status:				**8.21 (0.02)***
Not married	196 (67.59%)	94 (32.41%)	290 (100%)	
Married	133 (78.24%)	37 (21.76%)	170 (100%)	
Level of education:				**11.9 (0.02)***
No formal completed	7 (77.78%)	2 (22.22%)	9 (100%)	
Primary completed	20 (68.97%	9 (31.03%)	29 (100%)	
JHS/Middle completed	59 (85.51%)	10 (14.49%)	69 (100%)	
Secondary completed	154 (65.33%)	81 (34.47%)	235 (100%)	
Tertiary completed	89 (75.42%)	29 (24.58%)	118 (100%)	

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Area of Residence:				1.66 (0.67)
Rural	12 (75.00%)	4 (25.00%)	16 (100%)	
Peri-Urban	58 (75.32%)	19 (24.68%)	77 (100%)	
Urban	259 (70.57%)	108 (29.43%)	367 (100%)	
Employment status:				
Unemployed	1 (25%)	3 (75%)	4 (100%)	**9.52 (0.01)***
Employed	325 (71.9%)	131(28.1%)	456 (100%)	
Employment Domain:				
Formal sector	156 (78.00%)	44 (22.00%)	200 (100%)	1.83 (0.07)
Informal sector	169 (66.02%)	87 (33.98%)	256 (100%)	
Household Income (GHS):				**11.2 (0.00)***
<1000	8 (44.44%)	10 (55.56%)	18 (100%)	
1000 – 1999	41 (51.25%)	39 (48.75%)	80 (100%)	
2000 –2999	121 (78.06%)	34 (21.94%)	155 (100%)	
3000 –3999	116 (76.32%)	36 (23.68%)	152 (100%)	
≥ 4000	43 (78.18%)	12 (21.82%)	55 (100%)	
Asset-based wealth index:				**7.6 (0.00)***
Poorest	41 (44.57%)	51 (55.43%)	92 (100%)	
Poorer	62 (67.39%)	30 (32.61%)	92 (100%)	
Middle	74 (74.0%)	26 (26.0%)	100 (100%)	
Richer	83 (91.21%)	8 (8.79%)	91 (100%)	
Richest	69 (81.18%)	16 (18.82%)	85 (100%)	
Presence of at least 1 elderly in household:				**13.2 (0.00)***
Present	122 (95.31%)	6 (4.69%)	128 (100%)	
None	207 (62.35%)	125 (37.65%)	332 (100%)	
Elderly need care due to a health condition:				2.16 (0.56)
Need care	76 (96.20%)	3 (3.80%)		
Don’t need care	47 (94.00%)	3 (6.00%)		
Awareness of existence of care homes:				**9.5 (0.00)***
Aware	123 (93.89%)	8 (6.11%)	131(100%)	
Unaware	206 (62.61%)	123 (37.39%)	329 (100%)	
History of Patronage:				1.69 (0.11)
Patronage	30 (100.00%)	0 (0.00%)	30 (100%)	
No patronage	93 (92.08%)	8 (7.92%)	101 (100%)	

The chi-squared analysis presented in Table 4.2 unveiled that several factors, including Age, marital status, level of education, employment status, monthly household income, asset-based

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wealth index, presence of at least one elderly member, and awareness of the existence of care homes, were found to be statistically significant.

4.2.2 Maximum prices willing to pay

The results show that on average households sampled are willing to pay an amount of Gh¢ 1,403.3 for formal care homes for the elderly with a maximum price stated at Gh¢3000.00.

Figure 4.2 Distribution of price households are willing to pay (GHS)

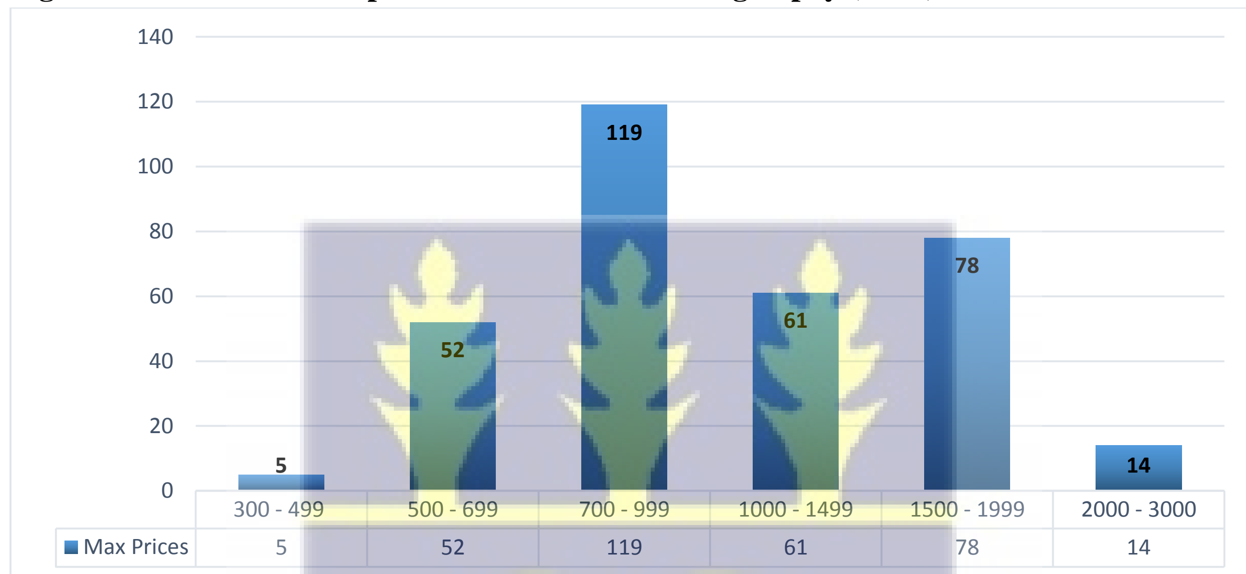

Figure 4.2 provides an overview of the range of maximum prices that households are willing to pay and how this willingness is distributed across different price ranges. Results indicate that the highest percentage of households (36.2%) are willing to pay between 700 - 999 cedis, while the lowest percentage of households (1.5%) are willing to pay between 300 - 499 cedis.

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4.2.3 Multiple logistic regression of factors associated with WTP

Table 4.3 Logistic regression to determine significant factors influencing household willingness to pay

WTP	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
Age of HH head	1.264	0.052	2.340	**0.019***	0.934	2.164
Male	0.602	0.171	-1.780	0.074	-0.344	1.051
Household size	0.994	0.075	-0.080	0.933	-0.856	1.153
Household Income	1.600	0.060	3.370	**0.001***	1.231	2.100
Marital status (ref = single)						
Cohabiting	2.798	1.414	1.190	0.233	-0.516	4.182
Married	3.620	0.285	1.380	0.061	-5.506	5.822
Divorced	5.430	0.377	1.670	0.077	-2.302	6.806
Widowed	9.560	0.726	1.210	0.079	-2.408	9.957
Level of education (ref = no schooling)						
Primary Completed	0.595	0.594	-0.520	0.603	-0.084	1.208
JHS/Middle	1.242	0.076	2.200	**0.028***	0.068	1.858
Secondary	1.571	0.051	4.230	**0.000***	0.075	2.188
Tertiary	2.268	0.063	2.650	**0.008***	0.101	3.710
Employed	3.050	1.319	2.350	**0.019**	1.192	7.794
Employment Domain (ref = informal sector)						
Formal sector	1.430	0.036	3.130	**0.002***	0.253	2.730
Presence of elderly in household						
Yes	10.341	0.041	5.890	**0.000***	6.183	12.063
Awareness of service						
Yes	8.813	0.042	5.610	**0.000***	6.118	10.858
Health status of elderly						
Good	-1.617	0.049	-3.320	**0.001***	-2.571	-0.663

*(statistically significant, p≤0.05)

Table 4.3 shows the results from multiple logistic regression of factors associated with willingness to pay for formal residential care for the elderly. Age of household head, household income, marital

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status of household head, level of education, employment sector, adequate knowledge of the existence of service, whether or not there is an elderly member living in the household, and health status of the elderly were all found to be significantly associated with household's willingness and to pay for formal residential care for the elderly.

The odds ratio for age of household head is 1.26, which indicates that for a one-unit increase in age of the household head, the odds of being willing to pay increase by a factor of 1.26. This result is statistically significant ($P < 0.05$). This means that there is strong evidence to suggest that there is a relationship between age of the household head and WTP. The odds ratio for Household Income is 1.6, which suggests that for a one-unit increase in household income, the odds of being willing to pay increase by a factor of 1.6. This result is also statistically significant ($P < 0.01$) which suggests that higher household income is associated with a higher likelihood of WTP

Educational level of the household head showed statistically significant association with willingness to pay for formal residential care for the elderly. The odds of willingness to pay for the service was significantly 2.3 times ($p=0.008$) as high among household head who had up to tertiary education as compared to household heads who had not completed any of the level of education. Household heads who completed secondary, and JHS/Middle school were 1.6 times and 1.2 times more likely to pay for the service as compared to those who had completed no formal education.

Awareness of the existence of care homes in Ghana was also significantly associated with their willingness to pay for the service ($p = 0.000$). Respondents with adequate knowledge 9 times more likely to be willing to pay for the service as compared to those who had inadequate knowledge about the service.

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Presence of elderly in the household as well as health status of the elderly were found to be significantly associated with household's willingness to pay for the formal care homes for the elderly. Household who reported to have at least one elderly member living with them were 10 times more likely express willingness to pay for the service as compared to households without elderly members. Household who reported that their elderly was in good health were 1.6 times less likely to express willingness to pay for the service as compared to households whose elderly member had bad health.

4.3 Ability to Pay for formal residential care for the elderly

4.3.1 Distribution of household maximum ability to pay by income group

Table 4.4 Household income and ability to pay: a cross-tabulation

Monthly household income (GHS)	Maximum amount households are able to pay per month (GHS)						
	300-499	500-699	700-999	1000-1499	1500-1999	2000-3000	Total
600-999	5 62.50	3 37.50	0 0.00	0 0.00	0 0.00	0 0.00	8 100.00
1000-1999	0 0.00	7 19.44	27 75.00	2 5.56	0 0.00	0 0.00	36 100.00
2000-2999	0 0.00	35 40.70	40 46.51	8 9.30	3 3.49	0 0.00	86 100.00
3000-3999	0 0.00	25 34.72	20 27.78	17 23.61	7 9.72	3 4.17	72 100.00
4000-4999	0 0.00	4 5.00	37 46.25	19 23.75	18 22.50	2 2.50	80 100.00
5000+	0 0.00	0 0.00	4 8.51	4 8.51	30 63.83	9 19.15	47 100.00
Total	5 1.52	74 22.49	128 38.91	50 15.20	58 17.63	14 4.26	329 100.00

In general, higher-income households tend to have a greater stated ability to pay higher amounts, while lower-income households often express more limited stated payment capacities. For

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instance, the highest proportion of households with a stated ability to pay over GHS 1,000 per month is within the highest income group (5000+), whereas the lowest percentage of households with a stated ability to make such payments belongs to the lowest income group (600-999). Nevertheless, there's noteworthy variation within income groups. For example, the 2000-2999 income group shows a substantial proportion (40.70%) with a stated ability to pay between GHS 500-699 per month, surpassing the 1000-1999 income group (19.44%) and the 3000-3999 income group (34.72%). Among the 329 households, 108, or roughly a third of the sample, state that they can afford GHS 1,000 or more per month. This indicates that for many households, stating an ability to pay GHS 1,000 or more may signify a significant financial burden. These findings underscore that while household income is a critical factor in stated ability to pay, it's not the sole determinant. Other factors, including household size, location, and priorities, may also influence households' stated ability to pay for specific products or services. Additionally, it's essential to recognize that these results are based on self-reported stated maximum payment capabilities, which may not always correspond to actual payment behavior. Nonetheless, they offer valuable insights into households' perceptions of their stated ability to pay for a given product or service.

4.3.2 Percentage of household income required for stated ability to pay

Table shows the mean percentage of household income required to pay the stated maximum ability to pay for elderly care homes across different income ranges:

Table 4.5 Percentage of household income required for stated ability to pay

Household income ranges (GHS)	Mean Percentage of income (%)
600-999	47.4
1000-1999	48.2
2000-2999	38.2

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3000-3999	38.3
4000-4999	24.7
5000 and above	21.7

In Table 4.5, results from an analysis on the maximum amount that households are willing to pay for elderly care homes, relative to their monthly income, reveals interesting insights. The results indicate that households in the lower income ranges, specifically those earning between 600-999 GHS and 1000-1999 GHS, are required to allocate nearly half of their income to pay for elderly care homes. On the other hand, households in higher income ranges are required to allocate a smaller proportion of their income towards elderly care homes, with the mean percentage of 51 income required decreasing as household income increases. These findings suggest that households with lower incomes will face a greater financial burden when it comes to accessing elderly care home services.

Table 4.6 Household vulnerability to catastrophic health expenditure

Catastrophic	**Freq.**	**Percent**	**Cum.**
At risk	202	61.4	61.43
Not at risk	127	38.6	100.00
Total	329	100.00	

A threshold analysis of percentage of household income required to pay for the stated ability to pay revealed that about 61.4% of households are at risk of encountering catastrophic health expenditure if they were to allocate their stated ability to pay for elderly care home services as shown in Table 4.6. This implies that the amount they intend to pay for elderly care homes exceeds the 40% threshold set by the WHO. On the other hand, 38.6% of households are not at risk of experiencing catastrophic health expenditure.

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4.3.3 Factors associated with households' ability to pay for formal residential care for the elderly

Table 4.7 Logistic regression of factors associated with households' ability to pay

Able_to_pay	Coefficient	Std. Err.	z	P>z	[95% Conf.	Interval]
Household income	1.026	0.343	2.990	**0.003***	0.354	1.698
Household size	0.125	0.068	1.990	**0.041***	0.313	3.787
Age of head	-0.008	0.010	-0.760	0.445	-0.027	0.012
Employment status						
Employed	3.040	1.140	2.82	**0.003***	1.294	3.175
Level of Education						
Primary Completed	1.123	0.763	1.470	0.141	-0.372	2.617
JHS/Middle	1.550	0.792	0.700	0.487	-1.001	2.102
Secondary	0.621	0.774	0.800	0.422	-0.896	2.137
Tertiary	1.050	0.886	2.310	**0.021***	0.313	3.787

*(statistically significant, p≤0.05)

This logit model examines the factors that influence the ability of households to pay for elderly care homes. The results show that household income and household size have a statistically significant relationship with the ability to pay for elderly care homes, while age of head does not. Employment status and level of education also have statistically significant relationships with the ability to pay for elderly care homes. The coefficient for household income is positive (1.026) and statistically significant at the 5% level, indicating that as household income increases, the ability to pay for elderly care homes increases. Similarly, the coefficient for household size is positive (0.125) and statistically significant at the 5% level, suggesting that larger households have a greater ability to pay for elderly care homes. Regarding employment status, households with employed heads have a significantly higher ability to pay for elderly care homes (coefficient of 3.040) compared to households with unemployed heads.

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Finally, level of education also has a statistically significant relationship with the ability to pay for elderly care homes. Households with heads who completed tertiary education have a significantly higher ability to pay for elderly care homes (coefficient of 2.050) compared to households head with no education. However, the coefficients for household heads with Primary, JHS/Middle, and Secondary education levels are not statistically significant, indicating that their education levels do not significantly affect their ability to pay for elderly care homes. Overall, these results suggest that household income, household size, employment status, and level of education are important factors that influence the ability of households to pay for elderly care homes.

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CHAPTER FIVE

DISCUSSION

5.0 Summary of study and findings

This study sought to assess households' willingness and ability to pay for formal residential care homes for the elderly, as well as factors associated with their willingness and ability to pay. This was achieved by estimating the proportion of household willing to pay and assessing their stated ability to pay, and comparing socio-demographic characteristics and other factors to their willingness and ability to pay.

5.1 Willingness to pay for residential care homes for the elderly

The willingness of households to pay for formal residential care for the elderly is an important indicator of the potential market for such services. In this study, about 72% of respondents indicated their willingness to pay for formal residential care for the elderly. This finding suggests that there might be a significant demand for formal care homes for the elderly in Ghana. There have been similar findings in other contexts (Kashiwagi & Kondo, 2017; Zhang et al., 2019). The study by Zhang et al. (2019) found that 82.1% of households in urban China were willing to pay for elderly care homes, with an average willingness-to-pay amount of 2629 yuan (about 408 US dollars) per month. Contrasting findings have also been reported. For instance, a study conducted that only 19.1% of households in rural China were willing to pay for elderly care services, including care homes (Hu & Zhang, 2015). Another study conducted in the United States reported that 54% of the participants were unwilling to pay for long-term care (Harris-Kojetin et al., 2013). These differences may be attributed to variations in cultural beliefs, economic status, and healthcare systems in different countries. It is important to note that hypothetical questions enquiring about willingness to pay may not always translate into actual demand for the service

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(Bala et al., 1999; Donaldson, 2001; Whittington, 1998). However, willingness to pay is often backed by other factors such as affordability and perceived benefits of the service.

In this study, the average amount households were willing to pay for formal care homes for the elderly was Gh¢1,403.30, with a maximum price stated at Gh¢3,000.00. The variability in maximum prices that households were willing to pay provides further insight into the potential market for formal residential care homes for the elderly. The results showed that the highest percentage of households were willing to pay between Gh¢700 - Gh¢999, while the lowest percentage of households were willing to pay between Gh¢300 - Gh¢499. This information can be useful in setting prices for formal care homes for the elderly that are affordable and accessible to households with different income levels.

5.2 Factors associated with WTP

The multiple logistic regression analysis revealed that age of household head, household income, marital status of household head, level of education, employment domain, whether there is an elderly member living in the household, and health status of the elderly were all significantly associated with households' willingness to pay (WTP) for formal residential care for the elderly. These findings are consistent with previous studies that have explored factors associated with WTP for elderly care services in China (Wang et al., 2020; Zhang et al., 2023). The positive association between age of household head and WTP for formal residential care for the elderly suggests that as the age of the household head increases, the likelihood of being willing to pay also increases. The same conclusion was drawn from another study (Wang et al., 2020).

The positive relationship between household income and WTP for formal residential care for the elderly is also consistent with previous studies (Amilon et al., 2020b; Glendinning et al., 2010). The odds ratio of 1.6 indicates that for every unit increase in household income, the odds of WTP

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increase by a factor of 1.6, suggesting that higher household income is associated with a higher likelihood of WTP for formal residential care for the elderly. The level of education of the household head was another significant factor in households' willingness to pay for formal care. The study found that the odds of willingness to pay were significantly 2.3 times ($p = 0.008$) as high among household heads who had up to tertiary education as compared to those who had not completed any formal education. Household heads who completed secondary and JHS/Middle school were 1.6 times and 1.2 times more likely to pay for the service, respectively, as compared to those who had no formal education.

The presence of an elderly member in the household and their health status were found to be significantly associated with WTP for formal residential care for the elderly. Households with at least one elderly member were 10 times more likely to express WTP compared to households without elderly members, and households whose elderly member had poor health were 1.6 times more likely to express WTP compared to households whose elderly member had good health. These findings are consistent with previous studies that have reported a positive association between the presence of elderly members in the household and WTP for various types of elderly care services, as well as between poor health status of the elderly and WTP for elderly care services. (Amilon et al., 2020b; Lapsomboondee et al., 2020; Wang et al., 2020). This finding highlights the importance of considering the presence and health status of elderly members when designing and promoting elderly care services.

5.3 Ability to pay (ATP) for formal residential care for the elderly

The results presented in this study demonstrate a clear relationship between household income and ability to pay for elderly care homes. Specifically, higher income households are more likely to be able to pay higher amounts, while lower income households are more likely to be restricted to

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lower payment levels. This finding is consistent with prior studies in and out of the field and is therefore not surprising (Adebayo et al., 2015; Zhu & Meeks, 1994). It is also notable that there is some variation within income groups, with certain households in lower income groups able to pay more than some households in higher income groups. This suggests that other factors beyond income, such as household size, location, and priorities, may play a role in determining ability to pay.

The finding that only one third of the sample was able to pay GHS 1000 or more per month for the service is important, as it suggests that this level of payment may pose a significant financial burden for many households. The findings of the analysis on maximum amount that households are willing to pay for elderly care homes, relative to their monthly income, are consistent with the results presented in the previous section of the thesis. Specifically, households with lower incomes are more likely to face a greater financial burden when it comes to accessing elderly care home services. The fact that households in the lower income ranges are required to allocate nearly half of their income to pay for elderly care homes is particularly concerning, as this may have a significant impact on their overall financial well-being.

Furthermore, the threshold analysis revealed that a significant proportion (61.4%) of households were at risk of experiencing catastrophic health expenditure when paying for elderly care homes, which exceeds the 40% threshold set by the WHO. This finding highlights the need for policymakers and stakeholders to consider the affordability of elderly care homes when designing policies and programs aimed at promoting access to these services. It also underscores the importance of exploring alternative financing mechanisms, such as social insurance or public subsidies, to ensure that households are not at risk of financial hardship when accessing these services.

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5.4 Factors influencing ATP for formal residential care for the elderly

The findings of your study are consistent with previous research that has shown that income is an important determinant of ability to pay for health services (Trani et al., 2013; Wagstaff & van Doorslaer, 2003). The positive and statistically significant coefficient for household income in our logit model confirms this relationship, indicating that households with higher incomes are more likely to have a higher ability to pay for elderly care homes.

Additionally, the findings on the positive relationship between household size and ability to pay for elderly care homes are supported by previous research that has shown that larger households have a higher ability to pay for health services (Njie et al., 2023; Ravangard et al., 2021). This may be because larger households are likely to have more people working, which can increase the household income and ability to pay.

The relationship between employment status and ability to pay for elderly care homes is also consistent with previous research that has found that employed households have a higher ability to pay for health services than unemployed households (Wagstaff & van Doorslaer, 2003). This is likely because employed households have a more stable and reliable source of income than unemployed households. Finally, the finding that higher levels of education are associated with a higher ability to pay for elderly care homes is supported by previous research that has found that education is positively related to income (Griliches & Mason, 1972; Guo et al., 2023; Houthakker, 1959). This suggests that households with higher levels of education may have higher incomes and, therefore, a higher ability to pay for health services.

INTEGRI PROCEDAMUS

5.5 Strength and limitations

This study on assessing household willingness and ability to pay for formal residential care for the elderly in the La Nkwantanang-Madina Municipality is notable for several strengths.

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The study used a rigorous sampling technique to randomly select households from Enumeration Areas (EAs) in the municipality, which ensures a representative sample of the population. The proportional allocation method was used to allocate the appropriate number of households from each EA, further enhancing the representativeness of the sample. The study also considered a wide range of household characteristics, including demographic and socioeconomic variables, as well as variables related to the elderly's health status and healthcare history. This approach allowed for a comprehensive understanding of the factors that influence household willingness and ability to pay for formal residential care services for the elderly.

The collection of data for the study was by Interviewer-administered questionnaire, which ensured the data was accurately collected. The study also considers potential variations within income groups, such as differences in household size and location, which can help to account for the diversity of household circumstances.

Despite the strengths of this study, there are several limitations to consider. First, the study relies on self-reported data on household income and ability to pay, which may be subject to biases or inaccuracies.. Second, the study only focuses on households in the La Nkwantanang-Madina Municipality, which may not be representative of households in other regions or municipalities. Third, the study did not consider the preferences or opinions of the elderly themselves, which could have provided additional insight into their willingness and ability to pay for formal residential care. Fourth, the study did not explore the potential impact of cultural or traditional beliefs on the willingness and ability of households to pay for formal residential care for the elderly. Lastly, the study did not take into account any changes in the economic or political environment that may impact the willingness and ability of households to pay for formal residential care in the future.

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Also, the results were based on stated amounts of maximum payment ability, which may not always align with actual payment behavior. Nonetheless, the results provided valuable insights into household perceptions of their ability to pay, which can inform product and service design and pricing strategies.

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CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study aimed to determine households' willingness and ability to pay for formal residential care for the elderly. The results indicate that a significant proportion of households are willing to pay for formal residential care for the elderly, with most of them willing to pay up to GHS 1,000 per month. However, a considerable number of households may experience catastrophic health expenditure when paying for elderly care homes, which may pose a financial burden on them.

The study also found that household income, household size, level of education, and employment status are important factors that influence households' ability to pay for formal residential care for the elderly. As expected, higher-income households are more likely to be able to pay higher amounts, while lower-income households are more likely to be restricted to lower payment levels. Additionally, larger households have a greater ability to pay for elderly care homes. The level of education and employment status of the household head also play a significant role in determining the ability to pay for elderly care homes.

In conclusion, this study provides valuable insights into households' willingness and ability to pay for formal residential care for the elderly in Ghana. Future studies may further explore other factors that may influence households' willingness and ability to pay, such as cultural beliefs and preferences regarding elderly care, to provide a more comprehensive understanding of the issue.

6.2 Recommendations

Based on the findings of this study, several recommendations can be made to inform policies and strategies for the development of elderly care services in Ghana. These recommendations aim to

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ensure that elderly care services are accessible, affordable, and responsive to the needs of the population:

Increase awareness: To promote better planning for elderly care, it is essential to enhance awareness among households regarding the significance of preparing for the care of their elderly family members. Public education campaigns and targeted awareness-raising initiatives can be instrumental in achieving this goal. For instance, by conducting informational seminars and workshops in local communities, households can gain a better understanding of the various elderly care options available to them and the financial implications. These campaigns can emphasize the potential benefits of formal residential care for the elderly, dispel common misconceptions, and highlight the role of subsidies and financial assistance programs in making these services affordable. By increasing awareness, households can make more informed decisions about their elderly care needs and better plan for their financial responsibilities in this regard.

Development of innovative payment models: To promote affordability and access to elderly care services, it is necessary to develop innovative payment models. One example of such a model is a sliding scale fee structure, where the cost of care is adjusted based on the household's income. This ensures that households with lower incomes pay a reduced fee, while those with higher incomes contribute more. Furthermore, exploring insurance-based models or public-private partnerships can help spread the financial burden of elderly care more equitably among the population. These innovative payment models not only enhance affordability but also encourage the delivery of high-quality care, ensuring that elderly care services are accessible to a broader spectrum of households.

INTEGRI PROCEDAMUS

Tax cuts for existing and new businesses: Introducing tax cuts for both existing elderly care home businesses in Ghana and those planning to enter the sector can have substantial benefits. Tax cuts can incentivize new entrants into the elderly care home industry. This is particularly valuable

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in a country like Ghana, where there is a growing demand for elderly care services. By reducing the tax burden for startups, the government can stimulate entrepreneurship and increase the availability of care facilities. This expansion of the sector can create job opportunities, generate economic growth, and bolster the overall healthcare infrastructure. Moreover, such tax incentives can encourage the expansion and growth of existing care facilities, fostering improvements in infrastructure, staff training, and the overall quality of care provided to the elderly. This, in turn, enhances the well-being and living standards of the elderly population.

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APPENDIX I: PARTICIPANT INFORMATION SHEET

TITLE OF RESEARCH: **Household Willingness and Ability to Pay for Formal Residential Care for the Elderly. A case study of La Nkwantanang-Madina Municipality.**

Principal Investigator: Henry Delali Dakpui

Address: Department of HPPM, School of Public Health, University of Ghana.

Email: henrydelali5@gmail.com

Tel: 0209676244

General Information about Research

Due to lack of elderly infrastructure and social change in contemporary life in Sub-Saharan Africa, specifically Ghana, several private and non-governmental organizations have emerged to implement geriatric interventions such as recreational or residential homes for the elderly. These institutions have seen a high level of patronage for these services, indicating that there is a demand for such services in Ghana, thus, its acceptability and patronage on a large scale must be looked at. Therefore, the willingness and ability of Ghanaian households to pay for this type of formal care model for the elderly must be assessed, and that is the goal of this research. The findings would add to Ghana's existing knowledge of elderly care. It will also be useful in policy decisions regarding the implementation and pricing of large-scale residential care homes for the elderly.

Nature of Research

This is cross-sectional survey that will involve 452 participants across the three sub-districts of the La Nkwantanang Municipality: Madina, Danfa, and Pantang. Simple random method will be employed in the selection of households, who live with at least one elderly member, after stratification of the municipal has been done and the sample shared equally across the three strata. We invite you to take part in this research project. If you accept, you will be required to sign or give oral consent to this study. Afterward, you will be assisted by the Research Assistant to fill the questionnaire. The questionnaire contains questions on your knowledge, awareness and perception of residential care services for the elderly in Ghana. It also presents a hypothetical situation of a residential care facility and elicits your willingness to pay for such a service. The field assistant would corroborate your answers by reporting your responses. Your participation in this study is expected to last for a maximum of 30 minutes.

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Possible Risks and Discomforts:

There are minimal discomforts potentially associated with partaking in this study potential risk. The length of time for data collection may serve as a source of discomfort to respondents. Care would be taken to minimize interruptions during data collection period to shorten interview times.

Possible Benefits

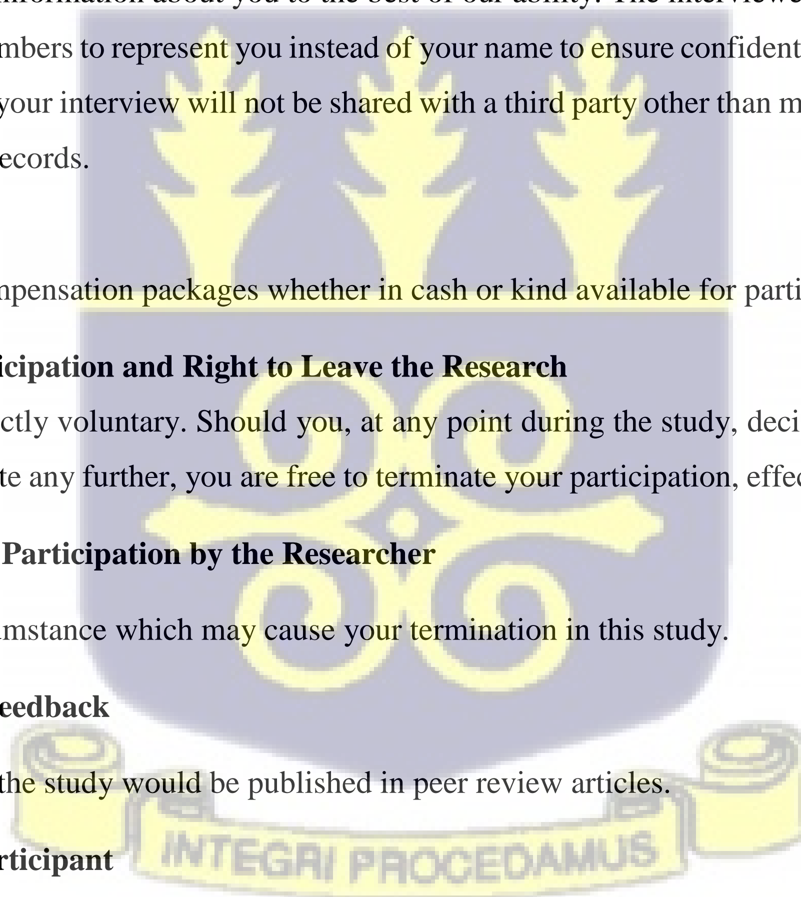
You may not get any direct benefit from this study however your responses might inform policy makers to put in place policies and structures to help your plight and that of potential family caregivers in the future. Also, results will be published in peer-review journals to add to existing knowledge on elderly care in Ghana.

Confidentiality

We will protect information about you to the best of our ability. The interviewer will only use the identification numbers to represent you instead of your name to ensure confidentiality. Information obtained during your interview will not be shared with a third party other than my supervisors who may access my records.

Compensation

There are no compensation packages whether in cash or kind available for participation



Voluntary Participation and Right to Leave the Research

This study is strictly voluntary. Should you, at any point during the study, decide that you do not wish to participate any further, you are free to terminate your participation, effective immediately.

Termination of Participation by the Researcher

There is no circumstance which may cause your termination in this study.

Outcome and Feedback

The outcome of the study would be published in peer review articles.

Feedback to participant

Feedback of findings would be communicated to participants at the end of the study on request

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Funding Information

The study would be self-funded by the Principal Investigator

Sharing of Participants Information/Data

Participants' identification would be anonymized during data collection period.

Data Access and Storage

The completed questionnaires for quantitative study will be collected each day and stored in a locked locker with only the principal investigator having access. The coded questionnaires will be entered into Microsoft Excel 2016 with a password by the principal investigator.

Provision of Information and Consent for Participants

A copy of the Information sheet and Consent form will be given to you after it has been signed or thumb-printed to keep

Contacts for Additional Information

You may contact me, the Principal Investigator (Henry Delali Dakpui, 0209676244) or my supervisor (Dr. Genevieve Aryeetey, 0244865387) if you need further explanation of pertinent questions about this research.

Your rights as a Participant

This research has been reviewed and approved by the Ghana Health Service Ethics Review Committee. If you have any questions about your rights as a research participant you can contact the GHS-ERC Administrator, Nana Abena Apatu, between the hours of 8 am-5 pm through the landline or 0503539896 , email address: ethics.research@ghs.gov.gh

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APPENDIX II: CONSENT FROM FOR RESPONDENTS STUDY

TITLE OF RESEARCH: **Household Willingness and Ability to Pay for Formal Residential Care for the Elderly. A case study of La Nkwantanang-Madina Municipality.**

PARTICIPANTS' STATEMENT

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions satisfactorily explained to me in a language I understand (English/ Ga/ Twi/ Hausa/ Ewe). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name of Participant…………………………………………………………………………………

Participants' Signature…………………………….. OR Thumb Print……………………………

Date:…………………………………………………

INTERPRETERS' STATEMENT

I interpreted the purpose and contents of the Participants' Information Sheet to the afore-named participant to the best of my ability in the language (English/ Ga/ Twi/ Hausa/ Ewe) to his proper understanding. All questions, appropriate clarifications sort by the participant and answers were also duly interpreted to his/her satisfaction.

Name of Interpreter…………………………………………………………………………………

Signature of Interpreter……………………………….. OR Thumb Print ………..........................

Date:……………………………………………………….

Contact Details

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STATEMENT OF WITNESS

I was present when the purpose and contents of the Participant Information Sheet was read and explained satisfactorily to the participant in the language (English/ Ga/ Twi/ Hausa/ Ewe) he/she understood. I confirm that he/she was given the opportunity to ask questions/seek clarifications and same were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.

Name:…………………………………………………………………………………………….

Signature……………………….............................. OR Thumb Print ……….........................

Date:……………………………

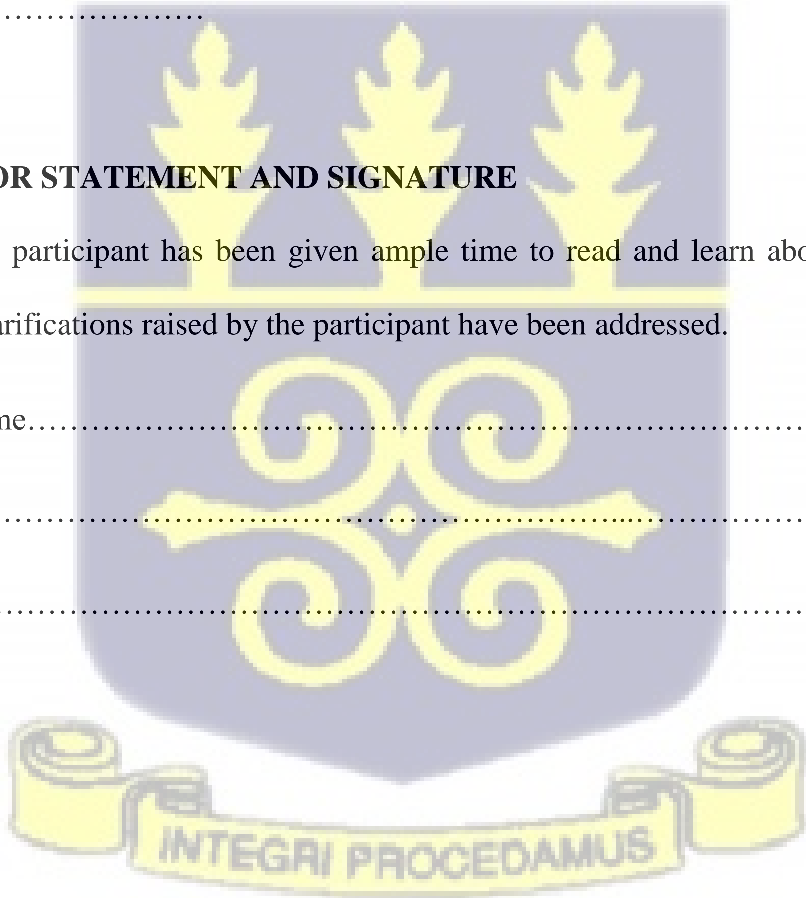
INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…………………………………………………………………………

Signature……………………………………………………...…………………

Date……………………………………………………………………………………….



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APPENDIX III: STATEMENT TO COMPLY WITH ETHICAL PRINCIPLES

I, HENRY DELALI DAKPUI, The Principal Investigator (PI) of this study and on behalf of my collaborators write to state that we will comply with all ethical principles and guidelines throughout the conduct of this study.

I shall conduct the study in accordance with the approved protocol .

Name of PI: Henry Delali Dakpui

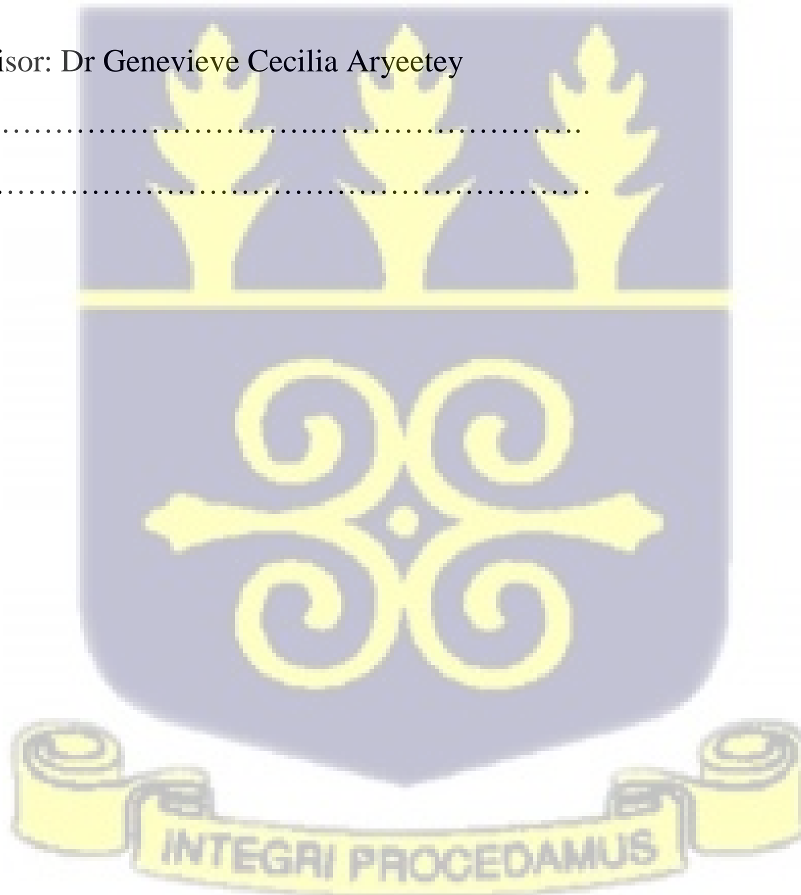
Signature: ……………………………………………………

Date:………………………………………………………….

Name of Supervisor: Dr Genevieve Cecilia Aryeetey

Signature: ……………………………………………………….

Date:……………………………………………………………



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APPENDIX IV: QUESTIONNAIRE

Household ID

SCHOOL OF PUBLIC HEALTH

UNIVERSITY OF GHANA, LEGON

TITLE OF RESEARCH: **HOUSEHOLD WILLINGNESS AND ABILITY TO PAY FOR FORMAL RESIDENTIAL CARE FOR THE ELDERLY**

Date of Interview: __ __ / __ __ / 2022

Consent Form

Hello Sir/ Madam, my name is Henry Delali Dakpui, a student at the School of Public Health, University of Ghana, Legon reading Master of Health Economics (MHE). I am conducting this study on household willingness and ability to pay for formal residential care for the elderly. The purpose of this research is to determine Ghanaian households' willingness and ability to pay for formal residential care for their elderly. There is no risk associated with this study, and no direct benefit will be given for your participation. The questionnaire may be completed in a maximum of 30minutes. I would like to assure you that any information you provide will be strictly confidential; and will be used only for the purposes of this research and never be used against you. Your participation is voluntary, and you may stop the interview at any time. Do I have your permission to continue?

Yes [ ] No [ ]

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SECTION A: IDENTIFICATION

Locality Name	
Locality Code	
Household Id	
Rural/Urban	
Field Worker's Code	

SECTION B: BACKGROUND CHARACTERISTICS OF HOUSEHOLD HEAD

Q1	How old are you? (Age at last birthday)	
Q2	Sex of household head	Female……………………………………1 Male………………………………………2
Q3	What is the total number of people who live in this household?	
Q4	How many adult members earn income in this household?	
Q5	What's your ethnic origin?	Ga-Adangbe………………………………..1 Akan………………………………………..2 Ewe…………………………………………3 Dagomba……………………………………4 Nzema………………………………………5 Guan………………………………………..6 Dagarti……………………………………..7 Kassem……………………………………..8 Frafra………………………………………9 Other………………………………………10
	Specify other ethnic origin	
Q6	What's your religion?	Traditional Religion…………………………..1 Christian……………………………………2 Muslim………………………………..……3 Other(specify)……………….……………..…4
	Specify other religion	
Q7	What's your marital status?	Single……………………...……...……..1 Cohabiting…………………..…..……..2 Married……………………………....…...3

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		Widow/widower……………………...…..4 Divorced…………………………..….…5
Q8	What's your level of education?	No schooling completed……………………1 Primary…………………………………..2 JHS/Middle School…………………………3 Senior High School…………………………4 Technical / vocational………………………5 Diploma……………………………………6 First Degree……………………………...7 Masters……………………………...…..8 PhD…………………………………………9 Other……………………………………..10
	Specify other level of education	
Q9	What is your main income generating job?	Farmer……………………….……………1 Trader…………………….…………………..2 Artisan…………………….…………….3 Private Formal sector……………………..4 Civil Service……………………………5 Public Service…………………..……….6 Other-specify……………………..… ……7 None……………………………………….8
Q10	How much do you earn on average per month (approximately)	
Q11	If a farmer, what is the value of your produce and/or services provided in a year	
Q12	How much earning do the other adult household members make per month?	
Q13	Is there an elderly person in this household (elderly being persons 65 years and above)	Yes………………………………………..1 No…………………………………………2 I am the elderly person………………………3
Q14	How many elderly members are in this household?	

SECTION C: INFORMATION ON HOUSEHOLD EXPENDITURE

Q15	Do you pay rent? *If no, move to Q17*	Yes…………………………..1 No……………………………2
Q16	How much do you spend on rent annually?	
Q17	How much do you spend on Food monthly?	

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Q18	Do you pay school fees? If no, move to Q20	Yes…………………………..1 No……………………………2
Q19	How much do you spend on school fees every year?	
Q20	How much do you spend on clothes and footwear monthly?	
Q21	How much do you spend on electricity monthly?	
Q22	How much do you spend on cooking fuel monthly?	
Q23	How much do you spend on water monthly?	
Q24	How much do you spend on soap monthly?	
Q25	How much do you spend on transport monthly?	
Q26	How much do you spend on health goods monthly?	

SECTION C: PROFILE(S) OF THE ELDERLY PERSON(S)

Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39
ID of Elderly	**How old is the elderly member**	**Sex of the elderly** Female…1 Male…...2	**Ever been to School?** Yes……..1 No………2 *If no, move to Q32*	**What is the highest level of education completed?** < primary school……..1 Primary school……..2 Secondary school…...3 College/ university…4 Post graduate degree ..5	**Marital Status** Never Married…….1 Currently married…2 Cohabiting……..….3 Separated/Divorced..4 Widowed………..…5	**Occupation of the elderly** Retired…..…….1 Farmer…..…….2 Trader…..…….3 Artisan…..…….4 Other(specify)…5	**Does the elderly need care due to his/her health condition or because he/she is getting old and weak?** Yes……………..1 No……………...2 *If no, move to Q39*	**Which of the following conditions?** Hypertension……..……1 Diabetes……………..…2 Stroke…..……….....….3 Mental disorder……….4 Physically challenged…5 Others(specify)……….6	**In general, how would you rate your health today?** Very good……….1 Good…………….2 Moderate………..3 Bad……………..4 Very bad……..…5	**Overall in the last 30 days, how much difficulty did you have with work or household activities?** None…………….1 Mild……………..2 Moderate………...3 Severe……………4 Extreme/cannot do..5	**Overall in the last 30 days, how much difficulty did you have with moving around?** None…………….1 Mild……………..2 Moderate………...3 Severe……………4 Extreme/cannot do..5	**Is the elderly covered by health insurance** Yes……1 No……..2

INTEGRI PROCEDAMUS

SECTION D: USE OF HEALTH CARE SERVICES

Section D – Part 1: Outpatient medical services and treatment for curative, dental and rehabilitative care (for the elderly)

Q40	Q41	Q42	Q43	Q44	Q45
ID of Elderly	**During the last 4 weeks has the elderly you care for (within or outside of your household) visited a health facility for outpatient, curative, dental and rehabilitative care?** Yes………………..1 No…………………2 *If no, move to Q45*	**How many times did the elderly visit the facility for outpatient curative, dental and rehabilitative care in the last 4 weeks?**	**Where did the elderly seek health care in last 4 weeks? (tick all that apply)** Visited a Pharmacy…………1 Public Hospital……………..2 Health Center………………..3 CHPS Compound……………4 Polyclinic……………………5 Private Hospital……………6 Private Clinic……………..…7 Laboratory…………………8	**On the most recent visit, what specific services did the elderly seek at the health facility in the last 4 weeks? (tick all that apply)** Curative…………………….1 Dental care…………………2 Rehabilitative care…………3 Other (Specify)……………4	**How long do you have to travel to access outpatient medical services and treatment for curative, dental and rehabilitative care?**

INTEGRI PROCEDAMUS

Section D-Part 2: Preventive health care services (Example, Vaccination services, screening, diagnosis test) (Ask Information for elderly member)

Q46	Q47	Q48	Q49	Q50	Q51
ID of Elderly	**During the last 4 weeks has the elderly you care for (within or outside of your household) visited a health facility for Preventive health care?** Yes………………..1 No…………………2 *If no, move to Q51*	**How many times did the elderly visit the health facility for preventive health care services in the last 4 weeks?**	**Where did the elderly seek health care in last 4 weeks? (tick all that apply)** Visited a Pharmacy…………1 Public Hospital……………...2 Health Center………………..3 CHPS Compound……………4 Polyclinic…………………….5 Private Hospital……………6 Private Clinic……………..…7 Laboratory………………….8	**On the most recent visit, what specific services did the elderly seek at the health facility in the last 4 weeks? (tick all that apply)** Routine check-up……………………1 Vaccination…………………….……...2 Screening……………..……………………3 Dental care…………….………….. 4 Rehabilitative care…….…………….5 Other (Specify)…………………..…6	**How long do you have to travel to access Preventive health care services?**

INTEGRI PROCEDAMUS

Section D- Part 3: Inpatient Health Care Services (Ask Information For Elderly Member)

Q52	Q53	Q54	Q55	Q56	Q57	Q58
ID of Elderly	**During the last 12 months has the elderly you care for (within or outside of your household) any elderly member of your household been admitted to the hospital?** Yes………………..1 No…………………2 *If no, move to Q58*	**How many days hospitalized?**	**How many times has the elderly member of your household visited the facility for inpatient services in the last 12 months?**	**Where did the elderly member of your household seek care your most recent inpatient care ? (tick all that apply)** Public Hospital…………………..…1 Private Hospital………………….2 Private Clinic…………………....3 Tertiary/referral hospital……….4 Other (specify)………………….5	**On the most recent visit, what specific services did the elderly seek at the health facility in the last 4 weeks? (tick all that apply)** Surgery…………………………..….1 Respiratory services(Oxygen, etc)..2 Coronary/heart care……………….3 Transplant Services……………….4 Other (specify)……………………5	**How long do you have to travel to access Inpatient health care services?**

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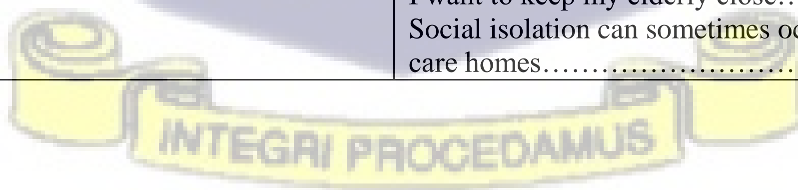
SECTION D: KNOWLEDGE AND PERCEPTION TOWARDS FORMAL RESIDENTIAL CARE HOME MODEL

Q59	Have you heard of the existence of formal residential care homes for the elderly in Ghana? *If no, move to Q65*	Yes……………………………………..1 No………………………………………2
Q60	Have you ever patronized that kind of care for your elderly before?	Yes……………………………………..1 No……………………………………...2
Q61	What type of services do you know or have heard they provide? *If don't know, move to Q65*	Home-cooked meals……………………...1 Laundry and housekeeping……………….2 Transportation……………………………3 Medication administration & management.4 Planned activities, events, and outings…...5 Other (specify)……………………………6 Don't know………………………………7
	Specify other type of services	
Q62	Are these services appealing to you? *If no, move to Q64*	Yes……………………………………..1 No………………………………………2
Q63	Why are these services appealing to you?	Professional and personalized care……….1 Support with day-to-day tasks……………2 Social connection for the elderly…………3 Comfortable accommodation…………….4 Regular and nutritious meals…………….5 Medication management…………………6 Activities to keep body and mind fit……..7 Peace of mind for relatives………………8
Q64	Why not?	It is too costly……………………….…….1 I prefer my elderly to remain in my own home, where he/she is comfortable and familiar with the surroundings……………………………2 Some care homes have a reputation for being impersonal or providing subpar care………….3 I want to keep my elderly close……………….4 Social isolation can sometimes occur in elderly care homes…………………………………….5



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Hypothetical Scenario: **We ask you to picture an older woman in your family. Below, we describe her situation**

Maame Ama is an 85 year old. She lives alone in a three-room apartment. She is fine mentally, but she suffers from various physical problems. She gets out of breath quickly and is not that strong any more. She has two children, but they live far away and therefore cannot visit and help her with her everyday chores. Besides her children, she only has regular contact with a neighbor. Maame Ama is currently receiving help with cleaning one hour every second week, and she gets ready-made food delivered. She cannot get any additional help from the municipality at present. A new residential facility for the elderly is put up and opened for business.

The care home illustrated is no ordinary care home for the elderly. By patronizing such services for your elderly you transfer the burden of having to make time to cater for the day-to-day activities of the elderly. Services here include accommodation, meals in a communal dining room, housekeeping services (e.g. laundry, cleaning), healthcare, supervision of drug administration (if needed). There would be physicians, nurses, physician assistants, social workers, cooks, cleaners, and mental health specialists available to attend to your elderly at all times. Visiting or taking your elderly out of the facility for a few days is allowed. On average it would reduce the number of times you and any other member of your household have to assist the elderly member to the hospital for routine healthcare, preventive healthcare, and curative healthcare services.

Based on the scenario and your own experiences, kindly answer the following questions

	BIDDING QUESTIONS	**YES**	**NO**
Q65	Would you be willing to pay for this formal residential care home for the elderly? *If don't know, move to Q75*		
Q66	What is the maximum you will pay?		
Q67	If No idea, would you be willing to pay an amount of GHS500 per month?		
Q68	Would you be willing to pay an amount of GHS700 per month?		
Q69	Would you be willing to pay an amount of GHS1,000 per month?		
Q70	Would you be willing to pay an amount of GHS1,500 per month?		
Q71	Would you be willing to pay an amount of GHS2000 per month?		
Q72	Would you be willing to pay an amount between GHS3000 – GHS2000 per month?		
Q73	State an amount		

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Q74	If "Yes", why will you patronize this service?	It offers services tailored to the needs of my elderly……………………..…….……..…...1 For peace of mind & security in times of ill-health (elderly)……………………………..2 Elderly faces health problems frequently………………………………………...3 My relative will have opportunities in the day to socialize with people of a similar age and circumstances as them…...…………………….4
Q75	If "no" Why would you not want to patronize this service?	I do not have enough money to pay………1 I don't need it……………………………….2 I don't trust that my elderly would receive the needed care…………………….…………..3 Paying for someone else to take care of my relative is a taboo………………………….4

SECTION E: ASSETS AND POSSESSION OF HOUSEHOLDS (Ask This to Any Responsible Household Member Who Has Information On Household Assets And Possession)

No	Question	Category
Q76	Main material of the floor	Earth/sand……………………………………….1 Wood…………………………………………..2 Ceramic tiles…………………………………3 Cement…………………………………………4
Q77	What is the main source of drinking water for members of your household?	Piped into dwelling……………………………1 Piped into yard/plot…………………………..2 Public tap/standpipe…………………………..3 Tube well or borehole………………………..4 Sachet water……………………………………5
Q78	How long does it take to go there, get water and come back?	____________________minutes
Q79	What kind of toilet facility do members of your household usually use?	Flush/pour flush toilet to manhole……………..1 Ventilated improved pit latrine………………..2 Pit latrine with slab……………………………3 Pit latrine without slab/open pit………………4 No facility/bush/field…………………………5 Other (specify)………………………………..6
Q78	Do you share this toilet facility with other households?	Yes……………………………………….1 No………………………………………...2
Q79	Does this household use LPG mainly for cooking?	Yes……………………………………….1 No………………………………………...2
Q80	Do any household member own land?	Yes……………………………………….1 No………………………………………...2

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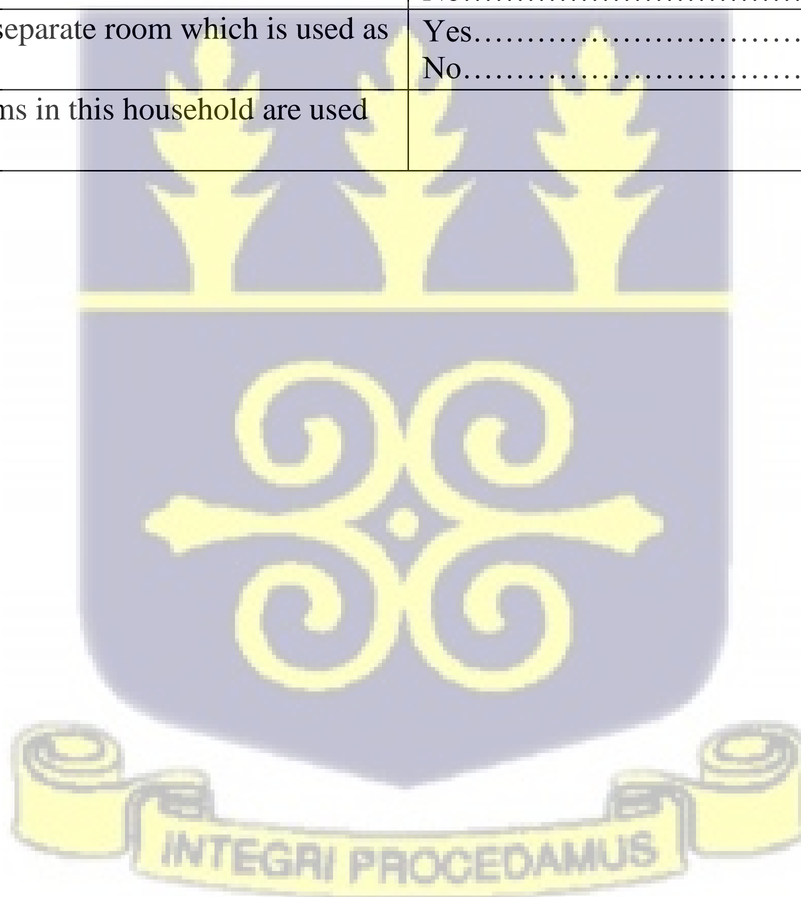
Q81	Does household have a radio?	Yes……………………………………..1 No……………………………………...2
Q82	Does household have a television?	Yes……………………………………..1 No……………………………………...2
Q83	Does household have a refrigerator?	Yes……………………………………..1 No……………………………………...2
Q84	Does any household member own a bank account	Yes……………………………………..1 No……………………………………...2
Q85	Do household have an air-conditioner/ air-cooler?	Yes……………………………………..1 No……………………………………...2
Q86	Do household have a computer/laptop?	Yes……………………………………..1 No……………………………………...2
Q87	Do household have a Credit card?	Yes……………………………………..1 No……………………………………...2
Q88	Do household have a washing machine?	Yes……………………………………..1 No……………………………………...2
Q89	Do household have any motorized vehicle?	Yes……………………………………..1 No……………………………………...2
Q90	Do you have a separate room which is used as a kitchen?	Yes……………………………………..1 No……………………………………...2
Q91	How many rooms in this household are used for sleeping?	



University of Ghana http://ugspace.ug.edu.gh

APPENDIX V: ETHICAL APPROVAL

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Digital Address: GA-050-3303
Mob: +233-50-3539896
Tel: +233-302-681109
Email: ethics.research@ghs.gov.gh
20th January, 2023

My Ref. GHS/RDD/ERC/Admin/App /23/036
Your Ref. No.

Henry Delali Dakpui
P. O. Box LG 13,
Legon

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC: 029/12/22**
Study Title	Household Willingness and Ability to Pay for Formal Residential Care for the Elderly
Approval Date	20th January, 2023
Expiry Date	19th January, 2024
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of a yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

You are kindly advised to adhere to the national guidelines or protocols on the prevention of COVID -19

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED...
Dr. Naa-Korkor Allotey
(Ag. Head, Ethics & Research Management Department)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra