



ASHESI UNIVERSITY COLLEGE

**DEMENTIA IN GHANA:
CARE OPTIONS AVAILABLE AND HOW TECHNOLOGY CAN BE USED
TO PUBLICIZE THEM**

UNDERGRADUATE THESIS

Thesis submitted to the Department of Business Administration, Ashesi University College,
in partial fulfillment of the requirements for the award of Bachelor of Science degree in
Management Information Systems

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Declaration Page

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

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Abstract

According to the 2010 census in Ghana, the population of the elderly grew by 87% between 1960 and 2010 (Ghana Statistical Service, 2013). With this growth in the number of elderly people, comes a higher number of occurrences of diseases that afflict the aged, such as dementia.

The objective of this thesis, is to find the care options available to the demented in Ghana, those actually being used by the families of the demented in Ghana, and ways by which technology can be used to publicize dementia and its care options in Ghana. Qualitative research was done using non- probability sampling to select respondents to partake in this study. Findings from this research were got by interviewing medical professionals, family members/guardians of the demented and experts in educating the public on various issues using technology in Ghana. All respondents targeted are based in Accra, the capital city of Ghana.

The findings show that there is a general ignorance on dementia plaguing Ghanaians which causes them to respond wrongly to people diagnosed with dementia. However, there are several care options available in Ghana for the demented. The main problem here is the lack of information about the care options available which makes it difficult for families with demented members to access them. Also, technology experts say that technology will serve as a great medium to publicize dementia and its care options in Ghana, however, success is based on which segment of people are targeted as recipients of the messages. Technologies that can be used for the publication range from mass media such as radios to processor-embedded devices such as Virtual Reality tools.

Keywords: Dementia, caregivers, Alzheimer's, aged, mental illness, old people's homes, medical technology

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CHAPTER 1: INTRODUCTION

Motivation

The motivation for this topic initially stemmed from conversations I had with a few medical personnel about the elderly and various diseases they suffer from when I was looking for some sort of community service to engage in after high school. However, in 2014, my motivation and mere interest peaked when my father was diagnosed with dementia. Excluding the basic care advice given by the doctor on what to expect and how to handle him, finding care options was a difficult task that lasted for many months. After a few conversations with some of my peers who had family members with dementia in Ghana, I realized that the problem my family faced in finding care options was not peculiar to us. With this information, finding a solution to this difficulty would be highly beneficial to families with dementia patients as well as families who have never heard of dementia.

Background

Dementia is a disease of the brain, which deposits certain proteins in the brain and causes it to degenerate (Smith, Kenan, & Kunik, 2004). It is a descriptive term indicating an observable decline in mental abilities (Gustafson, 2009).

The disease was nicknamed “the long bye” by Nancy Reagan, a former first lady of the President of America, because it gradually robs its patients of their memory to the point where to a family member or friend, all they see when they look at the patient is a familiar face, but recognize a stranger within. From the patient’s point of view, Virginia Bell and David Troxel liken how the patients feel to when a student is asked a question in class that he/she has no idea about. The loss, confusion, frustration,

paranoia, anger and feeling of isolation are emotions that the dementia patients experience regularly (Troxel & Bell, 1997).

With the inevitable stage of old age in a person's life comes various challenges, diseases and complications. According to the 2010 population census in Ghana, the population of the elderly grew by 87% between 1960 and 2010 (Ghana Statistical Service, 2013). With this increasing ageing comes a higher risk of diseases, including dementia, as highlighted by the World Health Organization (WHO) in 2014.

According to the Dementia Association of Ghana, there were already over seventeen thousand (17,000) people suffering from dementia in the country in 2014. Mr. Dey, the co-founder of the Dementia Association of Ghana, stated that, "it is estimated that one in nine persons over sixty-five years and one in four over eighty years, develop this progressive illness which that last for many years." (Ghana News Agency, 2014).

The World Health Organization (WHO) goes on to state that the one form of dementia suffered by the elderly in Ghana is Alzheimer's. Alzheimer's which was discovered by a German physician called Alois Alzheimer (Smith, Kenan, & Kunik, 2004), and like many dementias cannot be treated; it can only be slowed down using drugs (Ohene, 2016).

In developed countries, such as countries in Western Europe including Spain, where dementia is most common, and in the United States of America, people are very concerned about this mental disease and as such, have dedicated resources to collate statistics on its prevalence (Alzheimers.net, 2016). However, the topic of dementia in Ghana, and other developing countries for that matter, is not treated as issue of much gravity. To many in Ghana, the symptoms of dementia in the elderly such as being forgetful are the mere effects of old age (Ohene, 2016). "More research is needed to allow developing countries to estimate the current extent, type and cost of medical

and social service provision, and to make confident predictions of future need.

Research in different cultures with different levels of economic and industrial development will also increase the variance of environmental exposure, facilitating the identification of environmental risk factors and gene—environment interactions for dementia” (Prince, 1997).

Even when the people are diagnosed with the disease in Ghana, family members and other people are not able to cope with the dementia patients causing them to ostracize the patients and in some cases, tag them as witches or wizards (Spittel, 2014). For a long time, Africa’s approach to caring for the elderly has been based on the traditional model, where extended family members support the elderly in the family by providing physical, emotional and financial support (Walker, 2011). With the crumbling of the extended family system due to urbanization and the gradual dissolution of the traditional system through education and the peaking rate of Christianity, older family members barely have support from their younger family members (Akinny, 2016). This thesis seeks to research the care options available to the demented in Ghana. With the world becoming highly technological, this research also hopes to find ways by which technology can be used to disseminate information about this disease and the various care options that are available in Ghana, by examining best practices from other fields and talking to professionals in dementia care and publications in Ghana. Technologies to be used range from mass media such as newspapers to processor-embedded devices such as mobile phones.

Research Topic

The care options available to dementia patients in Ghana and how technology can be used to publicize dementia and the care options available.

Objective of Research

The objective of this research is to find the care options available to dementia patients in Ghana and find ways by which technology can be used to inform the public on dementia and its care options in Ghana.

Research Questions

Based on the objectives stated above, the following questions guide this study:

- What are the care options available to dementia patients in Ghana?
- What care options are currently being used by patients diagnosed with dementia in Ghana?
- How can technology be used to effectively spread information to the public about dementia and the care options available to the demented in Ghana?

To answer these research questions, respondents were grouped into three; namely,

- medical personnel from various specialized hospitals and institutions to educate on the care options available to the demented in Ghana
- family members and guardians of the demented to highlight the care options they have adopted and are using to care for their dementia patients
- experts in using technology to publicize and market various ideas and products in Ghana

Research done to answer the research questions was qualitative and employed the used of interviews, both face-to-face and over the phone. Also, non-probability sampling was conducted to select the respondents of this study.

Relevance of Research

The Ghana Statistical Service defines the elderly as adults who have attained the age of 60 years and over (Ghana Statistical Service, 2013). The life expectancy in Ghana is presently approximately 65.75 years (IndexMundi, 2014). Furthermore, according to the 2010 population census which shows the population of the elderly grew by 87 % between 1960 and 2010 (Ghana Statistical Service, 2013), it is implied that there are more old people in Ghana, and thus, a high occurrence of the many issues that come with ageing including diseases, and general body weakness.

Considering the statistic that by the age of 85 years old, between 25% and 50% of people exhibit signs of dementia (ASHA, 2014), this research is extremely needed as it would provide information about the care options available in Ghana. Making this information more readily available would help improve the general health and care of the elderly citizens of Ghana. Finding answers to the research questions of this study could give ideas to institutions such as the Alzheimer's and Related Disorders Association Ghana, also referred to as the Dementia Association, on how to use technology to educate the public. Furthermore, the findings got can be of specific help to families with demented family members as well as those who have not yet identified their family members as being demented, to lessen their burden of probing care options available to them. With the continuous increase in life expectancy in Ghana, it is important Ghanaians are abreast with dementia. This

research would help with offering a high quality of life to the elderly and help caregivers to deliver better care to the demented in the country.

Organizational Outline

- Chapter 1- This chapter holds the background of Dementia in Ghana, information about the care options in the country and why it is of any importance to readers and the whole country at large.
- Chapter 2- This chapter intends to offer an understanding to dementia, the care options that come with it and how technology is being used to educate the public on medical issues, by analyzing various literature. This literature review, was divided into four parts: One part highlights various points related to old age and defines dementia, the second part holds literature on giving care to the demented, the third part discusses technology in relation to dementia and the final section holds literature on technology and how it is being used to educate the public.
- Chapter 3- This chapter focusses on research methodology expatiating the methods and techniques to be used in the research.
- Chapter 4- This chapter holds the results got from the research conducted. The results were organized into the groups of the respondents, each of who answered the aforementioned research questions. These respondents were the medical experts, family members/guardians of the demented in Ghana and technology experts.
- Chapter 5- This chapter holds the conclusions from this research and recommendations on how the issue of the lack of information on dementia and its care options can be handled using technology.

CHAPTER 2: LITERATURE REVIEW

This chapter is divided into four sections, each of which presents literary works discussing dementia, its care options and technology. The first section explains dementia and discusses its occurrence in the aged. The second section discusses the care for the demented, while the third section discusses technology and how it is currently being used in relation to dementia. The last section of this chapter highlights how technology is being used to publicize information and educate the public on a whole.

Dementia and the Aged

Dementia is defined as “an acquired clinical syndrome characterized by the deterioration of mental functioning in its cognitive, emotional and conative aspects.” Despite scientific definitions, people tend to associate a variety of brain diseases at varying stages and caused by a number of things to dementia (Gustafon, 1996). This disease does not only rob the patient of his/her memories, but also robs family members and friends of the joy that comes with associating the demented with a particular memory (Smith, Kenan, & Kunik, 2004). According to the World Health Organization (WHO), one form of dementia suffered by the elderly in Ghana is Alzheimer’s, which was discovered by a German physician called Alois Alzheimer (Smith, Kenan, & Kunik, 2004). Alzheimer’s disease, like most dementias, cannot be treated; it can only be slowed down using drugs (Ohene, 2016).

The Ghana Statistical Service defines the elderly as adults who have attained the age of 60 years and over (Ghana Statistical Service, 2013). The growing concern for the aged, particularly with relation to their health has caused people all over the world to give extra attention to their diet, improve general sanitation, and medical treatments. With

this new status quo, people are living much older than was recorded a few decades ago (Tong, 2009). The life expectancy in Ghana is presently approximately 65.75 years (IndexMundi, 2014). Furthermore, according to the 2010 population census, the population of the elderly grew by 87 % between 1960 and 2010 (Ghana Statistical Service, 2013). This implies that there are more old people in Ghana, and thus, a high occurrence of the many issues that come with ageing including diseases, weakness, and lack of care. Dementia is among the psychological diseases which typically affects people in their older ages, that is, sixty-five years and older. However, some cases have been recorded of this disease having affected a few people aged younger than sixty-five (Harvey, Skelton-Robinson, & Rossor, 2003). “Approximately 67 to 98 per 100,000 people aged 45 to 64 years carry a diagnosis of young-onset dementia” (Kuruppu & Matthews, 2013), and one of every ten of these people seem to have inherited the disease from a parent (Alzheimer's Society, 2017). However, given the focus on the elderly, this paper will not be exploring the other reasons and factors surrounding young-onset dementia. Nevertheless, findings on increasing awareness of the care options available to the demented may well aid young-onset dementia patients as well and should be applied where relevant.

Dementia in the elderly is a global disruption of personality, affecting behaviour and intelligence, with impairment of the ability to learn new responses and thus, to adapt to a changing environment. The demented experience loss of the ability to remember recent events and experience a range of emotions including confusion and nervousness. Despite the continuous decline in mental function, the degree of this decline may be preserved, provided the old person retains a constant environment with which she is familiar and that new demands on her are not great. This however, does not stop the degeneration of the brain (Arie, Dementia in the elderly: Diagnosis

and assessment, 1973).

Considering the statistic that by the age of 85 years old, between 25% and 50% of people exhibit signs of dementia, typically, Alzheimer's disease (ASHA, 2014), this research would provide information that would help with the general health and care of the elderly citizens of Ghana.

Care for the Demented

When dementia kicks in, the patient becomes incapable of performing basic, daily activities such as dressing properly or brushing the teeth. Care of the demented is very important because the cognitive, functional, and behavioral decline in the demented can be severe and weakening, leading them to require significant support from caregivers. This requires the caregivers to take on a multitude of new responsibilities previously managed by the person with dementia (Galvin, 2013). Without care, the demented tend to wander around and in countries like Ghana, can be called witches or wizards, (Spittel, 2014) and in the extreme cases, burnt alive. An extreme case of this sort happened in Ghana in 2009 when a 72-year-old woman was accused of being a witch and was burnt alive. This left the family members of the victim in distress. (Smith, 2010).

When old age creeps up on an individual, the subsequent question is "Who bears the burden?" Is it the government, families, or individuals? (Tong, 2009) The aged have various ways by which they are cared for depending on level of development of their resident countries' healthcare systems. In some countries, like Italy where the aged are well taken care of by the government, reaching old age is not considered bothersome. On the other hand, in African countries such as Uganda and Ghana, where the younger generation of families are depended on for elderly care, old age

becomes a chore (Akinny, 2016). Statistics provided by Prof. Spittel of the University of Applied Science, Berlin, show that in the case of informal caregiving to dementia patients, in Ghana particularly, women take up the mantle to provide care. Thus, most of the old men are cared by women, usually, their wives, who often die leaving their ailing husbands widowed (Spittel, 2014). The World Health Organization (WHO) highlights the various challenges faced by the dementia patients and their families, which hinder their access to the few medical facilities available. These challenges include transportation problems and general poverty (World Health Organization, 2014).

When the question of who bears the burden is answered, questions about the care options available to the elderly per their individual problems come up. Patricia Smith, an award-winning health journalist and the primary author of this book, writes the book through her lens of having been a caregiver to her demented mother. She does well to inform and guide caregivers of dementia patients with what they are dealing with, the various stages of the dementia, how to cope as a caregiver and effective way to treat and deal with the dementia patients. (Smith, Kenan, & Kunik, 2004).

Issues of care for dementia patients mainly arise from the lack of knowledge on the disease and lack of mental facilities in Ghana. In 2011, there were a hundred and twenty-three “(123) mental health outpatient facilities, three (3) psychiatric hospitals, seven (7) community based psychiatric inpatient units, four (4) community residential facilities and one (1) day treatment center, which was well below what would be expected for Ghana’s economic status. There were an estimated 2.4 million people with mental health problems of which 67,780 (that is, 2.8%) received treatment in 2011” (Roberts, Mogan, & Asare, 2014). Many medical professionals do not choose to specialize in psychiatry so care from a professional level is lacking (Ofori-Atta,

Read & Lund, 2010). As such, mental health care industry lacks adequately trained health workers. As at 2011, there were only 18 psychiatrists, 1,068 Registered Mental Nurses, 19 psychologists, 72 Community Mental Health Officers and 21 social workers working in mental health (Roberts, Mogan, & Asare, 2014).

Dementia does not only affect the demented patient; it also tends to have adverse effects on the caretakers as well. These caretakers tend to feel angry, depressed and fatigue, each of which can be treated (Rabins, Mace, & Lucas, 1982). It has been observed that in worst-case scenarios where caretakers only take care of the demented, and have ignored their own feelings, these caregivers have fallen ill, or even died (Smith, Kenan, & Kunik, 2004). To cope, various caregivers have developed various practices that suit them. It has been found that typically, black caregivers resort to their religious faith to cope, while white caregivers subscribe to help from professionals and other problem-solving methods (Wykie & Segal, 1991). Some people argue that in caring for the aged, be they with or without dementia, the care given should be holistic such that it encompasses physical, spiritual and emotional aspects that would allow the caregivers to fully understand what kind of assistance their patients require. Govier, (2009) highlights that it is this holistic care, emphasizing on the spiritual care, which contributes to how patients respond to the disease and their various treatment. Given the fact that the holistic care is needed, it would help if the caregivers in Ghana, both formal and informal, are trained or informed on how to give this kind of care. (Govier, 2009)

In developed countries, such as the United Kingdom, articles have been published highlighting the stress and ton of emotional caregivers in home deal with when dealing with dementia patients in their last stages of life. It was discovered that these caregivers make a lot of effort to avoid the family members of the patients as they

approach death (Livingston et al., 2012). Though, some homes exist in Ghana, they do not specialize in caring for the demented. Moreover, Ghanaians do not subscribe to using the homes for various reasons including the cost that comes with such homes (Akinny, 2016). Even with the homes in the developed countries, there are a couple of problems, which arise such as informal caregivers finding it hard when their patients are from their homes to homes for the aged. One article written by Egdell (2013), describes the change in location as confusing the dementia patients and making it hard for the caregivers to work. Also, these informal caregivers believe that the level of care given, is not as intense as compared to what they offer. Given that majority of research done on dementia was done based on the situations in the developed countries such as the United Kingdom, little information exists that relates to the conditions in the developing countries like Ghana, where dementia also exists. This leads to a gap in information on the existing conditions in developing countries.

One article written by two professors, Prof. Spittel and Prof. Wolf-Ostermann, at the Alice Salomon University of Applied Science in Berlin, Germany highlights the ignorance of the public on dementia a key issue, which is made worse by aged care facilities and skilled experts in geriatrics being in short supply (Spittel & Wolf-Ostermann, 2013). It is this ignorance that causes Ghanaians to ostracize their elderly demented patients and it is the state of the mental health care facilities that make it difficult for the dementia patients to receive the care they require. Without the right care administered, the dementia worsens (Scrutton & Brancati, 2016).

Aboderin (2004) emphasizes on the gradual crumbling of the extended system in Ghana as an issue, which has hindered care options to the aged. This, in her opinion, has exposed increasing numbers especially of urban elderly to destitution and

poverty. “The nature and causes of this decline remain poorly understood, in particular the relative role of growing material constraints, as proposed by political economy perspectives, or weakening traditional values, as suggested by modernization perspectives.” Here, informal care, which has been the backbone of support given to the African elderly, is being shuttered. This leaves the demented aged, suffering in silence. Despite this break the traditional care process, Ghanaians are still not in favour of taking their elderly family members to homes (Akinny, 2016).

Aside the crumbling of the extended family system, the ignorance of Ghanaians causes them to stigmatize the demented people. These people are ostracized, called witches, abused, taken to witch camps and at times, killed. Because dementia causes its patients to behave in ways they would not usually act in, people around who are as confused as these patients, maltreat the patients (Spittel, 2014).

Technology in Dementia

What is technology? This 21st century craze has been defined as “an extension of human capabilities in order to satisfy our needs and wants.” This can be as a simple system or be presented in a complex form (UNESCO, 2003).

Since dementia makes aspects of daily life difficult for the demented, some assistive technologies have been developed to help dementia patients with their daily routines. These technologies, however, are helpful to dementia patients particularly in their early stages. These technologies include electronic calendars, schedulers, picture phones, medication reminders and locators (Inoue, 2015).

One major problem faced when dealing with dementia patients is wandering. To curb this problem, the use of tracking devices to ensure that caregivers know where

the patients are at every given time was suggested as a helpful tool in caring for the demented. However, from surveys conducted and further research, it was found that various people responded differently to response to the use of GPS devices on dementia patients. The responses ranged from the devices being a basic necessity to being an infringement of the individual's right. (Landau, Werner, Auslander, Shoval, & Heinik, 2009) The limitation of this article was that the research was done using Britain as a standard. However, in countries like Ghana where a large number of the elderly are found in the villages, technologies such as GPS devices would be difficult to be understood and used by the illiterates who need them. Though the GPS is among the technology used in caring for dementia patients, this is not the focus for this thesis. The focus is on technology used in educating the public on dementia and its care options in Ghana. Nevertheless, further research could be done later to see what technologies could be brought to Ghana and other developing countries to deal with dementia.

Patients who have had dementia for a long time are among the most challenging patients to care for. They are often bedridden and dependent in all activities of daily living including eating and dressing. Difficulty with eating is especially prominent and distresses family members and health care professionals. To reduce the stress that comes with this inability, feeding tubes are used to assist in feeding these patients who have lost their ability to chew and swallow. These feeding tubes have been proven to be beneficial in preventing sore throats and ensuring that the demented get adequate nutrition (Li, 2002). The new frontier of technology in dementia includes video games currently being developed that would help detect dementia in its early stage (Bhattacharya, 2016).

Technology and Educating Society

In this section I will discuss some methods of using technology for health information that have already been implemented in various countries including Ghana. This is to highlight what has been done and serve as a foundation on which publicizing health information locally can be built.

It has been found that using mobile phone voice and text messages as communication technologies to provide informational support have improved the quality of care administered to the sick. Where information on diabetes and smoking cessation was delivered ranging from five times daily to once a week, significant improvements were noted in smoking quit rates, proper health care, self-efficacy, lower failed appointments, quicker diagnosis and treatment, and improved teaching and training. The research highlighted that using communication technologies can help improve health outcomes and care processes for both patients and providers (Krishna, Boren, & Balas, 2012).

In relation to dementia, the fear of being ostracized and inadequate knowledge of the disease tend to keep people away from discussing their concerns about the disease. As a solution to this problem, in the United Kingdom set-up an organization called CANDID which has 24/7-hour health lines that people could call to express the challenges they are facing in caring for dementia patients and learn more about the disease provide positive feedback (Harvey, Roques, Fox, & Rossor, 1998). In the United Kingdom, health lines, classified, as “cybermedicine” or “telemedicine”, are also used by NHS for medical information on cognitive function (Larner, 2003). Others use this technology to schedule hospital appointments and in some cases, contact specialist who go to the patients’ home to assess them (Arie, 2016).

Providing public education and access to dementia resources using a toll-free interactive voice response (IVR) telephone system, caused a “cost-effective bridge to the “digital divide” existing among elderly, lower socioeconomic status, and rural populations underrepresented as computer and Internet users” (Mundt, Kaplan, & Greist, 2001).

Though technology has been observed to be helpful in educating the masses in Ghana, the issue of illiteracy, lack of the technologies and even lack of electricity are not forgotten (Alemna, 2006)

In educating the public on malaria and AIDS in 2005 and 2007 respectively in Ghana, television advertisements and the use of posters, billboards and banners were employed. These served as a means of educating the public about these diseases, their symptoms, prevention methods and ways to contain and treat the diseases.

Technologies ranging from decentralized printing to electronic mail have improved operations of the advertising industry in various ways (Khattak, Nasir, & Sultan, 2012). In the case of educating the public on HIV/AIDS, television shows and movies recorded on videotapes were used. This made people understand the disease better and boosted the public’s interest in using condoms to prevent sexually transmitted diseases (Solomon & DeJong, 1989).

Chapter Conclusion

Although there are relevant literature relating to dementia in Ghana, most literature available is based on the experience of dementia outside Ghana. Literature based on experience of dementia in Ghana is needed to serve as a reference for Ghanaians on how to care for the demented in a setting they are familiar with. In countries, such as the United Kingdom, technologies such as GPS are used to track the demented has

been incorporated in caring for the aged. Nevertheless, this thesis seeks to find out how technology can be used to publicize dementia and the care options available to the demented in Ghana. Borrowing from other countries such as the United States of America, and from the models used to publicize malaria and HIV/AIDS in Ghana, there are a couple of ways by which the objectives of this research can be met, using the technologies summarized in the table below.

Table 1

Summary of technologies, discussed above, used to publicize medical information

TECHNOLOGY	USE
Mobile phones and text messages	Worked to educate on the various diseases and health uses, and thus, improving quality of care administered
Health lines (also referred to as “cybermedicine”)	Served as a means of constant access of the public to medical information needed to administer care or deal with any sort of issue about the disease
Mass media (including posters, newspapers, television, and billboards)	Used to publicize the various diseases (malaria and HIV/AIDS) to all kinds of people, irrespective of their social classes

CHAPTER 3: METHODOLOGY

This chapter holds the objective of this research and details the method used to collate data to achieve the objective. It highlights the research design employed in this study and gives a breakdown of how the research was conducted.

Objective of the Research

The objective of this research is to find the care options available to dementia patients in Ghana and find ways by which technology can be used to inform the public on dementia and its care options in Ghana.

Research Questions

Based on the objectives stated above, the following questions guide this study:

- What are the care options available to the demented in Ghana?
- What care options are actually being used by families for their dementia patients in Ghana?
- How can technology be used to effectively spread information to the public about dementia and the care options available to the demented in Ghana?

Research Design

Research design, as defined by Burns and Grove, is a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings (Burns & Grove, 2003). It describes how, when and where the data to be collected are analyzed to satisfy the study (Parahoo, 1997).

This research would also be both descriptive and exploratory in nature. Exploratory research works on the basis of researcher having an idea or having observed

something that he/she seeks to understand more about it. Descriptive research, on the other hand, is defined as the attempt to describe what is happening in a particular sector in more detail. Thus, filling in missing parts and expanding general understanding of the issue (Ethridge, 2004). Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). With using these methods, the primary goal is to describe what is being done in relation to care options for dementia patients in Ghana and probe deeper into how technology can be used to educate the public on this issue. The research design used in this study is qualitative mainly because the findings of the research will be conveyed in words. Qualitative research explores and reveals people's interpretations of their experiences (Vanderstoep & Johnston, 2009). Even though qualitative research allows for in-depth examination of ideas and phenomena and allows subjective information got to be used (Oklahoma State University, n.d), the researcher's bias always seems to be built in to the research. Another disadvantage of the qualitative research is that, it is very difficult to replicate (Oklahoma State University, n.d).

Qualitative research analyzes information based on beliefs, values, feelings, and motivations that underlie behaviors (Berkwits & Inui, 1998). This approach was helpful in learning directly from all the respondents the results of the research questions. Data was collected from the medical personnel to give information on dementia in Ghana, the care options they know to be available and those they recommend to their patients. The role of the family members worked as some sort of approval or disapproval of what the medical personnel said. The family members provided data on the care options that they actually subscribe to. Also, the qualitative data collected from the experts in using technology to publicize information will bring

light to how the technology can be used effectively in Ghana to disseminate information relating to dementia.

Scope of Research

This research was conducted in Accra. Greater Accra Region is the capital region of Ghana and is the most urbanized region. This region is 90.5% urbanized with an annual urban growth rate of 3.1% (National Population Council Secretariat, 2013). With this urbanization, people in this region are exposed to various forms of dementia care as well as technology.

Among the sophisticated resources and venues in Accra, there are five main hospitals that specialize in and are known to administer help to patients with various forms of brain diseases. These hospitals are Korle Bu Teaching Hospital, one of Ghana's oldest and largest hospitals, The Brain Clinic, started and managed by South African-trained Ghanaian psychiatrist, Dr. Yao Mfodwo, and Accra Psychiatric Hospital, built soon after colonization to cater for people with mental illness, Pantang Psychiatric Hospital, which exist as the second born of the Accra Psychiatric Hospital (Accra Psychiatric Hospital, 2017) and the Valley View Clinic, owned by an English-trained Ghanaian psychiatrist, Dr. J. J. Lamptey (Valley View Clinic, 2016).

Of the five hospitals named, doctors and medical personnel from three; with the exception of Pantang Hospital and Valley View Clinic, were interviewed. Even though some contacts in Pantang Hospital, for example, were got, having conversations with any of the personnel seemed impossible because they could not be reached, be it in person or on phone. Because the other three hospitals are also located in Accra, it was cheap and fairly easy to access them for any form of help relating to the research.

The technology experts interviewed were those who could also be located easily in Accra. These were from MTN, Ghana's main telecommunications firm, Hadley Solutions managed by the former manager of Ericson, and Ogilvy & Mather, one of Africa's leading marketing firms. The first person of this group contacted was the respondent from Hadley Communications, who in the interview recommended talking to the personnel from MTN who had more experience in using technology to sell brands and ideas to the Ghanaian community.

Method/Procedure

Purposive sampling approach was employed to select the medical officers and families to investigate. Purposive sampling is a non-probability sampling method that relies on the researcher's own judgment when choosing members of population to participate in the study

Using this approach made the research cost and time-effective. Irrespective of these advantages, using the purposive sampling method makes the work highly prone to the researcher's bias (Lund Research Limited, 2012). The snowball sampling approach was used to contact medical officers and other experts in dementia after the primary medical officers from Korle Bu Teaching Hospital and The Brain Clinic were interviewed. When these medical personnel agreed to be interviewed, the interviews were scheduled and conducted accordingly. The snowball sampling approach is often used because the population under investigation is 'hidden' either due to low numbers of potential participants or the sensitivity of the topic (Browne, 2007), both of which were applicable to this research.

The purposive sampling approach was also used to contact the co-founder of the Dementia Association in Ghana who served as medical personnel knowledgeable in dementia.

Family members of dementia patients were initially to be got from Ashesi University via a Google form sent out to allow people to decide whether they would like to participate in focus group discussions or not. This method was not effective and ended up with only one response to the Google form. Although the single respondent was interviewed, contact details of a few other family members of demented patients were got through a purposive sampling of going to some people who had dementia patients in their families but had not filled the Google form. Other family members and caregivers of the demented were obtained using a snowball sampling approach. While the interviews were being conducted, notes were taken, and in the case of the face-to-face interviews, an audio recording was made to capture the details of the discussion better.

Contact was made with Hadley Communications using the purposive sampling approach; however, the snowball sampling approach in terms of referral was used to contact the other respondents such as the Sales and Marketing Director of MTN Ghana, who were well versed in using technologies to publicize information in Ghana. After the consent forms were signed in each case, the interview was conducted to get information on how the technology has been and can be used in public education on dementia. All the interviews regarding technology and with the medical personnel were held face-to-face, thus, during the discussion sessions, recordings were made while notes were being taken. After the interviews were conducted, each one was transcribed verbatim before analysis began.

Population

To answer the aforementioned research questions, three groups of people were interviewed, namely; the medical personnel who are experts in the issue of dementia in Ghana, family members who use various care options for their demented patients in Ghana, and technology experts who have each worked in using technology to advertise various business and social issues in Ghana.

Additional Sources of Data

Through investigation of dementia in Ghana, the Dementia Association in Ghana was discovered. Secondary data was gathered about the association and its activities. In addition, primary data was also obtained from the co-founder of the Association, who also classified as medical personnel. Mrs. Esther Dey, the co-founder of the Association, got trained for two years in dementia care in England and started the Association with her husband in 2012, after they read a story in the news about a 72-year-old woman who was burnt alive for being a witch. “I knew the woman probably had dementia and Ghana needed to know about the disorder” (Dey, 2017).

Secondary data was also got from journals, articles and books to get a deeper understanding of the technology used to educate the public on medical issues and how it is done.

Summary of Respondents

Figure 1

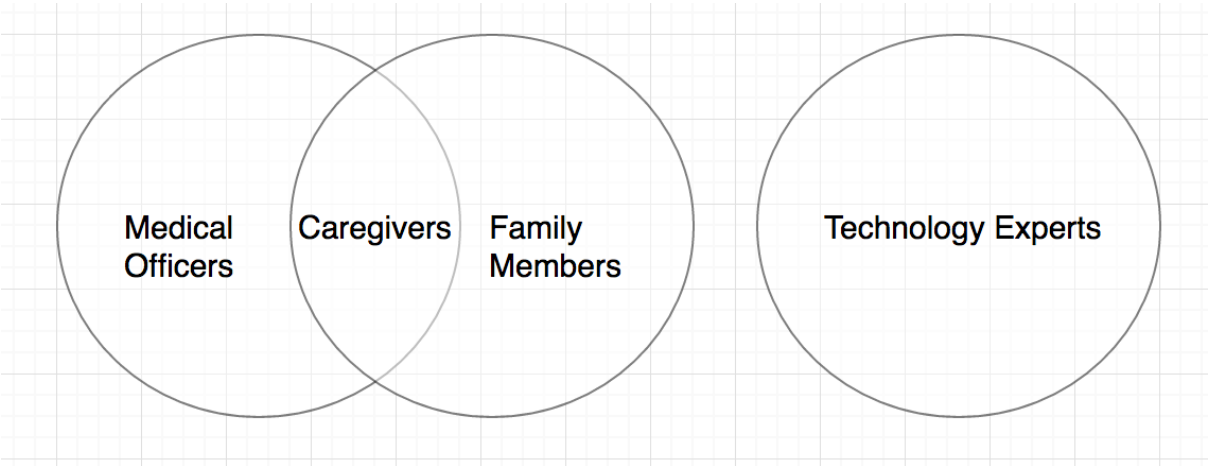


Table 2

Research sample

Characteristics	Organizations	Number of Respondents	Objective Answered
Medical Officers	<ul style="list-style-type: none">• Korle Bu Teaching Hospital• The Brain Clinic• Accra Psychiatry Hospital• Dementia Association	4	Care options available in Ghana for the demented
Caregivers	<ul style="list-style-type: none">• The Brain Clinic	1	Care options available in Ghana for the demented and

			those being used by families
Family Members	N/A	6	Care options used for the demented family members
Technology Experts	<ul style="list-style-type: none"> • Hadley Communication s • MTN Ghana 	3	Means by which technology can be used to publicize dementia and its care options in Ghana

Source: Field data

Table 3

Details of respondents

Characteristics	Names	Organizations	Positions
Medical Officers	Dr. Samuel Ohene	Korle Bu Teaching Hospital	Head of Psychiatry
		Accra Psychiatric Hospital	Psychiatrist
	Dr. Selassie Adom	Accra Psychiatric Hospital	Psychiatrist

	Dr. Yao Mfodwo	The Brain Clinic	Neuropsychiatrist and Founder
	Mrs. Esther Dey	Dementia Association of Ghana	Co-founder and former nurse
Caregiver	Ms. Genevieve Adiegah	The Brain Clinic	Trained caregiver
Family Members	Mrs A63h Ms. W82t Mr. B20u Mrs. A49i Mrs. A57u Mrs. A83i	N/A	Spouse Great-aunt Father Aunt Mother Mother
Technology Experts	Mr. Kusum Appiah Mr. Eric Nsarkoh Mr. Kenneth Kwawu	Hadley Communications MTN Ghana Ogilvy & Mather	Founder and former manager of Ericson Sales and Marketing Director PR Director

Source: Field data

Data Collection Tools

Data was initially to be collected using two focus groups of approximately seven people each. However, due to the busy schedules of the respondents and the fact some people did not feel comfortable talking about their experience in groups, the focus group discussion could not be implemented. Instead, the respondents were interviewed face-to-face and over the phone using interview guides (see Appendix B). While the benefit of being in an environment where people can agree or disagree with each other that comes with focus groups (Slager, 2012) could not be realized, the personal interviews provided an opportunity to obtain deeper understanding of the subject matter (Knupfer & McLellan, 2002). The interviews allowed the interviewees to have conversations and add extra detail in narrating personal stories that helped to explain their experiences with the demented and/or using technology to publicize information much better. Before interviews were conducted, the guide was reviewed by the Ashesi IRB, see detailed discussion on Research Ethics below. Also, the consent of the participating individuals was sought. Those who agreed to partake in the interview depicted their consent by signing the consent form (see Appendix B). Interviews conducted were semi- structured to help to keep the research from veering of the main topic of discussion. Semi-structured interviews make it possible to study and understand reality, allow respondents to express their views without limitation and permits findings to emerge and be analyzed during the interviewing process (Sarantakos, 2005). It allowed each interviewee to express himself/herself amply after answering basic questions required to help the study.

Research Ethics

Ethics, defined as “the norm for conduct that distinguishes between acceptable and unacceptable behaviour,” promotes truth in and reduces the occurrence of errors in research (Resnik, 2015). In line with implementing the principle of research ethics, the research process was approved by Ashesi’s Institutional Review Board (IRB), a body that seeks to ensure the safety and protection of all human subjects of research performed by Ashesi students. Also, the research maintained its objectivity, data was interpreted appropriately and data presented was neither fabricated nor falsified.

Consent forms were signed willingly by the respondents and per the IRB investigation; human rights were not infringed upon. The research method avoided harm of any sort to the respondent, be it legal, mental or physical (Sarantakos, 2005). Further, a high level of confidentiality was maintained for the caregivers and family members of the demented, most of who opted to be kept anonymous. Information gathered would be published such that the names of the interviewees are unknown to the public. The names, when needed in the data compilation, were coded by using the first and last letters of the surnames with two random numbers in between. For example, a Mr. Kofi Akoto and a Ms. Hannah Ofori was recorded as Mr. A87o and Ms. O32i, respectively.

Reliability and Validity

The reliability of a measuring instrument is defined as the ability of the instrument to measure consistently the phenomenon it is designed to measure (Hammersley, 1987). This means that the instruments of the research give consistent or very close results whenever the research is repeated. Measuring reliability of research is done in relation to the qualitative research. In this research, the processes carried out are explained in

detail to make it possible for the research to be repeated and similar findings got. It must however, be noted that variance in the results may be recorded when the knowledge of dementia and its care options hopefully increase in Ghana over time. This paper employed the use of pilot testing to validate the measuring instruments. With this, a few people were examined with the interview guides and allowed to give feedback on how the survey process can be improved.

Data Analysis

To analyze the textual data collected, the interviews were transcribed verbatim and the transcriptions pored over for a week to help fully understand the findings and paint a picture of the whole situation currently experienced by all stakeholders in this issue. The qualitative data was collected in both descriptive and exploratory manner. To analyze the data collected, all the transcriptions made were printed out, read over and certain sections were highlighted to emphasize important comments made during the interviews. The transcribed interviews were also run through a word cloud application known as Tag Crowd. This software generated content clouds, which are a type of visualization “that summarizes the contents of a document by depicting the words that appear most often in larger, darker type within the cloud” (Cidell, 2010).

CHAPTER 4: RESULTS

Analysis of Data and Discussion of Results

This chapter seeks to discuss the actual care options available to the demented in Ghana, the care options that are used by families for their demented patients and discusses how technology can be used to publicize the care options available to various kinds of people in Ghana. This chapter throws light on the idea of using technology to disseminate information on dementia and its care options in Ghana, thus, meeting the objectives of this research.

Dementia in Ghana

Interviews with the medical personnel and experts in dementia revealed what dementia is and its occurrence in Ghana. Backing the general ignorance Ghanaian had of dementia, as highlighted by Prof Spittel and Prof. Wolf-Ostermann in the article (refer to Chapter 2: Care for the Demented), all the medical personnel interviewed highlighted the need for people to be educated on dementia and other mental diseases. “Generally, people do not know what dementia is. I would say that less than twenty percent (20%) of educated people even know about the disease. It is an illness, a pathological problem and not just old age.” (Ohene, 2016) However, Dr. Ohene is of the belief that the resource personnel are highly informed about dementia and should be contacted. He is, however, aware that there are not many medical officers trained in the mental health industry, not to think of being trained in dementia are caring for the demented. This goes to support the claim of resources needed for the demented being in short supply in Ghana (Spittel & Wolf-Ostermann, 2013)

What is Dementia?

Dr. Samuel Ohene (2016) defined dementia as a reduction in mental capacity which can be caused by various disease and infections. Combining notes taken from Dr. Ohene and Dr. Mfodwo revealed that, in Ghana, there dementias arising from hypertension, diabetes, hormonal imbalances, trypanosomiasis (also known as the sleeping sickness), excessive intake of alcohol (especially in young people), and even HIV/AIDS. Dr. Ohene further explained that in the early 1950s one of the first cases of dementia in Ghana was recorded from the patient getting trypanosomiasis. However, it was discovered that the dementia was cured when the disease was treated.

Diagnosing Dementia

Irrespective of the fact that some dementias can be treated by treating the causative disease, no patients can be diagnosed on the dementia without seeing a medical professional. “The diagnosis of the dementia is fully clinical. Even though the disease cannot be fully diagnosed without autopsy, doctors can be almost entirely sure of the presence of the dementia based on the patient’s actions” (Ohene, 2016). On the other hand, there is a test; a spinal tap, that can be done to find out whether a person has inherited the dementia trait, long before the dementia trait shows. Doctors recommend against this test because “it only puts fear in the person especially because nothing can be done about it: there is no cure for the dementia. The best you can be told is to take good care of yourself. However, you should do that whether you are prone to getting the dementia or not. Because dementia is clinical, you usually can’t put a figure on the date the disease actually started” (Ohene, 2016).

When a patient suspected of having dementia visits the hospitals or clinics for diagnosis, doctors usually ask the patient to replicate simple shapes such as a circle

with a triangle. Often, the patient is unable to do this (see Appendix A). Also, it has been realized that, when the patient is very organized and takes part in simple daily routines, it is difficult to identify the presence of the disease because the patient knows what to do and at what time.

Objective 1: Care Options Available to the Demented in Ghana

One major problem plaguing Ghanaians is the lack of knowledge on this issue and thus, are rendered helpless with faced with it. “First and foremost, Ghanaians need to know that dementia is not witchcraft. It can be managed or treated and there is professional help available” (Mfodwo, 2017). This research exposes the idea that the medical professionals believe that there are many care options available to the demented in Ghana, each of which need to be brought to light. Findings about the care options available to the demented in Ghana is summarized in a cloud content below, in which families as a care option, for example is highlighted as one main care option (see *Figures 2*). The care options available are:

Family Members: The family members who serve mainly as informal caregivers can be trained by the hospitals they visit or by the Dementia Association in Ghana. “If someone is suffering from dementia, it affects the whole family” (Dey, 2017). When dementia cases are taken to Korle Bu Teaching Hospital, the first thing done by Dr. Ohene, the Head of Psychiatry, is to educate the family on the disease. This education includes counselling and explaining the various degenerating stages of the disease to the family. They are taken through mental exercises that serve as good preparation. Dementia patients respond best to their families (Dey, 2017), thus, having the people close trained to care for the patients is very helpful.

Psychiatric Hospitals: In Accra, there are five main hospitals that people tend to visit in the case brain issues and specialized in caring for patients with all sort of brain diseases including dementia. These are Korle Bu Teaching Hospital, the Brain Clinic, the Valley View Clinic, the Accra Psychiatric Hospital and Pantang Hospital. These hospitals are helpful for the clinical diagnosis of dementia and help families cope with their demented loved ones with drugs and various counselling tips. However, one thing that is considered a major problem is the little manpower available in the psychiatric industry of Ghana (Mfodwo, 2017). Dr. Ohene, for example, works in both Korle Bu Teaching Hospital and the Accra Psychiatric Hospital to provide psychiatric assistance.

Trained caregivers: An interview conducted with the founder of The Brain Clinic, Dr. Yao Mfodwo, revealed that even though in Ghana, there is an issue of low manpower in the field of psychiatry, some organisations such as the clinic, Elites Nursing Agency and Help Age Ghana train health officials to care for the old suffering from various diseases. One of these caregivers trained by the Brain Clinic is Ms. Adiegah (2017) who emphasized on counselling both the patient (especially in the early stages) and the caregivers. She also stated that caregivers need a lot of patience and need to understand the disease before they can provide proper care to the demented. The Dementia Association also trains various health officials through their annual Dementia Conference on how to care for the demented.

Private Homes: There are few homes available for care of old people in Ghana, however, none of these homes specialize in caring for the demented (Ohene, 2016).

One problem with putting the demented in homes is that it increases the degeneration process. “Once the person can, the patient should be left in their usual environment. The patient can have a catastrophic scare” (Ohene, 2016). Aside the effect the home has on the patients, families in this country are not enthused about the idea of leaving their loved ones in a home. The families are also not ready to incur the cost that comes with using homes as a care option for their members (Akinny, 2016).

Dementia Association: This association serves as a care option for the demented in Ghana. In this association, caregivers are trained to care for the patients. The association, when contacted, visit the home of the patient, train the families on how to care for the patient and in the case when the families are not around, train nurses to look after the patient for a fee. The association also does not support going to Psychiatric Hospitals as a care option. “The doctors are not aware of the disease and tend to misdiagnose the patients” (Dey, 2017). The Dementia Association in Ghana has emulated a model that makes use of health lines similar to what is done in other countries such as the United Kingdom (refer to Chapter 2: Technology and Educating Society). This model makes use of a particular phone number that people can call at any time throughout the week to make enquiries about dementia in Ghana and find ways to contain whatever difficulty they may be facing. The dementia health line number in Ghana is 0573454201.

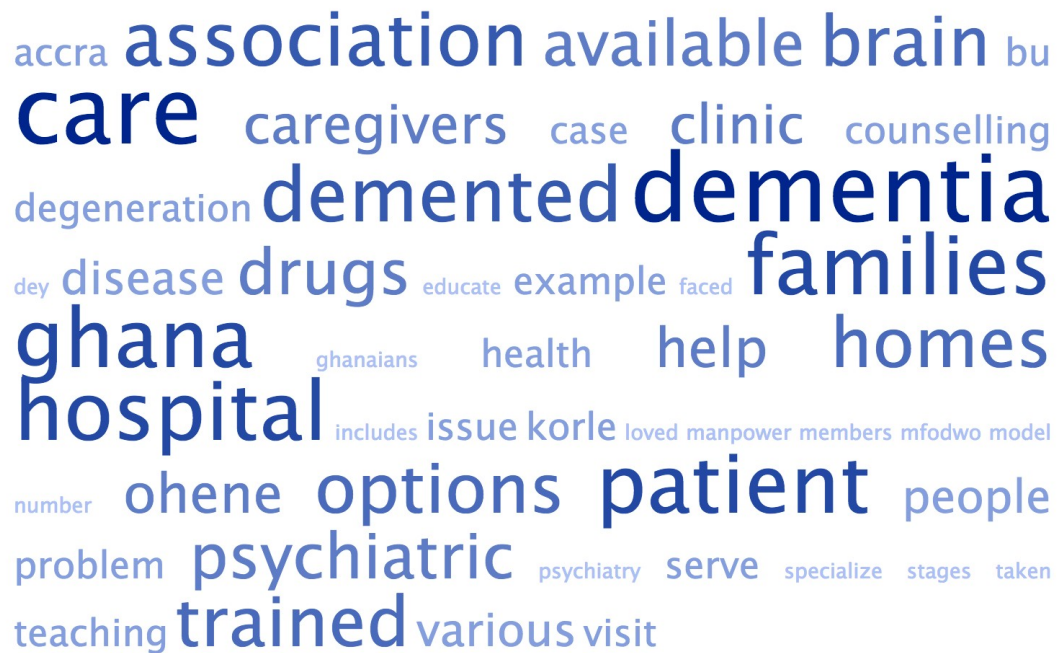
Drugs: Even though the Dementia Association is against giving the demented anti-psychotic drugs, saying that “they make the dementia disease worse,” (Dey, 2017) there are drugs that are prescribed to the demented worldwide to reduce the degeneration of the brain cells. “There is currently no cure for dementia but in the

near future, something should come up.” (Ohene, 2016) However, there are some drugs that appear to improve the memory in the short term. An example of these drugs is Donepezil, commercially known as Aricept.

Summary of Care Options Available to the Demented in Ghana

All the six care options stated above, namely; the family members, psychiatric hospitals, trained caregivers, private home, Dementia Association and prescribed drugs, that are available in Ghana are also available in developed countries such as the United Kingdom. However, because the care options have been fully functional in the developed countries for a long time than in Ghana, each of these care options still require funding and more training. This funding and training will help eradicate the problem of insufficient resources in Ghana highlighted by Prof Spittel and Prof Wolf-Ostermann (refer to Chapter 2: Care for the Demented).

Below, is a visual content summary on the care options available to the demented in Ghana.

Figure 2:

Source: (Tag Crowd, 2017)

Objective 2: Care Options being Used by Families in Ghana for their Demented Patients

From this research, 100% of the sample of family members spoken to knew nothing about the above listed care options in Ghana, aside going to the psychiatric hospitals and taking prescribed drugs. Most family members were astonished at the care options above, especially availability of the private homes in Ghana and the Dementia Association.

“I did not know about the Dementia Association. I would not mind joining it to serve as a medium through which we share our experiences,” said Mrs.

A83i.

Aside that, 100% of them strongly believe that the doctors and other medical personnel are ignorant of the dementia disease and tend to write the disease off as

madness. In other cases, the medical personnel prescribe drugs which instead, have various adverse effects on the patients.

“In the beginning when my husband was acting weird, I took him to one hospital for diagnosis. At this hospital, the nurse for him to be taken out because they do not cater to mad people,” said Mrs. A63h.

“We took my dad to a few centres and I don’t think they knew about the disease. They only gave him pills until it got worse when they made him do a brain scan. One doctor suggested an operation which could make him better by sucking the fluid around his brain. The operation could either be successful or lead to his death, so we rejected it,” said Mr. B20u.

Mrs. Esther Dey, the co-founder of the Dementia Association supported the claim of ignorance on the part of the medical officers, saying, “the doctors are not aware of the disease and tend to misdiagnose the patients. Most clients with dementia are being diagnosed as having schizophrenia or depression or something else. The doctors keep giving anti-psychotic drugs which end up making the dementia disease worse.”

All of respondents make use of family members as a primary care option. They trained their family members either through trial and error, researched on the Internet or contacted their friends and family members, particularly in the United Kingdom where people were generally educated on dementia.

“I couldn’t find the care options so I created my own. The Internet was my main help. Without it, I don’t know what would have become of my husband. I also had friends in England who helped in educating me on what to do and how to handle what was happening,” said Mrs. A63h.

“Only family members used to care for her. We did not know of any care options at all,” said Ms. W83t.

Below, are the care options the family members actually use, considering the fact that many people are not educated on dementia in Ghana (Spittel & Wolf-Ostermann, 2013). This ignorance on the part of the general public makes many people in Ghana with demented patients as family members find the issue too sensitive to talk about. This sensitivity made a lot of families refuse to be a part of this research. “People have not heard of the disease before and tend to pass ignorant comments about what is happening to the patient,” said Mrs A63h.

Hospitals: When any member of a family starts acting peculiar, the first point of contact for the patient is usually the hospitals. However, “the doctors themselves do not seem to know about dementia” (Mr. B20u, 2017), they assume it is some other kind of disease. In one case, the nurses shouted for the “mad man” to be taken out of the hospital.

Family members: The family members in the case of Ms. W82t’s family run shifts on who cared for their great-aunt. At gatherings, such as at church or parties, one family member committed to keeping an eye on the patient to keep them acting right. The family members from all the various families tend to provide all things possible to keep the patient comfortable. However, the family members still suffer difficulty. “It takes such a long time accepting that this patient looks like who you knew but is no longer the same person. Living with a demented person is hard. It took me about five years to come to terms with it” (Mrs. A83i, 2017). In some families, the only caregivers are the family members. Some of these family members were immediate, while others were extended. They do everything from bathing and feeding the patient to grooming and administering drugs to the patient. “I try to keep my aunt company

when I visit her by chatting with her to stimulate her mind,” said Mrs. A49i. For families who had other care options, they made use of formal or informal caregivers, as well as the drugs known to slow the growth of the dementia disease down.

Caregivers: The caregivers used by the by Mrs. A82i were trained, that is, were nurses got from Elites Nursing Agency located in Accra. However, in the case of Mrs. A63h, the caregivers around the patient were those she trained with what she had learnt on the Internet. It took the caregivers over a year to accept and stabilize living with a demented patient. “At a point, one caregiver quit because she could not cope with the stress the job came with” (Mrs. A63h, 2017). The caregivers in this case were house helps and some extended family members. As a trained caregiver, Ms. Genevieve Adiegah, highlighted the how difficult and expensive it is to care for a demented person.

Private Homes: In the case of Mrs. A57u, living with her mother in Ghana became difficult especially because her husband was also elderly and needed attention. With this situation, she put her mother in a specialist home in the United Kingdom. “We had the chance to go around the various homes, interview people who had used the facility and settled on the one we liked best,” she said. Even in these homes, families are encouraged to visit their demented patients as often as possible and at times, take them out. The presence of the family members, even when the patients has forgotten them, help makes them feel loved. Going back to the analogy of the feeling a student experiences having to answer a question he/she knows nothing about (refer to Chapter 1: Background), the presence helps to make the patients happy. Because of the

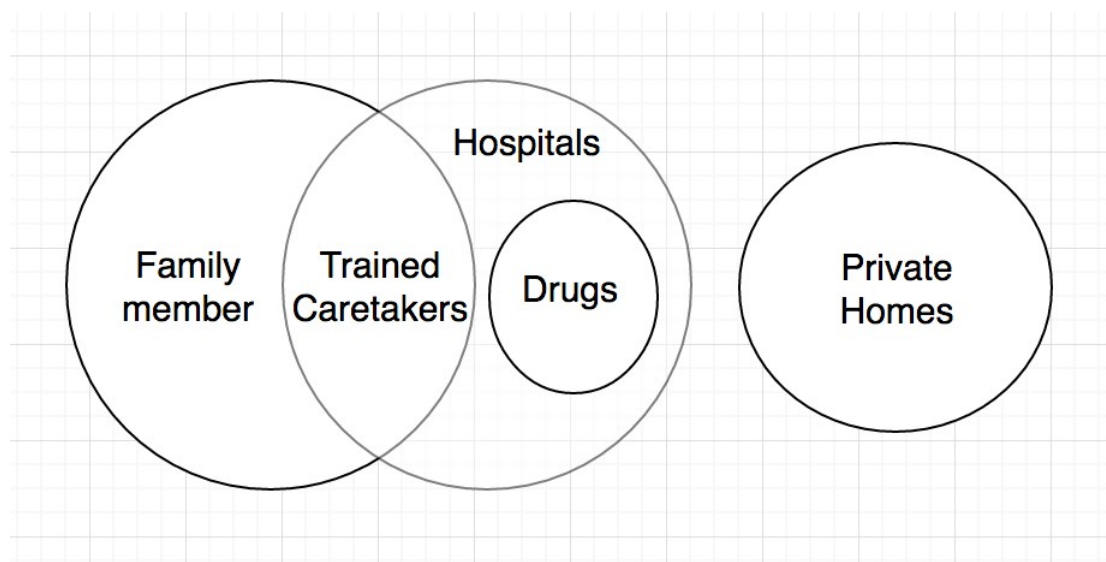
education on dementia in the United Kingdom, people rather empathise and not stigmatize when the demented patient is taken out (Mrs. A57u, 2017).

Drugs: Irrespective of the fact that the families do their own research or the doctors they visit help them, the patients are eventually given drugs to reduce the degeneration of the brain cells. One of these drugs commonly given is Donepezil, commonly known as Aricept.

Summary of Care Options Used by Family Members of the demented in Ghana

Below are two images that serve as visual summaries of the care options discussed above, that go to answer the above stated research question of the care options which are actually used by the families with members suffering from dementia.

Figure 3:



Source: Field data

be targeted and message that is to be communicate should be a major focus, stated Mr. Eric Nsarkoh (2017), the Sales and Marketing Director of MTN.

Targeting Children

For this education to be effective, the right market needs to be targeted. Some respondents suggest that children below the twelve years old should be targeted. These children can serve as a fast and effective means of spreading the idea of dementia to their peers and in effect, the adult around them (Dey, 2017). When targeting children, social media is one of the most important means of spreading information. MTN holds over fifty percent (50%) of the voice and data market share in Ghana. Records from MTN shows that the biggest source of traffic on the Internet is YouTube, followed by Facebook, then WhatsApp before Google (Nsarkoh, 2017). With this information, publicizing on the above mentioned social media platforms will bring more people into contact with the idea of dementia in Ghana. Also, search engine optimization, which ensures a greater chance that a particular page will be visited can be used to ensure that more visitor to the search engine sites visit pages that educate on dementia and its care options in Ghana (Schneider, 2013). Ads, in the form of banner ads, text ads and mobile ads can be implemented to advertise the care options of dementia in Ghana.

Another technology that will appeal to children is the television. Using cartoons and movies, as well as short animated clips to educate children about dementia and its care options, will be helpful. This method will imprint the truth about dementia in the minds of the children, who will in turn grow knowing the truth about dementia. “If my daughter had any cartoon that taught about dementia when she was younger, I can

bet she would have put it into practice when caring for her dad ten years after (Mrs. A63h, 2017).”

Mobile games can also help to disseminate information on the issue. Games can be design related to caring for a demented patient that teach the player how to navigate the issue. The format of a game, that give a real-life example such as Episode, can be followed to build a game relating to dementia in Ghana. Another game that can be emulated is Minecraft which comprises of various adventures and missions for the player to overcome (Appiah, 2017).

One other technology that will attract children, and in effect, their parents will be a kiosk in public places such as the malls. In this kiosk, everyone will get a feel of the mind of a dementia patient. Virtual Reality will be employed in these kiosks. There will be screens, motion-sensing gloves and headphones to give the user the full 4-D experience (Appiah, 2017). The difference in response from respondents came up with relation to the location of the Virtual Reality system. Locations selected were the malls which were public enough to catch the attention of a number of people, hospitals and pharmacies were people who visited had more time to partake and fully experience the, say ten-minute simulation.

Targeting Adults

From experts in using technology, dementia relates much better to older people, and as such, it publication should focus more on educating the older generation.

In targeting adults, technologies that can be employed include newspapers they read on their way to work as well as the billboards by the roadside. Other mass media mediums that will reach to this segment is the use of radio, by conducting in-studio interviews (Kwawu, 2017). On the radio, medical experts will be experimented in

local languages that will explained the concept of dementia and its care options in Ghana. This will not only educate the people but bring their attention to things happening around them they may have dismissed to old age. Aside the radio, the televisions would serve as a great medium for publicity. There is currently a program on Crystal TV, a local television channel called Tele Nurse. On this channel, the public is educated on various diseases that may be plaguing them. Advertising dementia on local television will serve as a means of reaching out to all sorts of people, irrespective of their demographic information.

100% of the respondent of this research own mobile phones and consider it a handy tool in finding information on dementia in Ghana. Even though the SMS system was suggested as a means of communication, some people stated that they do not read their text messages and find it annoying. Another group of people including Mr. Kwawu, highlighted on how busy he got daily and stated that he did not have enough time to research on dementia daily especially since no one in his family currently suffers from the disease. “The SMS is excellent for someone like me,” he said. Over 50% of the respondents, responded positively to the use WhatsApp messages instead of text messages.

Social media and placed media will serve as great means to publicize to the public. Placed media, which involves contacting people with many followers on social media platforms to either be ambassadors of dementia in Ghana or post pictures that will help raise awareness of the issue. This serves as a means of educating all their followers who will in turn, educate others.

Ads can also be put on forms such as online visa application forms, digital passport forms and driver’s license forms that the user must come into contact with. These ads will serve as nice reminders to people about dementia in Ghana.

Another form of technology that can be used to educate people on dementia is using the health line that people can contact for assistance. An example of a health line is what is used by the Dementia Association. Another way to implement the health line without using telephones is using the web cameras similar to the Skype system that people can contact to have conversations with remote medical officers. The web cameras help to provide a face-to-face experience. (Nsarkoh, 2017)

Summary of Technology to be Used to Publicize Dementia and its Care options in Ghana

Technology works as a key medium to publicize information and in the case of dementia, it is no different. These technologies range from everyday mass media to more advanced technologies such as Virtual Reality devices. Below are two images that serve as visual summaries of how technology can be used in Ghana to publicize dementia and its care options.

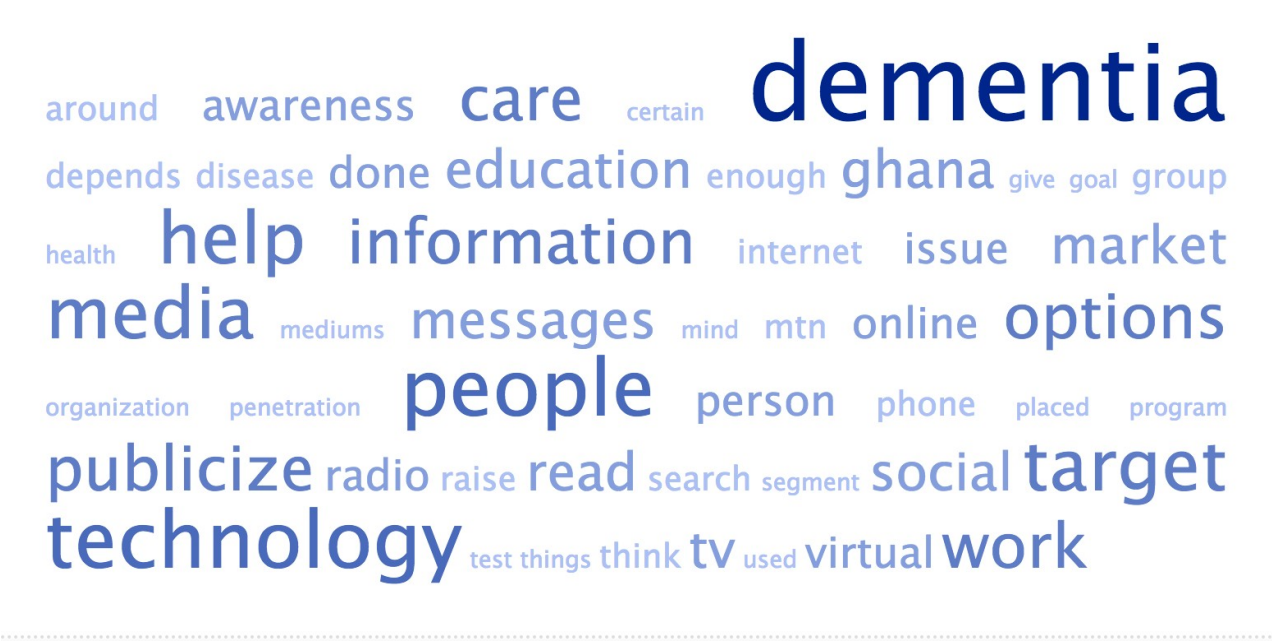
Table 4

TARGET	TECHNOLOGY
<ul style="list-style-type: none"> Children 	<ul style="list-style-type: none"> Social media Television (cartoons, movies and short clips) Virtual Reality kiosk is public places such as malls, and pharmacies

<ul style="list-style-type: none">• Adults	<ul style="list-style-type: none">• Mass media (E.g. newspapers and radios)• Television• Mobile phones (SMS messages)• Web camera health lines
--	---

Source: Field data

Figure 5:



Source: (Tag Crowd, 2017)

CHAPTER 5: CONCLUSION

This research sought to find the care options available to the demented in Ghana, map those that are actually being used by the families with demented patients, and find ways by which technology can be used to educate the public on dementia and its care options in Ghana.

The findings show that there are six care options available in Ghana, namely; the psychiatric hospitals, family members offering care, trained care givers, private homes for the aged, drugs that reduce the degeneration of the brain cells, and the Dementia Association of Ghana. However, because of lack of knowledge, families with demented members do not take advantage of these care options. Of the six care options available, all the families subscribe to caring for their demented members for themselves while administering drugs prescribed, mainly Donepezil, commonly known as Aricept. The families tend to do their own research, train themselves and find means of making the dementia patients comfortable. The lack of knowledge of dementia on a whole in Ghana, as well as the care options available to the demented can be eradicated by making use of various technologies. The technologies to be used depend on target market. The two main target groups recommended were children and adults. Social media platforms, cartoons, movies and short animated movies on television, and using Virtual Reality simulations in public places such as malls and pharmacies, are some ways technology can be used to publicize the disease and its care options in Ghana that can be used to reach the children effectively. When targeting adults, on the other hand, technologies such as mass media such as newspapers, SMS on mobile phones and web camera services that allows people to access medical resources remotely, will be effective.

These findings, as stated in the introductory sections of this write-up would give the government of Ghana and institutions such as the Dementia Association of Ghana ideas on how to use technology to educate the public on dementia, and even, other disease related to old age that have been neglected (refer to Chapter 1: Relevance of Study). Also, these results will help to familiarize families with demented family members with the care options available that they did not know about. Ghanaians would finally be abreast with dementia and find handling demented people in the country much easier.

Recommendations

The Dementia Association of Ghana, psychiatric hospitals and other organizations that serve as care options for the demented in Ghana could benefit from advertising themselves. This advertisement would benefit the families, mental facilities, Government of Ghana and all Ghanaians as a whole. In as much resources are in short supply to the mental facilities, there are ways that more people can get to know about the association and their activities that require minimal resources such as focusing on social media.

More doctors in Ghana need to be trained on dementia and taught how to diagnose patients with dementia in a way that does not insult the family members. Also, the medical schools in Ghana such as the Medical Schools of the University of Ghana and Kwame Nkrumah University of Science and Technology (KNUST) should push to train more doctors and nurses who specialize in brain diseases and caring for the old so as to increase the manpower in the psychiatric industry, and help rectify the problems of lack of resources reported when the Ghana's mental health system was

assessed using the World Health Organization's Assessment Instrument for Mental Health Systems (refer to Chapter 2: Care for the Demented).

Also, one question that tests whether a person has dementia should be put in forms that people must fill such as visa application forms and driver's license renewal forms to help detect when a person is in the early stages of the dementia. An example of this test is asking the applicant to replicate a drawing of basic shapes as shown in *Figure 6* of Appendix A. A person with dementia, would draw something similar to the drawing in *Figure 7* of Appendix A. In the case where the dementia is spotted, the applicant or the next of kin (with permission of the applicant) can be informed to help reduce the degeneration of the brain cells and treat the dementia much earlier.

Finally, the conferences and campaigns should be done to bring the Government's attention to the issues surrounding old age and mental health. The Government should allocate more resources for the mental institutions as well as institutions that are dedicated to caring for the aged in the country. This, will in turn, increase the quality of life for the elderly population of Ghana.

Limitations

One major limitation faced with this research was the fact that people with demented people found talking about the disease to a stranger, irrespective of whether I could relate well to the situation, very sensitive. They felt the topic was too touchy to discuss. This was challenging as it made finding the care options being used for the demented family members difficult to find.

Another limitation was the number of psychiatrists available in Accra. With only few psychiatrists available, it means that these psychiatrists tend to rotate among the hospital and thus, meant that they were always very busy. Dr. Ohene, for example

works as the Head of the Psychiatry in Korle Bu. He also works as a doctor in the Accra Psychiatric Hospital. Thus, getting in touch with these medical personnel was very difficult and took many phone calls and many days to schedule meetings.

Areas for Further Research

To attain a further understanding of dementia in Accra and Ghana, the cost related to providing care options to demented patients and the limitations that keep certain families from using the available care options should be investigated. This will be helpful to the government and other interested organization to find ways to subsidize the cost and ensure a good quality of life of the elderly.

The appropriate type of technologies that can be used all over Ghana to help administer care to the demented to reduce the strain on caregivers can also be researched on, so that the appropriate technology for the Ghanaian work climate is acquired. This will aid companies interested in growing social businesses around dementia in Ghana to know what they are heading into and how they can use technology to run their businesses easily.

REFERENCES

- Accra Psychiatric Hospital. (2017). *Psychiatric Hospital- Taking care of your Psychiatry Needs*. Retrieved from <http://accrapsychediatrichospital.org/pages/about-us.php>
- Akinny, W. D. (2016). *Investigating the desirability and feasibility of the 'Old People's Home' as a viable business in Ghana*. Berekuso: Ashesi University College.
- Alemna, A. A. (2006). Critical issues in information and communication technologies in rural development in Ghana. *SAGE*, 22(4), 236-241.
- Alzheimer's Society. (2017). *Young-onset dementia*. Retrieved from Alzheimer's Society: United against dementia: https://www.alzheimers.org.uk/info/20007/types_of_dementia/17/young-onset_dementia
- Alzheimers.net. (2016). *2016 Alzheimer's Statistics*. Retrieved from Alzheimer's Statistics: <http://www.alzheimers.net/resources/alzheimers-statistics/>
- Arie, T. (1973). Dementia in the elderly: Diagnosis and assessment. *The British Medical Journal*, 4(5891), 540-543.
- Arie, T. (2016, December 8). Dementia in the elderly: Diagnosis and assessment. *The British Medical Journal*.
- ASHA. (2014). *Dementia*. Retrieved from www.asha.org/PRPSpecificTopic.aspx?folderid=8589935289§ion=Overview
- Babbie, E. R. (2010). *The Practice of Social Research* (12th ed. ed.). Belmont: CA: Wadsworth Cengage.

- Bhattacharya, A. (2016, November 21). *Scientists created a mobile game to help detect the early onset of dementia*. Retrieved from Gaming for good:
<http://qz.com/841502/scientists-created-the-mobile-game-sea-hero-quest-to-help-detect-the-early-onset-of-dementia/>
- Browne, K. (2007, February 23). Snowball sampling: using social networks to research non-heterosexual women. *International Journal of Social Research Methodology*, 47-62.
- Bulsura, D. (2011). *Using a mixed methods approach to enhance and validate your research*. Notre Dame University, Brightwater Group Research Centre .
Indiana: Notre Dame University.
- Cidell, J. (2010, November 2). Content clouds as exploratory qualitative data analysis. *Area*, 42(4), 514-523.
- Ethridge, D. E. (2004). *Research methodology in applied economics*. John Wiley & Sons.
- Galvin, J. (2013, July). The importance of family and caregiver in the care and management of people with Alzheimer's disease. *Alzheimer's & Dementia: The journal of the Alzheimer's Association*, 9(4), 1-2.
- Ghana News Agency. (2014, October 8). *Over 17,000 people with dementia in Ghana*. Retrieved from Ghana News Agency:
<http://www.ghananewsagency.org/health/over-17-000-people-with-dementia-in-ghana-80749>
- Ghana Statistical Service. (2013). *Population & Housing Census Report*.
- Glass, G. V., & Hopkins, K. D. (1984). *Statistical methods in education and psychology*. Englewood Cliff: NJ Prentice Hall .

- Govier, I. (2009). Spiritual care in nursing: A systematic approach. . *Nursing Standard*, 32-36.
- Gustafon , L. (1996, December). What is dementia? *Acta Neurologica Scandinavica*, 94(168), 22-24.
- Gustafson, L. (2009, January 09). What is dementia? *Acta Neurologica Scandinavica*, 94(168), 22-24.
- Hammersley, M. (1987). Some notes on the terms 'Validity' and 'Reliability'. *British Educational Research Journal*, 73-81.
- Harvey , R., Roques, P., Fox, N., & Rossor, M. (1998, June). *CANDID—counselling and diagnosis in dementia: a national telemedicine service supporting the care of younger patients with dementia*. Retrieved from [http://onlinelibrary.wiley.com/doi/10.1002/\(SICI\)1099-1166\(199806\)13:6%3C381::AID-GPS777%3E3.0.CO;2-M/full](http://onlinelibrary.wiley.com/doi/10.1002/(SICI)1099-1166(199806)13:6%3C381::AID-GPS777%3E3.0.CO;2-M/full)
- Harvey, R. J., Skelton-Robinson, M., & Rossor, M. N. (2003). *The prevalence and causes of dementia in people under the age of 65 years*. group.bmj.com.
- IndexMundi. (2014, July). *Ghana Demographics Profile 2014*. Retrieved from Index Mundi Website.
- Inoue, T. (2015). *Assistive technology and robotic technology for dementia care*. Research Institute of The National Rehabilitation Center for Persons with Disabilities, Department of Assistive Technology.
- Khattak, A. W., Nasir, M., & Sultan , D. (2012). The Role of Information Technology in Media Industry. *Internal Journal of Business and Social Science*, 3(6).
- Knupfer, N. N., & McLellan, H. (2002). Descriptive research methodologies.
- Krishna, S., Boren, S. A., & Balas , E. A. (2012). Healthcare via Cell Phones: A Systematic Review . *Liebert Online*.

- Kuruppu, D., & Matthews, B. (2013). Young-Onset Dementia. *Thieme*.
- Landau, R., Werner, S., Auslander, G. K., Shoval, N., & Heinik, J. (2009). Attitudes of family professional care-givers towards the use of GPS for tracking patients with dementia: An expmoratory study. *Oxford Journals*, pp. 670-692.
- Larner, A. (2003, January 7). Use of the internet and of the NHS direct telephone helpline for medical information by a cognitive function clinic population. *International Journal of Geniatrics Psychiatry*.
- Li, I. (2002, April). Feeding Tubes in Patients with Severe Dementia. *American Academy of Family Physicians*.
- Lund Research Limited. (2012). *Purposive sampling*. Retrieved from Laerd Dissertations: <http://dissertation.laerd.com/purposive-sampling.php>
- Muijs, D. (2010). *Doing Quantitative Research in Education with SPSS*. (2. edition, Ed.) London: SAGE Publications.
- Mundt, J. C., Kaplan, D. A., & Greist, J. H. (2001). Meeting the Need for Public Education About Dementia. *Alzheimer Disease & Associated Disorders Journal*, 15(1), 15-30.
- National Population Council Secretariat. (2013). *Greater Accra Region*. National Population Council Secretariat.
- Oklahoma State University. (n.d). *Advantages of Qualitative Research*. Retrieved from <https://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/qualrsch/QUALRSCH/sld009.htm>
- Prince, M. (1997, October). The need for research on dementia in developing countries. *Tropical Medicine & International Health*.

- Rabins, P. V., Mace, N. L., & Lucas, M. J. (1982, July 16). The impact of dementia on the family. *JAMA*.
- Research-methodology.net. (2016). *Purposive Sampling*. Retrieved from Research Methodology: <http://research-methodology.net/sampling-in-primary-data-collection/purposive-sampling/>
- Resnik, D. (2015). *What is Ethics in Research & Why is it Important?* National Institute of Environmental Health Science .
- Roberts, M., Mogan, C., & Asare, J. (2014, May 4). An overview of Ghana's mental health system: results from an assessment using the World Health Organization's Assessment Instrument for Mental Health Systems (WHO-AIMS). *International Journal of Mental Health Systems* .
- Schneider, G. (2013). *E-Business*. Canada: Cengage Learning.
- Scrutton, J., & Brancati, C. (2016, April). Dementia and comorbidities: Ensuring parity of care.
- Slager, E. (2012, August 8). All about: Focus groups. Ohio, United States of America.
- Smith, D. (2010, November 29). *Ghanaian woman burned to death for being a 'witch'*. Retrieved from The Guardian: <https://www.theguardian.com/world/2010/nov/29/ghanaian-woman-burned-death-witch>
- Smith, P. B., Kenan, M. M., & Kunik, M. E. (2004). *Alzheimer's for dummies*. New Jersey, The United States of America: Wiley Publishing Inc.
- Solomon, M. Z., & DeJong, W. (1989). Preventing AIDS and other STDs through condom promotion: A patient education interevention. *American Journal of Public Health*, 79(4), 453-458.

Spittel, S., & Wolf-Ostermann, K. (2013). *Challenges in health care for people with dementia in Ghana*. Alice Salomon University of Applied Science, Berlin.

Spittel, S. (2014). *"I AM NOT A WITCH": Stigmatisation of people with Dementia in Ghana*. Alice Salomon University of Applied Sciences Berlin. Berlin: Alice Salomon University of Applied Sciences Berlin.

Tong, R. (2009). Long-term care for the elderly worldwide: Whose responsibility is it? *International Journal of Feminist Approaches to Bioethics*, 5-30.

Troxel, D., & Bell, V. (1997). *The best friend's approach to Alzheimer's care*. Health Professions Press.

UNESCO. (2003). What is technology?

Valley View Clinic. (2016). *About Us*. Retrieved from Valley View Clinic:

<http://valleyviewclinic.org/about.html>

Vanderstoep, S., & Johnston, D. (2009). What is qualitative research? In *Research methods for everyday life: Blending Qualitative and Quantitative approaches* (pp. 163-180). San Francisco, United States of America: Jossey-Bass.

World Health Organization. (2014). *Ghana country assessment report on ageing and health*. World Health Organization.

Wykie, M., & Segal, M. (1991). A comparison of black and white family caregivers experience with dementia. *Journal of National Black Nurses' Association*.

Interviews

Adiegah, G. (2017, February). Caring for the demented in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

Adom, S. (2017, March). Care options available to the demented in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

Appiah, K. (2017, February). How technology can be used to publicize dementia and its care options in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

Dey, E. (2017, February). Care options available to the demented in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

Kwawu, K. (2017, March). How technology can be used to publicize dementia and its care options in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

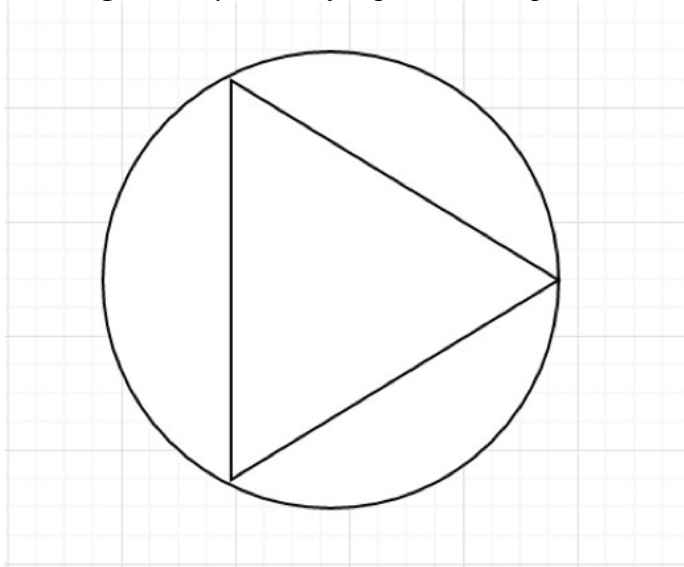
Mfodwo, Y. (2017, January). Care options available to the demented in Ghana. (D.-N. Appiah, Interviewer), Accra, Ghana.

Nsarkoh, E. (2017, March). How Technology can be used to publicize dementia and its care options in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

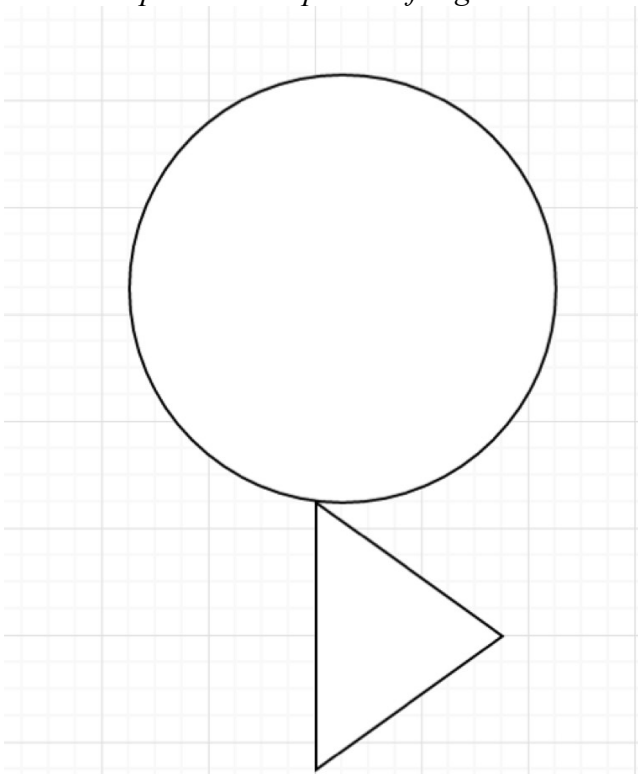
Ohene, S. (2016, November). Care options available to the demented in Ghana. (D.-N. Appiah, Interviewer) Accra, Ghana.

APPENDICES

Appendix A- Dementia Test Figures

*Figure 6**Drawing made by doctor for patient to replicate*

Source: field data

*Figure 7**Demented person's "replica" of Figure 6 above*

Source: field data

Appendix B- Data collection tools

CONSENT FORM

The following questionnaire contains questions that are part of the research involved in finding care options available to dementia patients and how technology can be used to publicize them. All information collected with this questionnaire will be deemed confidential.

I am seeking your permission to be part of this research and I will be grateful if you could complete this questionnaire. Your participation will give me information on the various care options available to dementia patients in Ghana and ideas on how these care options can be publicized using technology.

This questionnaire should take only a few minutes of your time. Your participation is voluntary; hence you can choose to stop participating at any time during the process with neither any risk nor consequences. There are however no benefits of taking part in this study

General knowledge about dementia and its care options in Ghana is quite low. The aim of this research is to in the end, find good ways to educate the public. This would benefit all people especially since families do not see the disease coming.

This research proposal has been reviewed and approved by the Ashesi University Human Subjects Review Committee. If you have questions about the approval process, please contact Chair, Ashesi University HSCR (adafla@ashesi.edu.gh)

If you have any questions or issues, kindly send me an email at dede-nakoh.appiah@ashesi.edu.gh or contact my supervisor Kajsa Adu-Hallberg at khadu@ashesi.edu.gh

Do you agree to be a part of this research?

Signature_____

Kindly provide answers to the following questions

INTERVIEW GUIDE FOR FAMILY MEMBERS AND CAREGIVERS

Name:.....

.....

Age:.....

.....

1. What is your relation to the dementia patients?

- ☐ Mother
- ☐ Father
- ☐ Spouse
- ☐ Sibling
- ☐ Child
- ☐ Grandmother
- ☐ Grandfather
- ☐ Other Please specify.....

2. Where do you live?

.....

3. When was the dementia detected?

.....

4. Please state your role in caring for the dementia.

.....

5. How is the patient currently being cared for?

- ☐ Informal care givers (e.g. Relatives, house helps, etc....)
- ☐ Professional care givers
- ☐ No care option currently available
- ☐ Other Please specify

6. How did you find your care option(s)?

- ☐ Internet
- ☐ Family member
- ☐ Hospital
- ☐ Friend
- ☐ Newspaper, journal or article
- ☐ Other Please specify.....

7. On a scale of 1 to 5, with 1 being very easy and 5 being very difficult, how easy was it to find information on dementia?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

8. On a scale of 1 to 5, with 1 being very easy and 5 being very difficult, how easy was it to find information on care options available to dementia patients in Ghana?
- ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4
 - ☐ 5
9. How long did it take you after diagnosis to find care options?
.....
.....
10. Do you have use a smart phone?
- ☐ Yes
 - ☐ No
11. Would you consider your phone as a handy tool to find information on dementia?
- ☐ Yes
 - ☐ No
12. If **yes**, please suggest ways by which this can be done
.....
.....
.....
.....
13. Do you use the Internet (search engines e.g. Google) for research?
- ☐ Yes
 - ☐ No
14. If yes, approximately how often do you use the Internet for research?
- ☐ Once a week
 - ☐ 3-4 times a week
 - ☐ Everyday
 - ☐ Once a month
15. Any other comments on dementia and this research?
.....
.....
.....

Thank you for your time.

INTERVIEW GUIDE FOR PROFESSIONAL CARE GIVERS (MEDICAL OFFICERS)

Name:.....

Place of
 work:.....

Number of years worked with dementia
 patients:.....

{State the objective of this research.}

1. What would you consider a main challenge in finding care options for dementia patients in Ghana? (Please select as many as applicable)
 - ☐ Money constraint
 - ☐ Lack of information
 - ☐ Lack of care givers
 - ☐ Other Please specify.....

2. On a scale of 1 to 5, with 1 being very little and 5 being a lot, how much information would you say is available to families with dementia patients
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4
 - ☐ 5

3. In your opinion, will using technology (televisions, mobile phone messages, etc.) be a helpful way to bridge the information gap?
 - ☐ Yes
 - ☐ No

4. If **no**, how do you think the information gap can be bridged?

.....

.....

.....

.....

.....

5. If yes, how would you suggest?

.....

.....

.....

.....

.....

6. Would you use technology, to be specific, your mobile phones and/or computers to research on care options available to dementia patients in Ghana?
- ☐ Yes
 - ☐ No
7. On a scale of 1 to 5, with 1 being very easy and 5 being very difficult, how difficult would you say it is for families to find care options for dementia patients?
- ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4
 - ☐ 5
8. What care options do you recommend to families with dementia patients?
-
-
-
-
-
9. What personal experiences have you had in recommending care options for dementia patients to families?
-
-
-
-
-
10. Do you know of any programs in Ghana that educate people (both with and without family members with dementia) about dementia?
- ☐ Yes Please specify.....
.....
 - ☐ No
11. Any other comments on the research?
-
-
-

Thank you for your time.

INTERVIEW GUIDE FOR TECHNOLOGY EXPERTS

Name:.....

Place of

work:.....

Number of years worked with technology and
communication:.....*{State the objective of this research.}*

12. On a scale of 1 to 5, with 1 being very easy and 5 being very difficult, how difficult would you say it is for people to find information about mental care in Ghana?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

13. What is your take on using technology to publicize dementia and the care options available in Ghana to the demented?

.....

.....

.....

14. From experience, what mode of technology would you recommend to spread information on dementia and care options in Ghana?

.....

.....

15. Would using the technology (televisions, mobile phone messages, etc.) effectively bridge the information gap?

- ☐ Yes
- ☐ No

16. If **no**, how else do you think the information gap can be bridged?

.....

.....

.....

17. If yes, how do you recommend that the information on the care options is spread using technology?

.....

.....

.....

18. What personal experiences have you had in using technology to publicize information in Ghana?

.....
.....
.....
.....
.....

19. Do you know of any programs in Ghana that educate people about any medical issue that employs technology?
- ☐ Yes
 - ☐ No

20. If yes, please specify the program and how the education is done

.....
.....
.....

21. Any other comments on the research?

.....
.....
.....

Thank you for your time.