

Determinants of Healthcare Utilization among the Ageing Population in Ghana

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Abstract

This study is to investigate the factors (social or economic) that influences the patronage of orthodox medical care or otherwise as a measure of healthcare utilization among the ageing population in Ghana. We carry out a cross-sectional analysis of 3,357 adults (aged 50 and above) who participated and had indicated that they needed healthcare in the three years prior to the phase 2007 World Health Organization, a study on Global Ageing and Adult health (SAGE) conducted in Ghana. We explored the social and economic factors that are likely to influence the use or otherwise of orthodox medical services following the framework of Andersen behavioural – model of healthcare utilisation. We employed multivariate logistic regression models. The results suggest that, adjustment for health status (comorbidity) among the ageing Ghanaian population nullified the socio-economic gradients in consulting with orthodox medical services. The outcome points to a potential link with the Ghanaian health policy.

Keywords: Healthcare Utilisation, orthodox medicine, socio-economic status, Ghana, Elderly population

1. Introduction

Several socio-economic factors might pose a challenge to a health insurance system in Ghana, the most obvious being that a majority of economically active people work in the informal sector. Since this is a field of employment that cannot be thoroughly regulated, it is difficult for the government to track and reimburse the insurance system.

According to the ILO programme “Decent Work Pilot Programme (DWPP)” initiated in 2006, “four out of every ten Ghanaians can be classified as poor”, i.e. 8 million people living in Ghana are poor. Furthermore, “[b]etween 25 and 30% of the people who depend on the informal economy for their livelihood are poor, making them the second largest group of poor after subsistence farmers. “The ILO said the sector is mainly marred by deficit in decency and low and unstable incomes. (ILO, 5 May 2006). On a macro-economic level, Ghana still depends on traditional natural resource export for the majority of its national income (GEPC, 23 May 2007, p.13). Though it has remained stable and on growth course, it is said to be vulnerable due to heavy reliance on foreign borrowing (Ghana Today, 2 September 2008). Ghana’s annual per capita income stands at about US\$600 (IRN, 22 July 2008). Real GDP growth as 6.3 per cent at the end of 2007 and per capita growth went up from 2.8 per cent in 2006 to 4 per cent in 2007. The economy is mainly dependent on agriculture, largely subsistent and accounting for 35% of the GDP with 60% of employment (Hepnet, 30 May 2007). Health Metrics Network, an independent body which undertook a review study of the Ghana health system in April 2005 after two years of implementation, noted that “given the low coverage of vital events registration, statistical analysis of the data is necessarily limited” (HMN, April 2005, p.2) 44% of the population is below the age of 15 while only 5% is above the age of 65. There are slightly more women (53 per cent) than men (47 per cent) in the overall population. Life expectancy at birth for a Ghanaian was estimated at 57.7 years: 55 years for males and 59.2 years for females “ (MOH, undated, p.8).

“Infant mortality¹ worsened from 64 per 1000 live births in 2003 to 71 in 2006” (US Census Bureau, 2008). Ghana recorded an under-five mortality rate of 111 per 1,000 live births in 2006 (MOH, undated, p.8). Health indicators by the World Health Organisation (WHO) (see table 1) point out some of the major challenges: Due to their pervasiveness, sanitation related diseases pose a particular problem to the country’s health system. The Ghanaian Chronicle reported that 82 per cent of the entire population lacked proper toilet facilities in 2008. The newspaper went on to say that “the country’s sanitation coverage stood at 10 per cent as at the end of 2006” (Ghanaian Chronicle, August 21 2008). Basic sanitation related diseases continue to rise. The national health insurance authorities say 80 per cent of the cases burdened on the scheme are sanitation-related (Public agenda, 1 September 2008). Curable illnesses such as malaria continue to be highly fatal for Ghanaians (see chapter 3.1.; IRIN, 11 August 2008). For a population of a little short of 23.5 million people, there are only 1,439 health care facilities (IRIN, 5 August 2008). A study by van den Boom et al. Compiled in 2004 noted that access to these facilities remained a problem; Medical facilities were not evenly distributed across the country, with most rural areas lacking basic facilities such as hospitals and clinics as well as doctors and nurses. The study further said that “Ghanaians on average live about 16 km from a healthcare facility where they can consult a doctor, but half of the population lives within a 5km radius. By the same taken, the other half cannot consult a doctor within a 5km, which corresponds to a 1 hour walking distance, and one quarter even lives more than 15 km from a facility where a doctor can be consulted.” The Government of Ghana embarked on a health sector reform in the early 1990s to improve the accessibility and quality of services. However,” the health situation in Ghana is still far from satisfactory” Many people in the country still rely on self-medication (van den Boom et al., October 2004, p. 1, 4, 20, 21).

Project to raise accessibility, however, are underway: The Minister of Health told Parliament in December 2007 “ that the Ministry has established 176 health infrastructure projects within a period of five years. This includes 50 Health Centres comprising 22 District Hospitals and 26 Community Health Planning Scheme (CHPS)” (Ghana Parliament, 18 December 2007). Data on the progress of this project were not available at the time of research. Access to health facilities in Sub-Saharan African is disadvantage towards the rural poor as these facilities are mostly concentrated in urban areas coupled with the poorly coordinated system. [Bour inaugural lecture]. The road networks between the rural and urban areas are so bad that it is more likely for the rural dwellers to utilise non-orthodox medical treatment for generally common ailments which otherwise could have been treated effectively in a conventional medical facility. The beliefs systems in Ghana also contribute to the utilisation of medical care.

1.1 Traditional medical care in Ghana

Traditional/herbal medical treatment has been with the Ghanaian people prior to the colonial days when the British introduced the conventional medical services. The patronage of traditional medical healing has since grown alongside the ever expansion of conventional medical advancement and increased awareness and education. The traditional/herbal medicine in Ghana has also gained support from government in recent years as a way to supplement the efforts of the government in the provision of health facilities in the rural areas of Ghana. Traditional medicine is perceived to be easily accessible and effective in Ghana, and sometimes cheaper for the treatment of certain common illness in Ghana as compared to orthodox medical treatment [R.M Gyasi et al., 2011]. In Western countries, a common perception is that traditional medicine serves as an auxiliary to orthodox medicine. Traditional medicine however, overshadows orthodox medicine in many developing countries. “Traditional medicine”, according to WHO, “refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being” (WHO, May 2003). According to a 2003 WHO estimate, “[i]n Africa, up to 80% of the population uses traditional medicine for primary health care” (WHO, May 2003). Furthermore, “[t]raditional practices such as homeopathy, naturopathy and osteopathy are already better integrated into Ghana’s health system than in other African countries” (SciDevNet, 16 May 2007). As of May 2007, the NHIS was yet to cover over half of its targeted people (coverage was estimated at 41 per cent, Hepnet, 30 May 2007). With often unaffordable cost of treatment, traditional medicine therefore still remains important in Ghana (van den Boom et al., October 2004, p. 4.).

In Ghana, as in other countries, WHO is collaborating with the government to integrate this type of medicine into orthodox medicine (WHO, May 2003).

Studies have indicated that, in the two and a half decades since the introduction of on the spot payment for health delivery, more than half of the country's patients have turned to traditional and self-medication (van den Boom et al., October 2004, p. 4). A 2007 article by the news platform on science and technology in developing countries Science Development Network quotes a journalist arguing that "integrating traditional medicine into Ghana's healthcare system is essential to improving the delivery of health services in the country." Recognising that with the challenges facing the country's health delivery, it can augment the system and play an important role. He said that with health workers' "frequent strikes and their migration elsewhere in search of better pay", integrating traditional medicine into the NHIS would play a vital role. "The author suggests this burden could be lightened by Ghana's roughly 45,000 traditional healers, most of who are licensed through national practitioners associations." He noted, this type of medicine "is culturally accepted and accessible to 80 per cent of Africans.

In Ghana, a large proportion of the population rely exclusively on this type of healthcare, particularly in rural areas" (SciDevNet, 16 May 2007). As much as the traditional medical practices augment the orthodox national health care service, they also present problems to government's efforts to offer universal healthcare in the country. Particularly challenging are those whomix orthodox and traditional medicine (i.e. herbal treatment and religious prayers). They are known in the country as healing churches. Many of these groups claiming to have spiritual powers for healing physical and mental illnesses eventually end up maltreating patients and abusing their rights (Public Agenda, 15 August 2008). Meanwhile, a report mentions that "Ghana Health Service (GHS) outreaches over the past few years have convinced some members of the Kpale (Xorse) Faith Church at Kpale, in the Ho Municipality of the Volta Region [the Eastern province of Ghana]" whose faith taught them to "refuse orthodox medicine either for curative or preventive purposes", to change their attitude and "report at healthcare facilities and use prescribed drugs when sick." (GNA, 1 June 2008). The World Health Organization stated in 1998 in a booklet defining the role of pharmacists in self-help and self-medication that "in many developing countries, the ratios of pharmacists and pharmacies to population are so low that access to pharmaceutical care is impeded. In such cases, consultation with other health workers or community health care workers, household carers and other appropriate lay people, provided they have received the appropriate pharmaceutical training and orientation, should be encouraged" (WHO, 1998).

However, reports indicate that in Ghana the issue goes further than seeking advice from those who substitute the lack of personnel. For instance, self-medication in Ghana, according to van den Boom et al., has three dangerous patterns: firstly, self-medication may be forced on patients due to their socioeconomic conditions; secondly, they might consume leftover and often expired drugs; thirdly, untrained chemical sellers might take "experts roles" and decide upon their clientele's medication (van den Boom et al., October 2004, p. 8). The Ghanaian Chronicle noted that "[i]t has become common these days to see quack pharmacists jumping from one [...] bus to the other, selling drugs to unsuspecting public" (Ghanaian Chronicle, 30 July 2008). Frequently, "when ill, Ghanaians also apply self-medication rather than consult a provider. The patient may go to a drug store or a drug peddler and buy drugs on the advice from the operators whose healthcare knowledge is sometimes questionable (UNICEF, 2002). After the introduction of user fees in 1985, self-medication has become more popular among the entire populace as a means to economise on consultation fees and transport costs" (van den Boom et al., undated, p. 3).

1.2 Orthodox medical care in Ghana

Among other socio-economic priorities, health is one of the issues that are at the forefront of the Millennium Development Goals (MDGs), which Ghana hopes to fulfil by 2015. The Government therefore prioritised health issues within the MDGs, three of which deal with health issues. The fourth of the goals of the MDGs is to reduce under-five mortality rate to two-thirds by 2015; the fifth goal is to reduce the maternal mortality ratio by three-quarters by 2015, and the sixth is to try and to reduce infection rates of HIV/AIDS, malaria, and other communicable diseases associated with hygiene and environment by 2015. All of these have been made primary health goals, which the government has sought to integrate into community level health care (Public Agenda, 6 February 2008). The main challenge in achieving the health-related MDGs, according to the ministry of health "is to increase overall coverage and to reach the poor more effectively". However, Public Agenda newspaper observed that "it appears [...] that despite the policy of focusing on primary health care, most of the increased spending in the health sector in recent years has gone into other sectors to the neglect of the primary health component" (Public Agenda, 6 February 2008).

The newspaper Public Agenda reports that “[d]espite the overall increase in health-sector expenditures, [a] 2006 sector review spoke of the persistent under-achievement in terms of targets.” It refers to a November 2007 report based on a “joint effort by the Brookings Institution Transparency and Accountability Project (BITAP) and the Integrated Social Development Centre (ISODEC)”, saying that “[o]verall, the primary health sector budget has declined from 70.5% in 2001 to 63.9% in 2006.” The document also indicates that “it is time for the Ghana government to commit itself to allocating more funds to investment expenditure in the health sector. This will ensure some stability in development project implementation even when there is donor apathy” (Public Agenda, 6 February 2008). Professor Agyeman-Badu Akorsah, former director-general of Ghana Health Services, had called the achievements of the country health sector a “mixed success in its bid to achieve equal healthcare for all” (VOA, 28 February 2007). Overall, and despite massive efforts by the government, the health care system is still characterised by underfunding and a lack of personnel: The Ghana Health Service acknowledges that there is an “urgent need for additional health facilities and more qualified health personnel, especially in rural communities” (IRIN, 5 August 2008).

Reports have indicated that some of the main problems in the health care system of Ghana are created by simple sanitation related diseases (Public Agenda, 1 September 2008; Ghanaian Chronicle, 21 August 2008). Other important factors augmenting disparities between the delivery structure and its applicability in the health industry of Ghana range from nepotism, favouritism, and corruption to sometimes tribalism. In its 2006 annual Corruption report, Ghana Integrity Initiative (GII), the local chapter of the international anti-corruption body Transparency International said the health sector of Ghana is “a corruption prone area with evidence of bribery and fraud across the breadth of medical services. This is said to have emanated from petty thievery and extortion, to massive distortions of health policy and funding, fed by payoffs to officials in the sector” (Ghanaian Chronicle, 2 February 2006). Some of the systematic problems of Ghana’s health sector are addressed by the 1995 Medium Term Health Strategy (MTHS) and the subsequent Sector Wide Approach (SWAp), which seek to reform the health financing system. One particular area the reform emphasises is to “strengthen [...] the district health capabilities and their financial management systems” (Asante et al., 17 August 2006).

A financial management reform followed SWAp and “shifted management responsibilities to the district level and granted greater control over funds to local managers.” District Health Administrations (DHAs) continue to receive and directly manage “funds for non-salary recurrent expenditure” under the concept of Budget Management Centres. Asante et al. noted that “while this has been hailed as a boost to district health delivery, release of funds to districts has remained untimely and unpredictable. First quarter allocations expected in January are often received in the second quarter, sometimes as late as June. Fourth quarter allocations may not be received at all. This erratic flow of funds to district health services threatens to offset any potential benefits from the reforms” (Asante et al., 17 August 2006). In 2005, the government increased wages of health sector workers; the payment, however, does not reflect household income needs of the workers (Witter et al., 22 January 2007). Generally, the subject of payment mechanisms for workers of the health sector attracts mixed receptions: In 2005, a survey was carried out in two regions of Ghana on health workers’ income and its influence on their motivation. The result showed a general change in attitude since the introduction of the scheme. Health workers were said to have shown a strong commitment and worked longer hours (Witter et al., 22 January 2007).

Their workloads have increased but have not affected morale, as “the increase in workload for public sector health workers has been matched by an unrelated pay increase” (Witter, March 2008). The study found out that health workers have experienced a pay rise higher than those of other public sector workers. When asked about the NHIS, the health workers expressed mixed feeling about the scheme. Though they appreciated their wage increase, they maintained that the delivery of payment was unreliable. They warned that unreliable government payments “are jeopardising sustainability” (Witter, March 2008). A 2005 study identified health information and data handling as a core part of health care delivery and said, that “the single most frequently quoted constraint to improved health information is human resources availability and capacity at all levels, national, regional and district.” According to the study, people with advanced skills in health information and data handling were seriously needed in the system. The study also said the Ghana Bureau of Statistics which handles these data is overstuffed with under-qualified personnel lacking the proper skills for health information management (HMN, April 2005, p. 3).

2. Materials and Methods

The entailed information gathered on 4491 adults who participated in the first phase of the 2007 World Health Organization Global Ageing and Adult Health (SAGE) Survey conducted in Ghana. The participants were interviewed about their social, economic and healthcare status. We define our primary measure of healthcare utilization, as an individual having contact with any recognized medical/health facility in Ghana that is manned by qualified/trained medical practitioners.

We employ Anderson behavioural model of health service utilization (Andersen, 1968, 1995, Andersen & Newman, 1973). The Andersen model is a flexible framework that enables the study and selection of useful determinants of healthcare utilization. The model proposes that a sequence factors influences the use of healthcare services. These determinants are categorised into three broad areas, namely predisposing factors (i.e age, sex and educational level), enabling factors (i.e. money) that influence ability of individuals to utilize services and need factors such a functional restriction and chronic disease that makes it essential to use health service[Willis et al 2007].

We included self-assessed health, functional restrictions, and comorbidity as markers for the respondents need for healthcare service. The self-assessed health status was derived from the answers categorised into two states (“good to very good health” and “moderate to very bad health) that respondents provided to the question “How is your health in General”.As a measure functional limitations and the inability of a respondent to perform the activities of daily living (ADL) in the last 30 days prior to the survey, we created the indicator called “function restriction” comprising the following, recognising a person across the road (a distance of 20m) standing up from a sitting position, bathing/washing whole body, getting dressed, moving around the home, eating, lying-down and getting to and using the toilet. We grouped these activities to create three categories: 1) not functionally restricted, 2) moderately restricted (limitation in one activity) and 3) severely restricted (limitation in two or more activities) for the indicator.The “comorbidity “indicator is also based on the responses provided to questions relating to the occurrence of chronic illness in the past. These chronic conditions were grouped into 5 categories: asthma and chronic lung disease (category 1), angina and hypertension (category 2), diabetes (category 3), stroke, Parkinson’s, dizziness (category 4) and arthritis other forms of rheumatism (category 5). These categories of chronic illness were further used to create the “comorbidity” indicator which consisted of three groups namely no chronic diseases, chronic diseases belonging to one category and chronic diseases belonging to two or more categories of the chronic illnesses.

Income is a very essential socio-economic status. With an increase in personal or house hold income, there is an increased chance of taking the services conventional medical facility. However information on a very essential socio-economic status, income, was not adequately collected in the survey. This might be due to respondent’s reluctance to divulge such information to the interviewers. In place of the income we included a variable that indicated whether the respondent felt that he/she had enough money to meet his/her needs. This variable is therefore derived from a subjective question and may not reflect the income situation of the respondent

Likewise, the educational attainment level of an individual within a single or multiple membership households play an very significant role in the decision to seek orthodox medical treatment or otherwise. Intuitively well-educated Ghanaians are likely to be employed in highly paid jobs and hence increasing the ability to pay for orthodox medical services. Such people’s belief systems about safety will also influence their decision not to patronise non-orthodox treatment centres. It must however be stated that a considerable number of the older population in Ghana are not in very highly paid jobs and hence may not be able to meet the cost of orthodox treatment by themselves. They may depend on their children for the support.We investigate the impact of the socio-economic factors on the possibility of a Ghanaian adult consulting qualified medical practitioners or traditional health attendants with three multiple logistic regression models. In the first model (Model 1) we include covariates sex (reference male), age (reference ages 50-59): and highest educational household attainment and wealth status as predisposing and socio-economic factors respectively. We introduce variables for the self-assessed health status (reference group: very good), comorbidity (reference group no chronic disease) and functional restrictions (reference group being no functional restrictions) in Model 2. Finally we include the resident’s place of residence (reference group: Urban) and religious denomination (reference group: None) in Model 3.

In the logistic regression model analysis we excluded all cases where the age of the respondent was not available. All analyses were carried out in STATA version 11. Out of the 3,357 respondents who need medical care, 226 (7%) indicated that they patronized non-orthodox medical facilities for treatment. The characteristics of the study of population are shown in Table 3. In the past three years, 93.4% of the interested interviewees consulted orthodox medical services.

The health status of the ageing population varies significantly according to their enabling factors socioeconomic status (SES) even after adjustment for demographic (age and sex) variables. Higher SES groups have a better self-assessed health and are less likely to be severely functionally restricted than lower SES groups. "The clear occurrence of a socioeconomic gradient in health status underlines the importance of including health status variables as control variables when studying SES differences in healthcare utilization." Suffering from chronic diseases belonging to one category is of little significance in the higher SES category as opposed to the lower SES category.

In Table 4, it indicates the results of the regression models for consultation (yes or no) with orthodox by respondents of 50 years and older. The consultation of ageing population with orthodox varies according to health status only. The ageing populations who are worse off in terms of health status (comorbidity) are less likely to consult with orthodox medical services as compared to their counterparts with no chronic diseases. There was no difference in consulting with orthodox medical services according to functional restrictions and self-assessed. The same pattern emerged for Wealth, Religion and Education. In model 1, when there was no adjustment for any of the variables, there were no differences in consultations with orthodox medical services.

After adjustment for health-status (comorbidity) (model 2), no more differences remain in consultations with orthodox medical services between both demographic and SES groups.

4. Discussion and Conclusion

In this cross-sectional study we sought to determine whether consultations with orthodox medical services or otherwise by ageing population of Ghana are associated with their health status after adjustment for determinants of healthcare utilization. Our study has a number of limitations; to begin with, there is evidence that responses to socio-economic status interview is at variance with health interview and this accounts for the weak linkage between the two. Also the nature of the data will not allow drawing conclusions about causal relationships. Again, the interviewee was to respond on his or her own utilization of healthcare services. This is subjective although other researches have proven that self-reported use of healthcare provides a valid prediction of disparities between socio-economic groups.

In another development, many studies point to the fact that socioeconomic inequalities in the health status of the general population and continue to persist in old age. This study shows that, after controlling for health status (comorbidity), a certain degree of imbalance remains. There are no differences among ageing Ghanaians in having at least one consultation with orthodox medical services in the last three years.

Conclusion

The identification of possible health status (comorbidity) gradients in healthcare utilization is of great importance. In this study, we have investigated and realized a potential correlation between having consultation with an orthodox medical services and the health status (comorbidity) of the ageing Ghanaians.

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References

- Abor, P. A; Abekah-Nkrumah, G; Abor, J: An Examination of Hospital Governance in Ghana. In: Leadership in Health Services Vol. 21 Issue 1, 2008, 47-60 (published on [essa.org.za](http://www.essa.org.za))
<http://www.essa.org.za/download/2007conference/Abor;Abekah-Nkrumah&Abor.pdf>
- Andersen, R. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1-10
- Asante, Augustine D. /Zwi, Anthony B./Ho, Maria T.: Getting by on credit: how district health managers in Ghana cope with the untimely release of funds. In: *BMC Health Services Research*, Vol. 6.105, 17 August 2006 <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1563463>
- Asenso, Okyere: Financing health care in Ghana. In: *World Health Forum* 16.1, 1995, p. 86-91
<http://www.ncbi.nlm.nih.gov/pubmed/7873037>
- Bour Daniel. (1998). Analysing the socio-spatial inequalities in the access of health services in sub-Saharan Africa: interrogating geographical imbalances in the uptake of healthcare. Professorial Inaugural lecture, Kwame Nkrumah University of Science and Technology, Ghana.
- CHAG – Christian Health Association of Ghana, May 2006
<http://www.chagghana.org/docs/CHAGAREPORTMAYJUNE2006.pdf>
- EPN - Ecumenical Pharmaceutical Network: Ghana Baseline Survey, undated
<http://www.epnetwork.org/fr/access/research/ghana>
- GEPC – Ghana Export Promotion Council: Managing Ghana's Export for Development: Presentation of Ghana Export Promotion Council at the Ghana Investment Forum, 23 May 2007
http://www.gipc.org.gh/Userfiles/File/Events/IPA_GEPC.pdf
- Ghana CHPS – Ghana Community-based Health Planning and Services - About, 2009a
http://ghanachps.org/?page_id=7
- Ghana CHPS – Ghana Community-based Health Planning and Services: CHPS coverage, 2009b
http://ghanachps.org/?page_id=15
- Ghana Home Page: Population, undated <http://www.ghanaweb.com/GhanaHomePage/geography/population.php>
- Ghana Parliament: 176 Projects Completed Within Five Years, 18 December 2007
http://www.parliament.gh/176_health_project_completed_within_five_years.html
- Ghanaian Chronicle: Ghana; Corruption Rife in Health Sector- GII Report 2 February 2006(Published by TransparencyInternational)
www.transparency.org/content/download/4912/28857/file/Ghanaian_Chronicle_06-02-02.pdf
- Ghanaian Chronicle: Ghana: Chemical Sellers Have Legitimate Point, 30 July 2008 (published on allafrica.com)
<http://allafrica.com/stories/200807300824.html>
- Ghanaian Chronicle: Ghana: Lack of Adequate Toilet Facilities, Threat to Public Health, 21 August 2008 (published on allafrica.com) <http://allafrica.com/stories/200808220586.html>
- Ghana Today: Economy strong but vulnerable – ISSER, 2 September 2008
<http://www.ghanatoday.com/index.php?option=news&task=viewarticle&sid=24273>
- GHS - Ghana Health Service: Health Administration and Support Services, undated-a
<http://www.ghanahealthservice.org/division.php?dsion=Health%20Administration%20and%20Support%20Services&dd=30>
- GHS – Ghana Health Service: Organizational Structure, undated-b
<http://www.ghanahealthservice.org/aboutus.php?inf=Organisational%20Structure>
- GHS – Ghana Health Service: Organogram, undated-c http://www.ghanahealthservice.org/ghs_organogram.pdf
- GHS - Ghana Health Service: Ghana Health Service Council, undated-d
<http://www.ghanahealthservice.org/ghscouncil.php>
- GNA - Ghana News Agency: Some members of Kpale Faith Church now attend hospital, 1 June 2008 (published on Ghana Home Page)
<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=144688>
- GNA – Ghana News Agency: Ahmadiyyah Muslim Mission Organizes Free Medical Camp, 14 July 2008 (published on [Qadiyan.com](http://qadiyan.com)) <http://www.qadiyan.com/2008/07/ahmadiyya-musli.html>
- Gyasi, R. M. et al. (2011). Public perception of the Role of Traditional Medicine in the Healthcare Delivery in Ghana. *Global Journal of Health Science* 3(2), 40-49
- Hepnet – Health Economics and Policy Network in Africa: The Implementation of the National

- Health Insurance Scheme (NHIS) Ghana: Experience Sharing, 30 May 2007
<http://www.hepnet.info/downloads/Ghana1.ppt>
- HMN – Health Metric Network: Ghana health information system: Profile and summary preliminary assessment, April 2005
http://www.mohghana.org/moh/docs/hmn_act/Health%20Information%20System%20Profile%20Ghana_summary_2%5B1%5D.doc
- Hoeck, Sarah. et al (2011). Healthcare utilisation among the Belgian elderly in relation to their socio-economic status. *Health Policy* 99, 174 - 182.
- HRU – Health Research Unit: Report on The perception and demand for mutual Health Insurance in the Kassena-Nankana district of Northern Ghana, May 2005a <http://www.hru-ghs.org/Newsletter.pdf>
- HRU – Health Research Unit: Treatment Default Among Adult TB Patients Registered At The Effia-Nkwanta regional Hospital: What Are the Contributing Factors? May 2005b <http://www.hru-ghs.org/Newsletter.pdf>
- ICRO – Islamic Culture and Relation Organisation: Iran Clinic Offer Healthcare, 18 May 2007
<http://accra.icro.ir/?c=newsShow&NewsId=479632&t=4>
- ILO – International Labour Organization: Decent Work Pilot Programme (DWPP), 5 May 2006
<http://www.ilo.org/public/english/bureau/dwpp/countries/ghana/index.htm>
- IRIN - Integrated Regional Information Network: Ghana: National health insurance scheme launched, 18 March 2004 <http://www.irinnews.org/report.aspx?reportid=49172>
- IRIN- Integrated Regional Information Network: Ghana: Dumping Grounds for Used Gadgets, 22 July 2008
<http://www.irinnews.org/Report.aspx?ReportId=79371>
- IRIN - Integrated Regional Information Network: Ghana: Race Against Time to Cut Maternal Mortality, 5 August 2008 <http://www.irinnews.org/report.aspx?ReportID=79645>
- IRIN – Integrated Regional Information Network: In-Depth: Killer Number One: The fight against malaria, 11 August 2008
<http://www.irinnews.org/InDepthMain.aspx?InDepthId=10&ReportId=57929&Country=Yes>
- MOH – Ministry of Health - Programme of Work: The Ghana Health Sector annual programme of work, 2007
http://www.moh-ghana.org/moh/docs/programs_of_work/pows/AnnualProgrammeofWork2007.pdf
- MOH – Ministry of Health, Ghana: Legal and Policy Framework For Health Information and Health Data Reporting (Draft), March 2008
<http://www.mohghana.org/moh/docs/policies/health%20information%20policy/PolicyandLegalFrameworkforHMIS.pdf>
- Public Agenda - Why Neglect Primary Health Care? 6 February 2008 (published on allAfrica.com)
<http://allafrica.com/stories/200802060466.html>
- Public Agenda: Ghana: Country Needs a Mental Health Law Urgently, 15 August 2008 (published on allAfrica.com) <http://allafrica.com/stories/200808181038.html>
- Public Agenda: Ghana: NHIS Reeling Under Sanitation-Related Diseases, 1 September 2008 (published on allAfrica.com) <http://allafrica.com/stories/200809011434.html>
- Republic of Ghana: The Constitution of the Republic of Ghana 1992, Chapter 006
http://judicial.gov.gh/constitution/chapter/chap_6.htm
- Republic of Ghana: National Health Insurance Act, 2003
http://www.nhis.gov.gh/_Uploads/dbsAttachedFiles/Act650original2.pdf
- Sci DevNet – Science and Development Network: Room for traditional medicine in Ghana? 16 May 2007
<http://www.scidev.net/en/agriculture-and-environment/opinions/room-for-traditional-medicine-in-ghana.html>
- Van den Boom, G.J.M; Nsowah-Nuamah, N.N.N.; Overbosch, G.B: Healthcare Provision and Self-medication in Ghana, October 2004 (accessed via Web Archive)
<http://web.archive.org/web/20070625163825/http://www.saga.cornell.edu/images/vandenboom.pdf>
- VOA – Voice of America: Ghanaian Health Official Laments Slow Progress in Providing Universal Health Care, 28 February 2007 <http://www.voanews.com/english/archive/2007-02/2007-02-28-voa28.cfm>
- WHO – World Health Organization: The role of the pharmacist in self-care and self-medication, 1998 (published in WHO medicines bookshelf 1.0) <http://nzdl.sadl.uleth.ca/cgi-bin/library?e=d-00000-00---off-0whoedm--00-0--0-10-0---0---0prompt-10---4-----0-11-11-en-50---20-about---00-0-1-00-0-0-11-1-0utfZz-8-00&a=d&cl=CL1.1&d=HASH01a48452db985e8c8ed8378d.6.7>

- WHO – World Health Organization: Traditional Medicine, May 2003
<http://www.who.int/mediacentre/factsheets/2003/fs134/en/>
- WHO – World Health Organization: Core Health Indicators: The latest data from multiple WHO sources, May 2008 http://www.who.int/whosis/database/core/core_select_process.cfm
- Willis, R. et al. (2007). Applying Andersen behavioural model to informal support among Britain's ethnic minorities. Generations review. British Society of Gerontology.
- Witter, Sophie/Kusi, Anthony/Aikins, Moses: Working practices and incomes of health workers: evidence from an evaluation of a delivery fee exemption scheme in Ghana. In: HRH - Human Resource for Health 5.2, 2007, 22 January 2007 <http://www.human-resources-health.com/content/5/1/2>
- Witter, Sophie: Removal of childbirth delivery fees: The impact on health workers in Ghana. In: ID21 health highlights, March 2008 <http://www.id21.org/publications/health%20workforce.pdf>

Tables and Figures

| <i>Indicators</i> | <i>Value</i> | <i>Year</i> |
|--|--------------|-------------|
| Adult mortality rate (between 15 to 65 years per 1000 population) | 331 | 2006 |
| Death due to tuberculosis among HIV negative per 1000 population | 41 | 2006 |
| Death due to HIV per 1000 population | 131 | 2006 |
| Life expectancy at birth (years) | 57.0 | 2006 |
| Antiretroviral therapy coverage among HIV-infected pregnant women PMTCT (%) | 8 | 2006 |
| Antiretroviral coverage among people with advanced HIV (%) | 12 | 2006 |
| Children aged < 5 sleeping under insecticide –treated net (%) | 21.8 | 2006 |
| Birth attended by skilled health personnel (%) | 50 | 2006 |
| Population with sustainable drinking water source Rural (%) | 71 | 2006 |
| Population with sustainable drinking water source Urban (%) | 90 | 2006 |
| Population with sustainable drinking water source Total (%) | 80 | 2006 |
| Registration coverage of death (%) | <25 | 2006 |
| Source: World Health Organisation, (WHO Database), (accessed 19 September 2008); who.int/whosis/database/core/core_select_process.cfm | | |

Tab. 1: selected core indicators available for the year 2006 (latest in WHO statistics)

| Share of health care | |
|---|------|
| Faith In Ghana | |
| Catholic | 27% |
| Other Christian Churches | 11% |
| Muslim | 1-2% |
| Source: EPN , undated (source 5 Sept. 2008) | |

Tab. 2: Faith-based health care in Ghana

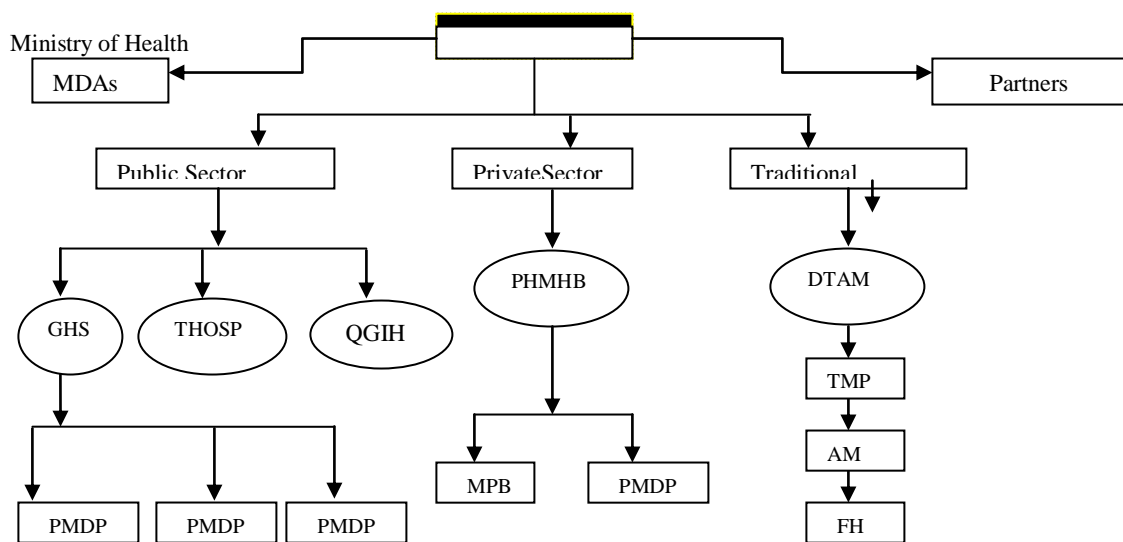
| Characteristic | Number of respondents | Percentage of total (%) | Characteristic | Number of respondents | Percentage of total (%) |
|---|-----------------------|-------------------------|------------------------------------|-----------------------|-------------------------|
| Total | 3,357 | 100 | | | |
| Healthcare consultation | | | Functional restrictions | | |
| Orthodox | 3,131 | 93.4 | Functionally restricted | 578 | 17.8 |
| Non-orthodox | 226 | 6.6 | Moderately restricted | 832 | 24.5 |
| Age (years) | | | Severely restricted | 1,947 | 57.7 |
| 50 - 59 | 1,299 | 39.3 | Employment Status | | |
| 60 - 69 | 931 | 27.4 | Public | 32 | 11.3 |
| 70 - 79 | 778 | 23.1 | Private | 13 | 4 |
| >=80 | 349 | 10.2 | Self employed | 2,961 | 75.6 |
| Sex | | | Informal | 342 | 6.7 |
| Female | 1,661 | 48.6 | No Information | 9 | 2.5 |
| Male | 1,696 | 51.4 | Wealth | | |
| Place of residence | | | Completely | 49 | 1.7 |
| Urban | 1,456 | 42.9 | Mostly | 179 | 6 |
| Rural | 1,901 | 57.1 | Moderately | 813 | 25.1 |
| Marital Status | | | A little | 1,491 | 42.1 |
| Married | 1,851 | 58.1 | Not at all | 799 | 24.4 |
| Alone | 1489 | 41.3 | No Information | 26 | 0.7 |
| No | 17 | 0.5 | Educational level | | |
| Information | | | None | 349 | 10.7 |
| Comorbidity | | | Primary | 403 | 12 |
| No chronic diseases | 2,277 | 66.6 | Secondary | 693 | 21.4 |
| Chronic disease(s) belonging | 786 | 24.5 | College/University | 118 | 3.8 |
| Chronic disease(s) in two or more categories | 294 | 8.8 | No Information | 1794 | 52 |
| Religion | | | Self-assessed health status | | |
| None | 158 | 4.4 | Good to very good health | 1,288 | 39.1 |
| Christianity | 2,427 | 73 | Moderate, bad to very bad health | 2,068 | 60.9 |
| Islam | 497 | 14.8 | No Information | 1 | 0 |
| Primal indigenous | 242 | 6.6 | Information | | |
| Other | 21 | 0.8 | | | |
| No | 12 | 0.3 | | | |

In Table 3, we present the descriptive analysis of the characteristics of the study population.

| | Model 1 | Model 2 | Model 3 |
|---|------------------|-------------------|-------------------|
| Age (years) reference 50-59 | | | |
| 60 - 69 | 1.01 (0.66-1.54) | 1.09 (0.72-1.66) | 1.09 (0.71-1.67) |
| 70 - 79 | 0.81 (0.47-1.39) | 0.92 (0.53-1.61) | 0.92 (0.52-1.62) |
| >=80 | 0.94 (0.54-1.62) | 1.07 (0.6-1.92) | 1.12 (0.62-2.02) |
| Sex (reference Female) | | | |
| Male | 1.29 (0.97-1.73) | 1.22 (0.89-1.66) | 1.23 (0.83-1.82) |
| Self-assessed health status | | | |
| Good to very good health | 1 | 1 | 1 |
| Moderate, bad to very bad health | | 0.82 (0.61-1.1) | 0.83 (0.62-1.11) |
| No Information | | | |
| Functional restrictions | | | |
| Not functionally restricted | 1 | 1 | 1 |
| Moderately restricted | | 0.99 (0.62-1.59) | 0.98 (0.61-1.56) |
| Severely restricted | | 1.13 (0.68-1.9) | 1.11 (0.67-1.84) |
| Comorbidity | | | |
| No chronic diseases | 1 | 1 | 1 |
| Chronic disease(s) belonging | | 0.57 (0.36-0.9)* | 0.58 (0.36-0.92)* |
| Chronic disease(s),more than one category | | 0.49 (0.26-0.91)* | 0.52 (0.27-0.97)* |
| Place of residence (reference Urban) | | | |
| Rural | | | 1.18 (0.78-1.77) |
| Marital Status | | | |
| Alone | | | 1 |
| Married | 1 | 1 | 1.12 (0.76-1.65) |
| No Information | | | 3.51 (0.83-14.86) |
| Religion | | | |
| None | 1 | 1 | 1 |
| Christianity | | | 1.22 (0.65-2.27) |
| Islam | | | 1.79 (0.96-3.34) |
| Primal indigenous | | | 1.1 (0.47-2.58) |
| Other | | | 0.4 (0.04-3.51) |
| No Information | | | 2.08 (0.29-15.18) |
| Wealth | | | |
| Completely | 1 | 1 | 1 |
| Mostly | 0.42 (0.08-2.2) | 0.42 (0.08-2.09) | 0.39 (0.08-1.96) |
| Moderately | 0.76 (0.18-3.23) | 0.75 (0.18-3.08) | 0.71 (0.17-2.9) |
| A little | 0.78 (0.19-3.25) | 0.75 (0.19-2.98) | 0.71 (0.18-2.8) |
| Not at all | 0.73 (0.17-3.26) | 0.72 (0.17-3.08) | 0.67 (0.16-2.84) |
| No Information | 1.01 (0.13-7.94) | | 0.95 (0.14-6.68) |
| Educational level | | | |
| No formal education | 1 | 1 | 1 |
| Primary | | 1.35 (0.83-2.18) | 1.41 (0.87-2.29) |
| Secondary | | 0.92 (0.47-1.81) | 1 (0.49-2.03) |
| At least University | | 0.65 (0.25-1.72) | 0.74 (0.28-1.96) |
| No Information | | 0.88 (0.56-1.4) | 0.83 (0.53-1.32) |

Table 4: Consultation of 50+ (n=3,357) adults with orthodox medical services during the last 3 years

Structure of the Health Sector of Ghana



Legend

MDA.s – Ministries Departments and Agencies

GHS- Ghana Health Service

T HOSP- Teaching Hospitals

Q GIH- Quasi Government Institution Hospitals

PHMHB- Private Hospitals and Maternity Homes Board

DTAM- Department of Traditional and Alternate Medicine

GHSP- Government Hospitals

PC- Poly-Clinics

HC- Health Centres

MBP- Mission-Based Providers

PMDP-Private Medical and Dental Practitioners

TMP- Traditional Medical Providers

AM-Alternative Medicine

FH- Faith Healers

Source: Abor, P.A; Abekah -Nkrumah, G;Abor,J: An Examination of Hospital Governance in Ghana. In: Leadership in Health Services Vol. 21. Issue 1, 2008, p.3

Fig. 1: Structure of the health sector of Ghana