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Community-based Health Planning and Services and Women's Access to Health Care in the Upper West Region of Ghana

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Abstract

The Community-based Health Planning and Services (CHPS) policy was implemented in 1999 to improve access to Primary Health Care (PHC) services in Ghana, particularly in rural and remote areas as part of global efforts to achieve universal health coverage. Despite this initiative, health care access in the Upper West Region (UWR) remains poor with wide gender disparities. Yet, little is known about the impact of CHPS on women's access to health care services in the UWR of Ghana. This study therefore examines the role of CHPS on women's access to health care services in the region. Data were obtained from a cross-sectional survey of women (n=805) in seven selected districts using a multi-stage sampling method and analysed using a logistic regression technique. Study findings reveal that women resident in CHPS zones (OR=1.612, $p \leq 0.01$) were more likely to have access to basic health care services compared to their counterparts in non-CHPS zones. Similarly, women who resided in CHPS zones (OR=2.806, $p \leq 0.01$) were more likely to report being able to make independent decisions to utilize health facility-based deliveries compared to their non-CHPS resident counterparts. Additionally, women's geographical location (rural-urban residence and distance to health facility) as well as their socio-economic and demographic status were found to be associated with their access to health care services. These findings suggest that CHPS policy seems to have positive impacts on health care access among women in its operational areas, which are mostly rural. Based on the findings, the study recommends improvement in the number of services and quality of care delivered at CHPS compounds while ensuring community ownership for its sustainability. It is further recommended that the CHPS policy be expanded to cover more rural communities in the region. The current electoral

area based zoning system should be re-conceptualized, and a multi-criteria approach used in siting CHPS to ensure optimization of health care services and coverage.

Key words: Community-based health planning and services, women's autonomy, health care access, primary health care, universal health coverage, Upper West Region, Ghana

Co-Authorship Statement

This thesis comprises two manuscripts that are being processed for publication. The research problem, study objectives and the study context are outlined in chapters 1 and 2. The research methodology is described in chapter 3. Chapters 4 and 5 present the two manuscripts whilst chapter 6 provides a summary and conclusion to the thesis, highlighting its contribution to literature along with relevant recommendations for policy and future research. The two manuscripts are as follows:

Chapter 4: Braimah, J. A. and Luginaah, I. Community-based Health Planning and Services and women's access to Primary Health Care.

Chapter 5: Braimah, J. A. and Luginaah, I. Community-based Health Planning and Services and women's empowerment for facility-Based delivery

Even though both manuscripts are co-authored with my supervisor, his role was to guide and review the chapters and the thesis as a whole. The actual research, which involved problem identification, study design, data collection, analysis and writing the thesis were done by me.

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List of Abbreviations

CHO	Community Health Officer
CHPS	Community-based Health Planning and Services
CHV	Community Health Volunteer
GHS	Ghana Health Service
GLSS	Ghana Living Standards Survey
GSS	Ghana Statistical Service
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
NHIS	National Health Insurance Scheme
PHC	Primary Health Care
SDG	Sustainable Development Goal
SPHC	Selective Primary Health Care
SSA	Sub-Sahara Africa
UHC	Universal Health Coverage
UWR	Upper West Region
WHO	World Health Organization

Chapter One: Introduction

1.1 Introduction

This thesis examines the impact of the Community-based Health Planning and Services (CHPS) on women's health care access in the Upper West Region (UWR) of Ghana. This introductory chapter provides an overview of health care access among women with a brief background to the CHPS policy in Ghana. It then proceeds to state the research aim and questions, and concludes with the structure of the thesis.

1.2 Study Background

Over the past decades, ensuring Universal Health Coverage (UHC) in a world of widespread and persistent inequalities in health care access has taken center stage in major global development agendas including the just ended Millennium Development Goals (MDGs) and the current Sustainable Development Goals (SDGs) (Rosenfield, Maine, & Freedman, 2006; WHO, 2016). Similar to many human development indicators, striking disparities exist in access to health care between and within countries (WHO, 2003, 2009). In most countries, rural populations and especially women of lower socio-economic status have limited access to care in spite of empirical studies indicating that women in their life courses are exposed to relatively higher health risks (Hogan et al., 2010; WHO, 2003, 2009). For instance, pregnancy and childbirth expose women to potential health risks especially in a context where access to critical health care is limited. Similarly, social processes largely attributable to poor conditions women live in, pose physical and psychosocial health risks to them (Denton, Prus, & Walters, 2004). These

demonstrate the need for comprehensive and sustainable health care policies that address health access inequities, particularly for women and rural populations.

Even though these inequalities are noticeable in overall health needs, disparities in access to maternal health care between the developed and less developed countries continues to widen (Canudas-Romo, Liu, Zimmerman, Ahmed, & Tsui, 2014). Accordingly, improvement in maternal health was uniquely highlighted and targeted in both the MDGs and SDGs. Maternal health involves the health of women during pregnancy, childbirth and the postpartum period (Thomas et al., 2014). Conversely, maternal mortality refer to "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (WHO, 2004: 98). Postpartum hemorrhage has been cited as the lead cause of these deaths globally (WHO, 2016).

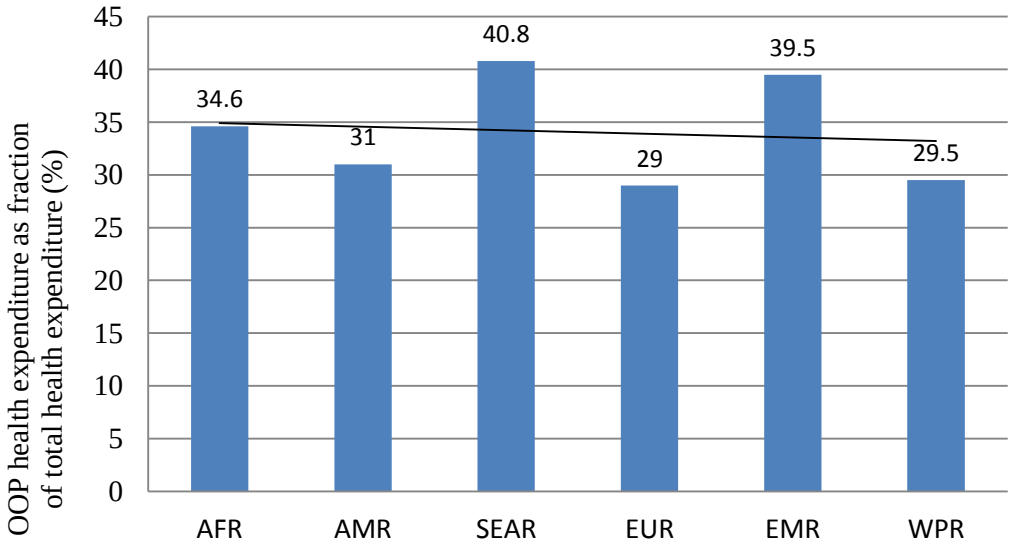
The previous MDGs on health sought to improve health care access in critical but deficient areas including maternal and child health, HIV/AIDs and malaria (UNECA, AU, ADB, & UNDP, 2015). Despite significant progress on the maternal health front whereby global maternal mortality declined by 45% and infant mortality reduced from 90 to 43 deaths per 1,000 live births, countries in Sub-Saharan Africa (SSA) were still behind the global targets (United Nation, 2015). Going forward, the SDGs were endorsed to build on the successes and improve upon the failures of the MDGs in areas essential to sustainable human development. Adopted at the UN summit in September 2015, the SDGs also referred to as Agenda 2030 in part seek to build momentum towards the achievement of UHC with a focus on SSA and other regions that still lag behind (Griggs

et al., 2013; WHO, 2016). Acclaimed as unique, the SDGs are much broader than the MDGs and focus on inter-sectorial collaboration and country/regional level monitoring (WHO, 2016). Specifically, the health goal (SDG 3) seeks to "ensure healthy lives and promote well-being for all at all ages". Unlike the MDG, the SDG on health is broader and covers all essential health topics including maternal, newborn and child health; reproductive health; non-communicable diseases; infectious diseases; UHC; road traffic injuries; mental health; environmental health consequences and health systems strengthening (WHO, 2016).

At a time the world is grappling with the burden of poor health, UHC presents a "key to the achievement of all the other [health] targets and the development of strong resilient health systems" (WHO, 2016: 2). UHC (SDG 3.8) focuses on the provision of essential, quality and affordable health care services to people (WHO, 2016). It seeks to bridge the endemic health service access gap, particularly in low income countries with mandates on health care service provision and financing. Indeed, attaining these objectives necessitates the implementation of robust and pragmatic primary health care (PHC) policies that expressly target individual country needs (Africa Progress Panel, 2010; Beyai, Aboagye, Adutum, Salifu, & Sedegah, 2013). PHC is a health service delivery strategy aimed at providing basic health care services to people (Hall & Taylor, 2003). It seeks to eliminate barriers impeding access to health care especially in hard to reach areas (WHO, 2008). In essence, PHC is considered the bedrock and gateway to achieving UHC. With the focus of UHC on the provision of essential health care services alongside health care financing, a "coverage index" which is a measure of essential health care coverage and health risk financing became the SDGs indicators for assessing it.

The WHO estimates show that the African Region is still lagging behind on access to essential health care services with over 60% of the population in the lowest UHC service coverage index quintile compared to less than 10% in both Europe and WHO Region of the Americas. With regards to the second focus of UHC (financial protection), out-of-pocket (OOP) payment, the major form of health care financing in low income countries has been the widely used indicator (WHO, 2016). This indicator measures OOP health expenditure as a proportion of total household expenditure on health care (WHO, 2016). As shown in Figure 1, lower indices indicate a higher likelihood of a household achieving health care financial protection.

Figure 1: Out-of-pocket health expenditure by WHO regions



AFR – African Region, AMR – Regions of the Americas, SEAR – South-East Asia Region, EUR – European Region, EMR – Eastern Mediterranean Region, WPR – Western Pacific Region

Source: World Health Statistics 2016 report (WHO, 2016)

Similar to essential health services, health financial protection in Africa and in fact many other low income regions is low and adjudged catastrophic by the WHO (>25%). This

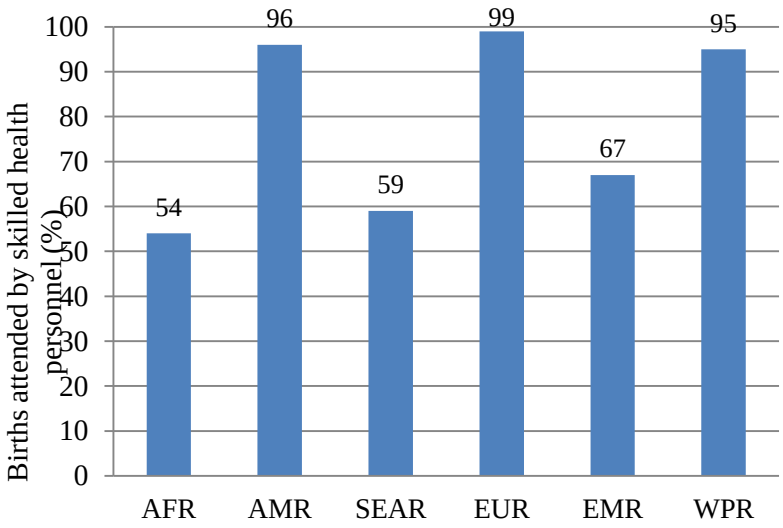
has far-reaching consequences on health service access in these regions particularly for women, given the deplorable conditions they live in.

Whilst the MDGs era witnessed a decline in maternal mortalities attributable to the implementation of strategic and cogent health policies as part of global commitments to improving health care, maternal mortalities remain high, particularly in less developed countries (WHO, UNICEF, UNFPA, World Bank Group, & UNPD, 2015). With a global maternal mortality ratio (MMR) of 216 deaths per 100,000 live births in 2015, an estimated 99% of these deaths occurred in developing countries with SSA alone accounting for 66% of total deaths (WHO, UNICEF, UNFPA & Division, 2015). More alarming is the possibility of these figures being higher than reported owing to challenges in obtaining accurate mortality records in many less developed countries (WHO, 2016). To this end, the SDG 3.1 seeks to reduce global MMR to less than 70 per 100,000 live births by 2030. This will require an annual global mortality reduction rate of at least 7.3% (WHO, 2016). The WHO recommends that to reduce maternal deaths, all deliveries be supervised by skilled personnel. However, access to skilled delivery services remains low in many developing countries with over 40% of births unassisted by skilled personnel in Africa (Figure 2).

Prior to the MDGs, the Government of Ghana through the Ghana Health Service implemented the Community-based Health Planning and Services (CHPS) policy. This policy was implemented in 1999 to improve access to PHC as part of commitments to improve health outcomes (Nyonator, Awoonor-Williams, Phillips, Jones, & Miller, 2005; Sakeah et al., 2014). Hence, the CHPS policy was key to the MDGs and still remains

central to the SDGs (Nyonator, Awoonor-Williams, Phillips, Jones, & Miller, 2005; Sakeah et al., 2014).

Figure 2: Births attended by skilled personnel in 2013 by WHO regions



AFR – African Region, AMR – Regions of the Americas, SEAR – South-East Asia Region, EUR – European Region, EMR – Eastern Mediterranean Region, WPR – Western Pacific Region

Source: World Health Statistics 2016 report (WHO, 2016)

The policy seeks to eliminate the pervasive rural versus urban health care inequalities in the country by providing essential PHC services in rural areas. In addition to the provision of primary curative services, CHPS also engages in health promotion, education and sensitization programs (Adongo et al., 2013; Awoonor-Williams et al., 2013; Ntsua, Tapsoba, Asare, & Nyonator, 2012). Health promotion programs are geared toward enhancing capacities and empowering people to utilize health care services. For instance, a study by Woods (2016) attributed the success of the community-initiated emergency transport services in some communities in the UWR to community mobilization efforts of CHPS.

In spite of the numerous promises the CHPS policy holds for health service improvement, women's access to health care in Ghana remains poor. For instance, about 29% of deliveries in Ghana still occur unassisted. Consequently, MMR is high and stands at 319 deaths per 100,000 live births, which partly explains Ghana's inability to meet the MDG target on maternal and infant health (WHO, 2016). This study seeks to understand the contribution of CHPS to women's access to health care services in the UWR of Ghana.

1.3 Research Questions

Previous studies have attributed poor access to health care among women to failing health care systems (WHO, 2009). Yet, since the implementation of CHPS in the UWR, not many empirical studies have been conducted to understand the contribution of the policy initiative to women's access to health care services. This research seeks to provide an understanding of PHC access among women within the context of CHPS in the region and how this is influenced by their socio-economic and demographic status. It further examines the role of CHPS in enhancing women's decision-making autonomy to seek health facility-based deliveries, as a focus area of CHPS. This study is guided by the following interrelated research questions:

1. What is the impact of CHPS on women's access to basic health care services in the region?
2. What is the influence of CHPS on women's ability to independently decide to seek health-facility based deliveries in the region?

1.4 Thesis Structure

This thesis consists of six (6) chapters. Chapter 1 provides a general introduction to health care access among women and the CHPS policy in Ghana. It also provides a justification for the study and states the research questions this study seeks to answer. The second chapter gives a background to PHC and its evolution over time. This chapter then proceeds to describe the CHPS policy in Ghana and the processes involved in its implementation. It further describes the study context and outlines trends in women's health care access both at the national and regional levels. In addition, the chapter provides theoretical context to the study based on which the research questions are examined.

Chapter 3 provides an account of the study methodology. It begins by explaining the philosophies underpinning the study. It then continues with the study design, data collection and analytical tools, and ends with mechanisms employed to ensure study rigor. Chapters 4 and 5 present manuscripts one and two respectively. As an integrated article thesis, these two interconnected manuscripts are at the core of the thesis. Chapter 4 examines the impact of CHPS on women's access to PHC services. Even though CHPS provide maternal health care services, it does not offer obstetric/facility-based deliveries. Instead, community health officers (CHOs) are expected to empower women to seek this service in higher-level health facilities designated to do so. In view of this, chapter 5 examines the role CHPS play in enhancing women's ability to independently decide to seek this service (health facility-based deliveries) in a patriarchal setting. Lastly, chapter 6 provides a summary of the study, highlighting its contribution to policy, with recommendations for future research.

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Chapter Two: Literature Review

2.1 Introduction

This chapter reviews the literature on Primary Health Care (PHC) and its policy environment at the global and national levels along with women's access to health care services. The chapter begins with a background to the concept of PHC and its evolution over time, highlighting key milestones in its development. It proceeds with a review of the Community-based Health Planning and Service (CHPS) policy in Ghana as a PHC initiative aimed at eliminating geographical barriers to health care access. The chapter further assesses the state of women's health care both on a national and on a regional scale. It concludes with a review of relevant literature on the determinants of women's access to and utilization of health care services.

2.1.1 Background to Primary Health Care (PHC)

The concept of "Primary Health Care" (PHC) as an approach to ensuring access to basic, universal and affordable health care was adopted at the Alma-Ata conference in 1978 by WHO member countries. This consequently set the stage for health policy formulation globally (Hall & Taylor, 2003; WHO, 2008b). It was in this conference that access to PHC was affirmed a fundamental human right in response to poor global health outcomes. PHC is a community-based service delivery model that seeks to bring basic but comprehensive and affordable health care services closer to people; in areas such as treatment of diseases, immunizations, vaccinations, family planning and health promotion (Hall & Taylor, 2003; WHO, 2008b). It sought to achieve health for all by the year 2000. Premised on the principle of community control, ownership and management of their

health care delivery system, PHC seeks to address inequities in health care access, especially in remote and rural areas. Lauded as the bedrock of a viable health care system, PHC is not only an end in itself, but an essential means to attaining Universal Health Coverage (UHC).

Akin to other developmental agendas, the Alma-Ata conference set goals and targets for member countries. Some of these targets included national governments spending at least 5% of all gross national product on health, increasing access to trained health care personnel during pregnancy and childbirth and the provision of a comprehensive child care package up to at least the first birthday of every child (Hall & Taylor, 2003). In pursuance of these set goals, primacy was placed on the construction of health posts, a departure from the conventional hospital construction model and increasing the number of trained health care professionals serving in rural areas and shanty towns. In areas lacking skilled workers, village health workers were to be trained to assist in health care service delivery. Communities were also mobilized into committees to manage and oversee the smooth delivery of services (Hall & Taylor, 2003). Cognizant of the nuanced relationship between health and development, PHC embraced an inter-sectorial approach to service delivery, drawing on the resources and expertise of public, private and non-governmental institutions.

However, shortly after the conference, one of the core principles of the declaration, community planning and management of their health care services was impugned and the concept of PHC rejected by aid experts and politicians from the developed countries (Cueto, 2004). This was because PHC was construed as over ambitious and idealistic, hence incapable of attaining the set goal of health for all by 2000

(Cueto, 2004). Consequently, a new concept known as "Selective Primary Health Care" (SPHC) emerged as a viable alternative (Cueto, 2004). Essentially, SPHC focused on under-five mortality reduction through growth monitoring, oral rehydration, breastfeeding and immunizations. SPHC reserved the management of the health service delivery system for consultants with expertise employed by funding agencies. Even though it was touted as a feasible model, SPHC induced policies that favored donor agencies to the detriment of distress communities with its attendant adverse implications.

Additionally, achieving the health for all target was stalled by lack of political commitment from governments, inadequate funding, civil wars, corruption and low patronage of health care services stemming from perceived low quality of service (Hall & Taylor, 2003). Whilst the debate on both perspectives continued, improvements were reported in global health indicators in some countries. These improvements, which included a substantial decline in childhood diseases (such as measles, diphtheria and tetanus) suggest SPHC was a more feasible health service delivery policy than PHC (Cueto, 2004). However, in late 1980 through to early 1990, economic reforms in Europe and North America impacted on health service delivery in the world at large. A "health sector reform" where service delivery was focused on cost recovery, public-private partnership and private insurance was recommended (Hall & Taylor, 2003). Governments in less developed countries were admonished to reduce their overall expenditures in the health sector (Hall & Taylor, 2003). Whilst this ensued, maternal health was duly recognized as a priority area at both the International Conference on Population and Development (1994) and the Fourth International Conference on Women (1995).

In spite of these efforts, the targeted universal access to health care by 2000 was missed and the millennium declaration in 2000 renewed efforts at improving global health outcomes. This declaration set 8 goals, known as the Millennium Development Goals (MDGs) to be accomplished by 2015 in areas of maternal and child health; poverty and hunger; education; gender equity and environmental sustainability among others (United Nations, 2015b). More specifically, MDGs 4 and 5 sought to achieve improved health outcomes for women and children at the turn of the millennia. Whereas Goal 4 targeted halving under-five mortality by 2015, Goal 5 sought to further reduce the 1990 maternal mortality rate (MMR) by 75% by 2015 (WHO, UNICEF, UNFPA, World Bank Group, & UNPD, 2015). Notwithstanding significant progress in reducing child mortalities, the global target of halving deaths was missed by 7%. Likewise, Goal 5 was missed by 31% and the current global MMR is estimated at 216 deaths per 100,000 live births (WHO, 2016).

Following the failure to meet some of the MDGs, the Sustainable Development Goals (SDGs) were adopted in 2015 to sustain the progress made and accelerate the achievement of these global developmental goals (Ronsmans, Graham, & Lancet Maternal Survival Series Steering Group, 2006). Among other things, SDG 3 seeks to "ensure health and well-being for all at all ages by improving reproductive, maternal and child health; ending the epidemics of major communicable diseases; reducing non-communicable and environmental diseases; achieving universal health coverage; and ensuring access to safe, affordable and effective medicines and vaccines for all" (United Nations, 2016: 4). Essentially SDG 3 is embedded in PHC as it seeks to eliminate inequalities in health care access through the provision of basic but essential health care

services. The current maternal health target aims at reducing MMR by at least two-thirds from the 2010 baseline by 2030 (WHO et al., 2015). Thus, all countries should have MMR of not more than 140 deaths per 100,000 by 2030.

2.1.2 Community-based Health Planning and Services policy in Ghana

At the national level, the Government of Ghana in collaboration with the Ghana Health Service in 1999 implemented the Community-based Health Planning and Services (CHPS) as part of efforts to improve health care service access. The model was scaled up as a national health policy after a pilot project in Navrongo in the Upper East Region of Ghana proved to be successful in improving health care access and utilization (Awoonor-Williams et al., 2013). CHPS is an initiative that seeks to eliminate geographical barriers to health care access in remote and hard-to-reach areas, primarily through community resource mobilization (Nyonator, Awoonor-Williams, Phillips, Jones, & Miller, 2005). In effect, this is anticipated to bridge the pervasive urban-rural health care access gap and propel Ghana towards achieving UHC (Awoonor-Williams et al., 2013). Accordingly, the model is underpinned by the tenets of PHC as espoused by the Alma-Ata declaration in 1978; community engagement in the delivery and management of health care services (Baatiema, Skovdal, Rifkin, & Campbell, 2013; WHO, 2008a).

The model shifts focus on health care service delivery from institutional to a mobile community-based system by a resident Community Health officer (CHO) or nurse (Atuoye et al., 2015; Woods, 2016). CHPS is represented by a compound within a geographically defined area referred to as a "CHPS zone" where health services are provided (Atuoye et al., 2015). The CHPS compound, which is often constructed through

community resource mobilization, also houses the CHO/nurse. The zoning system was adopted to ensure equity and efficiency in health care service delivery. Essentially, a "CHPS zone" is a defined geographical area that is assigned a CHO/nurse and a compound to deliver health services. Currently, CHPS zoning is based on electoral area matrix, a variation from the conventional population size system (Kyei-Nimakoh, Carolan-Olah, & McCann, 2016). The CHO or nurse is assisted by trained Community Health Volunteers (CHV) in areas of basic health surveillance, community education, sensitization and information dissemination (Ntsua, Tapsoba, Asare, & Nyonator, 2012). CHPS also benefits from the services of community level drugstores and traditional health care providers such as herbalists and traditional birth attendants. Given its founding principles, CHPS facilities are equipped with basic medicines and equipment to handle simple ailments and make referrals to bigger or more equipped health facilities in situations beyond their capacity (Awoonor-Williams et al., 2013). Transportation logistics such as motorcycles and bicycles are also provided to facilitate service delivery. Although the model traditionally focused on rural health care, widening urban health care access gap in recent times has necessitated the deployment of CHPS to urban areas referred to as "urban CHPS".

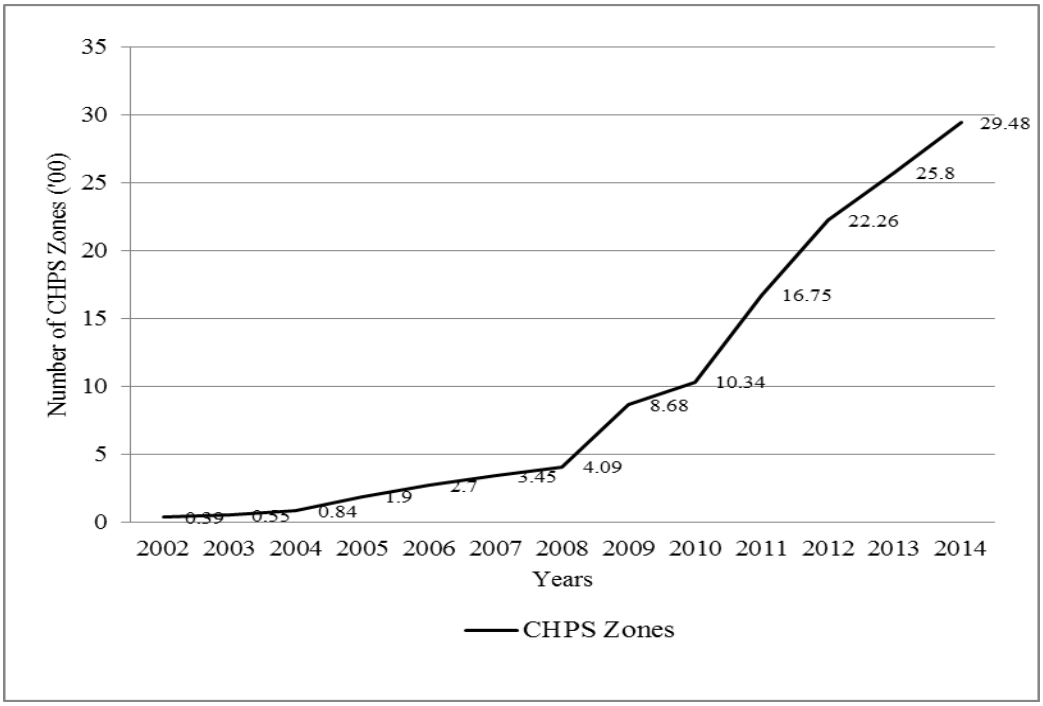
Community Health Management Committees (CHMC) in collaboration with the sub-District Health Management Team provide direction for the implementation of CHPS (Atuoye et al., 2015). Per the policy framework, implementing CHPS involves 6 key milestones (MoH, 2016; Nyonator et al., 2002). The first stage involves preliminary planning where the district is assessed in terms of capacity, labor, training and equipment needs, based on which zones are created and CHOs/nurses assigned. The second

milestone is community entry where steps are taken to foster discussions on the activities of CHPS, mainly through durbars and community meetings. The third milestone focuses on the construction of a community health compound referred to as CHPS compound. As indicated earlier, the construction of this building is spearheaded by community leaders and volunteers through community resource mobilization, partly to ensure a sense of community ownership and participation in its operation. Considered the most critical, the fourth milestone involves the posting of CHOs/nurses to run these CHPS compounds. In doing so, assigned CHOs/nurses are introduced to residents within the zone during organized community durbars. The fifth milestone involves the purchase of relevant clinical equipment and related logistics to provide health services. The sixth and final milestone involves the deployment of volunteers based on recommendations by the sub-District Health Management Team to assist CHOs/nurses in the discharge of their duties. These volunteers are trained on community health promotion and resource mobilization. Meeting these milestones is vital to an efficient and sustainable CHPS. Unfortunately, the CHPS implementation process has been inconsistent, occasioned by logistical and organizational failures (MoH, 2016). Beside these implementation challenges, the initiative is also fraught with some operational setbacks including irregular and inadequate government funding, delays in reimbursement of funds from service providers such as the National Health Insurance Authority (NHIA), inadequate health care professionals and poor community engagement and support (Baatiema et al., 2013; MoH, 2016).

While these setbacks take a toll on its progress, the CHPS policy continues to expand, manifested in the steady increase in the number of CHPS in the country over the

years (see Figure 3). For instance, in 2002 when CHPS was ushered into mainstream health service provision, the total number of zones was 39. A decade later, the number of CHPS zones increased to 2,226 and currently, the total number of CHPS zones and CHPS compounds in Ghana stands at 3,175 and 1,410 respectively (GHS, 2015b; MoH, 2016). As of 2014, Ashanti Region had 736 CHPS zones, which was the highest in the country with the UWR and Greater Accra Region having the least number of CHPS (145 and 142 respectively) (GHS, 2015b). Expansion in the policy may be attributed to external funding support it has been benefiting from over the years. For instance, JICA previously funded CHPS expansion and related projects in the UWR of Ghana through a program titled "Project for the Development of Community-Based Health Planning and Services Infrastructure in the Upper West Region".

Figure 3: Trend in implementation of CHPS in Ghana (2002-2014)



Source: GHS (2015b)

CHPS provides a range of essential health care services, mainly preventive, curative and promotional such as antenatal care (ANC), postnatal care, emergency deliveries, family planning, education, immunizations as well as malaria, acute respiratory infections and diarrheal disease treatments (Awoonor-Williams, Bawah, et al., 2013). According to the Ghana Health Service 2014 Annual Report, CHPS accounted for 30.4% (143,727) of family planning services, 10.2% (2,407,966) of outpatient department attendance and 3.8% (18,680) of skilled deliveries in the country (GHS, 2015b). Health promotion and educational programs by CHPS seek to enlighten people on various health risks with the hope of changing health behaviors (GHS & PPME, 2002; MoH, 2016). Indeed, these initiatives have been reported by Ngom et al. (2003) to contribute tremendously to promoting health service uptake in the Upper East Region of Ghana. Their findings reveal CHPS was successful in eradicating the traditional gate-keeper system to health care. The gate-keeper system basically is a traditional setup where household heads reserve exclusive authority over actions of household members including their movement. Likewise, community resource mobilization by CHPS pursuant to its policy framework is expected to enhance capacity and autonomy amongst marginalized populations to seek health care services such as health facility-based deliveries (MoH, 2016; Woods, 2016). These initiatives are very vital to enhancing health care access in traditional Ghanaian context where women have limited autonomy and control over decision-making and household resources.

2.1.3 Study area

The UWR is located in the north-western part of Ghana with a land area of about 18,476 km^2, constituting 12.7% of the total land area (see Figure 4) in the country. The region is bordered by Burkina Faso to the north, Cote D'Ivoire to the west, Upper East Region to the east and Northern Region to the south (GSS, 2013). It is situated in the guinea savannah vegetation zone with a single rain season averaging 115 centimeters annually, usually from May to October (Luginaah et al., 2009; Schraven & Rademacher-Schulz, 2016). The dry season, on the other hand, occurs from November to April with the onset of the dry harmattan winds from the north-east trade winds (Schraven & Rademacher-Schulz, 2016). Mean monthly temperature range from 21 to 32 degrees Celsius (GSS, 2013). The region is drained by the Black and White Volta (Schraven & Rademacher-Schulz, 2016).

As the least populated region in Ghana, it has a total population of 702,110 with 48.6% (341,182) being males and the remaining 51.4% (360,928) being females (GSS, 2013). The Dagaaba, Sissala, and Waala are the major ethnic groups in the region. The region is dominated by Christianity (44.5%), followed by Islam (35.6%) and African Traditional religion (13.9%) (GSS, 2013). Fertility in the UWR is the second highest in Ghana after Northern Region with a rate of 5.2 children per a woman. About 83.7% of the region's population is rural with a largely agrarian economy, accounting for about 73% of household incomes (Molini & Paci, 2015). Despite its reliance on agriculture, much of the cultivation is subsistence based, which leaves the majority of the residents food insecure (Rademacher-Schulz, Schraven, & Mahama, 2014). Cultivation is predominantly staple crops such as millet, yam, maize, rice, groundnut, guinea corn with

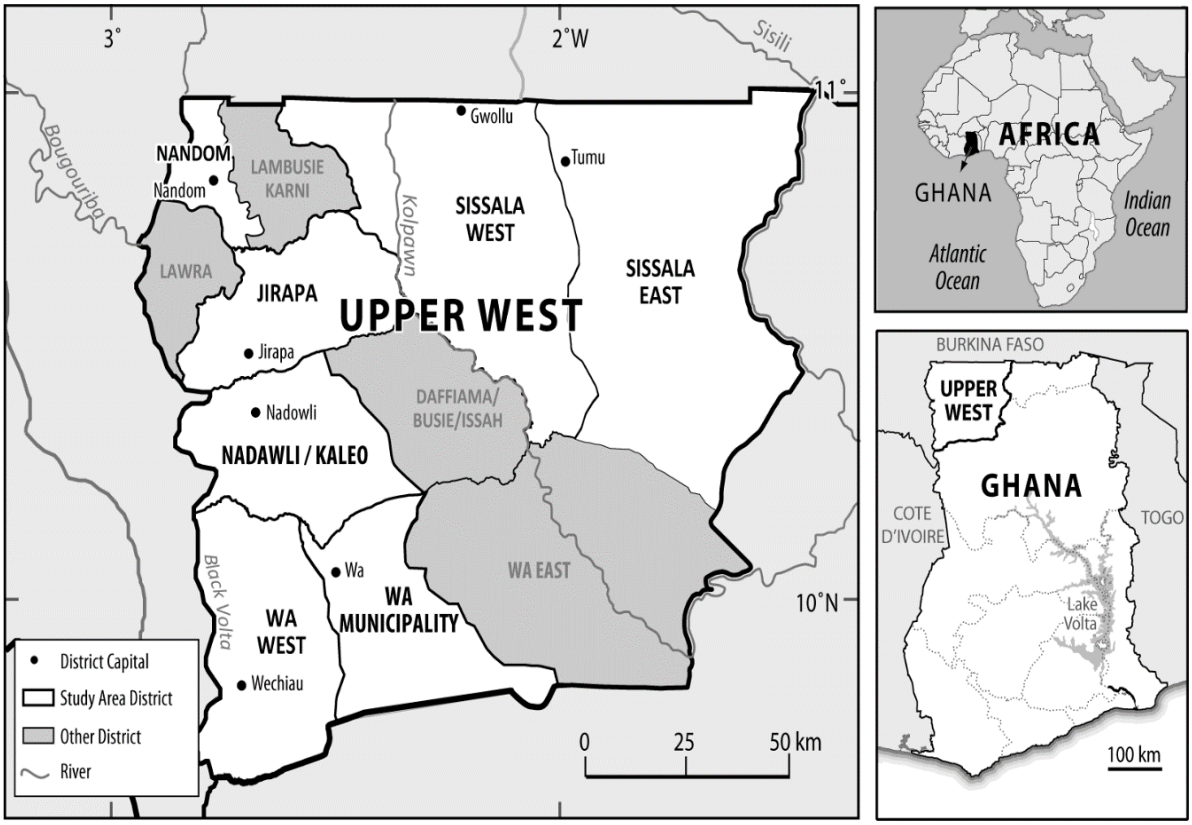
a few cash crops such as cotton and cowpea (GSS, 2013). Besides cultivation, residents, especially those in rural areas also engage in rearing as food and income supplement. This amongst others explains why the UWR records the highest (45.1%) extreme poverty (below 203.87 USD per adult per year) incidence in Ghana with women being the poorest (GSS, 2014b, 2015). This has also resulted in high labor out-migration mostly to the southern parts of the country in search of better livelihood opportunities (Kuuire, Mkandawire, Arku, & Luginaah, 2013). Whilst worsening environmental conditions are partly responsible for these high poverty incidence and out-migration, colonialism and unfavorable government policies have equally had grave consequences on these (Konadu-Agyemang, 2000).

The region has a patriarchal system of social organization, higher rates of polygamy and extended family system (GSS, 2013). This form of social organization potentially explains women's restriction to reproductive roles with limited economic opportunities and autonomy, especially on household decision-making. For instance, it has been reported that 23% of women in the region do not participate in decision-making regarding their health within the household (GSS, GHS, & ICF International, 2015). Educational levels are comparatively low with about 48.7% of women aged 15-49 having no form of formal education, more than twice the national average of 19.1% (GSS et al., 2015).

The region also lacks basic social amenities including roads and schools as well as health and sanitation facilities with rural communities disproportionally worse off (GSS, 2014). Health facilities in the region comprise of clinics/health posts/CHPS (22.4%), traditional herbal clinics (17.2%), drug/chemical stores (14.1%) and hospitals

(7.3%). According to the Ghana Health Service 2014 Annual Report, the region has 145 CHPS zones, the lowest in the country after the Greater Accra Region (GHS, 2015b). Overall, coverage of health personnel is low with untrained traditional birth attendants (16.7%) and traditional healers (17.1%) being major components of the health service delivery system albeit risks associated with their services. Others are doctors (3.4%), medical assistants (4.3%), nurses (9.9%), pharmacists (3.9%), trained midwives (7.0%), family planning workers (10.4%), community health workers (11.8%) and trained traditional birth attendants (15.5%) (GSS, 2014a). The region has a doctor-patient ratio of 1:36000, which has implications for health service provision. Similarly, each midwife supervises an average of 126 deliveries annually (Ministry of Health, 2014). Although CHPS primarily seeks to improve health care access in rural communities by bringing health professionals and services closer to the people, the Ghana Living Standard Survey Round 6 (GLSS 6) reports that 93.1% of these rural communities in the region do not have access to health personnel (GSS, 2014a). Major health challenges in the UWR include malaria (95.5%), hernia (2.3%) and cerebral spinal meningitis (1.1%) (GSS, 2014a).

Figure 4: Regional map of Upper West



Source: Cartographic Section, Department of Geography, Western University, 2017

2.1.4 Overview of women's access to health care in Ghana

Ghana missed the MDG 5 target with a 2015 MMR of 319 deaths per 100,000 live births and a 1 in 74 lifetime risk (WHO et al., 2015). Nonetheless, the country recorded a decline in institutional MMR from 195 in 2011 to 143.8 in 2014 (GHS, 2015a). Many of these deaths result from pregnancy-related complications such as hemorrhages, abortions, sepsis infections and hypertensive diseases. Reports show post-partum hemorrhage (PPH) is the leading cause of maternal mortality in Ghana, accounting for 30% of all deaths (GHS, 2015a). Increased access to ANC, obstetric care and postnatal care services have

therefore been recommended to curtail these deaths (Atuoye et al., 2017; Kuuire et al., 2017).

Although Ghana has one of the highest ANC coverage rates in the sub-region (nine out of ten), there exist significant inter and intra-regional disparities in access with the Western Region (99.3%) recording the highest coverage and the Northern Region (92.3%) the lowest (GSS et al., 2015). Similarly, whereas 93% of expectant mothers in urban areas have access to ANC facilities, only 82% of their counterparts in rural areas have access to ANC services (GSS et al., 2015). Overall, the proportion of women that make the ideal 4+ ANC visits has improved over the years from 78% in 2008 to 87% in 2014 (GSS et al., 2015). Access to skilled delivery in Ghana, an essential component of maternal health care services has witnessed a slow but steady increase between 2011 and 2014 from 49.4% to 56.7% (GHS, 2015a). The Upper East Region has the highest skilled delivery coverage of 73.5% with the Volta Region recording as low as 45.3% (GHS, 2015a). Similar to ANC, access to skilled delivery is much higher in urban (90%) areas than rural (59%) areas. These disparities are largely attributable to the rural-urban bias in infrastructural development in the country (GSS et al., 2015). In spite of calls to abolish the services of untrained traditional birth attendants, evidence shows they still play an essential role in the country's health care system with 16% of all deliveries supervised by them (GSS et al., 2015). Traditional birth attendants are more prominent in the Northern Region of Ghana where poverty is rife amidst poor infrastructural development with 4 out of 10 births delivered by a traditional birth attendant (GSS et al., 2015). As part of efforts at reducing risks associated with deliveries, pregnant women in Ghana are also provided misoprostol for use and these are returned when deliveries occur in health

facilities (GHS, 2015a). Although all women in Ghana have access to postnatal care, only 8 out of 10 women receive health checkup within the first two days after delivery when many post-delivery deaths occur (GHS, 2015a).

Furthermore, reports suggest family planning has been given due attention in Ghana; evident in high contraception knowledge levels (99.5%) among women (GSS et al., 2015). Sadly, this has not translated into family planning acceptance as the national acceptor rate stood at 26.7% in 2014 (GHS, 2015a; United Nations, 2015a). That is, unmet family planning needs worsened from 26.4% in 2011 to 29.9% in 2014 (MoH, 2015). About 63% of these contraceptions were received from government hospitals/polyclinic with CHPS/government health post accounting for 5.6% of modern contraception used in 2014 (GSS et al., 2015). In spite of the low acceptance rate, Ghana has one of the lowest fertility rates in the SSA sub-region of 4.2 children per woman, which is much higher in rural areas (5.1) (GSS et al., 2015).

In recognition of cost as a critical health care access barrier, the Government of Ghana implemented the National Health Insurance Scheme (NHIS) policy in 2004 to improve access (Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014). Ghana has 54.3% health insurance coverage among women with marginal inter and intra-regional disparities (GSS, 2014b).

2.1.5 Health care access among women in UWR

In spite of the low infrastructural and human development in the UWR, reports show improvement in health outcomes over the past years (MoH, 2015). A number of government initiatives such as the CHPS policy, NHIS and the NHIS maternal exemption

policy could be adduced to this improvement. Nonetheless, many of the health gains remain well below the national average and further fall short of WHO recommendations. In 2014, a considerable number of women (85.2%) had access to ANC services in the region notwithstanding a decline in coverage the previous year from 91.6% (GHS, 2015a). This decline has been attributed to decreasing outreach services largely due to logistical constraints. Ironically, the proportion of women who met the WHO recommended 4+ ANC visits improved from 63.9% in 2012 to 70% in 2013 and 72.3% in 2014 (GHS, 2015a). Although mixed, these reports suggest progress in overall ANC coverage in the region.

The WHO recommends intermittent preventive treatment (IPTp) during pregnancy as a remedy to the high malaria prevalence in the SSA sub-region. Unfortunately, IPTp coverage in UWR is low and has even declined over the years with only 46.6% and 16.7% of women taking IPT1 and IPT2 respectively (GHS, 2015a). This has significant implications for malaria-related maternal and child mortality in the region. Furthermore, about one-third of women are not protected against neonatal tetanus in the region, a condition estimated to kill over 200,000 infants globally each year. Access to skilled delivery although short of the WHO recommendation improved from 52.5% in 2012 to 63.9% in 2014 (GHS, 2015a). This further underscores the continuous existence and role of traditional birth attendants in the Ghanaian health care system despite calls to eradicate them in the health care delivery chain (GSS, 2014a). Even though the preceding statistics imply progress in maternal health front, they also demonstrate that health policy initiatives in the country have been slow at achieving their desired goals. With 100%

postnatal care coverage in 2014, the region was reported to have the highest coverage for PNC services within 48 hours of delivery in Ghana, a period when most deaths occur.

Estimating actual maternal death rates in the region has been challenging owing to inappropriate vital registration systems and the inability to track deaths associated with non-facility deliveries (Kyei-Nimakoh et al., 2016). Interestingly, trends in institutional mortality in the region seem to suggest progress made in ANC and skilled delivery care has not translated into desired maternal health outcomes. A holistic assessment of the health sector in 2014 by the Ministry of Health revealed institutional MMR increased from 158 in 2010 to 160 in 2011. It however, fell to 146 in 2012 and increased again to 193 in 2013 and 161 in 2014 (MoH, 2015). Although figures for 2010, 2011 and 2012 were below the national institutional MMR, 2013 and 2014 death rates were pegged above the national average (GHS, 2015a). Despite high family planning knowledge, acceptance rate is low (GSS et al., 2015). For instance, it is reported that only 25.2% of women use contraception in the region (GHS, 2015a).

Regardless of their economic deprivation, NHIS coverage rate is highest among women in the region. Women in the region have a 50.3% NHIS coverage compared to 49.4% for males (GSS, 2014b). This figure is however below the national average of 54.3% (GSS, 2014b). The NHIS maternal exemption policy implemented by the Government of Ghana enrolls pregnant women freely into the NHIS and perhaps accounts for the high enrolment rate among women (Johnson, Frempong-Ainguah, & Padmadas, 2015).

2.2 Theoretical Background

Although access is the main concern in health discourses, policies and systems, defining it has been challenging owing to its complexity, multidimensionality and context dependence. Nonetheless, some scholars have conceptualized it to encapsulate the key factors that influence health service use. For instance Gulzar (1999: 17) defines access to health care as "the fit among personal, sociocultural, economic, and system-related factors that enable individuals, families, and communities to have timely, needed, necessary, continuous, and satisfactory health services". Similarly, Penchansky & Thomas (1981: 128) defines it as the "degree of fit between the clients and the system". On account of these ambiguities and varied conceptualizations, there are opinions that utilization — defined as the actual use of the service or realized access is a better assessment of a health care system's performance since access alone does not guarantee service usage (Aday & Andersen, 1981; Goddard & Smith, 2001; Gulliford et al., 2002).

Diverse dimensions have equally been proposed for evaluating health care access such as service availability, health service utilization, health service outcomes and equity (see Goddard & Smith, 2001; Gulliford et al., 2002). In this study, access is conceptualized as the ability or ease with which patients use appropriate health services during need (Levesque, Harris, & Russell, 2013). Cognizant of the complexity and multidimensionality surrounding health care service access, this study draws on both feminism and a conceptual framework on health care access developed by Peters et al.'s (2008) to explore the impact of CHPS on women's access to health care services in the UWR of Ghana.

Historically, health care systems have been inundated with gender inequalities regarding access (Annandale & Hunt, 2000; Sen & Östlin, 2008). In view of this, the study adopts feminism to explore the obvious but often ignored gender related barriers to women's uptake of health care services in the UWR (Annandale & Hunt, 2000; Ross & Toner, 2004; Sen & Östlin, 2008). This is particularly critical in the study context and in fact many less developed countries where gender dynamics are accorded less or no priority in health policies and health care systems (Ross & Toner, 2004). Premised on the notion that inequalities within the society are perpetuated by socio-cultural and economic structures, feminist focus on understanding these structures of oppression within the society with the desire to create equal opportunities for all (Hesse-Biber, 2012). They seek to unearth women's experiences in society revealed in unequal power and status and its implications for their health and access to health care services. Feminism challenges social forces that engender inequalities between men and women with the aim to liberate and empower women in areas of their economic, political, social and personal rights. This is imperative given the substantial impact these factors have on health care access (Boateng et al., 2014; Kuuire, Bisung, Rishworth, Dixon, & Luginaah, 2015). Drawing insights from feminist perspectives, policies desirous of improving PHC access such as CHPS ought to incorporate women liberation and empowerment initiatives within their operational frameworks. Situating this study within feminist theories will give an understanding of CHPS as an empowerment machinery and how that influences women's health care seeking behavior in a context where traditional practices tend to perpetuate and deepen male dominance and inequities in health care access (GSS, 2013). Feminist

perspectives have been deployed to assess women's health and health care access dynamics in SSA by Rishworth (2014), Corbin (2012) and Braam & Hessini (2004).

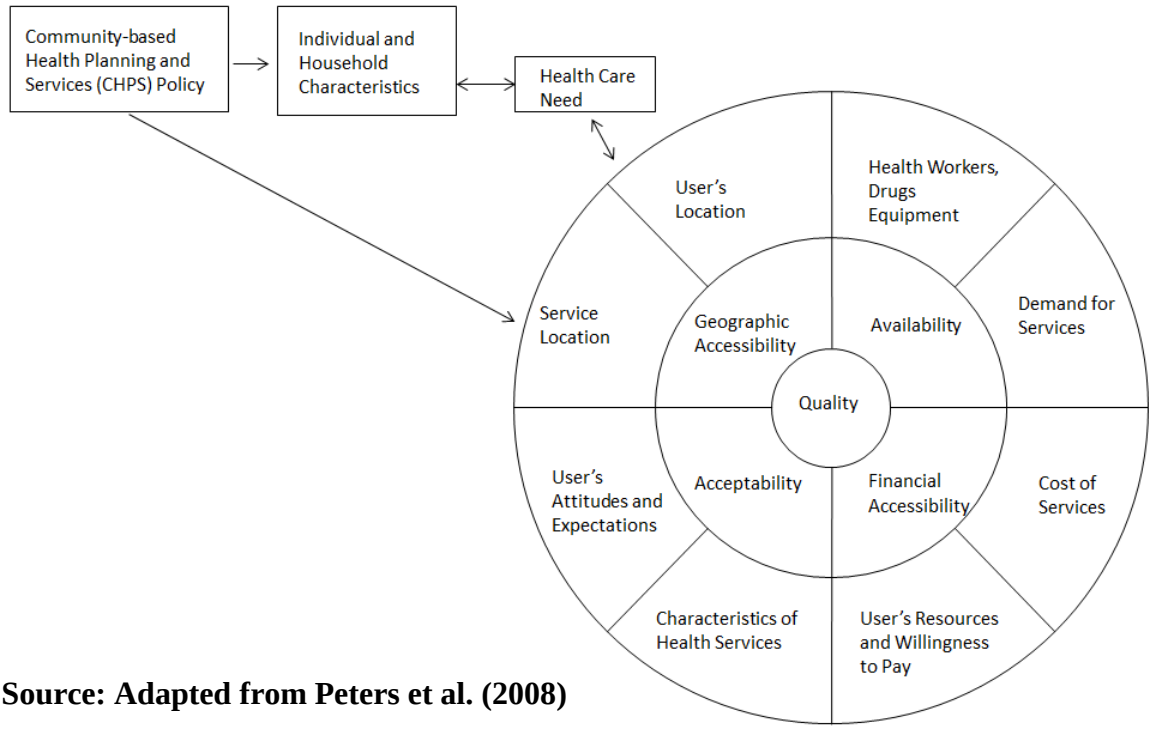
The conceptual framework for assessing access to health care services by Peters et al. (2008) identifies four key dimensions; geographic accessibility, financial accessibility, availability and acceptability to define health service utilization (Figure 5). Importantly, each of these dimensions has a supply and demand element to it, relating to the provision and need for health care service respectively. Geographical accessibility pertains to the physical proximity to health care services depicted in place of residence and distance to service delivery points (Gulzar, 1999). This dimension is widely acknowledged to impact access to health care services particularly for rural women in Ghana and many less developed countries (see Atuoye et al., 2015; Rishworth, Dixon, Luginaah, Mkandawire, & Prince, 2016). Geographical barriers to health care services emerge primarily due to the inability to provide health facilities for many rural areas owing to resource constraints. As such the CHPS initiative, relying on locally mobilized resources intends overcoming this barrier. Financial accessibility, the second dimension involves the means by which people pay for health services rendered them, and is attained where there is the willingness and ability to pay for services. In low and middle income countries, financial accessibility to health care services is remarkably determined by household wealth status (Ahmed et al., 2010; Dixon et al., 2014).

Indeed, availability, which Gulzar (1999) terms functional accessibility is a critical dimension to health care service access in less developed countries. Availability involves the opportunity to have the appropriate kind of service on continuous basis manifested in regular operational hours and access to service providers (Goddard &

Smith, 2001). Fundamentally, this access dimension is contingent on the contextual processes of medical care within a particular locale. Within the study context, determinants of service availability include place of residence (CHPS verses non-CHPS zones) and the demand for health care. In fact, availability and geographical accessibility are mutually inclusive and reinforce each other to define health care access. Acceptability, the last dimension relates to the fit between provided services and peoples social and cultural expectations. Gulzar, (1999: 15) defines acceptability as the "relationship of clients' attitude about personal and practice characteristics to actual provider characteristics". Acceptability of health services depends on the characteristics of health service and the expectations users have. In situations where services provided do not meet expectations, health service acceptability will be low.

Quality of care remains a priority to all health systems owing to its implications for service utilization, particularly in less developed countries. For instance, perceived poor quality of health care services has been attributed to home deliveries and increased bypass rates in rural Uganda (Parkhurst & Ssengooba, 2009). In view of this, quality forms the core of Peters et al. (2008) framework, driven by the four dimensions. Additionally, policy and macro-environment, which in the study context is the CHPS policy in conjunction with individual and household characteristics (age, education, marital status and religion) impact on these dimensions to dictate overall health care access. The model conceptualizes a feedback loop with these dimensions/determinants interacting and reinforcing one another at varying levels to shape health service utilization.

Figure 5: Conceptual framework for assessing access to health service



Source: Adapted from Peters et al. (2008)

2.2.1 Geographies of health

Health geography is a sub-discipline of human geography that emerged in the late 1980s and early 1990s in recognition of the role spatial patterns and relations play on health and health care access (Kearns & Moon, 2002; Kearns, 1993). This field evolved from medical geography, a subfield of geography traditionally concerned with disease ecology, with emphasis on "place" as central to health (Eyles, 1993; Luginaah, 2009; Rosenberg, 1998). Scholars including Dear (1984) and Kearns (1993) played pivotal roles in the development of health geography, relentlessly calling on medical geographers to incorporate "social theory" in health enquiry. Indeed, the field of health geography emerged based on the recognition of population health as a social product (Wilkinson, 2002), determined by the dynamic interplay of geographical (such as rural-urban divide),

socio-economic and cultural factors (Gatrell & Elliott, 2014). With the recognition of human health as a construct of 'place' (Kearns & Moon, 2002), "health geographers have reconceptualized the notion of 'place' as a complex cultural symbolic phenomenon constructed through relationships between people and their settings, rather than mere sites where observations are located" (Luginaah, 2009: 92). Indeed, this unique character distinguishes health geography from medical geography, which focused mainly on disease ecology and its spatial distribution.

Consequently, the era also witnessed philosophical, methodological and theoretical evolutions in health inquiry (Gatrell & Elliott, 2014; Kearns & Moon, 2002; Luginaah, 2009). Theoretically, health geography shifted from positivist and reductionist orientations of medical geography, which was informed by the biomedical understanding of human health to include other socially oriented theoretical approaches such as social interactionist or social constructionist, humanist and post-structuralist perspectives (Gatrell & Elliott, 2014; Luginaah, 2009). Central to these approaches is the belief that health is culturally, socially and environmentally constructed, hence should be studied within these contexts. Methodologically, whereas medical geography relies on the use of the biomedical model and epidemiological data in its inquiry, health geography transcends this model to more innovative methodologies that employ both quantitative and qualitative research approaches.

Traditionally, research in health geography focuses on "patterns, causes and spread of disease, and planning and provision of services" (Dummer, 2008;1177). The former, which is informed by the biomedical model is based on the understanding of disease to involve a disorder in the functioning of the human system. The latter is preoccupied with

health care service access and utilization attainable through the optimum allocation of health facilities whilst focusing on compositional factors affecting health care access. Indeed, these two overlapping streams are relevant for the expeditious design and implementation of health promotion policies and the attainment of UHC (Dummer, 2008). Whilst the provision of CHPS compound and CHO will bring health care services closer to people, "place" specific factors may likely influence the ability of the initiative to meet its goals. As demonstrated by previous studies, the concept of access is complex and multidimensional (Aday & Andersen, 1974; Penchansky & Thomas, 1981). Moreover, women's access to health care services within the context of CHPS in the region may further be complicated by the regions peculiar socio-cultural and economic conditions. Hence, the concept of health geography is employed in this study to explore how a PHC delivery policy interacts with women's socio-economic, cultural and environmental conditions to influence their health care access and utilization in the UWR of Ghana.

2.2.2 Determinants of health care access among women

Studies have shown that women's access to and utilization of health care services is dependent on the complex interplay of various socio-economic and cultural factors (Babitsch, Gohl, & von Lengerke, 2012; Parkhurst & Ssengooba, 2009). Categorized at individual, community and state levels, the relative influence of these factors sometimes vary with context (Babalola & Fatusi, 2009; Gage, 2007). These determinants, which include education, wealth, place of residence, distance to health facility and perceived quality of service are discussed below.

Earlier studies have demonstrated that geographical factors significantly influence access to and utilization of health care services, especially among rural dwellers in less developed countries (Atuoye et al., 2015; Thaddeus & Maine, 1994). These factors include the (non)availability of health facilities, distance to health facilities and transportation systems (Gage, 2007; MoH, 2014). Essentially, these factors tend to reinforce one another to define health care access especially in middle and low income countries, primarily due to resource scarcity. For instance, the absence of health facilities increases the geographical distance to access health care, which in turn is exacerbated by poor transportation networks. Aside being a disincentive to accessing health care, these barriers also inhibit the smooth and efficient delivery of outreach and door-to-door services by health professionals (Thaddeus & Maine, 1994). In Ghana, it is estimated that 34% of women of reproductive ages live beyond a two-hour travel to a health facility (Gething et al., 2012). In recognition of this, improving geographical accessibility remain a dominant theme in health reforms and policies in Ghana and in fact many less developed countries, apparently effecting the CHPS initiative (MoH, 2016).

Evidence from previous studies such as Kuuire et al. (2015) and Dixon et al. (2014) reveal that navigating health care system is profoundly influenced by wealth status. Similarly, the Ghana Poverty Mapping Report found an association between access to skilled delivery and wealth quintile with 97% of women from rich homes having access to skilled delivery services compared to only 47% from poor homes (GSS et al., 2015). Although cost affects all levels of health service delivery and utilization, its burden on women is felt most at the individual level. Health care cost is epitomized in health facility user fees, transportation, medication and opportunity cost (opportunity cost

of time spent to access care) (Ahmed, Creanga, Gillespie, & Tsui, 2010; Thaddeus & Maine, 1994). Certainly, in patriarchal settings, this burden will be exacerbated by women's limited economic opportunities and lack of control over household resources. Governments in poor countries in recognition of this have over the years embarked on pro-poor health initiatives aimed at enhancing individual level health care financing particularly among the poor and vulnerable in society.

Women's education has also been established to be associated with their health seeking behaviors. For instance, the Ghana Demographic and Health Survey 2015 Report found a positive relationship between women's education and their place of delivery. According to the report, 95% of women with secondary education and higher delivered at a health facility compared to 52% of women with no formal education (GSS et al., 2015). Similarly, Birmeta et al. (2013) in a study in Holeta town, Ethiopia, found women with no form of schooling to patronize ANC services less frequently compared to their counterparts with some form of schooling. It is suggested that women's education increases their knowledge of available health facilities and services which subsequently shapes their health care consumption patterns (Ensor & Cooper, 2004). Wilkinson (2002) relates educational attainment to improvement in one's position on the social hierarchy, which in turn influences one's health choices. Ahmed, Creanga, Gillespie, & Tsui, (2010) using data from 31 countries also argued that women's education also empowers them economically, which subsequently improves health care service utilization.

Empirical studies from developing countries reveal mixed findings on the role of women's age on their health seeking behavior (Burgard, 2004; Ensor & Cooper, 2004; Fapohunda & Orobaton, 2013). Old age comes with increased confidence, respect and

influence within the household in many traditional African societies which profoundly impacts on autonomy (Burgard, 2004). While this may be the case in some contexts, Fapohunda & Orobaton (2013) suggest older women are likely to be obsessed with and entrenched in traditions that perpetuate male dominance with its attendant effect on autonomy and health seeking behaviors at large.

Similar to age and health care seeking behaviors, findings on the impact of perceived quality of service on health service consumption are also mixed. A study by Sialubanje, Massar, Hamer, & Ruiter (2015) in rural Zambia revealed that perceived poor quality of delivery services provided at health facilities spurred home deliveries, notwithstanding notable risks associated with it. Similarly, Parkhurst & Ssengooba (2009) in a study in rural Uganda contend perceived low quality of services offered in health facilities caused underutilization and by-pass of certain health facilities. Thus, the quality of health care services provided determines its acceptability and people's subsequent behavior towards it (Penchansky & Thomas, 1981; Peters et al., 2008). Contrary to these findings however, Mills et al. (2008) report no association between community perception on quality of service provided and use of skilled delivery services in Navrongo (Upper East Region of Ghana). These antithetical findings reemphasize the role of context in health care service utilization. Limited health care services provided by CHPS couple with logistical constraints have potential implications on perceived quality of service and subsequent patronage.

Religious beliefs have also been cited in literature to remarkably influence women's need and uptake of health care services. Gyimah et al. (2006) found a relationship between women's religious affiliations and their health care access in Ghana.

Similarly, a study by Addai (2000) found a significant association between religion and maternal health care consumption in Ghana with Christian women more likely to access maternal health care services compared to both their Traditional and Muslim counterparts. The author suggests religious beliefs tie down followers to particular health care practices regardless of their appropriateness (Addai, 2000). For instance, whereas some religions prevent pregnant women from moving outside the house, others demand consultation of the gods before seeking treatment (Ensor & Cooper, 2004; Ngom et al., 2003). Likewise, some religious doctrines discourage the use of orthodox medicines while others uphold divine healing (Gyimah et al., 2006). These have tremendous implications for health care access.

Relatedly, it is argued that certain cultural practices tend to encourage unorthodox health care seeking behaviors along with male dominance, potentially limiting women's autonomy within the household (Ngom et al., 2003). For instance, a study by Baiden et al. (2006) in the Kasena-Nankana District of the Upper East Region revealed women preferred home deliveries as a proof of their bravery, faithfulness to husbands or freedom from curse or punishment from the ancestors. Evidence also show that women in many parts of SSA owing to the cultural setup ought to seek permission from husbands and male family members before accessing health care (Beyai, Aboagye, Adutum, Salifu, & Sedegah, 2013). Likewise, women's participation in decision-making concerning their health is limited in these settings (Furuta & Salway, 2006; Ganle et al., 2015). Even where women partake or make autonomous decisions to seek health care, they would have to rely on male household members for financial support and means of transport to the health facilities (Beyai et al., 2013).

Furthermore, health care professionals' attitude and relations with women largely shapes their health care seeking behaviors (d'Ambruoso, Abbey, & Hussein, 2005). Women are less likely to seek and utilize health care services once they anticipate maltreatment and intimidation by personnel at the health facility (Birmeta et al., 2013; Sialubanje et al., 2015). Turkson (2009) in a study on perceived quality of health care service delivery in a rural district of Ghana reveal widespread favoritism, corruption, rudeness, disrespect and impatience on the part of health professionals towards patients. These practices tend to deter women from accessing health care services even when health facilities are within proximity. Cognizant of the consequence of good relationship on service delivery, it is reported that women tend to invest time and efforts to establish good relationships with health professionals by indulging in appropriate practices such as being mindful of the health booklet which contains patient data (Østergaard, 2015).

Women's perception of their health status and type of illness has also been cited to determine their health care services utilization (Anderson & Eswaran, 2009; Senarath & Gunawardena, 2009). In a study by Cham, Sundby, & Vangen (2005) in rural Gambia, it was revealed that seven out of the thirty-two deaths were as a result of delays in accessing health care stemming from the underestimation of complications either by the woman, her relatives or other community members. Sialubanje et al. (2015) also reported that women in rural Zambia patronize the services of traditional birth attendants because they perceived themselves to be unsusceptible to complications. Thus, knowledge and capacity building are critical for women to be able to recognize abnormalities, assess the severity and make informed decision to seek appropriate care (Thaddeus & Maine, 1994).

In conclusion, as indicated earlier, women's health care access determinants are multifaceted and complex, varying from one context to another. It is therefore prudent in achieving desired health outcomes to adopt multi-sectorial approaches to health care policy formulation and implementations, especially in low and middle income countries. This theoretical discourse aided in the conceptualization and adoption of relevant approaches to guide this study with the hope to generate policy relevant findings to improve health care access among women. This is the case because, in spite of the many initiatives that have been embarked on to eliminate health care access barriers, a considerable proportion of women, particularly rural women within the low socio-economic class still face daunting challenges.

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Chapter Three: Methodology

3.1 Introduction

This chapter explains the study methodology including the design, sources of data and how these collectively relate to its ontological and epistemological underpinnings in understanding women's health care access and utilization in the Upper West Region (UWR) of Ghana. The chapter provides methodological details that are not captured in the manuscripts due to journal preferences and limitations.

3.2 Philosophy

Research in Geography, as it is in many other disciplines, is guided by the researcher's philosophy and as such this study draws on objectivism and post positivist theoretical perspectives in investigating the role of CHPS on women's access to health care services in the UWR of Ghana (Aitken & Valentine, 2006). A researcher's philosophy, defines his/her ontological persuasion as the process of knowing the nature of reality; and epistemology as what is admissible as valid knowledge and how it can be obtained (Couper, 2015; Crotty, 1998). According to Crotty (1998), ontological and epistemological issues are inter-connected, and delinking them can be daunting. Thus, from an ontological perspective, "reality" is viewed as either "objective" or "subjective" in the epistemological realm. Subjective reality, also known as "subjectivism" assumes the lived experiences of individuals through their interactions with the environment defines/constitute their "reality" or "knowledge" (Lincoln, Lynham, & Guba, 2011; Packer & Goicoechea, 2000). Thus, meanings ascribed to objects and phenomenon are contingent on experiences of the subjects. On the other hand, objective reality or

"objectivism" assumes knowledge exist outside our lived experiences, and is thus, derived from nature devoid of our human manipulations, interpretations or sensory perceptions. In view of this, the researcher's understanding of knowledge (epistemologies) legitimates the theories and methodologies employed in their research (Aitken & Valentine, 2006).

Understandably, the persuit of knowlegde occurs within the context of a theory or theories —guided by a set of assumptions (Crotty, 1998). This study broadly adopts post-positivist theoretical perspectives to examine the impact of CHPS on women's access to health care services in the UWR. Post-positivism denotes a paradigm shift from positivism, a theoretical perspective grounded in the notion of existing objective reality obtainable through the scientific approach. Post-positivism emerged from the understanding that scientific enquiry is not devoid of human values, emotions, interest and fallibility. It challenges the notion that observations are independent of or detached from the observer. Post-positivist hold the view that there exists objective reality, but this reality is context laden and not devoid of human influences. With post-positivist research therefore, it is suggested that in the process of knowledge derivation, researchers should endeavour to understand the different values, thoughts and actions of the study participants rather than focusing on empiricism and the generation of general laws to explain these actions (Castree, 2005). Within the context of this research, which is grounded in post-positivism, there is recognition of the existence of objective knowledge about the limited access to health care services in the context of developing countries, but women's access to and health care seeking behaviors to an extent is influenced by the

socio-economic and cultural conditions in which they live in, informed by our experiences and values.

The study adopted a quantitative research methodology to examine the impact of CHPS on women's access to health care in the UWR of Ghana. Adopting a quantitative methodology was informed by the desire to generate objective, broad and action oriented knowledge that is generalizable to the entire region and similar settings in Ghana and elsewhere. This is particularly imperative for the CHPS initiative, which seeks to improve health outcome in the country as a whole. Sayer (1992) denotes this as extensive research which contrasts with an intensive study design that seeks to provide deeper understanding of underlying principles, motives, opinions and actions of people. Although, quantitative research methodology is generally linked to objectivist epistemologies and positivist theoretical perspectives, Crotty (1998: 15) intimates that "quantification is by no means ruled out within non-positivist research". That is, the quantitative-qualitative research divide bears more on the research questions and expected outcomes (Couper, 2015; Crotty, 1998; Sayer, 1992). Quantitative research methodologies have been widely employed in assessing health care access in developing countries including Ghana (see Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014; Kuuire, Bisung, Rishworth, Dixon, & Luginaah, 2015; Rishworth, Dixon, Luginaah, Mkandawire, & Prince, 2016).

3.3 Study Methods

3.3.1 Study design and sampling

Aimed at assessing the impacts of CHPS on health care access among women in the UWR of Ghana, this study used quantitative methods with the goal to generalize findings

to the whole region and similar settings. Although research has been conducted on women's access to health care in Ghana, such studies have been limited to Southern Ghana. There exist dearth of research on health care access among women in the northern part of the country, comprising Ghana's three poorest regions (GSS, 2014b). Additionally, the few studies conducted on women's health care access in the UWR region employed qualitative study designs, which are limited in their generalizability (Atuoye et al., 2015; Ganle & Dery, 2015; Rishworth et al., 2016; Woods, 2016). In view of this, it is pertinent to use a quantitative study design to understand health care access in the region especially within the context of CHPS, a nationwide Primary Health Care (PHC) promotion initiative that necessitates findings that are generalizable. This study involved four successive stages including research design and proposal writing, data collection, data analysis, and manuscript writing and thesis formatting.

The data collection took place in the Spring and Summer of 2015, and begun with the recruitment of eight graduate and undergraduate research assistants (RAs) based on their research experience, familiarity with the study context, access to means of transport and proficiency in the local languages due to the multi-lingual nature of the study area. As such, these RAs had gained experience working with students from the University of Western Ontario who were in the region earlier to collect data. Additionally, RAs resided in the study districts and had access to motorbikes to ensure effective and efficient data collection. Notwithstanding their research experience, RAs were taken through a three-day intensive training on the survey instrument and research ethics. There was a role play and a pretest of the survey instrument to minimize errors and address potential challenges during field interviews. As part of the training, participant selection and survey questions

were extensively discussed, which saw questions translated into the various dialects to ensure that RAs understood them for consistent and appropriate data collection. RAs were also taken through research ethics protocols as prescribed by the Western University Non-Medical Research Ethics Board. Prior to the commencement of data collection in each district, I went on a familiarization visit with the assigned RA and discussed the essence of the research to the opinion leaders in sampled communities. Except for Wa municipality which had two RAs due to the targeted sample size, all other districts had one RA assigned. During data collection, I visited and supervised all RAs on the field to ascertain at first-hand how the data collection progressed and ensure that appropriate research protocols were followed. Additionally, each RA was made to sign a confidentiality agreement to ensure participant privacy.

The study employed a multistage sampling technique in selecting participants. The total number of females 15 years and older in the region according to the 2010 Population and Housing Census was 243, 568 (GSS, 2013). Using Slovin's formula [n=N/(1+(N*e^2))], the minimum sample size required for a 95% confidence level was estimated from this female population (i.e. 15 years and older) and this stood at 400 (see *also* Yamane, 1973). In view of this, 805 respondents were sampled to give a statistical significant power to this study, and this had a 100% response rate. The first stage of sampling involved selecting seven (7) study districts based on poverty ranking estimates provided by the Ghana Living Standards Survey Round 6 (GLSS 6), whilst ensuring that all ethnic groups and geographical areas are duly represented (GSS, 2015). Poverty served as an important criterion given its significant influence on the provision of health care services by the various District Health Directorates and District Assemblies. It has

also been cited in the literature as an important determinant of women's overall access to health care services (see Dixon et al., 2014; Woldemicael & Tenkorang, 2010). Based on this criteria therefore, four districts namely Sisaala East, Sisaala West, Wa West and Nadowli/Kaleo formed the poor district cluster with Wa Municipal, Jirapa and Nandom constituting the rich district cluster. Each district was then clustered into CHPS and non-CHPS zones, with 70% and 30% of study participants drawn from them respectively. The number of participants drawn from each sampled district was proportional to its total population according to the 2010 Population and Housing Census as shown in Table 1 below (GSS, 2013).

Table 1: Sampled Districts

District	**Sample Size**
	Number (%)
Sisaala East	79 (9.8%)
Sisaala West	69 (8.5%)
Wa West	113 (14.0%)
Nadowli/Kaleo	132 (16.4%)
Wa	149 (18.5%)
Jirapa	123 (15.3%)
Nandom	140 (17.4%)
Total	**805 (100%)**

Given the rural focus of CHPS, I furthermore recruited 70% of respondents in CHPS zones from rural communities, and the remaining 30% from urban areas. In districts without urban CHPS, respondents were drawn from rural CHPS zones. With non-CHPS zones, 70% of respondents were also drawn from rural areas and 30% from urban areas. All district capitals were selected for the study as they formed the only urban

centers for the very rural districts. In Ghana any settlement with a population of 5,000 or more is designated as urban (GSS, 2014a; Songsore, 2009).

Participants were recruited using a systematic random sampling technique, with a woman from every fifth household starting from one end of the sampled community participating in the study. A household is defined as "a single or a group of persons who lived together in the same house or compound and shared the same house keeping arrangement and are catered for as one unit" (GSS, 2013: 30). This approach was used to control for possible participant selection bias. A woman from each household with the most recent delivery was interviewed. This was done to generate up to date potential impacts of CHPS on health care access as well as avoid recall bias. Each RA could administer a maximum of 10 questionnaires a day to prevent potential errors associated with fatigue.

3.3.2 Data collection tools

The study adopted and modified the Ghana Living Standards Survey Round 6 (GLSS 6) questionnaire, particularly the household and community survey instrument to examine the impact of CHPS, on women's access to health care services in the UWR of Ghana. The Ghana Living Standards Survey (GLSS) survey is a nationwide household survey conducted by the Ghana Statistical Service since 1987 to elicit information on the general living conditions in the country (GSS, 2014a). The instrument collects extensive data from selected households on a wide range of issues including demographic characteristics, health, education, employment, migration and tourism, income, expenditure and access to credit facilities.

Questions from this instrument were modified to suit the study objectives, and in line with other empirical studies and theoretical persuasions. The modified questionnaire captured data on women's place of residence, access to antenatal care, place of delivery, who made the decision regarding where the delivery took place, access to care, access to a health facility and distance to a health facility. Questions relating to women's socio-economic and demographic characteristics such as age, level of education, marital status and household wealth and assets were also asked (see Appendix A). Studies by Goddard & Smith (2001), Kuuire et al. (2015), Rishworth et al. (2016) and Woldemicael & Tenkorang (2010) established associations between these measured variables and women's access to health care services in varying contexts.

3.3.3 Data analysis

Data were initially processed using an SPSS software package for onward modelling using Stata 12. Prior to the analysis, data were cleaned to remove errors that may have occurred from wrong entries and coding to ensure that study findings are accurate and valid. Whilst a detailed description of the analytical technique used is provided in the individual manuscripts, this section describes broadly the methods employed for the thesis as a unit. Given the dichotomous nature of my dependent variables for both manuscripts, I used binary logistic regression which is best suited for this kind of variables (Hosmer, Lemeshow, & Sturdivant, 2013). Also, the pseudo symmetrical nature of the dependent variable renders other analytical techniques including probit and ordered logistic regressions inappropriate for this analysis (Buis, 2010). Specifically, for the first manuscript, which examined women's access to basic health care services, the dependent

variable was measured with the question: "Were you able to access health care from a professional when you needed it?" The independent variable was residence in CHPS and non-CHPS zones. A similar question was used by the Ghana Statistical Service to assess health care service access in the GLSS 6 (GSS, 2014b). Also, studies by Farrants et al. (2017), Kuuire et al. (2015) and Porell & Miltiades (2001) used a similar question to assess access to health care in their studies. For the second manuscript, which aimed at understanding the relationship between residence in CHPS zones and women's independent ability to decide to seek health facility-based deliveries, the dependent variable was women's "independent decision to deliver a baby in a health facility". This was measured with the question: "If you delivered in a health facility, who made the decision for the delivery there?" Senarath & Gunawardena (2009) and Anyait, Mukanga, Oundo, & Nuwaha (2012) used this question to assess women's autonomy in accessing health care services in varied contexts. The focal independent variable was residence in CHPS or non-CHPS zones. Other independent variables were place of residence and distance from a health facility. Only respondents who had indicated that they delivered in a health facility formed the sample for this manuscript.

Central to research is the right of participation and withdrawal, privacy, confidentiality and safety of participants. Consequently, ethical approval for the study was obtained from the University of Western Ontario Non-Medical Research Ethics Board and all protocols duly adhered to. As indicated earlier, RAs were made to sign undertakings to observe all research ethics. The purpose of the study was appropriately communicated to participants and their privacy assured prior to survey administration.

Participants were also made to understand their right to discontinuity whenever they wished.

3.3.4 Rigor

During the study, steps were taken at all stages (research design, data collection and analysis) to ensure robustness. This is necessary to guarantee validity, reliability and generalizability of the findings. Firstly, I ensured that the survey questions were comprehensive, simple, clear and easy to interpret and translate into all languages in the study context without losing their conceptual meanings. Although all RAs were university students and had experience in similar studies, they were given a three (3) day intensive training with a field pretest of the survey instrument to ensure they understood the questions and objectives of the study. While on the field, RAs were supervised and monitored to ensure collation of high quality data. To avoid errors that may have occurred because of hasty questionnaire administration, tiredness or fatigue, RAs were allowed to administer a maximum of 10 surveys per day. The sampling technique ensured adequate representation and variability in the population interviewed. Additionally, I ensured the sample size (n=805) was large enough for valid and generalizable results. Internal validity checks were further conducted during data entry and analysis.

3.4 Conclusion

This chapter expatiated on the underlying philosophies of this study. It also provided a link between the methods sections of individual manuscripts of this integrated style thesis. Furthermore, the research design, data collection steps and analytical techniques

used in this study have been described in detail. The chapter then concludes with a discussion of the strategies deployed to ensure robustness of the study given the need for valid and generalizable findings

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Chapter Four: Community-based Health Planning and Services and Women's Access to Primary Health Care

4.1 Introduction

Although access to Primary Health Care (PHC) services has been widely recognized and entrenched as a fundamental human right (Toebes, 2001; UNHCHR & WHO, 2008), a considerable number of people in low and middle income countries lack access to basic health care services (WHO, UNICEF, UNFPA, The World Bank, & The UNPD, 2014; WHO, 2008a). PHC as an approach to improving health care access was adopted in 1978 at the Alma-Ata conference by WHO member countries. It was defined as "essential health care based on practical, scientifically sound and socially acceptable methods and technology, made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of development in the spirit of self-reliance and self determination" (WHO, 2008b: 5). PHC is a community based service delivery approach that seeks to bring basic but comprehensive and affordable health care services to the door steps of people through the treatment of diseases, immunizations, vaccinations, family planning, health education and sensitization programs (Hall & Taylor, 2003; WHO, 2008b). It seeks to address inequalities in health care access by providing essential basic health care services, especially to the poor and rural dwellers.

Trends in access to health care within many of these low and middle income countries reveal wide inequalities across geographical, social and economic spectrums (Gwatkin et al., 2007; WHO et al., 2014; WHO, 2008a). Segments of the population remarkably affected include women, rural residents, the poor and minority groups (WHO,

2016). To this end, the recently endorsed Sustainable Development Goal (SDG) 3 seeks to ensure healthy lives and wellbeing for all — with emphasis on Universal Health Coverage (UHC), access to quality essential care, financial support, safe, quality and affordable medicines and vaccines by 2030 (WHO, 2016). This understandably can be achieved by aggressively implementing PHC policy initiatives that explicitly target need areas. This study seeks to explain the contribution of the Ghana Community-based Health Planning and Services (CHPS), a PHC model to access to basic health care services, as part of efforts to meet global health targets including the current SDG 3.

In Ghana, the situation is not different in terms of access to care, with reported geographical and socio-economic disparities (GHS, 2015b; GSS, 2014b). Worryingly, access to health care amongst women is poor compared to their male counterparts although scholarship have shown women have greater health needs than men (GSS, 2014b; WHO, 2015). For instance, pregnancy and child birth exposes women to more risk including obstetric complications and it is not surprising these have been reported to be the lead cause of maternal deaths in Ghana (GHS, 2015b; World Bank, 2016). While evidence point to improvement in access to health care among women in recent times including maternal health care with the implementation of a number of health policies such as the free maternal health care policy under the NHIS, physical barriers remain significant impediment to care. This is particularly the case in rural areas where roads are mostly not motorable and transportation is irregular (Atuoye et al., 2015; Rishworth, Dixon, Luginaah, Mkandawire, & Prince, 2016). Other factors impeding women's access to health care include inadequate health care professionals, lack of logistics as well as abusive and non-receptive attitude of health care professionals towards patients. For

instance, a study by Yakong, Rush, Bassett-Smith, Bottorff, & Robinson (2010) in rural Ghana revealed that unethical practices by health care professionals such as intimidation and lack of privacy affects women uptake of facility delivery services. Similarly, a report by the Institute for Health Metrics and Evaluation (2015) found over 80% of health facilities to operate below 50% efficiency owing to shortage of health professionals, equipment and medicine, with adverse implications on health service delivery especially in rural areas.

Cognizant of the fact that the concept of health care access is complex and difficult to operationalize (Goddard & Smith, 2001; Goddard, 2009; Oliver & Mossialos, 2004), this paper conceptualizes access using Peters et al., (2008) and Levesque, Harris, & Russell (2013) works. Peters et al., (2008) and Levesque, Harris, & Russell (2013) works are unique to an extent that they capture the key dimensions and factors impacting health service access and utilization in developing countries. Health care access is concerned with the ease with which patients utilize appropriate health care services. This literature posits that, access to health care is a function of wide range of interrelated community and individual level factors. These include geographical or locational characteristics such as place of residence, the availability of health facilities and distance to health facilities (Atuoye et al., 2015; Kuuire, Bisung, Rishworth, Dixon, & Luginaah, 2015). Others are age, wealth status, religion, level of education and marital status (Boateng et al., 2014; Buor, 2005; Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014).

4.1.1 The CHPS policy in Ghana

In addressing challenges to health care access in rural areas, the Government of Ghana in collaboration with the Ghana Health Service in 1999 implemented the CHPS policy (Nyonator et al., 2005; Atuoye et al., 2015). CHPS is a primary health service delivery model that seeks to provide basic curative and preventive health care services such as treatment of minor illnesses, antenatal care, postnatal care, health education and sensitization programs (Nyonator et al., 2005). It is a national supply side health initiative that focuses on providing health care services to Ghana's rural and remote areas as part of efforts at bridging the health care need gap and reducing inequalities in care. CHPS operates through community resource mobilization and engagement with a resident Community Health Officer (CHO) assigned to provide health care services. Health care services are provided at the CHPS compound, which also serves as residence for the CHO. The CHOs work in collaboration with trained Community Health Volunteers (CHVs) particularly in areas of basic health surveillances, health promotion and health education. In cases of illness beyond the capacity of CHPS, CHOs make referrals to much higher/advanced health facilities such as clinics, polyclinics, sub-district, district and regional hospitals. The zoning system was adopted to clearly define and assign a CHO to a catchment area for effective service delivery. Each CHPS zone has up to 5000 persons or 750 households especially in highly populated areas. Since its adoption as a national policy after the Navrongo pilot, the number of CHPS has been on the increase. As of 2014, the number of CHPS zones in Ghana stood at 2,948 (WHO, 2015) and these accounted for 3.8% of overall health care services provided in the health sector (GHS, 2015b).

Despite empirical findings suggesting that CHPS could be improving access to PHC, reported widening gender as well as inter and intra-regional health care access gaps raise questions about the extent to which the policy is achieving its goals (GHS, 2015a; WHO, 2015). Indeed, this persistent disparity in health care access amidst several health care access initiatives and policies suggest these policies may be ineffective in attaining their set targets. As suggested by Goddard (2009), health care access policies are only effective when the targeted barriers to access have been eliminated. Unfortunately, achieving these targets in developing countries has been challenging generally due to the over ambitious nature of these policies, challenges in funding and weak institutions (WHO, 2015). The CHPS policy could be unique given its acclamation as a remarkable innovation to reducing health care access inequalities.

Yet, there is limited understanding of the contribution of CHPS to PHC access in Ghana. Many of the studies on health care access within the context of CHPS have centered on maternal health care services, primarily antenatal and postnatal care services. This study examines the contribution of CHPS to PHC services access among women in the Upper West Region (UWR) of Ghana by hypothesizing that women in CHPS zones (mostly rural areas) are more likely to access needed health care services than their colleagues in non-CHPS zones. The UWR is unique in that it is among the three northern regions in Ghana plagued with debilitating health, socio-economic and environmental outcomes. This study is important given the fact that barriers to health care access arise for different reasons among different population groups (Dixon et al., 2014). Importantly, the socio-cultural set up of the region marginalizes women and renders them vulnerable with lower socio-economic status, which may have implications on their health service

consumption. This study may provide important insights into the influence of CHPS in health care access and make relevant policy recommendations for achieving UHC in Ghana and other developing countries.

4.1.2 Theoretical background

Cognizant of the varied but related influence sociocultural factors have on women's access to and utilization of health care services (Fotso, Ezeh, & Essendi, 2009; Jejeebhoy, 1995), this study draws on feminist theoretical perspectives and Peters et al. (2008) framework for assessing access to health care services. A combination of feminist theory and Peters et al. (2008) framework for assessing health service use suit this study as they effectively incorporate these contextual and individual characteristics to explain the impact of CHPS on women's overall access to health care in the UWR of Ghana.

Feminism in this study attempts to explain systemic inequalities within the society that occasion marginalization, low autonomy and poor access to and utilization of health care services among women (Annandale & Hunt, 2000; Ross & Toner, 2004; Sen & Östlin, 2008; Zimmerman & Hill, 2000). Feminist researchers seek to exterminate structures of oppression and marginalization including gender, class and race in society by divulging lived experiences and perspectives of victims (Hesse-Biber, 2012). This is in congruence with the tenets of CHPS; which aims to provide equal access to health care services by bringing services closer to people while building capacities and mobilizing community resources to enhance service utilization (Adongo et al., 2013). Among women, this is anticipated to empower them and improve their access to and uptake of health care services. In the UWR, where traditional practices leave women with less control over household resources and decision-making, the presence of CHPS potentially

influences these structures of oppression (GSS, 2013). Consequently, incorporating gender perspectives into this study will aid in understanding how the CHPS initiative in conjunction with women's socio-economic and demographic characteristics collectively influence their access to health care services. Feminism perspectives have been deployed in health research to assess women's health care access dynamics in less developed country context (see Braam & Hessini, 2004; Corbin, 2012; Rishworth, 2014).

Peters et al. (2008) model identifies four main health care access dimensions dictating service use, including geographical accessibility, availability, financial accessibility and acceptability. Geographical accessibility pertains to proximity of health facility/services to people; denoted by place of residence and distance to the health facility. The CHPS policy seeks to eliminate these geographical barriers to access by bringing health care services close to people, particularly in rural areas. Availability is a supply side dimension that involves one's ability to access the right type of service during need, measured in terms of operational hours, availability of health professionals and logistics (Goddard & Smith, 2001). This is determined by residence in a CHPS zone. On the other hand, financial accessibility involves consumers' ability and willingness to pay for services rendered them. Financial accessibility to health care in the study context is assessed using household wealth given the high poverty levels in the region and the fact that all pregnant women in Ghana are insured through the maternal exemption policy under the NHIS (see Dixon et al., 2014; Kuuire et al., 2015). In recognition of high poverty rates among rural dwellers in Ghana, CHOs in collaboration with CHV are required to embark on programs to boost the financial status of members to utilize health service. This is very imperative within the context of the UWR characterized by high

poverty rates (GSS, 2015). Lastly and critical to health service delivery is acceptability, which is a function of the ability to provide service to meet the expectations of users. Non-acceptability of health care services is primarily due to perceived low quality of services provided with its implication on health service use (Hjortsberg, 2003). Other factors influencing these dimensions and largely, health care access include household and individual characteristics such as age, education, marital status and religion.

4.1.3 Study area

The UWR is largely rural (83.7%) with a population of 702,110 (GSS, GHS, & ICF International, 2015). The sex distribution of the region is relatively uniform with female constituting 51.4% of the population. Considered among the poorest regions in Ghana, six out of every ten people are in the lowest wealth quintile with 73% of household incomes coming from agriculture (GSS et al., 2015; GSS, 2015). The region is dominated by a patriarchal social system with its attendant effects on women's autonomy and control over the already scarce household resources. Christianity (44.5%) is the dominant religion, followed by Islam (35.6%) and African Traditional religions (13.9%) (GSS, 2013). There exists high illiteracy rate in the region with about 48.7% of women aged 15-49 having no form of formal education (GSS et al., 2015).

As part of efforts to improve PHC, 145 CHPS zones have been created in the UWR (GHS, 2015b). Despite this, overall access to health care among women is low with little progress in some areas of maternal health care. For instance, the region has a low family planning acceptance rate of 29.1% (GHS, 2015a). Although ANC stands at 85.2%, only 72.3% meet the WHO recommended 4+ visits (GHS, 2015a) and may be

much lower in very remote areas. Also, many deliveries still take place unassisted, leaving assisted/facility delivery rate at 63.9% in 2014 (GHS, 2015a). However, there is a reported 93.7% postnatal services coverage in the region (GSS, 2014b).

4.2 Methods

4.2.1 Sampling and data collection

A cross-sectional survey of 805 women was conducted in seven of the eleven districts in the region using a multi-stage sampling technique. In the first stage, the Ghana Living Standards Survey Round 6 (GLSS 6) reported poverty index was used in selecting seven districts, comprising three rich districts and four poor districts (GSS, 2015). This was done to ensure variation in the districts that formed the analytical sample given that overall wealth levels of districts potentially determine the provision and access to health care services. Subsequently, respondents from each district were selected proportional to the total population of the district using the 2010 Population and Housing Census figures (GSS, 2013). For each district, 70% of study participants were drawn from CHPS zones and the remaining 30% from non-CHPS zones. Finally, a systematic random sampling technique was used to select every fifth household, starting from one end of the community. A woman from each selected household with the most recent delivery was interviewed using structured questionnaire modified from the GLSS 6 instrument for the purposes of the study. Prior to the data collection, questionnaires were tested to ensure their clarity and appropriateness for the study objectives. Trained research assistants who were conversant with the study area and fluent in the local language conducted the interviews. Data were collected on health care access, presence of CHPS, distance to

health facility, household assets as well as demographic and socio-economic characteristics of participants.

4.2.2 Measures

Table 4.1 shows the dependent and independent variables for this paper and how they were coded. With the aim to assess women's access to health care within the context of CHPS, participants were asked the question; "were you able to seek treatment from a health care professional when you needed care?" This question was adopted as a measure of the independent variable because both the previous MDGs and the current SDGs target universal access to health care, epitomized in the ability to seek care from a professional when in need. Kuuire et al., (2015) in assessing health-seeking behavior among adults during illness in Ghana used a similar question as a measure of health service access. Also, Farrants et al., (2017) and Porell & Miltiades (2001) used a similar question in assessing health care access in different settings. Access to professional care is essential given that varied sources of care, many of which are inappropriate exist in this context such as the traditional healers and drug dispensing kiosks. Women's access to care from a health professional was treated as a binary variable with the inability to access care coded as "0" and the ability to access care coded as "1". The focal independent variable is whether respondents live in a CHPS zone or not (0 = no; 1 = yes). In addition, three sets of variables were controlled for, namely locational, socio-economic and demographic variables. Locational variables include urban-rural residence and distance to health facility. For socio-economic variables, I included household wealth quintiles and level of education. Household wealth quintile was constructed using a composite index of

household assets including annual income, electricity, drinking water, radio set, television set, car, motor, toilet facilities and livestock (Gwatkin et al., 2007). Finally, I controlled for three demographic variables, namely age of respondents (measured in completed years), marital status and religion.

4.2.3 Analysis

Given that the dependent variable is dichotomous, the binary logistic regression technique was employed to explore the relationship between the dependent and independent variables. Other analytical techniques such as probit and ordered logistic regressions did not fit the pseudo symmetrical nature of the dependent variable; hence render binary logistic regression the most appropriate analytical technique (Buis, 2010). Analysis was carried using the STATA 14 software. For multivariate analysis, residence in CHPS zone and two other locational variables (rural-urban residence and distance to health facility) were included in Model 1, while socio-economic and demographic variables were further controlled for in Models 2 and 3, respectively. For meaningful interpretation, findings were reported in odd ratios. Odds ratios greater than one indicate that women are more likely to seek treatment from a professional health care providers, while those less than one imply lesser likelihood of doing so.

4.3 Results

4.3.1 Univariate results

Table 2 presents the sample characteristics of the measured dependent and independent variables. Majority of women (83.60%) reported that they were not able to seek care from

a health care worker when they needed it, even though a high proportion of women resided in CHPS zones (76.77%).

Table 2: Univariate analysis of the dependent and selected independent variables

Variable	Category	Codes*	Percentage
Did you access treatment from healthcare worker when needed?			
	No	0	83.60
	Yes	1	16.40
Residence in CHPS zone			
	No	0	23.23
	Yes	1	76.77
Urban-rural residence			
	Urban	0	27.20
	Rural	1	72.80
Distance to health facility			
	Less than 1 km	0	38.39
	From 1 to 5 km	1	24.35
	More than 5 km	2	37.27
Household wealth quintile			
	Richest	0	19.25
	Richer	1	18.39
	Middle	2	18.51
	Poorer	3	23.48
	Poorest	4	20.37
Level of education			
	Secondary/higher	0	22.11
	Primary education	1	20.87
	No education	2	57.02
Age of respondents†			30.82
Marital status			
	Married	0	83.23
	Never married	1	4.47
	Formerly married	2	12.30
Religion			
	Christian	0	49.94
	Muslim	1	39.50
	Traditionalist	2	8.70
	No religion/other	3	1.86
Total			805

†Mean reported for age of respondents
*The categories coded "0" are the reference categories for all variables

4.3.2 Bivariate results

Table 3 shows findings from bivariate analysis. Women residing in CHPS zones reported having more access to care from a health care worker when they needed it relative to their counterparts in non-CHPS zones (OR = 1.426; $p \leq 0.01$).

Table 3: Bivariate analysis of the dependent and independent variables

Variable	OR (SE)
Residence in CHPS zone	
No	1.000
Yes	1.426 (0.155)***
Urban-rural residence	
Urban	1.000
Rural	0.998 (0.099)
Distance to health facility	
Less than 1 km	1.000
From 1 to 5 km	0.923 (0.105)
More than 5 km	0.851(0.086)*
Household wealth quintile	
Richest	1.000
Richer	0.929 (0.133)
Middle	0.925 (0.132)
Poorer	0.673 (0.093)***
Poorest	0.805 (0.113)*
Level of education	
Secondary/higher	1.000
Primary education	1.052 (0.142)
No education	1.056 (0.117)
Age of respondents	1.012 (0.005)**
Marital status	
Married	1.000
Never married	2.503 (0.588)***
Formerly married	1.607 (0.218)***
Religion	
Christian	1.000
Muslim	1.047 (0.098)
Traditionalist	0.847 (0.140)
No religion/other	1.673 (0.566)

* p≤ 0.1; ** p≤ 0.05; *** p≤ 0.01; OR for odds ratios; SE for standard errors

Compared to women that resided less than a kilometer from the health facility, those that lived more than 5 km away were less likely to seek care from a health professional (OR = 0.851; $p \leq 0.1$). For household wealth quintiles, women from the poorer and poorest households were less likely to access care when compared with those from the richest households (OR = 0.673; $p \leq 0.01$ and OR = 0.805; $p \leq 0.1$ respectively). For demographic variables, older women were more likely to seek care from a health professional than their younger counterparts were (OR = 1.012; $p \leq 0.01$). Moreover, never married and formerly married women were both more likely to seek care from a health professional than currently married women were (OR = 2.503; $p \leq 0.01$ and OR = 1.607; $p \leq 0.01$ respectively).

4.3.3 Multivariate results

For the multivariate analysis (see Table 4), three models were built to show the relationship between the independent variables and women's access to health care services. Findings were generally consistent with the bivariate results even after controlling for socio-economic and demographic variables. It was found in Model 3 that women residing in CHPS zones were still more likely to seek treatment from a health care worker than those in non-CHPS zones (OR = 1.612; $p \leq 0.01$). A number of control variables also remained statistically significant. For instance, compared with urban women, rural women were less likely to access health care (OR = 0.696; $p \leq 0.05$). Also, women that lived over 5 km away from the health facility were less likely to access health care compared to those that lived less than a kilometer away from a health facility.

With regards to the socio-economic and demographic variables, household wealth and marital status of women remained robustly associated with women's access to health care.

Table 4: Multivariate analysis of "access to treatment from a health care professional" among women in the UWR, Ghana

	Model 1	Model 2	Model 3
Variable	**OR (SE)**	**OR (SE)**	**OR (SE)**
Residence in CHPS zone			
No	1.000	1.000	1.000
Yes	1.472 (0.167)***	1.580 (0.180)***	1.612 (0.196)***
Urban-rural residence			
Urban	1.000	1.000	1.000
Rural	0.929 (0.096)	0.767 (0.099)**	0.696 (0.099)**
Distance to health facilities			
Less than 1 km	1.000	1.000	1.000
From 1 to 5 km	0.972 (0.112)	0.923 (0.115)	0.885 (0.113)
More than 5 km	0.845 (0.089)*	0.805 (0.088)**	0.809 (0.091)*
Household wealth quintiles			
Richest		1.000	1.000
Richer		0.904 (0.132)	0.926 (0.141)
Middle		0.861 (0.126)	0.863 (0.134)
Poorer		0.580 (0.084)***	0.581 (0.091)***
Poorest		0.644 (0.112)**	0.608 (0.110)***
Level of education			
Secondary/higher		1.000	1.000
Primary education		1.007 (0.143)	1.095 (0.162)
No education		0.906 (0.116)	0.973 (0.136)
Age of respondents			1.006 (0.006)
Marital status			
Currently married			1.000
Never married			2.825 (0.707)***
Formerly married			1.553 (0.242)***
Religion			
Christian			1.000
Muslim			1.012 (0.110)
Traditionalist			0.744 (0.142)
No religion/other			1.438 (0.531)
Constant	0.460 (0.565)***	0.698 (0.148)*	0.526 (0.151)**
Log likelihood	-352.146	-343.754	-324.93

* p≤ 0.1; ** p≤ 0.05; *** p≤ 0.01; OR for odds ratios; SE for standard errors; locational variables in model 1; socio-economic variables added in model 2; demographic variables in model 3

In comparison to richest households, poorer and poorest households were less likely to have access to care (OR = 0.581; p≤ 0.01 and OR = 0.608; p≤ 0.01 respectively). Contrary to the bivariate results, women's age became insignificant after controlling for socio-economic variables. Furthermore, never married and formerly married women were more likely to have access to health care compared to their married counterparts (OR = 2.825; p≤ 0.01 and OR = 1.553; p≤ 0.01 respectively).

4.4 Discussion

This paper examined the relationship between CHPS, a PHC promotion policy and women's access to basic health care services in the UWR. Overall, findings show an improvement in women's access to health care with residence in CHPS zones. These findings are in consonance with the founding principles of CHPS—bridging health care access gap in Ghana through the provision of basic health care services. Findings position CHPS as one of the practicable agents to achieve UHC. Additionally, women's socio-economic statuses were associated with access to health care services in the region. In the midst of ubiquitous unmet health needs, particularly among the poor and rural dwellers in less developed countries, this study contributes to literature that underscore how the micro and macro environments of people dictate access to and utilization of health care services. This has implications for health policy formulation and health research in general.

The preoccupation of any health care system including CHPS is enhancing geographical accessibility to health care services. The reason being that, geographical barriers, manifested in non-availability of health facilities and professionals have been extensively cited to hinder access to health care in less developed countries especially

among rural dwellers. Consistent with previous studies, the findings indicate that residence outside a CHPS zone restricts women's access to health care in the UWR (Ntsua, Tapsoba, Asare, & Nyonator, 2012; Shamsu-Deen, 2015). With a decentralised health care delivery system where the CHPS compound is the lowest point of health service delivery, women, and particularly rural women resident outside the zone will potentially be deprived access to basic health care services since the operational policy framework does not mandate CHOs to provide outreach services to non-residents.

Furthermore, an understanding of the role of CHPS in promoting health care access and service delivery needs to be situated within the context of inherent urban bias in infrastructural development in Ghana and other low-income countries. The study revealed that, rural women were less likely to report having access to health care services compared to their urban counterparts. These findings corroborate previous studies that highlight the effect of rural-urban residence on health care access in low-income settings (Ntsua et al., 2012; Osubor, Fatusi, & Chiwuzie, 2006). The region is generally rural with low infrastructural development, partly due to unfavorable colonial and government policies (Seini & Nyanteng, 2003; Songsore, 2011). Consequently, health access aberration between rural and urban areas here stems from the non-availability of health facilities, as well as difficulties and cost involved in moving from rural to urban centers to access care (Atuoye et al. 2015).

Relatedly, distance to a health facility emerged as a disincentive to women seeking health care and this would likely be exacerbated by the poor transport and road networks that typify many of the rural areas in the region (Atuoye et al., 2015; GSS, 2014a; Shaikh & Hatcher, 2005). For instance, Kuuire et al. (2015) in a study that

examined health care seeking behavior in resource poor settings in Ghana revealed that people who resided at least 5 km away from a health facility had poor access to health facility care. Longer distance to health facilities amidst lower socio-economic status among women may have adversarial consequences on their access to health care services in the region as many of them have to rely on family members to assist them reach these health facilities (Atuoye et al., 2015; Rishworth et al., 2016). Indeed, Woods (2016) reported the emergence of community-initiated emergency transport services through community resource mobilization by CHOs in response to the lack of transportation to health facilities in rural areas in the UWR of Ghana.

Similar to findings by O'Donnell (2007), this study found significant association between household wealth and health care access with poor women being less likely to have access to health care services compared to their richer counterparts. This suggests financial accessibility, epitomized in health facility user fees and transportation cost could be a significant hindrance to health care access amongst women in the region. Besides, findings highlight the potency of the various pro-poor health policies implemented by the central government as part of efforts to enhance financial accessibility to health care. Despite reports that the NHIS and the maternal exemption policy under the NHIS, implemented by government have improved women's access to health care (see Rishworth et al., 2016), there remain disparities in health care access between the poor and the rich. Poor women may still be challenged in paying NHIS premiums and renewals, transport cost to health facilities, as well as user and prescription cost not covered by these pro-poor policies (Atuoye, Vercillo, Antabe, Galaa, & Luginaah, 2016; Dixon et al., 2014). This is consistent with findings by Kuuire et al.

(2015) where households within the lowest wealth quintile were less likely to seek health facility care in spite of the pro-poor status of Ghana's NHIS.

The impact of male dominance on health care access in the region is depicted in the poor access to care among married women compared to their unmarried counterparts. Thus, despite the support married women may receive from their partners, the decision and means to access health care services lies in the hands of male partners. This is primarily attributable to the socio-cultural construction of marriage in the region and the larger Ghanaian society, which accords males power and authority over women. Customarily, women are answerable to men with little participation in household decision-making and control over resources, with its resultant effects on their health. The assertion by Shaikh, Haran & Hatcher (2008) that health care decision-making among partnered women causes delays in seeking care corroborate this finding. In view of this, CHPS is expected to engage in health promotion and sensitization programs alongside community resource mobilization to empower people, especially women to utilize health care services.

In spite of the importance of the study findings, there are some limitations largely arising from the nature of the study design. Firstly, the study is cross-sectional which limits the interpretation of the findings to a single time relationship between the explanatory and response variables. Secondly, the study relied on self-reported health access, which may be affected by recall bias. Nonetheless, the findings are generally consistent with the literature on health care access in less developed countries.

4.5 Conclusion

This paper examined the role a PHC policy through CHPS plays on women's access to health care services in the UWR of Ghana. Consistent with previous studies, findings suggest CHPS has enhanced access to basic health care services in the region. An understanding of how the CHPS policy coincide with people's socio-demographic and economic characteristics to influence their health seeking behaviors is essential for the design and implementation of efficient and sustainable PHC policies. This is particularly relevant to the context of the UWR of Ghana, dominated by patriarchy and high levels of poverty amongst women. The study recommends that the number and quality of CHPS compounds should be increased to provide easy access to quality care. Additionally, health service providers (CHO and CHV) should be supported, incentivized and offered training intermittently to keep abreast with health issues and needs. There is also the need to develop and engage in gender sensitive programs that will help build the capacities of women within the households to seek health care services.

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Chapter Five: Community-based Health Planning and Services and Women's Empowerment for Facility-Based Delivery

5.1 Introduction

Between 1990 and 2015, an estimated 10.7 million maternal mortalities were recorded globally, with over 99% of these deaths occurring in low income countries (WHO, UNICEF, UNFPA, World Bank Group, & UNPD, 2015). The sub-Saharan African region alone accounts for about 66% of these with a 2015 Maternal Mortality Ratio (MMR) of 542 deaths per every 100,000 live births, more than twice the global ratio of 216 deaths per 100,000 live births (WHO et al., 2015; WHO, 2016). Thus, average lifetime risk of maternal mortality is much higher in this sub region (1 in 36) compared with the global ratio (1 in 180). Consequently, improving maternal health has taken center stage in many global developmental discourses and actions such as the previous Millennium Development Goals (MDGs) and the current Sustainable Development Goals (SDGs). For instance, while MDG 5 aimed to reduce maternal mortality by three quarters by 2015, SDG 3 targets a reduction in global maternal mortality to rates less than 70% by 2030 (United Nations, 2015).

In spite of increased health interventions to meet these global health goals such as the Community-based Health Planning and Services (CHPS), Ghana like many low income countries continues to experience high MMR, with reports placing the national figure above 380 deaths per 100,000 live births, way more than the global average of 216 deaths per 100,000 live births (GHS, 2015b; World Bank, 2016). Many of these deaths have been linked to pregnancy-related complications such as haemorrhage, sepsis infections, abortions and hypertensive disorders (United Nations, 2015). Post-partum

haemorrhage, also known as excessive bleeding after child birth, has been reported to be the lead cause of these mortalities in Ghana, accounting for about 30% of all deaths (GHS, 2015a). Although facility-based deliveries have been recommended to minimize these maternal deaths (Essendi, Mills, & Fotso, 2011; Gabrysch & Campbell, 2009), a significant proportion of women in the country, particularly in the Upper West Region (UWR) do not have access to this all important service mainly because of inadequate health facilities and personnel, poor transportation network and financial cost involved in accessing care (Atuoye et al., 2015). It is reported that about 36% of women in the UWR do not have access to supervised deliveries (GHS, 2015a).

Consequently, CHPS was introduced as part of broader health policies aimed at empowering communities and improving health care access (MoH, 2016). The CHPS policy was adopted in 1999 with a focus on delivering Primary Health Care (PHC) services to deprived communities through community resource mobilization and engagement using a trained Community Health Officer (CHO) (Adongo et al., 2013; Nyonator, Awoonor-Williams, Phillips, Jones, & Miller, 2005). The CHPS model traditionally aims at eliminating both financial and geographical barriers to health care access among the poor and rural populations in Ghana. Although CHPS targets maternal and child health, it does not provide obstetric services except in emergencies (MoH, 2016). CHOs are required to encourage and facilitate referrals to higher-level health facilities for deliveries and other health complications. Importantly, the community empowerment component of the CHPS policy was designed to build capacities of members and promote health service utilization through advocacy, education, sensitization, information dissemination and community resource mobilization (Ntsua,

Tapsoba, Asare, & Nyonator, 2012; Stephenson, Baschieri, Clements, Hennink, & Madise, 2006). Typically, CHPS operate under a form of zonal system where a defined catchment area, currently an electoral area is demarcated as a CHPS zone for equitable and efficient service delivery (MoH, 2014). A resident community health officer (CHO) /nurse with support from community health volunteers (CHV) spearhead the daily operations of this CHPS zone.

Health care access literature however shows that women's health seeking behavior (particularly seeking obstetric care in less developed countries) is related to their decision-making autonomy within the household (Bloom, Wypij, & Gupta, 2001; Speizer, Story, & Singh, 2014; Woldemicael & Tenkorang, 2010). For instance, Speizer, Story, & Singh (2014) found that women with less access to skilled birth attendants are among women with low decision-making autonomy in Ghana. Similarly, a study in rural Tanzania reported that place of delivery was influenced by intra-household decision-making dynamics (Mrisho et al. 2007). Considering the risk involved in unassisted deliveries, women are more likely to seek facility-based delivery services when empowered with health information, resources and the freedom to decide where to deliver. Unfortunately, evidence point to little independent health decision-making autonomy among women in Ghana. For instance, only 27% of women reported being allowed to make independent decisions concerning their health (GSS, GHS, & ICF International, 2015). Even with this 27%, there exist substantial geographic disparities, likely aligned to the existing divide between the northern and southern parts of Ghana with the northern women experiencing the worse forms of oppression and marginalization (Boateng et al., 2014; GSS et al., 2015). Thus decision-making within the

household in this context does not always include women — even on issues concerning their health (Adongo et al., 2013; Gabrysch & Campbell, 2009). This lack of control over decisions on their own health may have adverse effects on women's uptake of facility-based delivery services and largely their health seeking behavior.

Despite the usefulness of previous studies in furthering our understanding of the role of women's autonomy (decision-making) and their health seeking behaviors, the role of CHPS in promoting women's autonomy, which includes authority to independently decide on place of delivery has been underexplored. This is because CHOs as part of the CHPS operational framework are mandated to embark on community resource mobilization and capacity building programs aimed at empowering people to seek and access health care services. Understanding this component of CHPS is important in the context of UWR where patriarchy and pervasive gender inequalities have engendered low women health decision-making autonomy (Atuoye et al., 2015; Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014; Moyer et al., 2014; Rishworth, Dixon, Luginaah, Mkandawire, & Prince, 2016). This paper contributes to ongoing discussion on improving maternal health care by examining the role of the CHPS program in promoting women's place of delivery decision-making autonomy. It is hypothesized that:

1. Women residing in CHPS zones are more likely to have autonomy to decide on health facility-based delivery.

5.1.1 Review of literature

The relationship between women's autonomy and their health seeking behaviors is complex and context dependent (Mistry, Galal, & Lu, 2009; Woldemicael & Tenkorang,

2010). These complexities are attributed to the varied but interacting social-cultural, economic and political environment in which women live (Andersen & Davidson, 2001; Babitsch, Gohl, & von Lengerke, 2012). Autonomy has been variously conceptualized and understood to comprise of multiple dimensions (Bloom et al., 2001). For instance, Dyson & Moore (1983) refer to autonomy as the ability – technical, social and psychological – to obtain information and to use it as the basis for making decisions about one's private concerns and that of others. Also, Burchardt, Evans, & Holder (2010) describe autonomy as the extent of choice/freedom, control and empowerment that one has over his/her life. Central to the many conceptualizations of autonomy is the independent use of information and resources alongside control over decision-making.

Indeed, empirical evidence point to a nuanced relationship between women's autonomy and their health care seeking behavior. Increased women's autonomy enhances their social status, and strengthens their bargaining power within the household on issues that affect their life, including health care service utilization (Speizer et al., 2014). The degree of impact autonomy has on women's health however, is contingent on the dimension of autonomy (Mistry et al., 2009; Senarath & Gunawardena, 2009). For instance, Bloom et al.(2001) in a study on the influence of autonomy (freedom of movement, control over financial resources and decision-making) on women's utilization of maternal health care services showed that freedom of movement was the major determinant of women's uptake of maternal health care services in India. In some other studies, the availability of health facility has been highlighted as an important factor influencing women's autonomy and their subsequent health care seeking behavior (see Atuoye et al., 2015). This is because health care professionals not only provide

clinical/medical services, they also engage in health education, capacity building and empowerment initiatives which tend to enhance women's autonomy both within the household and the community and reduce socio-cultural barriers limiting women's capacity to utilize health care (Awoonor-Williams et al., 2013; Ngom, Debpuur, Akweongo, Adongo, & Binka, 2003). For instance, community engagement and "door-step" service delivery in conjunction with various social support systems through community resource mobilization and health promotion activities under the CHPS program have been noted to have empowered women to seek health care (Mills & Bertrand, 2005; Ngom et al., 2003; Smith & Sulzbach, 2008).

In addition to the presence of health facilities, other studies indicate that both women's autonomy and independent health care decision-making ability including facility based deliveries are also dependent on their geographical location as well as socio-demographic and economic factors (Andersen & Davidson, 2001; Stephenson et al., 2006). Factors such as age, level of educational attainment, marital status, household structure, religion and rural/urban residence, operate at multi-scalar levels to influence women's autonomy in making health decisions. An example is old age, which directly relates to exercise of authority and respect in most traditional communities. This authority translates into autonomy and active participation in household decision-making including health decisions (Letamo & Rakgoasi, 2003). Furthermore, Babalola & Fatusi (2009) found education to be a significant individual level predictor of women's health seeking behavior in Nigeria, with women with higher educational attainment likely having higher health decision-making autonomy than their counterparts with low educational attainment. Additionally, in Botswana, Letamo & Rakgoasi (2003) found

varied levels of health service utilization between married women and their unmarried counterparts. Similarly, wealth or economic status has implications for women's autonomy and health seeking behavior particularly within the sub-Saharan African region where cost of accessing health care services remains high, beyond the reach of majority of the population who live in rural and deprived conditions (Dixon et al., 2014; UNECA, AU, ADB, & UNDP, 2015).

Nonetheless, recent studies have revealed a narrowing rural-urban gap in health care access because of increasing populations in urban localities which has put pressure on health care services in that context amidst improvement in rural health care access with the implementation of community level health programs in recent times (Fotso, Ezeh, & Essendi, 2009). The health care access literature however contends that the overall influence of socio-economic, socio-cultural and demographic variables on women's autonomy and health seeking behavior is context dependent (Fotso, Ezeh, Madise, Ziraba, & Ogollah, 2009; Stephenson et al., 2006). In this regard, the study accounted for the impact of these variables to explain the independent impact residing in a CHPS zone has on women's decision-making autonomy to deliver at a health facility in the Upper West Region (see Woldemicael, 2010).

5.1.2 Study context

The UWR is located in the north-western part of Ghana and has a population of about 702,110. The region is largely rural (83.7%) with an agrarian economy, which accounts for 73% of household incomes. This possibly explains the high poverty rates in the area, with 7 out of every ten residents being poor (GSS, 2014b, 2015). Illiteracy rate remain

high in the region with the rural (70%) areas been worse off compared to the urban (34.9%) areas. The region is patriarchal and dominated by the extended family system with pockets of nuclear households especially in urban areas. Nuclear households however still hold ties with their various extended families and rely on them in times of need such as bereavement, sickness and financial support (GSS, 2013). The cultural and social construction of the region has spawned pervasive gender inequalities with women being marginalized and less empowered within the household with its ramification on their control over household resources and decision-making (Abdul-Korah, 2011; Nyantakyi-Frimpong & Bezner-Kerr, 2015). The dominant religions here are Christianity, Islam and Traditional (GSS, 2013).

Overall, health care coverage in the region is among the lowest in the country, with the lowest ratio of health professionals to population (Kuuire, Bisung, Rishworth, Dixon, & Luginaah, 2015). The introduction of CHPS was touted as a positive step to address low availability of health professionals and services in resource poor locations such as the UWR (Nyonator et al., 2005). Currently, there are 145 CHPS in the region providing various services including maternal care services (GHS, 2015b). Despite the grim statistics on health care service availability in the region, it is interesting to note that the region has one of the highest proportion of residents registered in the National Health Insurance Scheme relative to the other regions in the country (GSS, 2014a).

Whereas knowledge of modern contraception is high (98.1%) (GSS et al., 2015), family planning needs, an important indicator of health care access among women, remains unmet, with a supply that is half the demand (25.2% supply vis-à-vis a demand of 52.7%) (GSS et al., 2015). This potentially explains the high fertility rates of about 5.2

births per women relative to the national rate of 4.2 births per women, and this is much higher among the poor and women with low educational attainment (GSS et al., 2015). Nonetheless, there is a steady increase in proportions of women who meet the WHO recommended 4+ ANC visits during pregnancy up from 63.9% to 70% from 2012 to 2013, and a further increase to 72.3% in 2014 (GHS, 2015a). These proportions however reflect high inequalities, with urban dwellers having higher access than their rural counterparts (GSS et al., 2015). Although access to skilled delivery increased from 52.5% in 2012 to 63.9% in 2014, this still falls short of the WHO recommendation of achieving 100% health facility based deliveries (GHS, 2015a). Notwithstanding this, postnatal services, which are vital to mothers and children's health, had about 93.7% coverage in the region in 2013 (GHS, 2015a). Institutional MMR in the region is 161 deaths per 100,000 live births, which is above the national average of 144 deaths per 100 000 live births (MoH, 2015).

5.2 Methods

5.2.1 Sampling and data collection

This study is cross-sectional and was conducted among 805 respondents. A multistage sampling technique was used in the selection of participants for the survey. First, the geo-political districts were clustered into two based on the poverty index as rich and poor districts using the Ghana Living Standards Survey Round 6 (GLSS 6) statistics. Three districts were selected from the rich districts cluster and four from the poor districts cluster to ensure variability in the data. Base on this, the number of participants from each district was selected proportional to its population as reported by the 2010

Population and Housing Census (GSS, 2012). Each study district was then grouped into CHPS and non-CHPS zones with 70% and 30% of respondents drawn from them respectively to ascertain any significant difference between them. Each district was further clustered into rural and urban areas with 70% of respondents drawn from rural areas and this was informed by the fact that CHPS primarily focused on these areas. A systematic random sampling technique was then employed where every fifth household starting from one end of the sampled community was selected. In each of the households, the woman with the most recent delivery was interviewed. This approach was used to control for possible participant selection and recall biases.

Based on the objective of the study, the survey questions were appropriately adapted from the GLSS 6. The GLSS 6 survey instrument has been used extensively overtime to measure maternal health care and living conditions in Ghana. The questions asked included health care before, during and after delivery for the mother and child, where the delivery occurred, who made the decision regarding place of delivery, residence in a CHPS zone, whether there is a health facility in the community and how far it is from the participant's residence. Other socio-economic information collected included household income, occupation and educational attainment. Out of the total participants, 440 of them reported delivering in a health facility and therefore constitute the analytical sample for this study.

5.3.2 Measures

The dependent variable for the study; "independent decision to deliver in a health facility" was measured with the question: "If you delivered in a health facility who made

the decision for the delivery there?" Only respondents who responded they delivered in a health facility were asked this question, which reduced the sample size to 440. This question has been used to examine the role women's autonomy in health care access decision making in Nepal, Bangladesh and India (Senarath & Gunawardena, 2009), and reproductive health care utilisation and women's autonomy in Uganda (Anyait, Mukanga, Oundo, & Nuwaha, 2012). Although the responses to the question consisted of three categories (0 = myself; 1 = husband; 2 = other), I dichotomized it into two (0 = husband/other; 1 = myself) because of the focus of the study on women's capacity/autonomy to decide place of delivery.

The focal independent variable was constructed from the question: "Do you live in a CHPS zone?" In response, women answered yes or no (0 = yes; 1 = no). To understand the independent impact of CHPS in women's decision on place of delivery, three blocks of control variables were introduced including locational, socio-economic and demographic variables. Locational variables include place of residence (0 = urban; 1= rural) and distance to the nearest health facility (0 = less than 1 km; 1= from 1 to 5 km; 2= more than 5 km). For socio-economic variables, I included household wealth quintiles (0 = richest; 1 = richer; 2 = middle; 3 = poorer; 4 = poorest) and level of education (0 = secondary/higher education; 1 = primary education; 2 = no education). Given that self-reported income may be unreliable due to recall bias and/or reluctance of people to reveal their income, the study used a composite index technique to construct wealth quintiles based on household assets as a proxy for the overall household wealth level. I also included socio-demographic variables such as age of respondents (measured in completed years), marital status (0 = currently married; 1 = never married; 2 =

formerly married) and religious affiliation (0 = Christians; 1 = Muslims; 2 = Traditionalist; 3 = no religion).

5.2.3 Analysis

The study employs the binary logistic regression because of the binary nature of the dependent variable, "women's own decision on place of delivery". Other analytical techniques such as probit and ordered logistic regressions did not fit the pseudo symmetrical nature of dependent variable, which makes binary logistic regression the most appropriate analytical technique (Buis, 2010). In addition to univariate logistic regressions, nested multivariate logistic regression models were fitted to understand the association between living in a CHPS zone and independent decision to deliver in a health facility. The multivariate models were sequentially built starting with locational variables in Model 1, then socio-economic variables in Model 2 and finally demographic variables in Model 3 to understand the impact of the three block of variables on the relationship between the focal independent and dependent variable. For meaningful interpretation, the results were reported in odds ratios whereby odds ratios greater than one indicate that women were more likely to make independent decision on delivering in a health facility, while those less than one indicate lower likelihood of doing so.

5.3 Results

5.3.1 Univariate results

Table 5 shows findings from univariate analysis.

Table 5: Univariate analysis of the dependent and independent variables

Variable	Percentage
Did you make decision to deliver in health facilities?	
No	35.23
Yes	64.77
Residence in CHPS zone	
No	25.00
Yes	75.00
Urban-rural residence	
Urban	33.41
Rural	66.59
Distance to health facility	
Less than 1 km	39.09
From 1 km to 5 km	24.09
More than 5 km	36.82
Household wealth quintile	
Richest	19.15
Richer	20.11
Middle	19.8
Poorer	20.01
Poorest	21.01
Level of education	
Secondary/higher	22.73
Primary education	22.95
No education	54.32
Age of respondents†	28.27
Marital status	
Married	94.09
Never married	1.14
Formerly married	4.77
Religion	
Christian	57.27
Muslim	35.00
Traditionalist	6.82
No religion/other	0.91
Total	440

†Mean reported for age of respondents

Among the women that delivered in a health facility, 64.77% reported that they were solely responsible in deciding place of delivery. Majority of them lived in CHPS zones (75.00%) and were married (94.09%). In addition, 39.09% reported living less than a kilometre away from a health facility, 24.09% from 1 km to 5 km from a health facility

and 36.82% more than 5 km from a health facility. As reported in the National Population Census of 2010, this study also found that majority of the sample population was in the poorest wealth quintile (21.01%). Moreover, majority of women were Christians (57.27%).

5.3.2 Bivariate results

Findings from bivariate analysis are shown in Table 6. Locational, socio-economic and demographic variables were all robustly associated with women's decision-making autonomy on where to deliver. Women in CHPS zones were more likely to independently decide to deliver in a health facility compared to their counterparts in non-CHPS zones (OR = 2.30; $p \leq 0.01$).

Whereas rural women were less likely to decide on their own to deliver in a health facility (OR = 0.474; $p \leq 0.01$), those that live from 1 km to 5 km and above 5 km away from a health facility were less likely to take independent decisions to deliver at a health facility compared to their counterparts that live less than 1 km away from a health facility (OR = 0.488; $p \leq 0.01$ and OR = 0.449; $p \leq 0.01$ respectively). For household wealth quintiles, women from the poorer and poorest quintiles were less likely to have independent decision-making autonomy regarding facility-based deliveries compared to the richest households (OR = 0.519; $p \leq 0.05$ and OR = 0.484; $p \leq 0.05$ respectively).

Table 6: Bivariate analysis of the dependent and independent variables

Variable	OR (SE)
Residence in CHPS zone	
No	1.000
Yes	2.300 (0.518)***
Urban-rural residence	
Urban	1.000
Rural	0.474 (0.107)***
Distance to health facility	
Less than 1 km	1.000
From 1 km to 5 km	0.488 (0.129)***
More than 5 km	0.449 (0.107)***
Household wealth quintile	
Richest	1.000
Richer	1.560 (0.472)
Middle	0.667 (0.216)
Poorer	0.519 (0.166)**
Poorest	0.484 (0.163)**
Level of education	
Secondary/higher	1.000
Primary education	0.692 (0.215)
No education	0.533 (0.140)**
Age of respondents	0.996 (0.019)
Marital status	
Married	1.000
Never married	2.156 (0.242)
Formerly married	0.718 (0.325)
Religion	
Christian	1.000
Muslim	0.287 (0.064)***
Traditionalist	0.102 (0.045)***
No religion/other	0.279 (0.282)

*p≤ 0.1; **p≤ 0.05; ***p≤ 0.01; OR for odds ratios; SE for standard errors

Similarly, women with no educational attainment were less likely to independently make decision to deliver at a health facility than those with secondary or higher education (OR = 0.533; p≤ 0.05). Furthermore, compared to Christians, Muslims and Traditionalist were all less likely to make independent decision to deliver at a health facility (OR = 0.287; p≤ 0.01 and OR = 0.102; p≤ 0.01 respectively).

5.3.3 Multivariate results

Table 7 shows findings from multivariate analysis. Consistent with bivariate findings, locational variables and decision-making autonomy on place to deliver were significantly associated even after controlling for socio-economic and demographic variables. Specifically, compared to women in non-CHPS zones, those in CHPS zones were more likely to independently take decision to deliver in a health facility (OR = 2.806; $p \leq 0.01$). Additionally, rural women were less independent in making decision regarding where to deliver (OR = 0.525; $p \leq 0.1$). Women that live from 1 km to 5 km and more than 5 km away from health facilities were less likely to make independent decisions to deliver in a health facility compared to their counterparts living a km or less away from a health facility (OR = 0.396; $p \leq 0.01$ and OR = 0.529; $p \leq 0.05$ respectively).

Although the impacts of socio-economic and demographic factors on decision-making autonomy to seek facility-based deliveries were largely attenuated, level of educational attainment and religious affiliations remained statistically robust. For instance, women with no form of formal education were less likely to make independent decision to deliver at a health facility compared to those with secondary/higher education (OR = 0.413; $p \leq 0.05$). Also, Muslims and Traditionalists were less likely to make independent decision to seek health facility-based deliveries compared to their Christian counterparts (OR = 0.362; $p \leq 0.01$ and OR = 0.212; $p \leq 0.01$, respectively).

Table 7: Multivariate analysis of "making independent decision to deliver in health facilities" among women in the UWR, Ghana

	Model 1	Model 2	Model 3
Variable	OR (SE)	OR (SE)	OR (SE)
Residence in CHPS zone			
No	1.000	1.000	1.000
Yes	3.622 (0.955)***	3.315 (0.898)***	2.806 (0.793)***
Urban-rural residence			
Urban	1.000	1.000	1.000
Rural	0.316 (0.083)***	0.332 (0.109)***	0.525 (0.184)*
Distance to health facilities			
Less than 1 km	1.000	1.000	1.000
From 1 km to 5 km	0.572 (0.162)**	0.457 (0.144)**	0.529 (0.172)**
More than 5 km	0.429 (0.105)***	0.360 (0.098)***	0.396 (0.111)***
Household wealth quintiles			
Richest		1.000	1.000
Richer		2.528 (0.932)**	2.051 (0.783)*
Middle		1.422 (0.565)	1.169 (0.481)
Poorer		1.218 (0.495)	1.362 (0.575)
Poorest		1.417 (0.613)	1.672 (0.761)
Level of education			
Secondary/higher		1.000	1.000
Primary education		0.625 (0.210)	0.600 (0.207)
No education		0.400 (0.129)***	0.413 (0.140)**
Age of respondents			1.014 (0.023)
Marital status			
Currently married			1.000
Never married			1.898 (2.280)
Formerly married			1.542 (0.826)
Religion			
Christian			1.000
Muslim			0.362 (0.093)***
Traditionalist			0.212 (0.105)***
No religion/other			0.283 (0.304)
Constant	2.561 (0.698)***	3.698 (1.421)***	3.203 (2.321)*
Log likelihood	-260.98	-252.06	-241.58

*p≤ 0.1; **p≤ 0.05; ***p≤ 0.01; OR for odds ratios; SE for standard errors; locational variables in model 1; socioeconomic variables added in model 2; demographic variables in model 3

5.4 Discussion

This study examined the role of the Community based Health Planning and Services (CHPS) policy in promoting women's ability to independently decide to seek health

facility-based delivery services in the UWR of Ghana. The CHPS program has been designed to improve health service access in rural and deprived communities in Ghana as part of efforts at promoting maternal and child health. The observed association between residence in CHPS zones and women's independent decision to seek health facility-based deliveries is suggestive of positive impact the CHPS policy is making in rural communities in Ghana. This positive outcome may be attributed to the advocacy, community educational activities, and resource mobilization initiatives being implemented as part of the CHPS policy. This finding is important as implementation of the policy is not only improving maternal health but also reforming communities and empowering women, which are vital for the attainment of the SDGs (UNECA et al., 2015). Although unique, the finding has been corroborated by previous studies that highlight determinants of women's health care decision-making, access to and utilization of health care services in Ghana and other developing countries (Moyer et al., 2014; Senarath & Gunawardena, 2009). Thus, it contributes to maternal health literature in developing countries.

Although evidence points to minimal women's participation in health decision-making including where to deliver in Ghana, the implementation of CHPS within the current PHC system has considerably improved maternal health care access in its operational areas (Woods, 2016). As stipulated within the policy, and widely acknowledged within women empowerment and autonomy literature, sensitization and educational programs by Community Health Officers (CHOs) and Community Health Volunteers (CHVs) builds capacities and empowers women to participate in making decision regarding their utilization of health services (see Woldemicael, 2010).

Community involvement and doorstep delivery of service could engender confidence and trust in health professionals who rather than husbands/family heads, become first point of call for women in health need. For instance, CHPS is reported to have eliminated the traditional health decision-making structure, also referred to as the "gate-keeping system" where women could not leave the house on their own accord to seek health care (Ngom et al., 2003). Moreover, social support systems such as mother-to-mother support groups and community based insurance schemes pioneered by CHO/CHV through community resource mobilization could be boosting women's decision-making ability (Smith & Sulzbach, 2008; Woods, 2016). It is not surprising that women who reside in communities located in CHPS zones would take independent decisions about delivery in a health facility.

Although evidence points to unmet urban health needs in developing countries (see Harpham, 2009; Idris, Gwarzo, & Shehu, 2007), urban areas are relatively endowed with better health facilities, access routes and diverse information and communication sources (Doku, Neupane, & Doku, 2012). In the midst of this urban-rural infrastructural disparity, rural women are disadvantaged with limited access to health facilities as well as empowerment and health promotion programs. Even though CHPS was established to reduce health inequality, a previous study in the context suggested that CHPS services were not far reaching enough to address important health needs such as obstetric care in rural settings in Ghana (Atuoye et al., 2015). In addition, unlike women in rural areas, those in urban settings have been enjoying access to pre-existing empowerment services and initiatives through media, and a formalised system that guarantee greater gender balance in decision making. In this regard, contribution of CHPS in empowering women

in rural localities could be an important step to autonomy in women's health seeking behaviours but not enough to completely address the disparity between rural and urban settings.

Similarly, previous studies have demonstrated that CHPS has reduced physical distance to health facility but equally suggested that accessing health facilities rather depended more on the nature of road network and availability of transportation from place of residence (Atuoye et al., 2015). In rural areas in the UWR, roads to the few available health facilities are deplorable, cut-off during the raining season and in most instances, are plied by 'market day tracks'. Even though women are sensitized to seek facility-based delivery, having to depend on male community members to travel with a motorbike or bicycle to health facilities, as reported by Atuoye et al (2015), reduces their capacity to independently decide on place of delivery. The findings that women who live farther away (over 5 km) from a health facility have less independent decision-making autonomy is corroborated by Masters et al. (2013). According to Masters et al. (2013), poor road network and lack of transportation services in many rural areas in the region increase travel time to a health facility in the region with those residing more than 5 km away from a health facility being the worse affected. This may be exacerbated by women's little or no control over household resources. Thus, in all these, women have to depend on others, mostly their male counterparts, rendering them more vulnerable and submissive. Also, long distance hinders the provision of outreach services by CHOs, a situation that is exacerbated by scarcity of resources within many of the CHPS facilities (Gabrysch & Campbell, 2009).

In addition, wealth has been indicated as an empowerment proxy which play a significant role in decision making at the household level (Ahmed et al., 2010; Mills & Bertrand, 2005; Moyer et al., 2014). Apart from influencing structures that weave into authority over decision-making, the ability of women to afford cost of accessing and utilizing facility based services impacts on their autonomy to decide on facility-based deliveries. In the rain-fed agrarian economy where livelihoods are poor and household expenditure decisions controlled by male household heads, women with low incomes depend on males to approve their utilization of facility-based deliveries. Rishworth (2016) has asserted that Ghana's implementation of a free maternal health care policy had drastically reduced the cost of utilizing facility-based deliveries but that women were still relying on male heads who pay for the cost of accessing delivery facilities from rural and deprived communities to decide on place of delivery. Interestingly, social support systems and community innovations such as the Community Emergency Transport System (CETS) have emerged from the implementation of the CHPS policy to reduce financial and transportation barriers to health access (Atuoye et al., 2015). Studies such as Woods (2016) have suggested that these innovative programs are reducing the impact of wealth disparities on health care access. It is therefore not surprising that wealth differentials, which is an important determinant of health care access and utilization, has little role in the relationship between CHPS and women's autonomy to independently decide on health facility based delivery.

Formal education enhances the status and bargaining rights of women and by extension their freedom and autonomy to make decisions (Ahmed, Creanga, Gillespie, & Tsui, 2010; Stephenson et al., 2006). In the UWR where literacy rates are low, especially

among women (GSS, 2010), health promotion, sensitization and educational programs implemented in CHPS, tend to enhance the autonomy of women, and subsequently influences their independent decision making for health facility based deliveries. Regardless of the influence of CHPS, women with lower formal education often are ascribed lower socio-economic status within the household, which translates into lower autonomies. Importantly, lack of education impacts on women's ability to appraise and utilize health information and sensitization programs, which has overarching implications on their health decision-making and uptake of health facility delivery.

The association between religion and women's autonomy to decide on place of delivery in this study is not surprising, although mixed findings are reported in prior studies in other context. While Gyimah, Takyi, & Addai (2006) attribute the relationship between religion and women's autonomy to theological and lifestyle difference in their analysis of the 2003 Ghana Demographic and Health Survey (GDHS), Fuseini and Kalule-Sabiti (2015) found no significant relationship between these variables in the 2008 GDHS. We argue that these conflicting findings reinforce the relevance of context in health care access and utilization research. This study found Muslim and Traditional women to have less independent decision-making autonomy regarding place of delivery compared to their Christian counterparts. Traditional African religious practices largely marginalize women allowing them little participation in decision-making, on household governance, inheritance and resource ownership. In addition, Traditional religion encourages consultation of deities and spiritualists during illness rather than the use of orthodox health care services which may have implications for women's health care access. Furthermore, women within the Islamic religion have limited contact with males

and little room for discussion on their health seeking choices. Although these norms are evolving, women with Christian religious affiliations enjoy greater autonomy.

Despite the relevance of the findings, this study has potential limitations. First, owing to resource constraints, the study has not been able to exhaust all theoretically relevant variables that influence women's decision-making autonomy such as nature of road and ethnicity (Mills & Bertrand, 2005). Nonetheless, the variables measured in the study remain very important predictors of women's decision-making autonomy and serve as good baseline to ascertain the role of CHPS in promoting women's decision-making autonomy in the region. Secondly, the cross-sectional nature of the study limits the ability to draw causal linkages between CHPS and women's decision-making autonomy regarding place of delivery. With the benefit of more resources and time, a longitudinal study could capture causal relationships and the impact of emerging innovations over time and space. However, the study is still relevant in highlighting the role of CHPS and the impact of socio-economic and demographic characteristics of women on their autonomy to seek obstetric care in the UWR of Ghana.

5.5. Conclusion

This study has tremendous implications for research and policy in a number of ways. It contributes to the literature by highlighting women's autonomy and its influence on health seeking behaviors in Ghana. Although this is not new, examining such relationship within a national health policy (the CHPS policy) is novel. The findings indicate a positive impact of the CHPS policy in transforming gender norms, which serve as barriers to women's independent health care seeking decision-making, and by implication

bottlenecks in the achievement of Universal Health Coverage, and health equity in Ghana. Furthermore, the study demonstrates the impact of women's socio-demographic characteristics on their independence in deciding to seek health facility-based deliveries and the need for a multi-sectorial approach to promoting women's uptake of obstetric care. With evidence suggesting that health promotion and support systems instituted by CHO enhance women's status, it is recommended that attention be increasingly paid to these program areas within the CHPS policy framework. There is also the need to expand services provided by CHPS to include obstetric services given that rural women face several barriers in accessing such services. Finally, based on the positive impacts of the CHPS policy, we recommend its implementation in similar context in Ghana and other developing countries.

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Chapter Six: Conclusion

This chapter provides a summary of the study findings. It also outlines the contributions of this study to health care access discourse, particularly in the context of a health care promotion initiative. The chapter further discusses the implications of the study for health care service provision and utilization and concludes with relevant recommendations for policy and future research.

6.1 Introduction

This study examined the impact of the Community-based Health Planning and Services (CHPS), a primary health care promotion initiative on women's access to health care services in the Upper West Region (UWR) of Ghana. Although reports suggest health care access has improved globally in the past decades, this has not been uniform within and across countries (United Nations, 2015b). Ample evidence shows that considerable number of people in middle and low incomes countries including Ghana still lack access to basic health care services (United Nations, 2015b; WHO, 2016). Likewise, within these countries, access to health care is limited among women and rural dwellers (United Nations, 2015b; WHO, 2016). To this end, the current Sustainable Development Goals (SDGs) expanded on the just ended Millennium Development Goals (MDGs) among others to accelerate progress towards improved health care coverage (United Nations, 2016; WHO, 2016). Specifically, SDG 3 seeks to ensure healthy lives and well-being for all by 2030 with emphasis on reducing maternal and child mortality, ending epidemics, addressing neglected tropical diseases and achieving universal health coverage (WHO, 2016).

Conceptually, health care access is complex and earlier studies posit that women's access to health care is contingent on the interplay of geographic and socio-economic factors. Geographic factors include (non)availability of health facilities, distance to health facilities and transportation systems (Atuoye et al., 2015; Rishworth, Dixon, Luginaah, Mkandawire, & Prince, 2016). For socio-economic factors, studies by Smith & Sulzbach (2008) and Kuuire, Bisung, Rishworth, Dixon, & Luginaah (2015) reveal wealth substantially impacts health care consumption in Ghana and other less developed countries. Similarly, Wilkinson (2002) and Birmeta et al. (2013) found significant association between women's educational attainment and their health care access. Furthermore, Gyimah et al. (2006) in a study on religion and maternal health utilization in Ghana found religion to be a determining factor on maternal health use. Indeed, considering this complex and multifaceted outlook, ensuring access to health care particularly among women require pragmatic, comprehensive and multi sectorial health policies that target essential needs.

The Government of Ghana as part of global efforts to improve health care access has initiated several health policies over the years including CHPS. The CHPS policy was implemented in 1999 to deliver basic but comprehensive health care services to rural and hard to reach areas in the country (Awoonor-Williams et al., 2013). The policy seeks to bridge the health care access gap in Ghana by providing basic and essential health care services to deprived areas (Atuoye et al., 2015). The provision of services is led by a resident community health officer (CHO) with assistance from trained community health volunteers (CHV). Health care services are delivered in CHPS compounds which also houses the CHO. In addition to their core mandate, CHOs provide outreach and house to

house health care services to these communities within their jurisdictions. With the conviction that CHPS will propel Ghana towards achieving improved and equitable health care (see Nyonator, Awoonor-Williams, Phillips, Jones, & Miller, 2005), the number of CHPS in Ghana has been on the ascendency with a total of 3,175 CHPS zones by 2015 (GHS, 2015 in MoH, 2016).

Notwithstanding this initiative, access to health care in Ghana, similar to many other low and middle income countries remains poor with geographical and gender disparities (GSS, GHS, & ICF International, 2015; United Nations, 2015a). This is manifested in Ghana's inability to meet the MDG maternal health target in 2015. The current national MMR stands at 319 deaths per 100,000 live births, which is higher than the global rate of 216 deaths per 100,000 live births (WHO, 2016). Although these poor health outcomes suggest the CHPS initiative may be inefficient in closing the health care access gap, very few studies have examined the impact of CHPS on women's access to health care in the UWR of Ghana. To this end, this study first examined the impact of CHPS on women's access to basic health care services in the UWR of Ghana. Furthermore, as most maternal deaths in low and middle income countries are pregnancy related obstetric care services or professionally assisted deliveries have been widely recommended to avert these deaths (Africa Progress Panel, 2010). Since CHPS do not have the mandate to offer such services, but rather refer and facilitate deliveries at higher-level health facilities except in emergency situations (see MoH, 2016) this study subsequently investigated the impact of CHPS on women's ability to independently decide to seek health facility-based deliveries in the region. Understanding this is

essential for improving maternal health care access in the UWR given its unique socio-cultural character where women often do not participate in household decision-making.

6.2 Summary of Study Findings

Objective one: CHPS and women's access to primary health care services

A quantitative technique was employed to examine the impact of CHPS on women's access to primary health care services in the UWR of Ghana (see Chapter 4). The outcome variable was women's access to care from a health professional when they needed it, whilst the focal explanatory variable was residence in a CHPS zone.

Results from the multivariate analysis indicate that women who resided in CHPS zones were more likely to report having access to health care when they needed it compared to their counterparts in non-CHPS zones. These findings corroborate previous studies that suggest CHPS has improved health service access in rural areas in Ghana (see Adongo et al., 2013; Shamsu-Deen, 2015). Although these overall findings demonstrate the potential of CHPS in promoting UHC and attainment of global health goals, rural women still reported less likelihood of access to health care services compared to their urban counterparts. Previous studies have attributed poor access to health care in rural areas to urban bias in infrastructural development including health facilities and road networks (Atuoye et al., 2015). Similarly, the findings here show distance to health facility acts as a barrier to the access and utilization of health care services in the region. In fact, women who lived more than 5 km to a CHPS compound were less likely to access care compared to their counterparts that lived less than a km to the facility. These findings call for concerted efforts to provide more CHPS compounds to boost

geographical accessibility to health facilities. Additionally, enhancement in capacities of CHPS facilities to provide outreach services will tremendously improve accessibility to health care services in the region. The study further reveals household wealth and marital status are important determinants of women's health care access in the UWR of Ghana.

Objective two: CHPS and women's ability to independently decide to seek health facility-based deliveries

The second objective transcends basic health care access to examine whether CHPS has been able to empower women to independently decide to seek health facility-based deliveries within households; a vital service to forestall the high maternal mortality incidence (Chapter 5). This objective was also in view of health promotion, education and outreach mandate of the CHPS policy. This was achieved using binary logistic regression technique. The outcome variable was women's ability to make independent decisions to deliver in a health facility and the explanatory variable was residence in a CHPS zone. Theoretically relevant geographical (rural-urban residence and distance to health facility) and compositional (wealth, education, age, marital status and religion) factors were also included in the analysis.

From the multivariate analysis, residence in CHPS zone was significantly associated with women's independence in deciding to seek health facility-based deliveries. These findings shed light on CHPS engagement in community sensitization and empowerment programs and how this translate into willingness and ability to seek services not provided by CHPS within this patriarchal setting. Similarly, rural-urban residence and distance to health facility were shown to be significant indicators of

women's autonomy in deciding to seek health facility-based deliveries in the region. Rural women were less likely to independently decide to seek health facility-based deliveries compared to their urban counterparts. Likewise, women who lived beyond 5 km to a CHPS compound were less likely to independently decide to seek health facility-based deliveries compared to their counterparts that lived less than 1 km to a health facility. Studies by Atuoye et al. (2015) and Rishworth et al. (2016) reported similar findings in the same context. Absence of health facilities and transportation challenges epitomized in poor road network and unavailable transport services could be adduced to explain these findings (GSS, 2014).

Additionally, the findings reveal women's socio-economic status such as wealth, education and religion have remarkable influence on their health facility-based delivery decision-making ability within households in the region. Interestingly, age and marital status were not associated with women's ability to decide to deliver in a health facility. These findings emphasize the relevance of context in understanding women's health care seeking behaviors and access. To improve maternal health in the region and similar settings, it is prudent for CHPS to engage in community resources mobilization and capacity building programs geared towards improving women's socio-economic status and to a large extent their autonomy within the household.

6.3 How the Manuscripts Integrate

Broadly, both manuscripts examined the impact of CHPS on women's health care access in the UWR of Ghana. Chapter 4 examined the impact of CHPS on women's access to PHC services. It sought to ascertain the extent to which women's health care needs are

being met within the context of CHPS. This is critical to attaining improved health outcomes and UHC. Though CHPS provide maternal health care services as part of these efforts, CHOs do not assist in deliveries (MoH, 2016). Instead, CHOs are expected to refer and assist women to seek delivery services at a higher-level health facility. Chapter 5 extended on chapter 4 by examining CHPS impact on women's independent ability to decide to seek health facility based deliveries in these higher-level facilities. This is necessary given the patriarchal nature of the region where women's participation in household decision-making is minimal. Hence, a comprehensive assessment of CHPS impact on women's health care access merit a further examination of its role in empowering and enhancing women's uptake of health facility-based deliveries, which is a critical component of maternal health care.

6.4 Contributions of the Study

This study contributes to literature on health care access in developing countries, highlighting the impact of a community led health service delivery initiative on health care access among women. Although previous studies have assessed the impact of health policies on service access and utilization in Ghana (see Dixon et al., 2014; Witter, Arhinful, Kusi, & Zakariah-Akoto, 2007), only a few have examined the role of CHPS on women's health access in Ghana. This study therefore augments the literature to provide an understanding of the role of CHPS on health care access among women in the UWR of Ghana. The findings which are consistent with previous studies reveal CHPS has improved health care access thereby positioning it as an effective initiative in enhancing geographical accessibility to health care among rural and remote areas in the region

(Atuoye et al., 2015; Woods, 2016). Nonetheless, findings indicate geographical barriers still remain critical obstacles to the efficient delivery and access to health care services in the region, particularly among rural dwellers.

Furthermore, it was revealed CHPS profoundly influenced women's health decision-making autonomy within the household. This finding is consistent with studies that suggest health care promotion programs impact people's health seeking behaviors (Basu & Dutta, 2008; Currie & Wiesenberg, 2003). Through community resource mobilization and capacity building, CHPS is able to empower women to independently decide and to seek health care including health facility-based deliveries. This is very pertinent within a patriarchal context where women are less autonomous and often do not participate in household decision-making amidst studies suggesting delays in deciding to seek health care is a major contributor to maternal mortalities in developing countries (Rishworth et al., 2016). This finding is an important addition to literature as it highlights the remote but crucial role health policies play in removing underlying socio-economic and cultural barriers to women's uptake of health care services.

Additionally, findings corroborate other studies that attribute women's health seeking behavior to their peculiar socio-economic conditions (Ganle & Dery, 2015; Tappis, Koblinsky, Winch, Turkmani, & Bartlett, 2016). For instance, wealth status, level of education, religion and marital status were all found to be significantly associated with women's access to health care in the region. These findings advance the literature to demonstrate the complexity and multidimensionality surrounding health care access especially in the context of developing countries (Goddard & Smith, 2001; Peters et al.,

2008). Indeed, given the findings in this study, there is a need to further emphasize the concept of "place" as central to health and health care access (Luginaah, 2009).

Studies that have explored CHPS and health service use in Ghana have done so using qualitative techniques (see Atuoye, 2015; Shamsu-Deen, 2015; Woods, 2016). Currently, this study is the first to have used quantitative methodologies to examine CHPS and women's access to health care in the UWR of Ghana generating generalizable findings. Quantitative techniques are necessary to understand how CHPS intersect with relevant health care access variables to shape women's health service consumption in the region. This is relevant to health policy design, which often should be holistic, covering varied contexts. Furthermore, using principal component analysis, this study demonstrates how household wealth could be estimated relying on household assets. This is vital for study settings dominated by the informal sector and high illiteracy rates, which can lead to misreporting of incomes.

6.5 Policy Recommendations

This thesis makes a number of policy recommendations for Ghana and similar contexts. Overall, the findings are consistent with studies that have assessed the impacts of the CHPS initiative on health care access (Witter et al., 2007; Woods, 2016). The findings suggest CHPS has positive impacts on health service access in the UWR of Ghana. In low and middle income countries where resources are scarce, optimal location of health facility is essential to ensuring equitable coverage. Although the zoning system sought to ensure this, the findings that significant numbers of people still lack access to care in the region suggest the current zoning system, which is centered on electoral areas may still

be limited in coverage (MoH, 2016). Thus, a substantial number of women in dire need of health care may still be located outside these electoral areas. It is therefore recommended that the number of CHPS zones be increased whilst defunct zones revived. This study further recommends a revision in the current zoning system by adopting a multi criteria approach to select sites for the construction of CHPS compounds that will serve areas and populations in most need. For instance, in addition to the electoral area approach to CHPS zoning, travel time as suggested by Atuoye et al. (2015) could be contextualised in terms of geographical access and included in the matrix of the zoning system. This will tremendously enhance geographical accessibility to health care services in the region. Additionally, CHPS should be equipped with the requisite logistics for cogent outreach and house-to-house service delivery.

Consistent with the literature, the findings also suggest socio-economic and demographic factors mediate the effect of CHPS on women's access to health care in the region. Lower socio-economic status was associated with lesser likelihood of accessing health care. This reinforces the relevance of context in health policy design and implementation, particularly in less developed countries which are characterized by uneven economic and infrastructural development. To this end, it is recommended that CHPS incorporates capacity building and other economic empowerment programs relevant to the context to enhance health service utilization. In a setting where women's health care access is mostly dictated by their male counterparts, there is a need for the policy to incorporate gender sensitive programs that will help build the capacities of women within the households. Furthermore, limited and perceived low quality of services provided by CHPS may dissuade women from accessing care. Therefore, there is the

urgent need to increase the number and quality of health care services provided by CHPS including obstetric care services which will position CHPS to improve maternal health especially in rural communities. Traditional Birth Attendants who still remain important in pregnancy deliveries could be incorporated into the CHPS program with the requisite training to ensure safe deliveries.

6.6 Study Limitations

Despite its contribution to the health care access literature and policies, this study has some limitations that are worth noting. As this study used cross-sectional data, analyses may be limited to associations (Miller, 2013). For instance, the relationship between CHPS and women's access to health care in chapter 4 is one of association and does not make a claim to a causal relationship. Furthermore, reliance on a self-reported data on health care access may bias the findings. CHPS is mandated to provide basic health services while serving as a referral point to other health facilities in terms of conditions beyond its capacity. Respondents who may not understand this mandate may report no or limited access to health care if CHPS is unable to treat a particular ailment or provide a specialized service. Additionally, the inability to comply with referrals by the CHOs may be considered as lack of access to health care.

Additionally, this study has not been able to exhaust all factors that shape women's access to health care services. As posited by previous literature, health care access is complex, multidimensional and context dependent. Accordingly, women's access to health care services and independence in health decision-making may be influenced by other individual and environmental conditions that are not captured in this

study. For instance, educational levels of husbands/household heads, their relationships with health care professionals and level of movement autonomy may also influence their access to health care services.

Notwithstanding these limitations, the study findings are still relevant in providing an understanding of the impact of CHPS, a primary health care promotion initiative on health care access among women in the UWR of Ghana. The statistically significant associations found between relevant variables gives an insight into various factors shaping health service consumption. There is therefore a need for health policy design and implementation in Ghana and other developing countries to be focused on these factors.

6.7 Future Research Direction

Given the limitations of this study, it is pertinent to make a couple of suggestions for future research. Since this study adopted the quantitative approach to examine the association between women's health care access and relevant geographic and socio-economic factors, a qualitative research approach in the study context in the future will be very beneficial in augmenting the findings in this thesis. A qualitative approach will interrogate in-depth and provide a comprehensive understanding of geographical and social structures and how they intersect to shape women's access to and utilization of health care services in the UWR of Ghana. Findings from a quality enquiry will also offer insights on women's lived experiences regarding access to care and their perspectives on how such barriers to health service access could be addressed.

Besides CHPS, the government of Ghana also implemented a number of health promotion initiatives including the NHIS and the maternal exemption policy under the NHIS. Considering the complexities associated with health care access, it is proposed that future research examine the linkage of these interventions with the mandate of CHPS in promoting UHC. It is further recommended that future studies incorporate other theoretically relevant factors not included in this study such as perceived quality of service, husbands' educational levels and women's relationship with health professionals to understand their individual roles in women's health care access in the region. Additionally, operational processes within CHPS facilities need to be examined to ascertain how these reflect on health service utilization onsite. This is necessary given that, delay in receiving care from caregivers at health care facilities has been observed as one of the three delays causing maternal mortality (Knight et al. 2013). Finally, considering Ghana's diverse environmental and social-cultural settings, it is recommended that the study be replicated in other parts of the country to understand how these factors operate in varied contexts. This will enormously assist in efficient policy formulation.

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Appendix A: Research Ethics Approval

Western Research

Research Ethics

Western University Health Science Research Ethics Board
NMREB Delegated Initial Approval Notice

Principal Investigator: Dr. Isaac Luginaah
Department & Institution: Social Science\Geography,Western University

NMREB File Number: 106454
Study Title: The Contribution of Community-based Health Planning and Services to Community Health and Sustainability in the Upper West Region of Ghana
Sponsor:

NMREB Initial Approval Date: April 30, 2015
NMREB Expiry Date: April 30, 2016

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Other	RA Confidentiality Agreement	2015/02/27
Instruments	Key Informants Interview Checklist	2015/02/27
Instruments	Interviews and Focus Group Checklist	2015/02/27
Revised Western University Protocol		2015/04/11
Revised Letter of Information & Consent	LOI: Interviews	2015/04/11
Revised Letter of Information & Consent	LOI: Focus Group Discussion	2015/04/11

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Appendix B: Survey Instrument

General Information			
NAME OF LOCALITY _____CODE_____ **NAME OF DISTRICT _____CODE_____**			CODE
LOCATION: (1 = RURAL 2 = URBAN)			…|____|
LOCALITY CHARACTERISTICS: (1 = LARGE TOWN, 2 = SMALL TOWN, 3 = VILLAGE)			…|____|
No.	**Question**	Response Option	Code
MATERNAL AND NEWBORN HEALTH (Current Pregnancy)			
1	Are you pregnant now? **(If Male skip to Q52)**	Yes……...…1 No……...….2 Unsure……..3 **(If NO or UNSURE skip to Q12)**	….|____|
2	How many months pregnant are you?	Record Months_____	
3	At the time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?	Wanted to become pregnant then.....……..1 Wanted to become pregnant later……...……..2 Did not want to be pregnant at all……...……...…...3 Refused…….…….....99	….|____|
Antenatal Care			
4	Have you ever attended antennal care during this current pregnancy?	Yes……..1 No ……..…….2 **(If NO skip to Q8)**	….|____|
5	When was your first antenatal care visit?	Record Months_____	
6	When was your second, third and fourth antenatal visits?	Record Months 2nd Visit:_____ 3rd Visit:_____ 4th Visit:_____ Other:_____	….|____|
7	Who made the decision for your first antenatal visit?	Myself…….....1 My husband…....…2 My mother in law.....3	

		The oldest woman in my house……..…...…4 A friend……...5 A health worker……6 Other (specify)…….97	….|____|
8	If you did not go for antenatal care, why? (**If YES in Q4 SKIP to Q9)**	Inaccessible facilities..1 Poor quality service…2 Poor attitude of health professionals…….3 No insurance……..4 Was not permitted….5 Not necessary……6 Other (specify) ..….97 Refuse……..99	….|____|
Breastfeeding and Preventive behavior			
9	Do you plan to breastfeed after delivery?	Yes…….....1 No ……2 **(If NO skip to Q11)**	….|____|
10	How long do you plan to breastfeed?	Record Months Months:_____	
11	Did you sleep under an Insecticide Treated Net last night?	Yes…….....1 No ……...2	….|____|
MATERNAL AND NEWBORN HEALTH (pregnancy in 5 years)			
12	Have you given birth in the last 5 years?	Yes ……..1 No…….…….....….2 **(If NO Skip to Q41)**	….|____|
Antenatal Care			
13	I will like to ask you a number of questions about your most recent birth in the last 5 years How old is the child now?	Record years Year(s):_____ Month(s)_____	
14	Did you seek antenatal care when you were pregnant?	Yes ……...…..1 No…….….....….2 **(If No Skip to Q18)**	….|____|
15	How many times did you seek antenatal care during the pregnancy?	Number of times_____ Don't know ……..98	….|____|
17	Who made the decision for you to seek antenatal at that time?	Myself…..……...1 My husband…....…2 My mother in law…...3 The oldest woman in my house……..…4	….|____|

		A friend…….....5 A health worker……..6 Other (specify)……..97	
	Immunization		
18	Did you receive any injection in the arm or shoulder during the pregnancy to prevent the baby from getting tetanus (convulsion) after birth?	Yes…….……....1 No……...……....2 Don't know ……..98 **(If No or don't know Skip to Q20)**	….|____|
19	How many times did you receive this tetanus injection during the pregnancy?	Number of times_____ Don't know ……..98	….|____|
20	Did you receive any tetanus injection at any time before the pregnancy?	Yes……..……....1 No……..…...….2 Don't know ……..98	….|____|
	Delivery		
21	Who assisted with the delivery of the pregnancy?	Health professional: Doctor…….....1 Nurse/Midwife…….....2 Auxiliary midwife…...3 Other person Traditional birth attendant……..…..4 Community health worker……5 Relative/friend..…..…6 Other (specify) ...….97 No one……..98	….|____|
22	Where was the pregnancy delivered?	Home: Your home……..…11 Other home……12 Public sector: Govt. Hosp./polyclinic…….21 Govt. clinic/health center……..22 Govt. health post/CHPS (Community based	….|____|

		Health Planning and Services) compound…….23 Other public (specify)……26 Private medical sector: Private hospital…….31 Private clinic…….32 Private maternity home……..33 Other private (specify)……....36 Other (specify) ...…..97	
23	If you delivered in a health facility, who made the decision for the pregnancy to be delivered at the hospital of health center?	Myself……..…..….1 My husband..…….…...….2 Other……...…...3	….|____|
	Breastfeeding		
24	Did you ever breastfeed the baby?	Yes……..…...…..1 No……...….2 **(If NO skip to Q28)**	….|____|
25	How long after birth did you first breastfeed the baby?	Immediately……000 Hours……1 _____ _____ Days……..2 _____ _____ Don't know ……..98	….|____|
26	Are you currently breastfeeding?	Yes……..……....1 No……..…….2	….|____|
27	How long did the baby breastfeed? OR How long has the baby been breastfeeding **(record number of months)**	Record Months_____	
28	In the first three days after delivery, was the baby given anything to drink other than breast milk?	Yes……..…...……....1 No…….…….2 **(If NO skip to Q30)**	….|____|
29	What was the baby given to drink?	Milk (other than breast	

	(Circle all that apply)	milk)……1 Plain water……...…2 Sugar or glucose water……3 Gripe water……..….4 Sugar-salt-water solution……..…..5 Fruit juice…….....6 Infant formula (cerelac)……...7 Tea/infusions…….…..8 Honey…….….9 Other (specify) ....….97	….|____|
30	In the last four weeks, has your baby been sick?	Yes……...…...1 No……..…...2 **(If NO skip to Q32)**	….|____|
31	What was the sickness?	Malaria,……...…...…..1 Diarrhea……...…...…2 Fever…….…...3 Other (specify) ....….97	….|____|
	Post-Natal Health Checks		
32	Now I will like to ask you some questions about the care you received at the place of delivery: Did anyone check on your baby's health immediately (within 1hr) after delivery?	Yes……...…….....1 No…….…….…2 Don't know ……..98	….|____|
33	Did your baby receive any health checkup since the delivery?	Yes…….....….....1 No…….....….2 **(If NO skip to Q37)**	….|____|
34	How long after delivery did the first health checks of your baby happen?	Hours ……..…1 _____ _____ Days…….2 _____ _____ Weeks…….....3 _____ _____ Don't know …….….98	….|____|
35	Who checked on the baby's health at the time?	Health professional:	

		Doctor….....1 Nurse/Midwife……...2 Auxiliary midwife…...3 Other person: Traditional birth attendant…….....…4 Community health worker……..…..…5 Relative/friend.....…6 Other (specify) ....….97	….____
36	Where did this check take place?	Home: Your home……..…11 Other home……..…..12 Public sector: Govt. Hosp./polyclinic…....21 Govt. clinic/health center…….22 Govt. health post/CHPS compound…….23 Other public (specify)……26 Private medical sector: Private hospital…….31 Private clinic…….32 Private maternity home……..….33 Other private (specify)…….36 Other (specify) ….....97	….____
37	What about you, did anyone check on your health immediately after delivery? **(If NO skip to Q41)**	Yes……..……...1 No……..….2	….____
38	How long after delivery did your (mother) first health checkup happen?	Hours ……..1 ____ ____ Days…….2	….____

		_____ _____ Weeks……..3 _____ _____ Don't know …….....98	
39	Who checked on your (mother) health at that time?	Health professional: Doctor….....1 Nurse/Midwife…..….2 Auxiliary midwife.....3 Other person: Traditional birth attendant…….....4 Community health worker…….5 Relative/friend..…..…6 Other (specify) ...…..97	….|___|
40	Where did your (mother) checkup take place?	Home: Your home……..…11 Other home……12 Public sector: Govt. Hosp./polyclinic….....21 Govt. clinic/health centre……..…...22 Govt. health post/CHPS compound……...23 Other public (specify)…..…..26 Private medical sector: Private hospital…..….31 Private clinic…….…..32 Private maternity home……..33 Other private (specify)…….....36 Other (specify) ....….97	….|___|
Infant/Child Mortality (for mothers only)			

	Now, I will like to ask about all the births you have had during your life		
41	Do you have any sons or daughters to whom you have given birth who are now living with you? If yes, how many sons and daughters? If None, Record '00'	Sons _____ Daughters _____	
42	Do you have any sons or daughters to whom you have given birth who are alive but not staying with you? If yes, how many sons and daughters? If none, record '00'	Sons _____ Daughters _____	
43	Have you ever given birth to a boy or girl who was born alive but later died even if he/she was alive for seconds?	Yes ……..…..…..1 No…….....…2 **(If NO skip to Q46)**	…|____|
44	How many boys and girls have died? If none, record '00'.	Boys dead_____ Girls dead_____	
45	How old was he or she at death? (Record age at death in years and month starting with the most recent if number is more than 1)	Record years and months (repeat if >1) Year(s)_____ Month(s)_____	
	Health Care Access		
46	Do you live in a CHPS zone?	Yes……..……....1 No…….....…2	….|____|
47	Is there a health facility in this community?	Yes…….....1 No…….....….2 **(If NO skip to Q51)**	….|____|
48	What kind of health facility is it?	CHPS Compound…….1 Health Centre……..2 Clinic…….. 3 Hospital……..…..4	….|____|
49	Comparing now and before the establishment of the health facility, what is your opinion on the use of health care services in your community?	More use……..……1 No change……...….2 Less use……..…..3 Don't know ……..98 Refused……..…...…99	….|____|
50	Comparing now and before the establishment of the health facility, how would you asses your use of health care services?	More use……1 No change…….…….2	

		Less use……..3 Don't know ……..98 Refused……..…...…99	….|____|
51	How far is the nearest health facility from where you live?	Less than 1 km……....1 Between 1 and 5Km...2 More than 5Km..…...3 Don't know ……..98 Refused…….…..….....99	….|____|
52	How long does it take to get to the nearest health facility by car?	Record time in minutes and hours Hours_____ Minutes____ Don't know ……..98	….|____|
53	What is the road condition to the nearest health facility?	No road/footpath……1 Trunk road……...2 Feeder roads……...3 Urban roads……4	….|____|
54	Were you able to seek treatment from a health care professional when you needed care?	Yes……....1 **(If YES skip to Q56)** No..……..…2 Refused…….…..…...99	….|____|
55	Which reason(s) best explains why you did not get health care?	Did not have insurance ……....1 Could not afford the cost of the visit……...2 Could not afford the cost of transport ……3 No transport available ……...4 You were previously badly treated …...…...5 The health care provider's drugs or equipment were inadequate ……..…6 You did not know where to go……....7 You tried but were denied health care .….8 Other (specify) ...…..97	….|____|
56	During your last illness where did you seek treatment?	Health facility.……1 Hospital.…….2 Community Health	….|____|

		Worker……....3 Traditional healer……4 Drug Kiosk/Store..…..5 Don't know ……..98 Refused…….……..…99	
57	Are there any community health workers in this village/town?	Yes…….……..…..….1 No..……..….2 Don't know ……..98 Refused……..…..99	….|____|
58	Do you have a drug dispensing kiosk/outlet/store (mini-pharmacy) in this community?	Yes...…….....…1 No……..……2 Don't know ……..98 Refused……...…...…99	….|____|
59	Are there any non-governmental organizations working in health in this area?	Yes...…….....…1 No……..……2 Don't know ……..98 Refused……...….....99	….|____|
60	What is your most important source of information about health matters in this community?	Community Health Worker...……1 Government Health Centre/Hospital……...2 Faith-based Health Centre/Hospital……...3 NGO..…….4 Don't know ……....98 Refused……...…..…99	….|____|
Community Initiated Emergency Transport System (CETS)			
61	Have you heard of Community Initiated Emergency Transport System (CETS)? Probe: a common fund for the community to support referral	Yes…….…….....1 No…….....… 2 **(If NO skip to Q79)**	….|____|
62	Do you currently have CETS in your community?	Yes……...1 **(If YES skip to Q65)** No…….…....….2 Don't know ……....98	….|____|
63	Was CETS ever in your community? If no longer operating.	Yes…….....1 **(If YES skip to Q64)** No…….…....….2 **(If NO skip to Q79)**	….|____|
64	List three things why it failed	Record reasons 1:_____	

		2:_____ 3:_____	
65	In your opinion, why was CETS setup?	For transport for referral……..1 For money for referral..2 For CHPS……3 Other (specify) ....….97 Don't know ……....98	….|____|
66	Have you ever been a member of CETS?	Yes…….....1 No…….....….2 **(If NO skip to Q69)**	….|____|
67	Why did you join CETS?	Get free transport for referral…….1 Get money for referral…….2 Support CHPS……..…3 Other (specify) ...…..97 Don't know ……..…98	….|____|
68	Are you currently a member of the existing CETS?	Yes……..1 **(If YES skip to Q71)** No…….…..... …. 2 **(If NO skip to Q70)**	….|____|
69	If **NO in Q66** why have you never joined CETS?	Not interested……...…1 No money to pay fee....2 CETS collapsed…..…..3 Don't know ……..98 Refused……...…99	….|____|
70	Why did you drop out?	No longer interested….1 Difficulty in paying fee……...2 CETS collapsed……...3 Management challenges……...4 Don't know …..….....98 Refused…….……..…99	….|____|
71	How would you rank ease of transportation of the sick	Very Easy……..…1	

	to a health facility outside your community with CETS?	Easy……..…2 No change…….…...3 Difficult…….…..4 Very difficult ……..5 Don't know ……..98	….|____|
72	In your opinion, how is the use of emergency medical referral with CETS compared to period before CETS?	More use……..……1 No change……....2 Less use…….....3 Don't know ……....98 Refused…….…….....99	….|____|
73	Have you or any of your household members been a beneficiary of CETS?	Yes……..…....1 No…….…..…2	….|____|
74	How did you or that household member benefit?	Free transport……...1 Loan to augment other cost ……..…..…...2 Others (specify) ….....97	….|____|
75	What was the condition under which you or that household member benefitted?	Pregnancy related…..……..…..1 Child sickness……..….2 Personal emergency……3 Others (specify) ……..97	….|____|
76	In your opinion, what are the three most important benefits of CETS to your community? *(Number from 1 to 3, from most important to least important)*	Improved referral……..... Improved maternal and child health…... Improves health access..... Community cooperation…….. Others (specify)……97	
77	In your opinion, what are the three most important benefits of CHPS to your community? *(Number from 1 to 3, from most important to least important)*	Improved referral……..... Improved maternal and child health….. Improves health access..... Community cooperation…….. Others (specify)……97	

78	In your opinion, what are the three most important challenges of CHPS in your community? *(Number from 1 to 3, from most important to least important)*	Lack of money……..... Unreliable service…… Inadequate service…… Others (specify)……97	
Socio-Demographic Information			
79	What is your age?	_____	
80	What is you marital status?	Never married ……....1 Currently married.….2 Divorced……3 Widowed...…….……4 Refused…….…..…..99	….|____|
81	What is your highest level of education?	No education……..…..1 Middle School……2 Primary education.….3 Secondary education...4 Tertiary education..….5 Refused……...…...…99	….|____|
82	How many people in total live in your household?	_____	
83	How many of the people in your household are children?	_____	
84	How many of the children are under five years?	_____	
85	What is your religion?	Christianity...……..…..1 Muslim..……..…2 Traditionalist…….…3 No religion.……4 Other (specify) ....….97 Refused…….…..…99	….|____|
86	Ethnicity	Sissala…….…...…1 Waala……..…….2 Brifo…….…...3 Dagaaba……..….4 Other (Northern)…….5 Other (Southern)…….6	….|____|
87	What is your annual household income?	Record.…… Don't know ……..98 Refused…….…..…..99	….|____|

88	Which one of the following housing type best describes the type of dwelling this household occupies? **DO NOT READ ALOUD SELECT ONE AND RECORD**	House..……...1 Traditional dwelling/homestead…2 Compound house……3 Room in house…….....4 Hut/Shack...…….....5 Other (specify) ...…..97	….|____|
89	Does your house have electricity?	Yes……..…….…...1 No……..……2 Don't know ……..98 Refused……..….....99	….|____|
90	Does your house have running water?	Yes..…….……..1 No…...……...…2 Don't know ……..98 Refused……...….....99	….|____|
91	Does your household have a radio set?	Yes..……...…1 No…...…….……...2 Don't know …..….....98 Refused…….……99	….|____|
92	Does your household have a TV set?	Yes..…….…...…1 No…...……..…2 Don't know ……98 Refused…….…...…...99	….|____|
93	Does your households have a bicycle?	Yes……..……1 No……..…….2 Don't know ……..…98 Refused…….…….....99	….|____|
94	Does your households have a motor?	Yes……..……1 No……..…….2 Don't know ……..98 Refused……...……99	….|____|
95	Does your households have a car?	Yes……..…...……1 No……..…….....2 Don't know…..….....98 Refused…….....99	….|____|
96	Do you have a toilet in your house?	Yes……..…….....1 No……..…….....2 Don't know …….....98 Refused…….…….....99	….|____|
97	What is the main floor material of your house?	Tiles……..…1 Ceramics/terrazzo…..2 Cement…...…...……3 Mud/gravel……...…..4	….|____|

98	What is your status in the house you reside?	Owner……1 Tenant……2 Relative's house…….3 Other (specify).....….97	….|____|
99	Does this household own any livestock?	Yes……..……...1 No...……...2 Don't know……..…98 Refused…….…**.....**99	….|____|
100	How many of the following types of animals does your household have?	Goats	
		Pigs	
		Cattle	
		Donkey	
		Sheep	
		Chicken	
101	Which of the following best describes the household structure? DO NOT READ ALOUD- ASK ABOUT HOUSEHOLD TYPE AND CIRCLE ONLY ONE ANSWER	Female Centered (No husband/ male partner in household, may include relatives, children, friends)**.....**1 Male Centered (No wife/ female partner in household, may include relatives, children, friends)...……..…2 Nuclear (Husband/ male partner and wife/ female partner with or without children)**..**……..3 Extended (Husband/ male partner and wife/ female partner and children and relatives).4 Polygamous (husband with more than one wife)...…….……5 Other (specify) **...**….97	….|____|

Appendix C: Curriculum Vitae

Joseph Asumah Braimah

Department of Geography

Faculty of Social Sciences

University of Western Ontario

151 Richmond Street

London, Ontario, Canada, N6A 3K7

Education

Sept. 2015 to date: **Master of Arts Student, Geography,** University of Western Ontario, Canada

Thesis Title: Community-based Health Planning and Services and women's Access to health care in the Upper West Region of Ghana.

Supervisor: Dr. Isaac Luginaah

May 2009 **Bachelor of Arts, Geography and Resource Development,** University of Ghana

TEACHING EXPERIENCE

Sept. 2015 to date **Teaching Assistant, University of Western Ontario, Canada**

Course Title: 1- Fundamentals of Geography (Geog 1100)

- Address course related concerns from students in class and during office hours.
- Support the professor to deliver lectures
- Proctor and grade assignments and examinations

Jan 2014-Aug 2015 **Tutor/Head of Geography Dept., Funsi Snr. High School, Funsi-Wa, Ghana**

- Performed administrative duty such as planning lesson schedule, assigning lessons to tutors, and supervise the day to day running of the department
- Taught geography
- Provided counselling to students

- Organized sporting and entertainment activities for students and also participated in inter-school competitions.

Apri 2012-Dec 2013 **Teacher, Tinniabee Junior High School, Funsi-Wa, Ghana**

- Assisted and prepared concise lesson plans, improving students' analytical skills.
- Provided assistance to teachers and headmaster in management related functions in the school.

Aug 2010-Jun 2011 **Teaching Assistant, Geography Dept., University of Ghana**

- Organized tutorials and taught students
- Conducted and graded examinations and assignments
- Assisted in undertaking research for the department

Nov 2009-Jun 2010 **National Service Person, Geography Dept., University of Ghana**

- Organized tutorials and taught students
- Conducted exams and assisted in grading
- Assisted in undertaking research for the department

Research Experience

June-Aug 2015 **Masters Thesis Research, Western University**

- Designed study and survey instrument
- Recruited and trained field staff on the survey instrument.
- Coordinated various teams in the research
- Currently writing thesis

Jan-May 2008 **Undergraduate Thesis Research**

- Designed questionnaires and collected data
- Analysed data and wrote thesis on "The shea tree and women's welfare in the Upper West Region of Ghana".

Publications:

Peer Reviewed Articles

Braimah, J. A., Atuoye, K. N., Vercillo, S., Warring, W. and Luginaah, I. (2017). Debated agronomy: Public discourse and the future of biotechnology policy in Ghana. *Global Bioethics.*

Under review or Submitted

Warring, C., Mason, S. A. **Braimah, J. A**., Baxter, J. and Luginaah, I. (submitted). Paralysis by analysis or precautionary paralysis: Policy and environmental discourses in the management of residential organic waste. *Journal of Environmental Planning and Management.*

Sano, Y., Anatabe, R., Atuoye, K., **Braimah, J. A**. and Luginaah, I. (under review). Married women's autonomy and post-delivery modern contraceptive use in the Democratic Republic of Congo. *Journal of Maternal and Child Health.*

Braimah, J. A., Gordon, C. and Yirenya-Tawiah, D. (under review). Hand dug well water safety: the case of two peri-urban communities in Ghana. *Ghana Science Association.*

In preparation

Braimah, J. A. and Luginaah, I. (in draft). Community-based Health Planning and Services and women's access to primary health care in the Upper West Region of Ghana.

Braimah, J. A. and Luginaah, I. (in draft). The role of the Community-based Health Planning and Services in empowering women to utilize facility-based deliveries in the Upper West Region of Ghana.

Sano, Y., Anatabe, R., Atuoye, K., **Braimah, J. A.** and Baada, J. (in draft). Land ownership and HIV testing among married women in Ghana.

Conference Presentations:

Braimah, J. A. and Luginaah, I. Women's access to primary healthcare in the Upper West Region of Ghana: Understanding the role of community-based health planning and services. Canadian Association of Geographers Annual Meeting. University of York, Toronto, May 29 –June 2, 2017

Braimah, J. A., Atuoye, K. N. and Luginaah, I. Women's autonomy in deciding to utilize obstetric services in Ghana. American Association of Geographers Annual Meeting. Boston, Massachusetts, April 2 – 9, 2017.

Braimah, J. A. and Luginaah, I. The community-based health planning and services and health facility-based deliveries in the Upper West Region of Ghana. Canadian Association of Geographers Ontario Division Annual Meeting. University of Waterloo, Waterloo, October 28 – 29, 2016.

Kyeremeh, E. K., Sano, Y., Antabe, R. and **Braimah, J. A**. Land ownership and HIV testing among married women in Nigeria. Canadian Association of Geographers Ontario Division Annual Meeting. University of Waterloo, Waterloo, October 28 – 29, 2016.

Braimah, J. A., Atuoye, K. N., Vercillo, S., Warring, W. and Luginaah, I. Debated agronomy: Public discourse and the future of biotechnology policy in Ghana. Canadian Association of Geographers, Ontario Division Annual Meeting. University of Waterloo, Waterloo, October 28 – 29, 2016.

Braimah, J. A., Yirenya-Tawiah, D. and Gordon, C. Science and perception: Household well water quality in Wa in the Upper West Region of Ghana. American Association of Geographers Annual Meeting. San Francisco, California, March 29 – April 2, 2016.

Braimah, J. A., Yirenya-Tawiah, D. and Gordon, C. Prioritising access over quality: Perceptions of households on the effects of latrines on water quality in Wa in the Upper West Region of Ghana. Canadian Association of Geographers Ontario Division Annual Meeting. Carleton University, Ottawa, October 23 –24, 2015.

Membership

2015 to date	**Canadian Association of Geographers Ontario Division (CAGONT)**
2015 to date	**Canadian Association of Geographers**
2015 to date	**American Association of Geographers**
2015 to date	**Health and Medical Geographers Association (AAG)**

Awards

2014-2016	**Western Graduate Research Scholarship (WGRS)**
	CAD$ 54000

Extra-Curricular Roles

2016 to date	**Social Committee member**, Geography Graduate Students, Western University
2016 to date	**Peer guide, International and Exchange Student Center,** Western University, Ontario
2015 to date	**Chair, International Students Issues Committee**, Society of Graduate Students, Western University, Ontario
2015 to date	**Scholarship and Bursary Committee Member**, Society of Graduate Students, Western University, Ontario