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Chapter

A Collaborative Health Promotion Approach to Improve Rural Health Delivery and Health Outcomes in Ghana: A Case Example of a Community-Based Health Planning and Services (CHPS) Strategy

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Abstract

Rural health is a core component of public health but developing rural is a major public challenge, especially, in poor and resource-limited settings around the world. Poor rural healthcare, both access and quality is a strong contributory factor in poor health outcomes such as high maternal, under-five, and infant mortality rates in developing countries, particularly, in sub-Saharan Africa; as millions of rural folks including women and children face many challenges in accessing primary health-care. This chapter will examine these challenges in rural communities that negatively affect health outcomes and create health disparities between rural and urban populations in Ghana. We will discuss how maternal and child health outcomes can be improved through collaborative rural health promotion. A case for collaborative rural health promotion efforts will be made in this chapter and a community-based health planning and delivery service (CHPS) model will be presented as an example of collaborative rural health promotion in Ghana.

Keywords: Rural, health disparity, Ghana, community-based, maternal/child, literacy

1. Introduction

Globally, the accessibility and availability of appropriate health services for people living in rural areas remain an ongoing issue of public health concern [1]. People living in rural areas experience inequitable access to basic, fundamental, primary, and specialty health care [2]. Thus, access constitutes and remains a major issue in rural health around the world [3]. The rural health literature identifies several and multiple issues related to rural peoples' access to health care services.

The issues range from transportation difficulties, low population density with a concomitant lack of associated social infrastructure to provide services, limitation of finances associated with low levels of income and employment, social isolation, inadequate funding, limited choice and availability of specialist physicians, poor quality professional care, and differences in cultural needs [2]. These issues are not unique or peculiar to any one country in the world. Rather, all countries have such difficulties in addition to communication, the challenge of shortages of doctors and other health professionals in rural and remote areas [3]. Thus, these go beyond health systems factors to include broadly the social determinants of health. This has implications on the health status and outcomes of those living in rural areas, as evidence exists to show that the health status of people in rural areas is generally worse than in urban areas [3] around the world.

While over the years, rural health issues have received attention worldwide, the COVID-19 pandemic outbreak has again highlighted the fact that the most vulnerable populations will likely feel the greatest impact. This includes people who live in rural and remote communities with less access to critical health services [4]. The case of Ghana is not different from this observation.

Ghana is a particularly interesting case because when compared to other countries in sub-Saharan Africa, the country can be said to have a well-developed health system [5]. Again, although in terms of physician, nursing, and midwifery personnel density, the country falls short of the World Health Organization's recommended minimum threshold of twenty-three doctors, nurses, and midwives per 10,000 population at almost one and over nine respectively, comparatively, Ghana performs satisfactorily to most other African countries [5, 6]. Life expectancy at birth for males was 63.8 years and 66.1 years for females in 2020, surpassing the average life expectancy on the continent (62 years and 65 years respectively) [7, 8]. Ghana has also gained the reputation as the first country in Sub-Saharan Africa with an operative nationwide health insurance scheme and a leader in universal health coverage (UHC) [9, 10]. This assures access to healthcare services for both those in the formal and informal sectors of the economy as well as the agricultural and rural populations in one national scheme [11, 12]. This is in addition to the implementation of the Community-Based Health Planning and Services (CHPS) program since the late 1990s and early 2000s as part of government policy and Ghana Health Service [GHS] strategy to bring basic health care to the doorstep of people living in rural and remote areas and other hard-to-reach communities.

Ghana has thus made progress since the introduction of the National Health Insurance Scheme [NHIS] in 2003, along with related policies in maternal and child health care [5]. For instance, according to the 2017 Maternal Health Survey [MHS], antenatal care [ANC] coverage by a skilled provider (doctor, nurse/midwife, or community health officer/nurse) improved from 96% in 2007 to 98% in 2017 [13], way above the sub-Saharan African region average. The neonatal, infant and under-5 mortality rates have also seen improvements for the same period. While the neonatal mortality rate was 25 deaths per 1,000 live births, the infant mortality rate was 37 per 1,000 live births and that of under-5 was 52 deaths per 1,000 live births [13]. In relation to maternal mortality ratio, it currently stands between 308 per 100,000 live births [14–16] and 310 per 100,000 live births [13]. At the health system level, nationally, there has also been an improvement in the doctor and nurse to population ratios. Between 2013 and 2017, ten years after the introduction of the universal health coverage (UHC) policy via a national health insurance scheme, the doctor to population ratio has improved from 1:9749 to 1:7374 with the total number of doctors increasing from 2,730 to 4,016 nationally. That of nurses has also improved from 1:2,172 in 2013 to 1:505 in 2017 with the total number of the nurse cadre workforce increasing from 12,245 in 2013 to 58,608 in

2017 [17]. The trend shows an incremental and steady improvement in the core indicators over the years. Thus, overall, Ghana has seen a marked improvement in the provision of healthcare for all of its citizens as demonstrated by the health indicators and outcomes that are comparatively better than most other African countries [5]. Despite the stated improvements in health indicators in several areas, there are still challenges and barriers, especially, in relation to healthcare access and utilization for those in the rural areas. This chapter focuses on the health disparity challenges of people living in rural areas of Ghana. Specifically, it explores how poor rural health care is a strong contributory factor for high maternal and infant mortality rates in the country. The next phase of the chapter discusses some of these challenges. However, before that we define some terms/concepts that are crucial to understanding rural health broadly and specifically in Ghana. The next section focuses on health disparities in rural and urban Ghana, the underlying causes and challenges while the last section discusses a major approach and strategy that has been adopted to deal with the rural health challenges in the country. This part also concludes the chapter.

2. Definition of terms

2.1 Collaborative health Promotion

There are different definitions of health promotion but one overarching goal cuts through all the various conceptualizations, that of improving the health of individuals, groups, and/or communities. According to the Ottawa Charter of 1986, health promotion is the process of enabling people to increase control over, and improve, their health [18]. The Joint Committee on Terminology for Health Education & Promotion also defined health promotion as any planned combinations of educational, political, environmental, regulatory, or organizational mechanisms that support actions of living conducive to individuals, groups, and communities [19, 20]. For this chapter, we define collaborative health promotion as health promotion policies, goals, strategies, and activities that do not emanate solely from the government but from the collaborative efforts and commitments of multidisciplinary and multi-agency teams including communities to promote health and prevent disease.

2.2 Defining rural and urban communities

In Ghana, the major marker of which community is rural or urban depends on the population of the specified community with localities of 5,000 or more people classified as urban [21]. According to the 2010 Ghana Housing and Population Census (GHPC), 50.9% of the population of Ghana live in urban communities while 49.1% live in rural communities. There are regional differences in urban and rural populations in Ghana. At the regional levels, Greater Accra and Ashanti regions had 90.5% and 60.6% of their population lived in urban communities. The Volta, Northern, and Upper West regions had 33.7%, 30.3%, and 16.3% of the populations living in urban areas in 2010 [22]. The designation of rural communities tended to classify those that were farther and distant from national, regional, municipal, and district capitals in the country. Again, this classification gave prominence to localities based on their population size, and also mostly characterized by bad road network, limited transportation choices, lack of well-equipped health facilities and qualified healthcare professionals, and largely agrarian. By definition, the localities are mostly reachable by feeder roads, which are often not motorable especially during extended rainy seasons.

2.3 Defining rural health

Defining rural health is a challenging venture as the term rural is not universal but relative. What is considered rural in one country or region within the same country may not be deemed the same in another due to different classifications of the constituents of rural. While some define rural by population size only as in the Ghana 2010 Population and Housing census [22], other countries use population in addition to distance or land area and infrastructure as well as socio-economic characteristics, as in the case of the United States Census Bureau [24]. In the context of this chapter, we would like to define rural health as the collective efforts, policies and programs geared towards the improvement of the health status of people living in geographically remote and smaller communities classified by a particular country or region to be a rural locality.

2.4 Health disparities between rural and urban populations in Ghana

Health disparities indicate the differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups. Before discussing the challenges that rural health development and promotion are confronted with, it is important to highlight the indicators of health disparities between rural and urban populations in Ghana and around the world. Disparities exist when differences in health outcomes or health determinants are observed between populations [23]. The differences could be about availability and access to healthcare in terms of distance and cost, and health outcomes in terms of morbidity and mortality depending on different socio-demographic characteristics of different populations. Health disparity has been explained in different but similar terms to denote the lack of equity in access to healthcare and health outcomes. For instance, The Rural Health Information Hub (RHIfhub) views health disparities as “differences in health status when compared to the population overall, often characterized by indicators such as higher incidence of disease and/or disability, increased mortality rates, lower life expectancies, and higher rates of pain and suffering” [24]. The U.S Department of Health and Human Services also described health disparities as preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations [25].

Globally, there have always been and continues to be health disparities between developed and developing or rich and poor countries and sometimes the disparities within countries may be greater than disparities between developed and developing countries. These are witnessed among different racial or ethnic groups, between different socio-economic groups, sexual orientation, religious groups, and between rural and urban populations [26]. The focus of this chapter is rural health and so we will briefly discuss health disparities between rural and urban populations, especially in Ghana. In access to healthcare, for instance, rural and geographically isolated populations have limited access to qualified health professionals and health, well-equipped health facilities compared to people living in urban and metropolitan areas. In the United States (US), for instance, the National Center for Health Workforce Analysis (NCHWA) reported in 2014 that less than 8% of all qualified physicians and surgeons in the US chose to practice in rural settings [27]. The report also indicated that healthcare workers who are less educated and trained are living in rural areas. This trend is similar to the health workforce distribution in Ghana between rural and urban communities. The World Bank ranked Ghana as 14th in Africa for a doctor to population ratio with the doctor-population ratio being 0.1 per 1000 people [28] which is an improvement from previous years. The doctor to

population ratio was 1:7374, 1:8481, 1:8808, 1:9043 and 1:9749 for 2017, 2016, 2015, 2014 and 2013 respectively [17]. The rural–urban differences were greater than the national ratios above. For example, the ratios for Greater Accra and Ashanti regions, which have larger proportions of their populations living in urban areas, were 1:3052 and 1:6,888 in 2017. On the other hand, Upper East, Western, and Upper West regions which have larger proportions of their population living in rural areas had doctor-to-population ratios of 1:26,489, 1:20,568, and 1:14,821 respectively in 2017 [17]. Huge differences also exist in the distribution of midwives in the country, where Greater Accra and Ashanti regions had 3,232 and 2597 midwives respectively while Northern which has almost 70% of its population in rural communities had 823 midwives [17] during the same period.

Not only access to healthcare but there are also disparities in health outcomes between rural and urban populations in Ghana. A few examples of these disparities in health outcomes cover mortality, malaria prevalence, and children's nutritional status. Under-5 mortality data from the 2014 Ghana Demographic and Health Survey (GDHS) showed regional differences in under-5 mortality with rural communities bearing the greatest burden of under-5 mortality. For instance, under-5 mortality was 75 deaths per 1,000 live births among children in rural areas compared to 64 deaths per 1,000 live births among children in urban areas [29]. The figures were 47 deaths per 1,000 live births in Greater Accra compared to 111 deaths per 1,000 live births in the Northern region. Infant mortality was also highest in the Upper West and Northern regions where two-thirds of their populations live in rural communities. In the same GDHS reported, malaria prevalence was higher among children 6–59 months in rural areas (38%) than children in urban areas (14%). On a regional basis, malaria prevalence was highest among children in the Northern region (40%) compared to Greater Accra (11%) region [29].

These are just a few examples to highlight the health disparities that exist between rural and urban communities in Ghana. There is, therefore, a justification for us to generalize that even though there is a remarkable improvement in the health sector; inequities exist in the health delivery system in Ghana, particularly, between rural and urban populations with rural populations bearing a disproportionate burden of poor health outcomes. These disparities do not occur in a vacuum but result from a constellation of factors that combine to create the disparities. The factors putting rural populations at a disadvantage of health disparities can include geographic isolation, lower socioeconomic status, higher rates of health risk behaviors, limited access to healthcare specialists and emergency care, and limited employment opportunities among others. Below, we discuss these factors under the bigger umbrella of social determinants of health.

2.5 Social determinants of rural health in Ghana

The health status of a particular community, locality, or group of people is not static but changes positively or negatively due to changes in the community or the lives of the people. In this section, we discuss various factors that contribute to the status of health of a group of people at a particular point in time and again focus on rural communities and populations in Ghana. These factors may be related to socio-demographic, economic, environmental, political, policy, and technological characteristics of the community or the group of people individually or a combination of these factors. These various factors are collectively referred to as social determinants of health by various health institutions and organizations. The WHO defined social determinants of health as 'the circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness [30]. These circumstances are in turn shaped by a wider set of forces: economics,

social policies, and politics. In the Healthy People 2020 document, social determinants of health are defined as the ‘conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks [31]. Evidence shows that social determinants of health contribute between 75–100% to health improvement and outcomes [32–36].

3. Access to healthcare challenges

3.1 Health insurance

As mentioned earlier, while the introduction of the NHIS and its related maternal health policies have contributed greatly to improving access to health services, especially, for the vulnerable including pregnant women, there is evidence to suggest coverage and utilization challenges for those living in rural and remote parts of the country. For instance, it was estimated that more than seven million people in Ghana had subscribed to the NHIS, corresponding to a coverage of 35% of the entire population in 2007. Concerns were, however, rife about the NHIS ability to carry along the poor, in particular, poor residents in rural areas [37]. In their study, Kwarteng and colleagues have also highlighted the low enrolment and coverage of rural residents by the NHIS that aims at protecting the vulnerable and poor from catastrophic health expenditure. They highlighted “the great disparities in NHIS enrolment against members of the poorest households, those without formal education and living in rural areas” [38]. Similarly, other researchers have demonstrated in a study spanning seven districts of the Upper East region that women of lower Socio-Economic Status, living in rural settings with no formal education among other conditions were less likely to register with the scheme [38, 39]. The researchers identified a number of factors militating against the willingness of those in the rural areas to subscribe to the NHIS. These include the absence and or inadequacy of health care facilities within reasonable reach of rural residents, which requires traveling longer distances at greater cost to access health care services unlike their urban counterparts [37, 38]. Additional disincentive to purchase insurance in their view is the associated high non-medical cost for rural residents and poorer households [38, 40, 41]. From these few studies, it can be said that in spite of the fact that the NHIS has improved access to care, inequalities in service usage still remain, particularly between those living in the rural areas and the urban centers. This view is corroborated by Van Der Wielen and colleagues, who argued strongly based on the findings from their study that the NHIS coverage although does increase healthcare utilization among rural older adults, inequalities remain. The poor are still at a great disadvantage in their use of health services overall and benefit less from enrolment for outpatient care [42].

3.2 Inequitable distribution of health professionals

The doctor and nurse to population ratios across regions and in rural communities as against metropolitan/urban areas are equally telling. While there is an upward trend and improvement over the years, the disparities and inequities are still wide and far apart for the rural dwellers. Between 2013 and 2017, the doctor to population ratios in the Greater Accra and Ashanti regions, the two largest urban areas in the country improved from 1:3,240 (total number of doctors = 1,356), to 1:3,052 (total number of doctors = 1583) and 1:9,280 (total number of doctors = 558), and 1: 6,888 (total number of doctors = 822) respectively [17]. The

nurse to population ratio is also better in these two urban areas in comparative and population density terms as demonstrated below. While the Greater Accra region had a ratio of 1:1,904 (number of nurses = 3508) in 2013, this has dramatically improved to 1:530 (number of nurses = 9,124) in 2017. That of the Ashanti region has also seen similar improvements with the ratio declining from 1:2,244 (number of nurses = 2308) in 2013 to 1:548 (number of nurses = 10,332) in 2017 [17]. Conversely, the three most deprived northern regions (Northern, Upper East and Upper West) and the Volta Region, which are also largely rural, have not seen drastic improvement. The doctor to population ratios were 1:20,685 (total number of doctors = 131), 1:27,391 (total number of doctors = 40) and 1:38,692 (total number of doctors = 19) in 2013. While in 2017, it was 1:11,130 (total number of doctors = 269); 1:26,489 (total number of doctors = 47); 1:14,821 (total number of doctors = 56) [17] respectively during the same period. For the nurse to population ratio, the following are particularly telling of what the challenges are in the rural areas. In 2013, the figures for the Northern, Upper East and Upper West were 1:1,170 (number of nurses = 1,067); 1:470 (number of nurses = 604); and 1:322 (number of nurses = 311). In 2017, the ratios were: 1: 479 (number of nurses = 6248); 1: 340 (number of nurses = 3,660); and 1: 308 (number of nurses = 2,69) [17] respectively. Besides, in the largely rural Volta Region, the ratios were quite alarming. While in 2013, the doctor to population ratio was 1:20,625 (total number of doctors = 111), this declined to 1:10,534 (total number of doctors = 242) in 2017. That of the nurse to population ratios were 1:988 (number of nurses = 785) in 2013 with an improvement in 2017 as the ratio stood at 1:542 (number of nurses = 4,700) [17]. However, even within the regions, there are large variations in these indicators between the urban and rural areas. This does not only pose serious challenges of health care access and utilization but also undermines efforts towards attaining universal health coverage through the NHIS, which is a policy goal of the national health policy.

3.3 Transportation challenges

The role of transportation in a society in terms of movement of people, services, and goods; and being an engine of economic growth cannot be over-emphasized. We believe that public transportation systems, transportation availability, and efficient transportation services have a critical link and impact on public health, especially primary and emergency health delivery systems. Road transportation is particularly important for the primary healthcare delivery system in Ghana and in the rural communities where most rural folks travel far distances to access primary healthcare. Unfortunately, the rural transportation system in Ghana is a major hurdle to access to healthcare. Many rural communities in Ghana have bad roads, poor transportation systems such as motor vehicles and buses and suffer the health, economic, and social consequences of poor road infrastructure. A large proportion of the rural population in Ghana depends on public transportation to travel, move goods, and seek or render services [43]. The poor road network in rural communities affects access to healthcare services especially for district hospitals and referral services that rural folks need to access, and this has been well-documented [43–46]. As a result of poor road infrastructure in rural areas, emergency services are not accessible for a greater proportion of the rural population. They are far fewer ambulance services and emergency cases can quickly escalate into poor health outcomes and death. For instance, in the Nandom South District, for example, the major public referral hospitals are Tamale Teaching Hospital or Yendi Regional Hospital, which is 194 kilometers and 95.2 kilometers respectively from the district capital, Wulensi. In emergency cases, people struggle to get a means of transport and usually rely on motorcycles. There is a proliferation of motorcycle and tricycle

taxis in rural communities and even peri-urban centers in the country popularly called Okada and motor (Abobo yaa) or “Yello Yello” in many parts of the country. These modes of transport have become the dominant and most common means of transport services in rural areas including bicycles and sometimes tractors with trailers. However, they are often not very safe and Okada was even banned in urban areas in Ghana in 2012 [43] although there are operating even in cities across the country.

Thus, on rural–urban transport system for healthcare, there is inequity in terms of accessibility to health facilities. Disparities exist in the distance travel to access healthcare services between rural and urban residents or dwellers in Ghana [21]. It is more worrying with rural women, most of whom lack means of transport and rely on their husbands or family relatives in times of emergencies. Studies show women in rural areas traveled 4 km more than their urban counterparts to reach a health facility like a hospital or clinic. The evidence shows that 56% of women bypassed the nearest hospital to reach their community with higher chances of human lives being lost in rural than urban areas in accessing healthcare services especially in terms of medical emergencies in Ghana [47, 48]. Therefore, poor road infrastructure and transportation systems are major challenges impacting rural health delivery in Ghana.

4. Lower socio-economic status (education, lack of employment, poverty)

In Ghana, those living in rural areas are unfavorably disadvantaged in relation to the social determinants of health, which evidence shows contribute between 75–100% to health improvement and outcomes [32–36]. A critical component of social determinants of health is socio-economic status of people, which varies depending on residence, educational attainment, and income levels. In the 2017 GMHS, it was reported that 95% of households in urban areas have access to an improved source of drinking water, compared to 81% of rural households. While only 18% of households in Ghana used improved toilet facilities, again the statistics were negatively stacked against rural households. Urban households were found to be more likely than rural households to use improved toilet facilities (22% versus 13%). Similarly, while more than three-quarters (79%) of Ghanaian households have electricity, the rural–urban disparities were clear with 90% of urban households having electricity as against 65% of rural households. The picture was not quite different with communication and information gadgets. Urban households were more likely than rural households to own a mobile telephone, radio, or television. Conversely, rural households were more likely than urban households to own agricultural land or farm animals [13]. The rural versus urban disparities were also observed in the area of education—an important determinant of good employment and health care access and utilization. Women in urban areas (65%) were reportedly more likely to be literate, compared to women in rural areas (41%) [13]. Meanwhile, evidence shows that being literate or educated is critical to making well-informed decisions on health, education or business. Literate women are better placed in terms of knowledge on healthcare services, decisions on the appropriate healthcare facility to seek care including family planning. This is crucial in efforts to bridge the gap between rural–urban in terms of inequities in health. It is clear from the foregoing that systemic barriers and challenges still exist that impede the quality of, and access to, healthcare for those living in the rural areas of Ghana despite the interventions in the form of the CHPS, the NHIS and others.

4.1 Poor health literacy

Health literacy is an important component of the social determinants of health and needs important attention from health education and health promotion professionals in their efforts to promote public and community health. In general, literacy, the ability to read, write, and understand can be a determinant of how individuals perceive their environment and how they conduct themselves in their daily lives. Specifically, health literacy can influence how individuals perceive health issues and how their health-seeking behaviors will be. There are many definitions of health literacy in the literature as the field of health literacy continues to develop and expand. Two definitions that are more widely accepted and we think are appropriate for the context in which we write this chapter are presented below. According to the Calgary Charter on Health Literacy, 'health literacy allows the public and personnel working in all healthcare-related contexts to find, understand, evaluate, communicate, and use health-related information'. Health literacy is also defined as the degree to which individuals can obtain, process, and understand basic health information and services needed to make appropriate health decisions [49]. It is therefore important to clarify that health literacy goes beyond being able to read and write to include conscious effort to seek information regarding health issues, understanding those pieces of information, and using the information to make positive health-related decisions. For instance, do individuals seek medical care immediately they feel changes in their physical or mental health? Do they understand the instructions from their healthcare providers? Moreover, do they adhere to treatment regimens provided by healthcare providers? These are important health literacy questions that health educators and healthcare providers need to find out about in their communities of service. Evidence shows that individuals and communities that have good or high health literacy levels are more likely to make more positive health-related decisions and engage in positive health behaviors resulting in positive health outcomes compared to individuals and communities with poor health literacy levels [24]. For instance, Berkman and colleagues in a systematic review republished reported that limited health literacy is associated with poor health status resulting from a lower likelihood of using preventive health services and a likelihood of wrong medicine usage [50].

Rural communities and people living in remote communities are likely to be more negatively impacted by poor health literacy compared to people living and working in urban communities. Thus, rural folks are at a greater risk of poor health literacy due to poor general literacy from lower educational status, and high poverty levels [24]. Many other studies in different parts of the world have reported poor health literacy in rural populations compared to urban populations [51–54]. Majority of studies have reported lower health literacy levels among rural populations compared to urban populations even though confounders were more responsible for the differences in health literacy levels [51–54].

Although health literacy has not been widely researched in Ghana, a few studies assessed its association with health outcomes on different health issues in the country; and the general picture is that there is a high level of poor health literacy. While we cannot discuss all the studies in this chapter due to the page limitation, it is important to mention a couple of them. For instance, in a study of health literacy about universal health coverage in Ghana, Amoah and Philips found that only a third of the study sample of 779 from both rural and urban communities reported sufficient health literacy and that poor quality of health status was associated with poor health literacy [55]. In another study, researchers assessed the association between health literacy and cholera in a predominantly low socioeconomic status community in Accra, the capital city. The researchers found a substantial gap in

knowledge about environmental risk factors for cholera infection while reporting that high health literacy level was associated with the possibility to stay protected against cholera infection [56]. Lori and his colleagues also reported low health literacy among pregnant women in a qualitative study in an urban hospital in Ghana [57]. Again, almost half (49.1%) of the country's population live in rural areas as explained at the beginning of this chapter. This difference in health literacy between urban and rural populations in Ghana is a reflection of general literacy levels in the country. According to data from the 2010 Ghana Housing and Population Census (GHPC), literacy levels were 89.3% and 82.6% in the Greater Accra and Ashanti regions respectively, which have 90.5% and 60.6% of their populations living in urban areas respectively. However, literacy was 37.2% in the Northern region where 69.7% of the population was living in rural communities [22].

Health literacy, is, therefore, generally low and constitutes a major challenge in seeking and accessing healthcare and this can even be worse for rural populations in Ghana that already face a myriad of challenges in accessing healthcare. People living in rural communities may be more likely to develop chronic and non-communicable debilitating diseases than those living in metropolitan and urban areas. This is due to lack of regular health screenings, lack of awareness of the symptoms of diseases, and lack of knowledge of the importance of seeking healthcare early; and these diseases may develop into complications or advanced stages before being reported. For instance, as reported by Amoah and Phillips, even though the majority of their study participants subscribed to the national health insurance scheme, most of them had not accessed healthcare due to poor health literacy [55]. It will not be uncommon in rural communities in Ghana and among people with poor health literacy even urban communities to engage in medicine and treatment sharing, a phenomenon whereby one person shares his or her prescribed medication with a family member for similar symptoms. The same can be said about self-medication and a combination of herbal and orthodox medications. To help promote health literacy in Ghana as a whole and rural communities, in particular, we recommend prioritization of health literacy as a core mandate of institutions and policymakers so that health literacy can be incorporated into all health policy formulation and health program development and implementation strategies.

4.2 High risk sexual and reproductive health behaviors

People living in rural communities have characteristics that put their health at risk of negative health outcomes. They are likely to engage in certain behaviors that can jeopardize their health and this can be largely blamed on the low socio-economic characteristics described above. Examples of these include risky sexual and reproductive health behaviors, household size or total fertility rate and teenage parenthood.

In the 2014 GDHS, for instance, the total fertility rate for women in rural areas in the country was 5.1 compared to 3.4 among women in urban areas. The median age at first marriage for rural women was 19.2 years while it was 22.7 years for women in urban areas which means that women in rural areas marry 3.5 years earlier than their counterparts in urban centers in Ghana [29]. Women in the Northern region, which was then almost 70% rural, had a median age at marriage of 18.7 years, which was five years earlier than women in the Greater Accra region. Again, the percentage of women ages 15–19 who either were mothers or were pregnant at the time of the survey was 17 for rural women and 12 for women in urban centers. Both men and women in rural communities initiate sexual activity earlier than those in urban communities do. Thus, characteristics such as the desire for large family size, early marriage, and teenage parenting put the health and lives of women in

rural communities at risk of pregnancy complications and maternal mortality and morbidity. Adolescent pregnancies and teen motherhood are major public health challenges in Ghana, especially in rural areas. The concern is that adolescent pregnancy and childbearing have profound educational, health, physical, mental, and psychological consequences on health, sexual and reproductive health. Adolescents who become pregnant and begin childbearing in many instances are less likely to graduate from high school, likely to have large families, live in poverty, and children born to them likely to have limited educational attainment [29]. The children of such teenage parents are then likely to fall into the cycle of less education, no employment skills, and poverty.

The place of birth for a pregnant woman and the one who assists in the delivery of the child, whether skilled or unskilled, can have serious health implications for both the woman and the child. Pregnancy complications coupled with unskilled birth attendance have the potential and have been linked to the incidence of maternal and infant mortality. However, research has shown that women in rural communities in Ghana continue to deliver babies outside of health facilities and a trained or skilled person does not attend many of the deliveries. For instance, data on childbirths in the GDHS of 2014 show that 90% of all births in urban areas took place in health facilities but only 59% of childbirths took place in health facilities among women in rural communities [29]. On a regional basis, the Greater Accra and Ashanti regions recorded 93% and 85.6% of institutional deliveries compared to 63% and 34.5% in the Upper West and Northern regions respectively. Other researchers have reported a similar trend of high home deliveries among rural women. Furthermore, they have investigated factors responsible for home deliveries in rural areas in Ghana and have identified health insurance issues, cultural and religious practices, low educational achievements, negative attitudes of nurses and midwives, poor knowledge about signs of delivery onset [58–62] among many others as key factors. Therefore, the above risky health behaviors and practices which are prevalent in rural communities more than in the urban areas as a result of a constellation of many socio-demographic and economic factors contribute to the high burden of disease and negative health outcomes affecting the quality of health of rural populations in the country.

4.3 Poor cultural competence among healthcare professionals

The relationship between healthcare professionals and healthcare services users or seekers and their communities is critical in ensuring that quality health services are rendered with the hope of achieving positive health outcomes. Ghana is a multi-cultural, ethnic, and religious society and so cultural practices and beliefs vary across the country. These beliefs, religious, and cultural heritage shape lifestyles and importantly people's perception of health and health-seeking behaviors. Each healthcare professional or support staff belongs to at least one of these different ethnic and cultural groups and enters the healthcare workforce with his or her inherent ethnic, religious, and cultural biases. Healthcare professional such as a doctor, nurse, midwife, or mental health counselor, holding on to their beliefs, ethnic and cultural traits against the ethnic, religious, and cultural backgrounds of healthcare service users may breed frustration, mistrust, and bad feeling, especially from the health service seeker. This in turn can negatively affect health-seeking behavior and health outcomes. Literature on issues related to attitudes and behaviors of nurses, midwives, doctors; and perceptions of patients about healthcare professionals and how these affect the health-seeking behaviors and health outcomes abound in Ghana and other developing countries. There is no doubt about the work ethic of healthcare professionals, especially nurses, midwives, and doctors in Ghana. Their contribution has led to improvement in health outcomes and status

making the Ghanaian health care system one of the best and promising healthcare systems in Africa. However, negative attitudes and behaviors of some nurses, midwives, doctors, and other healthcare professionals towards mental health patients, pregnant women, people living with HIV, and culturally isolated people have been reported in the country [63–66]. These can have serious implications for health-seeking behaviors and health outcomes especially in rural communities in Ghana. Rural people may avoid seeking healthcare at health facilities for critical services such as mental health, pregnancy and childbirth, and malnutrition of children.

There is also the issue of confidentiality of personal health records and information of patients, which must be protected to the highest degree possible. In Ghana, there are codes of conduct for healthcare professionals including physicians, nurses, midwives, and auxiliary staff. There is also a bill of rights for patients and clients for healthcare institutions. These are usually posted on the walls in health facilities around the country. The questions are how many people in the rural communities, in particular, are aware of the code of ethics and bill of rights and how many can read and understand them? The presence of the code of ethics and bill of rights for healthcare professionals is not enough to ensure that culturally competent healthcare is delivered to the people. Unlike in the Western world where regulatory provisions are enacted and enforced such as the Health Insurance Portability and Accountability Act (HIPAA) of 1996, there is currently no such provision in Ghana.

Our observation is that there is a lack of cultural competency training in our health training institutions and for in-service training within the health delivery system. Thus, many healthcare professionals enter the healthcare industry without training in cultural competency and may have to learn from experience sometimes in a hard way of bad encounters. The 2002 Joint Committee on Health Education and Promotion Terminology defined cultural competence as “the ability of an individual to understand and respect values, attitudes, beliefs, and morals that differ across cultures, and to consider and respond appropriately to these differences in planning, implementing, and evaluating health education and programs and interventions” [19]. More practically, Perez and Luquis defined cultural competence as “a set of values, behaviors, attitudes, practices, and policies within an organization or program or among staff that enables people to work effectively with diverse groups” [67]. This is needed for healthcare professionals in Ghana and especially those who serve in the rural communities in the country. Many of the rural communities in Ghana do not have their people trained and stationed in the communities as nurses, for example, due to the low level of education described above, and so many nurses are posted to communities where they are total strangers. Cultural competency training is, therefore, very important for healthcare professionals in rural and traditionally setup communities. The importance of this is that being a culturally competent nurse, for instance, can significantly improve the quality of primary health delivery, which can then lead to positive health outcomes. Luquis and Perez asserted that “culturally and linguistically competent health services facilitate encounters with more favorable outcomes, enhance the potential for a more rewarding interpersonal experience, and increase the satisfaction of the individual receiving healthcare and disease prevention services” [67]. Cultural competency training needs to be prioritized by the Ghana Health Service and other healthcare institutions in the country for initial training and/or for annual or bi-annual in-service training.

4.4 Community-based health planning and services (CHPS) strategy and rural health in Ghana

To minimize the health disparities, bridge the inequities gap and to mitigate the challenges that bring about the disparities observed above between rural and

urban populations, there have been concerted efforts from diverse stakeholders within local communities, national, and multinational levels, and from public and private individuals and entities. Although still facing many challenges in its implementation, the Community Health Planning and Services (CHPS) program being implemented in Ghana as a national health policy directive and strategy is a collaborative health promotion tool to improve rural health in the country. CHPS is defined as “a national strategy to deliver essential community-based health services involving planning and service delivery with the communities”. Its primary focus is communities in deprived sub-districts and in general bringing health services close to the community [68]. The goal of the CHPS policy was to reach every community with a basic package of essential health services towards attaining universal health coverage and bridging the access inequity gap by 2020 [68, 69].

While we cannot fully cover CHPS implementation in this chapter, we provide a brief background about it and a summary of its major components for better understanding by readers. The CHPS concept was first piloted in Ghana in 1994 in Navrongo and with evidence of the concept steering community involvement in health services planning and delivery, it was adopted as a national strategy to improve healthcare access to deprived and geographically isolated localities in the country in 1999 [68, 69]. Ever since, CHPS has been implemented on a scale basis with the most recent remodeling and scale up launched in 2016. The CHPS strategy added a third service level, community (CHPS Zone), to the then district (hospital), sub-district (health center) levels thereby reaching more rural communities and populations in the country.

CHPS has two operational levels, which are the CHPS Zone and CHPS compound. CHPS zone is defined as a demarcated geographical area of up to 5,000 persons or 750 households in densely populated areas and maybe conterminous with electoral areas where feasible. CHPS compound on the other hand is an approved structure consisting of a service delivery point and community health officer (CHO) residential accommodation complex, both of which must be present [68]. The demarcated geographical area of up to 5,000 persons fits into the classification of a rural area by the Ghana Statistical Service [22]. The idea of the CHPS compound is to further reduce the distance of health services from smaller communities thereby increasing accessibility. Besides the leadership from GHS at national, regional, and district/municipal levels, CHPS direct implementation is carried out by CHOs, midwives if available, and community health volunteers (CHVs); and overseen by community health management committees (CHMCs).

The implementation of CHPS/CHPS+ is guided by four core policy directives according to GHS which include the duty of care and a minimum package of services, human resources for effective CHPS implementation, building and procurement of necessary infrastructure, and portfolio of financing for overhead and running cost of CHPS. The core package of services to be provided within the CHPS zone by the CHO and Community Health Volunteer (CHV) focuses predominantly on maternal and child health (MCH) and nutrition services.

5. Summary of the impact of CHPS national strategy on rural health in Ghana

The importance of CHPS and CHPS+ projects on rural health in Ghana cannot be over-emphasized. The policy guidelines for implementation of CHPS, the building of CHPS compounds in rural communities, and the training of CHOs, CHVs, and CHMCs have all resulted in improvement in health outcomes in rural communities in Ghana.

5.1 Improvement in primary health infrastructure in rural Ghana

As a result of the successes observed during the piloting and earlier implementation stages of CHPS, the concept was well accepted and efforts to make it a national health delivery system have led to remarkable progress in the development and procurement of infrastructure and equipment throughout rural and even urban areas around the country. For instance, by the end of 2018, the number of functional CHPS zones in the country was 5,987 according to the CHPS verification survey conducted in the country [70]. This was an increase from 4,400 in 2016 and from 3,951 in 2015 indicating a steady increase in infrastructure for CHPS over the years to reach a universal health coverage envisaged in the revised national CHPS policy of 2016. The large majority of these CHPS zones are in the rural areas of all the regions of the country. Apart from CHPS zones, there has equally been a remarkable increase in needed equipment and tools to facilitate the implementation of the program. Yeboah and colleagues have reported an extensive progress of CHPS in which the authors outlined various equipment procured for CHPS implementation. For example, the authors reported that the Japanese International Cooperation Agency (JICA) supported the CHPS program in the five Northern regions with the procurement of 30 vehicles, 1000 bicycles, and 300 motorcycles. The authors also reported that the World Bank through its maternal and child health and nutrition improvement project procured 56 vehicles, 1,000 bicycles, and 300 motorcycles to be distributed to CHPS zones throughout the country [71]. Again, this equipment in addition to medical supplies is geared towards improving delivery in rural areas in Ghana.

5.2 Improvement in access and service delivery in rural communities

The nationwide implementation has remarkably improved healthcare access and delivery for rural communities in the country. Access to services such as antenatal care (ANC), child welfare clinics, family planning (FP), outpatient admission, and skilled or health facility delivery in rural areas have increased through CHPS. For instance, according to the 2016 GHS annual report, CHPS contribution to outpatient admissions was 16%, 15.4%, 12.1%, and 11.5% in the Upper East, Upper West, Northern, and Western regions of the country respectively. In the same year, CHPS contribution to ANC services delivery was 34.7%, 27.4%, and 23.9% in the Upper West, Upper East, and Northern regions respectively. Again, in 2016, CHPS compounds served as skilled delivery places in Upper East, Upper West, and Northern regions with 11.8%, 8.1%, and 8.6% respectively [72]. These statistics are critical in improving maternal and child health in regions that have larger proportions of their populations living in rural communities. Without CHPS implementation, many of these services would have been missed and many of the deliveries would have taken place out of health facilities jeopardizing the lives of pregnant women and newly born or unborn babies.

5.3 Training and development of community health workers (CNOs) and community health volunteers (CHVs)

It is also important to recognize the workforce that has driven the progress achieved with CHPS implementation so far. The training and deployment of CHOs and CHVs in rural communities throughout the country is a remarkable improvement in rural health in Ghana. This is commendable because most of the rural communities are linked by feeder roads that can be difficult to ply; the communities have less or zero social amenities, and communication networks

are poor in many rural areas. Accepting to serve in such deprived and geographically isolated areas is a call to duty. Over the years, the number of trained and deployed CHOs and CHVs has increased. For instance, 2,523 trained CHOs were operating across 5,062 functional CHPS zones with an active community health committee; and 19,411 active CHVs who support the CHOs in the implementation of CHPS [73]. Besides, support from sub-district, district, municipal, and regional levels are available to help facilitate the implementation; and training and deployment of the core human resources for CHPS implementation. However, the figures above are an indication of the commitment to strengthen capacity for the program so that health services will be closer to every rural community in the country.

5.4 Involvement of array of important stakeholders

Since its inception and throughout its policy initiation and implementation, CHPS and now CHPS Plus (CHPS+) has brought together important stakeholders with the goal of ensuring that effective and evidence-based approaches are adopted to bring critical primary health delivery to all parts of Ghana. The array of stakeholders cut across societies from the bottom up to the top hierarchy of health service consumers in the communities, health providers, healthcare professionals, political leaders, policymakers, and multi-national partners. Community members constitute the CHMCs and CHVs, district and municipal health directorates, district and municipal assemblies, regional health directorates, and GHS top management and Ministry of Health (MoH). Tertiary and research institutions are an integral part of the stakeholders driving CHPS strategy and implementation including the University of Ghana (UG), University of Health and Allied Sciences (UHAS), University for Development Studies (UDS), the Navrongo Research Center, and Mailman School of Public Health (MSPH) of Columbia University. International partners that have committed expertise and making an immense financial contribution to the implementation of CHPS and now CHPS+ include the World Bank (WB), USAID, JICA, the Korea International Co-operation Agency (KOICA), and Doris Dukes Charitable Foundation among others. The procurement of equipment and medical supplies by JICA and the WB presented above are examples of the financial commitments by the donor partners. The CHPS+ project was a five-year project (2016–2020) that was a collaboration between GHS and KOICA to strengthen the capacity of Ghana health systems in the Upper East Region at the cost of US\$9 m. This project was a scale-up from the Ghana Essential Health Improvement Project (GEHIP), which was funded by Doris Duke Charitable Foundation and implemented in the four most impoverished districts in the Upper East Region from 2010 to 2015 [74].

Another component of the CHPS+ project was to scale up in the Northern and Volta regions selected as priority regions and funded by the Doris Dukes Charitable Foundation through the Mailman School of Public Health. It was a collaboration among Doris Dukes, MSPH, the Ghana Health Service Policy Planning, Monitoring and Evaluation Division (PPME), the universities (UG, UDS, UHAS), and community members. The main goal was to use the project to improve child survival and reduce under-five mortality in Ghana. Critical implementation components of this project included knowledge creation and utilization to improve child health, research into evidence-based approaches, health systems partnerships development, and development of learning platforms [75]. Two Systems Learning Districts (SLDs) were created in both the Northern and the Volta regions, which served as the centers of excellence for health systems strengthening to all other districts in the regions.

The importance of this array of stakeholders includes mobilizing resources for infrastructure and equipment, developing adequate and competent human resources, creating opportunities for communities to fully participate and share ownership of programs and initiatives concerning their health and wellbeing. Involving the universities is critical as research is earnestly needed to develop a comprehensive understanding of health behavior, the social determinants of health, development of evidence-based strategies to address health program implementation bottlenecks, and pave the way for effective and efficient implementation of CHPS+ so the universal health coverage envisaged can be achieved. For example, to understand the challenges of health delivery at the community level, professionals, and health system levels, researchers deployed a community scorecard in an explorative qualitative design in the two SLDs in the Volta Region. The researchers identified key bottlenecks that hindered the implementation of health services at levels of the community, healthcare professionals, and the health system [76]. Researchers also examined the importance of community involvement in the CHPS+ implementation as a strategy for improving health outcomes and found that overall acceptance of the CHPS+ strategy was 51.7% by participants in the two SLDs in the Volta Region and reported community involvement was low and needed to improve for Ghana to attain universal health coverage [63].

It can be seen from the above that great effort and commitment from all the stakeholders from the CHPS pilot in Navrongo through the implementation to the current CHPS+ project scale-up has been mobilized in the form of collaborative health promotion. Undoubtedly, the CHPS strategy has contributed greatly to the improvements in overall healthcare delivery in Ghana and rural communities across the country in particular. The report of the 2014 GDHS show improvements in major health indicators over the years from 2003 including reductions in infant, under-five, and maternal mortality in the country, increase in child immunizations, family planning uptake, children's nutrition, and reduction in mother-to-child HIV transmission among others [29]. For example, infant mortality in rural communities decreased from 70 deaths per 1,000 live births in 2003 to 46 deaths per 1,000 live births in 2014. During the same period, under-five mortality decreased from 118 per 1,000 live births to 75 deaths per 1,000 in rural areas [17]. Again, the maternal mortality ratio reduced from 254.8 deaths to 162 from 2003 to 2017 in the Northern Region; and from 256.2 to 139 deaths per 100,000 live births in the same period in the Volta Region [13]. We believe that CHPS implementation contributed to these positive outcomes. Studies have also shown that CHPS implementation has had a positive impact on maternal and child health services in rural areas [77], led to increased involvement of males in maternal and child health issues with positive health outcomes [78], and expanded primary healthcare in rural and deprived communities [79].

Notwithstanding the above contribution, CHPS implementation continues to face challenges throughout the country. The social determinants that cause the disparities in healthcare access and outcomes between rural and urban centers persist in the country and overcoming these challenges cannot be overnight but needs continuous collaborative health promotion efforts looking ahead. These challenges include financing and human resources [71], poor rural road infrastructure and transportation systems [44], and a host of other challenges.

In conclusion, although CHPS/CHPS+ implementation continues to face many challenges, by far the program has contributed to equitable healthcare service delivery in rural Ghana than any program ever implemented before it.

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References

- [1] Brabyn L, Barnett R: Population need and geographical access to general practitioners in rural New Zealand. *The New Zealand medical journal* 2004, 117(1199):U996.
- [2] Hopley M, Horsburgh M, Peri K: Barriers to accessing specialist care for older people with chronic obstructive pulmonary disease in rural New Zealand. *Journal of Primary Health Care* 2009, 1(3):207-214.
- [3] Strasser R: Rural health around the world: Challenges and solutions. *Family practice* 2003, 20(4):457-463.
- [4] Worley P: Why we need better rural and remote health, now more than ever. *Rural and remote health* 2020, 20(1):1.
- [5] Asemota E: Better Care, Better Health: Optimizing Healthcare Provision in Ghana. In: *The Cornell Policy Review*. UNICEF Ghana/Olivier Asselin; 2019.
- [6] World Health Organization: Key Country Indicators-Ghana key indicators [<https://apps.who.int/gho/data/node.cco.ki-GHA?lang=en>]
- [7] Statista: Average life expectancy at birth in 2020, by continent and gender (in years) In.: M. Szmigiera; 2021.
- [8] Worldometer: Ghana Demographics [<https://www.worldometers.info/demographics/ghana-demographics/>]
- [9] Agyepong IA: Universal Health Coverage: Breakthrough or Great White Elephant? *The Lancet* 2018.
- [10] Fusheini A: Healthcare Financing Reforms: Ghana's National Health Insurance In: *Health Reforms Across the World: the Experience of Twelve Small and Medium-sized Nations with Changing their Healthcare Systems*. edn. Edited by Okma K, Tenbensel T. Singapore: World Scientific; 2020: 25-54.
- [11] Fusheini A, Marnoch G, Gray AM: Stakeholders perspectives on the success drivers in Ghana's National Health Insurance Scheme - identifying policy translation issues. *International Journal of Health Policy and Management* 2017, 6(5):273-283.
- [12] World Health Organization: Success Stories of Health Financing Reforms for Universal Coverage Ghana
- [13] Ghana Statistical Service, Ghana Health Service, ICF.: *Ghana Maternal Health Survey 2017: Key Findings*. Rockville, Maryland, USA: GSS, GHS, and ICF; 2018.
- [14] Konlan KD, Saah JA, Amoah RM, Doat AR, Mohammed I, Abdulai JA, Konlan KD: Factors influencing the utilization of focused antenatal care services during pregnancy, a study among postnatal women in a tertiary healthcare facility, Ghana. *Nursing Open* 2020, 7(6):1822-1832.
- [15] World Health Organization: Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. 2019.
- [16] World Health Organization: *World health statistics 2019: monitoring health for the SDGs, sustainable development goals*. 2019.
- [17] Ghana Health Service: *The Health Sector in Ghana, Facts and Figures 2018*. In.; 2018.
- [18] Health Promotion: The 1st International Conference on Health Promotion, Ottawa, 1986 [<https://www.who.int/teams/health-promotion/enhanced-wellbeing/first-global-conference>]

- [19] The Joint Committee on Terminology for Health Education & Promotion: Report of the 2000 Joint committee on health, education and Promotion terminology. American Journal of Health Education 2001, 32(2):89-103.
- [20] Gold RS, Miner KR: Report of the 2000 joint committee on health education and promotion terminology. Journal of School Health 2002, 72(1):3-7.
- [21] Ghana Statistical Service: 2010 population and housing census: national analytical report. In. Accra: Ghana Statistical Service; 2013.
- [22] Ghana Statistical Service: 2010 Population and Housing Census. Summary Report of Final Results. In. Accra: Ghana Statistical service; 2012.
- [23] Meyer PA, Yoon PW, Kaufmann RB: Introduction: CDC health disparities and inequalities report-United States, 2013. MMWR supplements 2013, 62(3):3-5.
- [24] Rural Health Information Hub: Rural Health Disparities [<https://www.ruralhealthinfo.org/topics/rural-health-disparities#causes>]
- [25] Community Health and Program Services (CHAPS): Health Disparities among Racial/Ethnic Populations
- [26] Adolescents and School Health: Health disparities among youth [<https://www.cdc.gov/healthyyouth/disparities/index.htm>]
- [27] National Center for Health Workforce Analysis: Distribution of U.S. Health Care Providers Residing in Rural and Urban Areas. In.; 2014.
- [28] World Bank: World Health Organization's Global Health Workforce Statistics, OECD, supplemented by country data: Physician (per 1000 people) in Ghana. In.; 2021.
- [29] Ghana Statistical Service - GSS, Ghana Health Service - GHS, ICF International: Ghana Demographic and Health Survey 2014. In. Rockville, Maryland, USA: GSS, GHS, and ICF International; 2015.
- [30] World Health Organization: Social Determinants of Health [http://www.who.int/social_determinants/en/]
- [31] Healthy People: Social Determinants of Health: Understanding Social Determinants of Health [<https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>]
- [32] Bunker JP, Frazier H, Mosteller F: The role of medical care in determining health: Creating an inventory of benefits. Society and health 1995: 305-341.
- [33] Or Z: Determinants of health outcomes in industrialised countries: A pooled, cross-country, time-series analysis. OECD Economic studies 2000:53-78.
- [34] Fusheini A: The Implementation of the National Health Insurance in Ghana (2003-2013): University of Ulster; 2013.
- [35] McKeown T: The role of medicine: dream, mirage or nemesis? 1976. London: Nuffield Provincial Hospitals Trust, 180.
- [36] McKeown T: The role of medicine: dream, mirage, or nemesis?, vol. 56: Princeton University Press; 2014.
- [37] Sarpong N, Loag W, Fobil J, Meyer CG, Adu-Sarkodie Y, May J, Schwarz NG: National health insurance coverage and socio-economic status in a rural district of Ghana. Tropical medicine & international health 2010, 15(2):191-197.
- [38] Kwarteng A, Akazili J, Welaga P, Dalinjong PA, Asante KP, Sarpong D, Arthur S, Bangha M, Goudge J, Sankoh

O: The state of enrollment on the National Health Insurance Scheme in rural Ghana after eight years of implementation. *International journal for equity in health* 2020, 19(1):1-14.

[39] Akazili J, Welaga P, Bawah A, Achana FS, Oduro A, Awoonor-Williams JK, Williams JE, Aikins M, Phillips JF: Is Ghana's pro-poor health insurance scheme really for the poor? Evidence from northern Ghana. *BMC health services research* 2014, 14(1):1-9.

[40] Mtei G, Makawia S, Ally M, Kuwawenaruwa A, Meheus F, Borghi J: Who pays and who benefits from health care? An assessment of equity in health care financing and benefit distribution in Tanzania. *Health policy and planning* 2012, 27(suppl_1):i23-i34.

[41] Onwujekwe O, Onoka C, Uzochukwu B, Hanson K: Constraints to universal coverage: Inequities in health service use and expenditures for different health conditions and providers. *International journal for equity in health* 2011, 10(1):1-9.

[42] Van Der Wielen N, Channon AA, Falkingham J: Does insurance enrolment increase healthcare utilisation among rural-dwelling older adults? Evidence from the National Health Insurance Scheme in Ghana. *BMJ Global Health* 2018, 3(1).

[43] Badu E, Owusu-Manu DG, Edwards DJ, Adesi M, Lichtenstein S: Rural infrastructure development in the Volta region of Ghana: Barriers and interventions. *Journal of financial management of Property and Construction* 2013.

[44] Atuoye KN, Dixon J, Rishworth A, Galaa SZ, Boamah SA, Luginaah I: Can she make it? Transportation barriers to accessing maternal and child health care services in rural Ghana. *BMC health services research* 2015, 15(1):1-10.

[45] Agbenyo F, Nunbogu AM, Dongzagla A: Accessibility mapping of health facilities in rural Ghana. *Journal of Transport & Health* 2017, 6:73-83.

[46] Agyemang-Duah W, Peprah C, Peprah P: Factors influencing the use of public and private health care facilities among poor older people in rural Ghana. *Journal of Public Health* 2020, 28(1):53-63.

[47] Nesbitt RC, Lohela TJ, Soremekun S, Vesel L, Manu A, Okyere E, Grundy C, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR: The influence of distance and quality of care on place of delivery in rural Ghana. *Scientific reports* 2016, 6(1):1-8.

[48] Dotse-Gborgbortsi W, Dwomoh D, Alegana V, Hill A, Tatem AJ, Wright J: The influence of distance and quality on utilisation of birthing services at health facilities in Eastern Region, Ghana. *BMJ global health* 2020, 4(Suppl 5).

[49] Ratzan S, Parker R: Health Literacy. National library of medicine current bibliographies in medicine Bethesda: National Institutes of Health, US Department of Health and Human Services 2000.

[50] Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Viera A, Crotty K, Holland A, Brasure M, Lohr KN, Harden E: Health literacy interventions and outcomes: An updated systematic review. *Evidence report/technology assessment* 2011(199):1-941.

[51] Zahnd WE, Scaife SL, Francis ML: Health literacy skills in rural and urban populations. *American journal of health behavior* 2009, 33(5):550-557.

[52] Shrestha MK, Guo CW, Maharjan N, Gurung R, Ruit S: Health literacy of common ocular diseases in Nepal. *BMC ophthalmology* 2014, 14(1):1-8.

- [53] Wang X, Guo H, Wang L, Li X, Huang M, Liu Z, Liu X, Wang K, Alamian A, Anderson JL: Investigation of residents' health literacy status and its risk factors in Jiangsu Province of China. *Asia Pacific Journal of Public Health* 2015, 27(2):NP2764-NP2772.
- [54] Karim HA: Health literacy among rural communities: Issues of accessibility to information and media literacy. *Jurnal Komunikasi: Malaysian Journal of Communication* 2020, 36(1).
- [55] Amoah PA, Phillips DR: Health literacy and health: Rethinking the strategies for universal health coverage in Ghana. *Public health* 2018, 159:40-49.
- [56] Tutu RA, Gupta S, Busingye JD: Examining health literacy on cholera in an endemic community in Accra, Ghana: A cross-sectional study. *Tropical medicine and health* 2019, 47(1):31.
- [57] Lori JR, Dahlem CHY, Ackah JV, Adanu RM: Examining antenatal health literacy in Ghana. *Journal of Nursing Scholarship* 2014, 46(6):432-440.
- [58] Ganle JK, Mahama MS, Maya E, Manu A, Torpey K, Adanu R: Understanding factors influencing home delivery in the context of user-fee abolition in northern Ghana: Evidence from 2014 DHS. *The International journal of health planning and management* 2019, 34(2):727-743.
- [59] Dankwah E, Zeng W, Feng C, Kirychuk S, Farag M: The social determinants of health facility delivery in Ghana. *Reproductive health* 2019, 16(1):1-10.
- [60] Boah M, Adampah T, Jin B, Wan S, Mahama AB, Hyzam D, Akiti C: "I couldn't buy the items so I didn't go to deliver at the health facility" home delivery among rural women in northern Ghana: A mixed-method analysis. *PloS one* 2020, 15(3):e0230341.
- [61] Akazili J, Doctor HV, Abokyi L, Hodgson A, Phillips JF: Is there any relationship between antenatal care and place of delivery? Findings from rural northern Ghana. *Afr J Health Sci* 2011, 18(1-2):62-73.
- [62] Kotoh AM, Boah M: "No visible signs of pregnancy, no sickness, no antenatal care": Initiation of antenatal care in a rural district in northern Ghana. *BMC public health* 2019, 19(1):1-13.
- [63] Kweku M, Amu H, Adjuik M, Manu E, Aku FY, Tarkang EE, Komesuor J, Asalu GA, Amuna NN, Boateng LA: Community involvement and perceptions of the community-based health planning and services (CHPS) strategy for improving health outcomes in Ghana: Quantitative comparative evidence from two system learning districts of the CHPS+ project. *Advances in Public Health* 2020, 2020.
- [64] Osafo J, Knizek BL, Akotia CS, Hjelmeland H: Attitudes of psychologists and nurses toward suicide and suicide prevention in Ghana: A qualitative study. *INTERNATIONAL JOURNAL OF NURSING STUDIES* 2012, 49(6):691-700.
- [65] Adjorlolo S, Abdul-Nasiru I, Chan HCO, Bambi LE: Mental health Professionals' attitudes toward offenders with mental illness (insanity Acquittes) in Ghana. *International journal of offender therapy and comparative criminology* 2018, 62(3):629-654.
- [66] D'Ambruoso L, Abbey M: Midwives' Attitudes to Women in Labour in Ghana. 2008.
- [67] Luquis RR, Pérez MA: Cultural competence and health education. *Cultural Competence in Health*

Education and Health Promotion 2008, 18:231.

[68] Ministry of Health: National Community-Based Health Planning and Services (CHPS) Policy. In. Accra: Ministry of Health; 2016.

[69] Ghana Health Service: Community-Based Health Planning and Services. Operational Policy. In: Ghana Health Service Policy Document No 20. 2005.

[70] Ministry of Health/Ghana Health Service: The CHPS verification survey/Exercise. In. Accra; 2018.

[71] Yeboah BK, Letsa T, Mensah EA, Odame-Ankrah E: Progress of community-based health planning and Services in Ghana. *Global Scientific Journals* 2019, 7(12):1212-1228.

[72] Ghana Health Service: 2016 Annual Report. In. Accra: Ghana Health Service; 2017.

[73] Mwinnyaa G, Jones TC, Antwi P, Chan E, Phillips JF, Awoonor-Williams JK: Ghana's community health officers and community health volunteers. *Health for the People: National Community Health Worker Programs from Afghanistan to Zimbabwe* 2020:87.

[74] Ministry of Health: National CHPS+ Project launched [<https://www.moh.gov.gh/national-chps-project-launched/>]

[75] Mailman School of Public Health: CHPS+ [<https://www.publichealth.columbia.edu/research/advancing-research-community-health-systems/chps>]

[76] Kweku M, Amu H, Awolu A, Adjuik M, Ayanore MA, Manu E, Tarkang EE, Komesuor J, Asalu GA, Aku FY: Community-based health planning and services plus programme in Ghana: A qualitative study with stakeholders in two systems learning districts on improving the

implementation of primary health care. *PLoS One* 2020, 15(1):e0226808.

[77] Alhassan RK, Nketiah-Amponsah E, Ayanore MA, Afaya A, Salia SM, Milipaak J, Ansah EK, Owusu-Agyei S: Impact of a bottom-up community engagement intervention on maternal and child health services utilization in Ghana: A cluster randomised trial. *BMC public health* 2019, 19(1):1-11.

[78] Adongo PB, Tapsoba P, Phillips JF, Tabong PT-N, Stone A, Kuffour E, Esantsi SF, Akweongo P: The role of community-based health planning and services strategy in involving males in the provision of family planning services: A qualitative study in southern Ghana. *Reproductive health* 2013, 10(1):36.

[79] Phillips JF, Awoonor-Williams JK, Bawah AA, Nimako BA, Kanlisi NS, Sheff MC, Asuming PO, Kyei PE, Biney A, Jackson EF: What do you do with success? The science of scaling up a health systems strengthening intervention in Ghana. *BMC health services research* 2018, 18(1):1-10.