THE IMPACT OF COMMUNITY HEALTH WORKERS ON PRIMARY HEALTHCARE DELIVERY AND HEALTH OUTCOMES IN RURAL NIGERIA: A SYSTEMATIC REVIEW

Abstract

Healthcare is an essential right of every citizen and resident. Almost half of Nigerian population live in rural communities where access to healthcare is limited. The Federal government of Nigeria has done well to decentralize healthcare by creating more Primary Healthcare Centers (84.8%), 70% of which are in the rural communities.The heartbeat of Primary Health Care centers (PHCs) is the Community Health Workers (CHWs) with between 60% and 70% of the workforce in PHCs being CHWs. There are limited professional healthcare personnel in rural communities making CHWs perform functions outside their scope. This direct involvement ranges from providing support services to prescribing On the Counter (OTC) drugs.These extended services have significantly impacted both the quality of service (healthcare delivery) as well as the outcome (of diagnosis and treatment).The involvement of CHWs has helped in rapid response to reported healthcasesas well as in prevention of epidemics and management of pandemics. CHWs have also helped in reducing childbirth and in family planning issues. However, only about 20% to 30% of CHWs have formal training in healthcare management. This has often led to misinformation of patients and inaccurate diagnosis which have had serious negative impact on the outcome of patients' health management. The government will do well to provide continuous training to CHWs, provide opportunities for advancement as well as financial motivation. The government should also provide infrastructures that will make their service delivery seamless. The introduction of Tele-Medicine into healthcare delivery in rural communities will also enable easy and rapid access to professional advice especially in times of emergency. This if put in place will ensure proper healthcare delivery and successful healthcare outcomes at PHCs in rural communities of Nigeria.

Keywords: Primary Healthcare Centers (PHCs); Healthcare Delivery; Healthcare Outcomes; Rural Communities of Nigeria; Community Health Workers (CHWs).

Introduction

Primary Health Care (PHC) is the most readily available Healthcare system that every citizen can access. In Nigeria, the facilities are built so close to the masses that patients with acute challenges can easily be attended to.

The establishment of PHC dated back to the late 1970s and early 1980s as a response to the growing need for a more accessible, efficient and community-based health service delivery system[3]. The major milestones include: Alma-Ata declaration by global leaders (1978)[2]; PHC Adoption by the Federal Government (1980s)[1]; The Bamako Initiative which led to establishment of drug revolving funds in health facilities (1988)[3]; The establishment of National Primary Health Care Development Agency, NPHCDA (1992)[4]; Ward Health System which establishes PHC at ward level (1990s)[5] and The National Health Act which provided legal backing for PHC implementation and establish the Basic Health Care Provision Fund, BHCPF to finance PHC services[6].

PHC includes three interrelated and synergistic components: (i) comprehensive, integrated health services that incorporate primary care and public health goods and functions as central elements; (ii) multi-sectoral policies and actions to address the upstream and broader determinants of health; and (iii) engaging and empowering individuals, families, and communities to increase social participation and enhance self-care and self-reliance in health[8].

The influence of PHC in Nigeria cannot be overstated. According to statistics obtained from Nigeria Health Facility Registry (HFR) under the Federal Ministry of Health, of the 38,813 Healthcare facilities currently available in the country, 32,911 of facilities are Primary Healthcare facilities accounting for 84.8% of the total registered Healthcare facilities in the country[1].The implementation at ward level also about 70% of the PHC facilities are built at the most remote areas of Nigeria[9]. These areas are targeted because about 46% of the Nigerian population live in the rural areas[8].

Several pieces of legislation govern the framework of primary care and other aspects of care in Nigeria. NPHCDA is the agency saddled with the responsibility of governing the activities of PHC[4]. They also provide technical support to the planning, management and implementation of primary health. State Primary Health Care Development Agencies (SPHCDAs) are established under state primary health care development agency laws[4]. The SPHCDAs are statutorily conferred with authority to supervise and manage primary healthcare in the states under the Laws. The Laws also establish the local government health authority whose responsibility is direct management of primary health facilities. The NPHCDA provide minimum standards and direction under the Primary Health Care "Under One Roof policy"[8].

PHC systems are designed to be resilient in situations of crisis and proactive in detecting early signs of epidemics[10]. According to WHO, PHC might just be the "front door" of the health system and provides the foundation for the strengthening of the essential public health functions to confront public health crises such as COVID-19[11].

Who are the Community Health Workers (CHWs)

In an article published in June 2023, UNICEF refers to CHWs as "The Heartbeat of Global Primary Healthcare"[12]. CHWs fill the void in rural community providing care and savings lives[13]. CHWs usually share ethnicity, language, socioeconomic status, and life experiences with the community members they serve[13]. When recruiting CHWs, people who are indigents and residents are prioritized. This is because they need to have connections, be readily available and understand the health history of the community[14]. CHWs contribute significantly to healthcare delivery across Africa[15]. They have bridged the critical gap in human resources for health in the last mile and their positive impact across the continent is commendable[16].

Traditionally, CHWs are mainly involved in infectious diseases programs as well as maternal and child health services[17]. In a research published by the PMC PubMed Central, CHWs frequently delivered services beyond the scope of practice stipulated in the National Standing Orders[18]. This may be due to the ever rising cases for specific health issues in places where there are not enough professional health practitioners[19].

The WHO considers CHWs to be members of the community with varying levels of formal education who are trainedto address the health problems of individuals and the community[20]. In Nigeria, CHWs title include Community Health Officers (CHOs), Community Health Extension Workers (CHEW) and Junior Community Health Workers (JCHEWs)[21].

CHWs can be categorized into three groups by education and pre-service training[22]. These are Lay Heath Workers[23] (with little or no formal education but few days to few weeks informal training); Level 1 paraprofessionals[21, 22] (with some forms of high school education and subsequent informal training); and Level 2 paraprofessionals[23] (with high school training and some forms of formal training lasting a few months to more than a year).

A study in Rwanda published by Nigerian Health Watch three years ago revealed that most CHWs work as volunteers, receiving only a stipend for their services which is usually not enough to cover their basic need. This goes against the principle of equity and can be demotivating[24].

Healthcare Access in Rural Communities

Access to healthcare services involves the quality of care, physical accessibility, availability of the right type of care for those in need and financial affordability[25]. In rural communities, health services are underutilized because of glaring gap in access[26]. World Bank data from 2022 estimated that 47% of Nigerians live in rural areas[27]. That figure reduced to 45.72% in 2023[27]. Rural residents often encounter barriers to healthcare that limit their ability to obtain the care they need[25].

Nigeria Health Watch reported five years ago some dialogue they had with some residents of a rural settings in the Anambra state on the challenges they face accessing healthcare. *"Hospital dey too far from us. Before we go see bike carry us go there, the pikin for don die. That na why we dey buy this 'agbo' to drink for fever"* and *"if I go hospital go born, dem no go*

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answer me till I pay money and I no get am. I go born for house where I fit give angwanzoma wrapper or 'omo' to help me".

The United States Government Accountability Office (GAO) researched into "Why Healthcare is Harder in Rural America". Here are some things they found. "Many rural residents are seeing their local hospital close. More than 100 (or 4% of) rural hospitals closed from 2013 through 2020. As a result, residents had to travel about 20 miles farther for common services like inpatient care, and 40 miles farther for less common services, such as alcohol or drug misuse treatment.Rural areas without hospitals generally had fewer health care providers overall compared to those without closures. Often rural residents lack insurance coverage, which is associated with less access to care and increased risk of poor health outcomes. Many rural residents may turn to tele-health services meaning health care services delivered via phone or video. Tele-health can be an option to address limited provider availability in rural areas. However little to know internet coverage can limit such access. Even though this study was in the United States, the findings are similar to what is achievable in other part of the planet[28].

A study on improving access to healthcare in rural communities emphasized the need for a paradigm shift towards re-orienting[29] and integrating Patent and Proprietary medicine vendors (PPMVs)[30]and other drug outlets into mainstream primary healthcare delivery system[31]. They will serve as an opportunity to provide more coverage.

Expected Outcomes of Healthcare Services

Dr. Johannes W. van der Spek, a Medicare specialist when responding to a question on Quora about the expectation of patient when seeking services from PHC mentioned that patients expects miracles[32]. They expect 30 years of neglect to be removed with one visit at zero cost. That all advice over the past 25 years such as healthy diets, exercise, weight loss can be obtained in one day[32].

Ideally, better access to PHC is linked to better outcomes[33], including improvements in self-rated health and a reduction in all-cause mortality[34]. Outcomes are valuable because it generally focus on what is most meaningful to patients and otherstakeholders[35]. As healthcare competitive dynamics continue to evolve, it is no longer sufficient to define healthcare outcomes in terms of clinical outcomes alone[36]. The inclusion of patients' satisfaction is fast becoming an important dimension because of notion of consumer driven healthcare increasingly applies to patient choice in healthcare industry[34].

Healthcare outcomes are generally focused on the enhancement of patients' quality of life[38] which according to Briggs R. and Muller K. in Geriatric Physical Therapy is a subjective, broad and multifaceted construct which includes all elements that provide life satisfaction[37]. The main healthcare outcome are measured as measure of illnesses[39]. In addition, healthcare outcomes include measure of healthcare utilization such as length of stay, number of primary care consultations, or use of medication[36].

One must understand how to measure healthcare outcomes to know if the objectives have been met[34]. Ann Tinker opined the top seven measurement of healthcare outcomes in her column in "HealthCatalyst" as mortality; readmission; safety of care; effectiveness of care; patient experience; timeliness of care and efficient use of medical imaging[40].

According to WHO, Quality health care can be defined in many ways but there is growing acknowledgement that quality health service should be effective, safe and people centered[38].To realize the benefits, health care must be timely[41], equitable[42], integrated and efficient[43].

Outcome of healthcare are primarily defined and prioritized by national organizations including National Association for Healthcare Quality and in Nigeria[44], The Federal Ministry of Health[4]. With emphasis on 'quality outcomes', it is becoming increasingly critical for healthcare organizations to develop and implement a sound strategy for providing effective care that is appealing to patients and focuses on controlling costs[45]. Healthcare as a whole faces the challenge of attracting and retaining patients and talented employees[47] while delivering consistently effective and efficient care[48].

The Impact of Community Health Workers on Primary Healthcare Delivery in Rural Nigeria

We have earlier discussed the roles of CHWs and how they have positively contributed to healthcare system in Nigeria. It is however one thing to be present[49] and another to ensure the services provided are as desired[50]. There are two major roles that CHWs play in PHC: Maternal and Child health[51] as well as prevention and containment of epidemics[50]. Although all health related challenges are reported. CHWs have implemented preventive interventions for maternal and child health. CHW programs have been shown to reduce child mortality[51], reduce maternal depression[52], improve access to healthcare[51] and improve child growth and development[53].

Using CHWs is a globally recognized effective approach to increasing uptake in family planning[53]. Most CHWs are now allowed to provide non-clinical contraceptive methods such as condoms, pills, fertility awareness methods[53]. Many country also allow CHWs to give injectable contraceptives[54] and some are even moving towards allowing them to give implants[55].

CHWs appear to frequently engage in implementing diverse public health intervention programs[55]. During the COVID-19 pandemic, CHWs have aided in the home delivery of medication[11], follow up of patients[56], health education[55], nutrition screening[11], vaccine delivery[56] as well as psychological and social support[56]. In a research published in BMC Primary Care on "Leveraging CHWs for COVID-19 in DRC, Nigeria, Senegal and Uganda", CHWs played a critical role in linking communities to health systems[56], supporting the prevention and control of diseases in many low and middle income countries[57]. However, such roles have not been properly recognized and documented[58].

During Ebola outbreak, CHWs work with community leaders, going house to house to provide important information about Ebola and searching for active cases and contacts[60]. They helped religious leaders to expand their education[58] and outreach strategies[60].

Despite the positive impact of CHW programs, it has appeared that the positive impact of CHWs on health outcomes is more difficult to achieve in rural context than in more densely populated and peri-urban areas[57].

In a post COVID study amongst CHWs in Kaduna, Kwara and Ogun states, it was noted that CHWs are frequently lacking in appropriate support from the health system[11] due to inadequate, physical, social and financial resources. They also noted that their health and well-being is seldom considered[56]. Regardless of this, the CHWs still played major role in management of the pandemic. This is attributed to the emotional connection they usually have with the members of the community where they are attached.

The challenges faced by CHWs when implementing healthcare programs must be considered for success. Investments such as transport and the well-being of CHWs may be required to ensure the effectiveness of interventions managed by CHWs.

Impact of Community Health Workers on Health Outcome in Rural Nigeria

In most rural communities of Nigeria, CHWs roles have evolved from just administering vaccines[57] and assisting professionals[55] to treatment of patients[57]. In many PHCs, CHWs prescribe medicines, dispense drugs and suture wounds. This is mostly because there are not enough healthcare professionals like Medical Doctors, Pharmacists and Laboratory Technologist in-situ. Also, where you have a few, the PHCs have little healthcare infrastructures to operate functional healthcare services[57].

In some PHCs in rural Nigeria, the few healthcare professionals attached to them are living far from the community and are only available for few days in a week. Most health issues that require specific attention such as gynecology, optometry, geriatrics etc. may have to wait for appointments while acute issues like malaria, typhoid, gastric upset etc. are attended to by the available CHWs[56].

The impact of CHWs on outcome is relative. It is sometimes positive and other times not so well. Most of them are capable of giving first aids[57]. Out of the experience of working with healthcare professionals for a long time, they understand the first thing that pop to mind when facing a challenge. They know a few OTCs that can be recommended in relation to patients' complaints. Some CHWs will put a healthcare professional on call, describing the situation and asking for advice. This makes a fast response to challenges[66].

Similarly, there are more PHCs than Specialist centers as earlier mentioned. This means more CHWs than specialists[7]. In times when epidemics are being managed, CHWs makes the process more rapid because they are able to reach the most remote communities to give information[54], administer vaccines[57] and identify infected individuals[55]. This makes for an encouraging outcome.

However, the little to no formal training amongst CHWs have impacted healthcare outcomes significantly[60]. In a research published in BMC Primary Care this year on roles of CHWs in management of hypertension, only about 31% of the selected CHWs can correctly diagnose the condition while only

15% knew the baseline investigation to be requested[59]. In some unpublished research into the operations of CHWs in 5 PHCs in Niger state, it was found that the percentage of CHWs with maximum of just high school education working at the PHCs is at an average of 64% compared with those with advanced healthcare training. The ADHOC staff is about 82% compared to the documented staff 78% of which do not have any formal training as a healthcare professional. This level of literacy have had potential negative impact in healthcare management in rural Nigeria.

The significance of CHWs are felt better when they are supported and supervised in rural context[60]. Such will enhance the outcomes from the healthcare services provided. Another potential negative impact is the potential misinformation[61]. A person can only give information within his capacity. In some instances when a CHWs believe he has enough information and use that to give recommendations, it could go wrong and worsen the case[58]. WHO believes CHWs may unintentionally promote health myths or cultural biases affecting the trust and credibility of healthcare intervention with misinformation[62].

A study published in the Journal of Health policy and Planning discusses how CHWs, while effective in delivering basic healthcare services, often lack the training and tools to handle emergencies or complex health conditions[63], requiring timely referrals to more advanced care facilities[60]. Such wastage of time or failed management will negatively affect the outcome.

Conclusion and Recommendations

In healthcare delivery, the creation of PHCs and the use of CHWs in managing the infrastructure has been valuable especially in reaching the remote parts of the country. The CHWs has been involved in virtually most activities of healthcare in the country ranging from support work during medical outreach to drugs dispensing. Their contribution in prevention of epidemics and management of pandemics are obvious as already pointed out in many researches. Furthermore, the impact of CHWs making response to reported health challenges rapid and as well in the follow up of health services cannot be under-estimated.

However, the Federal Government of Nigeria and the Ministry of Health need to recognize this impacts of PHCs and CHWs and analyze to understand the challenges they face in a way to help bridge the gaps. One of the major way to help is by subjecting them to frequent training and capacity building. They need to know what is trending in healthcare delivery. Such will enable them make better decisions which will in turn produce desirable outcomes.

Many researches have shown that CHWs are not well remunerated and therefore may be disinterested. Most residents in rural areas are living below the poverty line. Requesting them to make payments before getting care will only be a waste of time. This can make them prioritize alternative to conventional healthcare. If government can subsidize such care and remunerate CHWs better, the turn out will be better and the outcome of care will be satisfactory. Non-financial incentives such as opportunities for professional development, certifications and recognition within the community will also encourage the CHWs.

Similarly, the government need to be intentional in acknowledging the roles of CHWs in healthcare management especially when successes are recorded just as the case of management of COVID-19 and Ebola diseases outbreak and in the reduction of incidence of malaria and childbirth issues. When their involvement is publicized just like other healthcare professionals, they will be motivated to want to do better. In health planning, in budgeting, the PHCs and CHWs need to be given more attention than they currently receive.

However, when integrating CHW programs into healthcare organization, several factors should be addressed to ensure effective team effort. The healthcare staff should understand the roles of CHWs on the team including the extent of their services. This will also foster teamwork and increase precision and accuracy of diagnosis and health outcomes.

The concept of telehealth (telemedicine) can be introduced into PHC operations. A statistics obtained from "statista" reported that 42.2% of Nigerian households have internet access[68]. That figure is projected to reach 51.04% by 2027 and 64.07% by 2029[68]. This exponential increase means in little time, all rural parts of Nigeria will have internet access. The Federal Ministry of Health needs to take advantage of this by starting to implement Telehealth in PHCs. With Telehealth, there will be AI bots that can help when troubleshoots of healthcare challenges are uploaded. Telehealth will also ensure easy access to healthcare professionals without their actual physical presence[67].With such technology, CHWs can know when an appointment is booked, which medical professional is available and other necessary information[66].

The invention of rapid diagnostics tools such as kits for some of the common infective conditions has enhanced healthcare delivery. Provision of these resources in PHCs will help CHWs who may be available at the time to make better decision and have better outcomes. Resources like BP machines, thermometers, first aid kits must be available. Digital tools such as computer systems that can help track patients' data faster are of utmost importance.

We have found out earlier that under supervision, CHWs perform better. It is important that a few professionals are readily available at the PHCs over time. The presence of such professionals will ensure better delivery and outcomes. All stakeholders involved in healthcare administration need to be actively involved and intentional about improving healthcare delivery and outcomes of diagnosis and treatment in rural Nigeria by integrating and developing Community Health Workers already available in the already numerous Primary Healthcare Facilities.

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