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## Review

### Primary healthcare in six sub-Saharan African countries: an impact assessment using a systematic review

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**ABSTRACT:** Primary healthcare is provided in most developing and developed countries to enhance healthcare accessibility for the population. This study accesses the impact of primary healthcare in six Sub-Saharan countries. A systematic search for qualitative and quantitative studies published before the end of 2017 was conducted online. Inclusion criteria were met by 6 studies, one each from Ghana, Malawi, Nigeria, Tanzania, Zambia and Zimbabwe. Five studies are peer-reviewed, and one is a working paper. Three studies reported on the impact of primary healthcare on healthcare accessibility. Four studies reported on the role healthcare resources play in enhancing primary healthcare services. Two other studies mentioned how cost-sharing mechanism led to an increase in healthcare utilization and how the reduction in user changes in all primary healthcare centers led to the reduction in out-of-pocket spending on healthcare services in a short-term. Primary healthcare offers access and utilization to healthcare services in most countries. It also offers protection against the detrimental effects of user fees. However, concerted efforts are still needed in most African countries in revitalizing the operations of primary healthcare centers for the improvement of healthcare services.

**KEY WORDS:** *Africa; Healthcare; PHC*

## INTRODUCTION

Primary healthcare acts as the bedrock for building a vibrant healthcare system that ensures positive health outcomes and health equity.<sup>1</sup> The World Health Organisation (WHO) enhanced its role in primary healthcare (PHC) in 1978 when it was identified as the key to the attainment of the goal of “Health for All” and as a central mechanism for promoting health throughout the world.<sup>2</sup>

Access to healthcare services is a universal human right which re-enforces the persistent call for universal healthcare coverage.<sup>3,4</sup> This call is more

pronounced in developing countries where there is lack of access to basic healthcare services.<sup>4</sup> Owing to this, the WHO is championing PHC as the answer to attaining universal healthcare coverage.<sup>4</sup> Every country should show concern for the health of its population as the health index of any country is closely connected with her socioeconomic growth.<sup>4</sup> Evidence has shown that the burden of diseases is inversely connected to economic growth particularly in low- and middle-income countries.<sup>4</sup> A case in point was Zambia where some families that lost their household heads to HIV/AIDS encountered a staggering 75% drop in monthly income.<sup>5</sup> Additionally, the unbalanced distribution of social determinants of health such as income, housing, healthy environment, employment as well as the limited accessibility, affordability and availability of essential health services have led to

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widening health inequities between the high and low socioeconomic communities.<sup>6</sup>

In many developing countries, various forms of PHC have a positive effect on health costs, appropriateness of care, and results for most of the key health indicators.<sup>7-11</sup> Studies have also shown that countries associated with a vibrant healthcare orientation have stronger and more equitable health outcomes than countries that are oriented toward specialty care.<sup>2,12,13</sup>

Studies undertaken in developed countries have evaluated how the emphasis on PHC quality may affect health outcomes and the findings were mixed.<sup>1</sup> Studies in Taiwan have shown that patients with a PHC doctor experienced better PHC quality such as better access, family centeredness, continuity, cultural competence and coordination.<sup>14,15</sup> In Canada, it was revealed from a study that asthmatic patients in the experimental group taking part in a program designed to enhance access to PHC services had better access than patients in the control group.<sup>16</sup> However, after one year, there was no difference between the two groups.<sup>16</sup> In the United Kingdom (UK), an impact assessment analyzing the quality of diabetes care provided in specialist diabetes hospitals to that provided by PHC centers found no long-term difference in the rate of progress in HbA1c, cholesterol, and blood pressure over time.<sup>17</sup> In comparison, a study in Denmark found patients suffering from asthma experienced better care quality from respiratory specialists as opposed to PHC doctors.<sup>18</sup>

There is a substantial debate about how practical PHC has been promoting public health in developing countries.<sup>19,20</sup> As the debate rages on, this paper uses a systematic review mechanism to assess the impact of PHC in six sub-Saharan countries, namely Ghana, Malawi, Nigeria, Tanzania, Zambia, and Zimbabwe. Data and studies were drawn from existing evidence on the role PHC plays in health outcomes.

## METHODOLOGY

The search for literature was conducted online via Google search engine using the search terms “primary healthcare”, “primary healthcare in Africa” along with the terms “healthcare quality”, “healthcare resources”, “out-of-pocket payment” and “healthcare accessibility” to identify relevant studies. A medical database that emanated from the online search was also searched for relevant studies that met the specific criteria of the study. Reference lists of included studies were further searched for

relevant studies. The search was focused on research reports written in English.

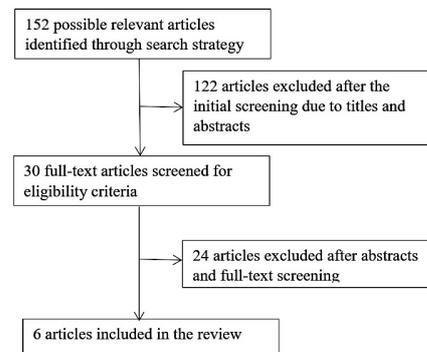
Studies that reported PHC and health outcomes were included in this paper. The studies to be included must report one or more health outcomes due to PHC. While various PHC practices exist in many African countries, studies that did not report on the impact of PHC on health outcomes were excluded. Also excluded in this paper were studies that were conducted in other languages other than English-language.

A standardized form was used to extract data from the included studies. Among the relevant information gathered included authors’ names, date of publication, methods, location and the measured impact. A narrative synthesis was used to analyze the findings of the included studies since a meta-analysis was excluded from the review.

## RESULTS

### Search strategy

**Figure 1** presents the summary of the search strategy adopted by the study. The online search for relevant studies yielded 152 articles on PHC in Africa. The screening of these articles led to the exclusion of 122 articles. An additional screening of the remaining 30 articles through scrutiny of abstract and text resulted in the exclusion of 24 articles. Consequently, only 6 studies were included in the final review.



**Figure 1:** Flow chart diagram showing study selection process for systematic review of studies on PHC on health outcomes in six Sub-Saharan African countries

### Study characteristics

The characteristics of the included studies are presented in **Table 1**. Each of the studies was conducted in Ghana, Malawi, Nigeria, Tanzania, Zambia, and Zimbabwe from 1995 to 2017. The study sample of the included studies comprised under-5 children, patients, community members and community heads. In terms of methods, 4 studies employed a quantitative approach while the remaining 2 studies used a qualitative method.

**Table 1:** Characteristics of included studies

Study	Location	Methods	Type of study	Main outcomes studied
Afari et al. <sup>21</sup>	Ghana	Quantitative	Peer-reviewed	Infant mortality rate, maternal mortality rate, healthcare resource
Lepine et al. <sup>26</sup>	Zambia	Quantitative	Working paper	Medical expenditures
Makaula, <sup>23</sup>	Malawi	Qualitative	Peer-reviewed	Community directed intervention
Mushi, <sup>25</sup>	Tanzania	Quantitative	Peer-reviewed	Cost sharing, utilisation, attendance, mortality rate
Oyekale, <sup>24</sup>	Nigeria	Quantitative	Peer-reviewed	Primary healthcare facilities
Ray and Masuka, <sup>22</sup>	Zimbabwe	Qualitative	Peer-reviewed	Facilitators and barriers to effective primary health care in Zimbabwe

### Impact of primary healthcare

Three studies reported on the access to healthcare services due to primary healthcare.<sup>21–23</sup> In Ghana, an assessment of primary healthcare on child morbidity and mortality showed that the introduction of PHC in three communities reduced childhood deaths.<sup>21</sup> Infant mortality rate was reduced from 114,6/1000 live births in 1987 to 40,8/1000 live births by 1990. The under-5 mortality rate also came down from 155,6/1000 live births to 61,2/1000 live births in 1990. Maternal deaths were also reduced when PHC was introduced in the three communities; of the 467 births recorded from 1987 to 1988, 95% were delivered by traditional birth attendants and resulted in no maternal deaths and no issues of neonatal tetanus within the period. In Malawi, PHC services were implemented through the Essential Health Package (EHP) since there was no PHC policy on the ground.<sup>23</sup> A community direct invention approach was used to support the Malawian PHC. This resulted in the prioritization of the treatment of malaria and diarrhea diseases in the Mangochi district as against the prioritization of diarrhea diseases and tuberculosis in Mzimba. While the PHC services availed Malawians access to the treatment of diarrhea, malnutrition, measles, and HIV/AIDS, the health providers and their partner organizations at local and facility levels felt that PHC was not delivered in an efficient way. In Zimbabwe, donor funding from development partners on PHC led to the dramatic uptake of anti-retroviral treatments and the prevention of mother-to-child transmission.<sup>22</sup> However, paying for healthcare services was an obstacle to care.<sup>22</sup>

Four studies assessed the relationship between PHC and healthcare resources for the improvement of access to healthcare services.<sup>21–24</sup> In Ghana, the procurement of basic medicines and supplies for the treatment of common sicknesses, family

planning, procurement of antenatal services, training and supervision of Community Health Workers, health education and disease surveillance were the key PHC strategies used to enhance the healthcare of the child and expectant mothers in the study areas.<sup>21</sup> Basic medicines such as penicillin, paracetamol, chloroquine, combantrine and supplies for the treatment of common childhood sicknesses were provided by the Noguchi Memorial Institute for Medical Research (NMIMR) within the context of PHC. Furthermore, expectant mothers were registered and seen by hospital staff in antenatal clinics where they were provided with antenatal care and women with complicated pregnancy issues were referred to better hospitals. However, the nutritional status of under-5 children did not improve dramatically when the PHC intervention was introduced.

In Malawi, in order to boost the PHC operations, local districts supplied basic medicines and other medical resources to health centers at a regular basis.<sup>23</sup> This prompted the regular visits of health officials to the communities to provide health services. The communities joined hands with health center officials in managing the health centers through a Health Centre Committee (HCC). At the same time, Health Surveillance Assistants (HSAs) worked together with healthcare volunteers to deliver healthcare services to those in need and report to the appropriate authority. Nevertheless, the health centers lacked adequate personnel and hospital facilities were in disrepair due to lack of maintenance. Additionally, the lack of space for inpatients, poor transport facilities, and inadequate storage of consumables were obstacles to the effective delivery of PHC. In the case of Nigeria, data from 2,480 healthcare facilities revealed that medical disposables were available in 44.03% of all healthcare facilities.<sup>24</sup> Immunization services were available in 86.57% health centers, while active stethoscopes were at the disposal of 77.22%

facilities and only 68.10% of the health centers had sphygmomanometers. Some basic drugs such as Azithromycin, Nifedipine, Dexamethasone and Misoprostol were lacking in all the combined health centers while common medicines such as paracetamol and folic acid were in abundance. The analysis of the study showed that "indices of drug and medical equipment availability increased significantly ( $p < 0.05$ ) among states in southern Nigeria and with the presence of some power sources (electricity, generators, batteries and solar), but decreased among dispensaries/health posts. Travel time to headquarters and rural facilities significantly reduced indices of equipment availability ( $p < 0.05$ )".<sup>24</sup> [p:1]

In Zimbabwe, the PHC centers were mainly manned by PHC nurses in rural health centers, and nurses, midwives and hospital officials in urban Municipality Health Centres.<sup>22</sup> Nurse-anesthetists provided the bulk of anesthesia in urban and rural health centers. PHC doctors provided a general guideline and every district has at least two health officials, every PHC facility had two professional nurses, 59% of administrative wards had environmental health technicians and 60% of villages had access to a village health official.

Two studies reported on health expenditures and PHC in Tanzania and Zambia. In Tanzania, the introduction of cost-sharing improved attendance, utilization and reduction of mortality rate.<sup>25</sup> However, there were cases where patients refused to seek medical attention because of unaffordable fees. In Zambia, out-of-pocket spending on healthcare services was successfully reduced though on a short term after the initiative of reducing user charges in all primary healthcare services by primary health centres.<sup>26</sup> The success of the initiative after six months did not show any positive impact of an increase in healthcare utilization or a change in the choice of health providers.

## **DISCUSSION**

A systematic review approach was used to assess the impact of PHC in six sub-Saharan countries. After a rigorous search for literature through electronic means, six studies were included in the final review. Findings from the review revealed the important role PHC plays in healthcare accessibility for the population. For instance, in both developed and developing countries, PHC has been seen to be linked with improved access to healthcare services, better health outcomes, and a reduction in hospitalization and the use of emergency department visits.<sup>1</sup>

PHC plays a key role in a healthcare delivery system and the access to quality healthcare.<sup>1</sup> In Ghana, Malawi, and Zimbabwe, PHC has been responsible for the accessibility to healthcare services. This study found that in Ghana when PHC was introduced in three rural communities, the maternal and child mortality rates were reduced.<sup>21</sup> Various PHC programs such as health education, disease prevention and control, provision of essential drugs, immunization and early detection and treatment of common childhood disease could actively and positively reduce childhood mortality and enhance the health of the child in a village.<sup>21</sup> Studies in Haiti,<sup>27</sup> West Africa,<sup>28</sup> and Zaire,<sup>29</sup> have shown that PHC programs focused on diseases significantly reduced childhood mortality. Research findings have shown that PHC leads to healthcare accessibility and improve health outcomes.<sup>1</sup> In both developed and developing countries, PHC establishment has been related to an increase in access to healthcare services, stronger health outcomes, and a reduction in hospitalization and the use of emergency department visits.<sup>1</sup> Furthermore, PHC can also assist in preventing the negative effects of poor economic conditions on health.<sup>1</sup> PHC is meant to serve the population, especially the poor, vulnerable, and low-income earners.<sup>1</sup> The establishment of primary health centers in communities increases accessibility to healthcare services. Research findings have shown that the siting of primary health centers in communities helps to bridge the inequalities suffered by people in the communities.<sup>1</sup> An extensive body of research revealed that primary health centers enhance access to primary care for the vulnerable population,<sup>30-33</sup> decrease hospitalisation,<sup>30</sup> and provide better quality care for these people as compared to other providers.<sup>34,35</sup> Furthermore, primary health centers may decrease inequalities by income, race or insurance status.<sup>32</sup>

The Malawi PHC programs focused on the treatment of diarrhea disease, malaria and tuberculosis.<sup>23</sup> The study findings showed that despite Malawi having no specific PHC policy, the government through EHP has been implementing PHC programs in the area of prevention, treatment and the management of common diseases.<sup>23</sup> The approach of the Malawi government to PHC focuses on the holistic definition of PHC given by Starfield in her historic book titled "Primary care: balancing health needs, services and technology".<sup>9</sup> Starfield conceptualized "primary care as the provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community".<sup>10</sup> [p:5] The characteristics of PHC outlined by Starfield are similar to the policy

document adopted by the Malawi government which stipulates the minimum package of services offered to communities.<sup>23</sup>

The Zimbabwe government adopted the PHC mechanism and focused resources toward vulnerable areas and active participation of communities in transforming their health.<sup>22</sup> This resulted in the positive uptake of anti-retroviral treatments and the prevention of mother-to-child transmission.<sup>22</sup> External funding has been the bedrock in sustaining the Zimbabwe PHC. However, financial impediments and user fees are the key obstacles to care, with 7.6% of households incurring catastrophic health expenditure in 2015, 13% in the poorest and 3% in the richest communities.<sup>22</sup> In Ghana, Malawi and Zimbabwe, this study has established from its findings that PHC paved way for access to healthcare services, especially in rural communities. This correlated with the findings of Macinko *et al*, whose study found that increasing PHC accessibility in developing countries correlated with enhanced healthcare for the population.<sup>2</sup>

A unique aspect of PHC is that the governments procure resources to enhance the quality of care. In Ghana, Malawi, Nigeria, and Zimbabwe efforts have been concentrated in providing resources for the betterment of PHC. Human and medical resources are the commonest materials provided to improve healthcare. The findings of this study show that Ghana, Malawi and Nigeria concentrated in providing medical resources while in Zimbabwe, medical personnel were provided in rural and urban health centers to meet the health needs of the population. Similar studies have also shown that various countries place strong attention on PHC and have established effective PHC infrastructure. For instance, in Canada, a modest preventive PHC outreach scheme targeting the aged included home care, combined panning between patients, households and doctors, and referral to relevant social support and community resources. The scheme, however, had no substantial positive outcomes and no link with functional status and self-rated health of participants.<sup>36</sup> In the United States, research outcomes indicated that expanding the supply of PHC doctors by just one unit per 10,000 doctors might enhance health outcomes by 0.66% to as much as 10.8%, depending on the outcome examined.<sup>37</sup> Emerging economies such as Brazil and Thailand have also carried out national-level programs to expand access to primary care services.<sup>38,39</sup>

The relationship between PHC infrastructure and health outcomes have been examined.<sup>2</sup> Research conducted in advanced countries, such as member nations of the Organization for Economic

Cooperation and Development (OECD), revealed that better PHC systems are usually correlated with better population health outcomes including reduced mortality rates, rates of premature death and hospitalization for ambulatory care sensitive conditions, and higher infant birth weight, life expectancy, and satisfaction with healthcare system.<sup>12,13,40</sup> Also, in the United States, research findings have confirmed that stronger PHC availability in a community is linked to greater health outcomes.<sup>41</sup> The findings of the review showed that Ghana, Malawi, Nigeria, and Zimbabwe have intensified efforts in providing necessary infrastructure both human and materials to enhance their PHC systems.

The low cost of access to primary health centers increases healthcare utilization. The findings from this study showed that in Tanzania, the introduction of cost-sharing increased hospital attendance.<sup>25</sup> There was no corresponding increase in healthcare utilization in Zimbabwe when user charges were reduced in primary health centres.<sup>26</sup> Because medical fees have been an obstacle for the poor in accessing healthcare services, in Tanzania and Zambia medical fees were reduced to enhance accessibility to healthcare services. The availability of primary health centers may be better linked to health outcomes in rural communities where most of the inhabitants are poor, indicating that increasing primary health centers in these rural communities may have a significant impact on the inhabitants' health.<sup>42</sup> Access to better primary healthcare may have the greatest impact on health in communities with the strongest levels of income disparity.<sup>43</sup> Furthermore, studies have shown that improved access to PHC has been linked to decreased mortality rates, stronger health outcomes and fewer costs.<sup>34,35</sup> Studies also revealed that the quality of care the poor receive at primary health centers was the same as the quality provided by other health providers and that health center patients may incur fewer inpatient costs.<sup>44,45</sup>

### Limitations

Despite the contribution of the included studies in PHC progress in the selected countries in this study, there are limitations in their outcomes. For instance, none of the studies discussed PHC reforms in improving access to healthcare of which it is known that PHC reforms have taken place in some selected countries in this study. In Nigeria, Anaemene examined healthcare reform and sustainable development<sup>46</sup>. The creation of primary health centers seeks to address the healthcare needs of vulnerable communities.<sup>1</sup> No included study reported the establishment or upgrading of community primary health centers even though primary health centers are vital in the advancement

of PHC both in developed and developing countries. Other factors missing from the reviewed studies included the treatment of chronic diseases by PHC centers, health insurance role in the accessibility of health services at the care centers and cost-effectiveness to improve the quality of PHC.

In view of these limitations from the included studies, it will be necessary that the following considerations are to be taken into cognizance for proper assessment of the role of PHC in meeting the health needs of the population.

Firstly, health reforms have taken place in many African countries with emphasis on primary healthcare. Future studies need to use time series analysis to assess the impact of reforms that have taken place in a country. For instance, in Nigeria, different health reforms have taken place; we need to know what changes have taken place in these reforms and what progress has been made to advance the access to healthcare by the population. Secondly, studies should start to think of assessing the primary health centers to know what goes on in these centers. A case in point is to know if patients are satisfied with the centers, the number of health officials available in these centers and who monitors and evaluates these centers. Also, the dispensing of drugs, the availability of hospital beds, and the cleanness of the environment are of paramount importance to the growth of PHC and more studies should focus on these factors at the centers.

Future studies also need to examine the role health insurance players in utilizing primary healthcare services. While some countries have employed a cost-sharing method for the accessibility of healthcare services, many countries are embracing health insurance in healthcare accessibility. Health insurance has been linked to access to primary care and the quality of care.<sup>47</sup> The insured individuals have access to healthcare services than the uninsured people; among the insured individuals, those enrolled in private insurance have better access to quality primary healthcare than those in public insurance.<sup>47</sup> Since most primary health centres are located in communities with more vulnerable people, studies to assess the role both private and public health insurance play in primary healthcare access as well as the role health insurance plays in the poor accessing primary healthcare services are necessary.

## CONCLUSION

PHC is vital in the provision of access to healthcare services among the population. It is imperative to know from the findings of this study that PHC has

made it possible for an increase in healthcare utilization, the treatment of common diseases, and the reduction of huge spending on healthcare services.

Laying emphasis on health system more steadily on PHC serves as an effective strategy to address emerging health issues,<sup>48</sup> scale up current interventions, and adequately combat health risks such as HIV/AIDS,<sup>49</sup> tuberculosis,<sup>50</sup> chronic diseases,<sup>51</sup> and others.<sup>2</sup> African governments need to do more in committing resources and efforts in revitalizing the PHC system. Poverty is increasing in Africa and access to healthcare by the poor will become difficult. The concentration of resources in PHC will go a long way in enhancing access to PHC services and improving healthcare services, which will result in better health outcomes.

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