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The Demand for Maternal and Child Health Care Services in Sub-Saharan Africa: A Review of Latest Available Data for Selected Countries

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Abstract

It is evident that maternal and under-five child deaths have gradually reduced in Sub-Saharan Africa (SSA) in the last three decades. In a bid to improve access and utilization of maternal and child health care services in the region, actors in public, private and civil society arenas at all levels have engaged in familiar circles towards service provisioning. Nevertheless, evidence from several SSA countries shows less utilization of some maternal and child health care services. The demand remains low for some services such as attendance of four antenatal visits as recommended by World Health Organization, delivery skilled birth attendants, postnatal care especially for newborns, child immunization, and use of modern contraceptives. The concern remains whether the less demand is influenced by supply-side or demand-side factors. The personal, socio-cultural, economic, health systems related factors may condition a person's demand choices regardless of the need for a particular health service. Improved access may not necessarily translate into utilization because of these interrelated determinants of demand. Therefore, policy-makers might need to turn to Sen's capability approach viewpoint to gaze at how expanding people's choices-especially poor women might help to improve the demand for maternal and child health services in SSA. Policy interventions may include pro-poor healthcare service provisioning through public financing, improving women's education, improving women's access to information, etc. However, a multi-sectoral approach is necessary for addressing all demand determinants at all levels and the interventions should be context-specific.

Keywords: Maternal and Child Health; Demand; Capability approach; Sub-Saharan Africa

Introduction

According to World Health Organization (WHO), an estimation of about 66% (201,000) maternal deaths, which are more than half of the global maternal deaths (303,000), were experienced in Sub-Saharan Africa by the year 2015. Compared to other regions, the Maternal Mortality Ratio (MMR)-maternal deaths per 100,000 live births-in the Sub-Saharan Africa (SSA) region reduced from 987 in 1990 to 546 in 2015 making it a 45% change in two and half decades [1]. On the other hand, compared to other global regions, the SSA region still has the highest under-five mortality ratio. According to United Nations Children's Fund (UNICEF), by 2016 under-five child mortality ratio had reduced to 79 (2,777 deaths in thousands) from 183 (3,787 deaths in thousands) per 1,000 live births in 1990 making a 57% decline in two and half decades [2]. So, one in thirteen children dies before their fifth birthday. Additionally, the fertility rate is still comparatively high in this region, but it has gradually reduced from 6.3 in 1990 to about 4.9 births per woman in 2016 [3].

These reductions in MMR, under-five child mortality ratio and the fertility rate could be attributed to improvements in accessibility and utilization of maternal and child health care services. Moreover, these reductions have disproportionately been experienced among the poorest quintiles and even differently within countries in this region. Such differences could be attributed to several factors that influence access and use of maternal and child health care services. Improved demand for maternal and child health contributes to human development and has positive multiplier effects on socio-economic and political development at personal, household, community, and national levels. The discussion in this paper will focus on the determinants of demand for maternal and child health services in SSA and then link this demand status to the capability approach viewpoint as a relevant option for health policies in SSA.

In a bid to improve access and utilization of maternal and child health care services in the region, actors in public, private and civil society arenas at all levels have engaged in familiar circles towards service provisioning. Nevertheless, the concern remains whether the service demand (utilization) situation is because of less demand for or supply of maternal and child health services. Per[4] the use of health services is influenced by the predisposing, need and enabling

factors within the realms of demand and supply sides. These factors thus may relate to the value people attach to the services available and indeed about the context the services are availed. The context may, for instance, depend on whether the service is needed before, during and after childbirth. The determinants may enable or constrain the demand for maternal and child health services. Also, service affordability or accessibility may not necessarily translate into its utilization. The demand for services may be a matter of freedom exercised by people to either value (or not) the services [5]. The freedom to value may also depend on whether the services are indeed accessible or not. This paper uses a systematic literature review with an objective of assessing the situation of demand for maternal and child health services in SSA from a capability approach perspective. The discussion questions enablers and constraints of the demand for maternal and child health services in SSA.

Review Methodology

A systematic review of the literature is used in this paper. The consulted literature is in the period between the year 2008 and 2018. The assumption is that from the year 2008 (halfway on the implementation of the Millennium Development Goals objectives) SSA countries would already be realizing the impact of interventions for improving accessibility and utilization of maternal and child health care services.

Data sources

Grey literature from Demographic Health Surveys (DHS) reports was used to access country data on the status of demand for maternal and child health care service. Peer-reviewed journals were used for data on determinants of demand for maternal and child health services. Both quantitative and qualitative data were sought. See table 1 for a summary of data sources.

Criteria for searching data sources

The search for literature was internet-based using the Google search engine and UAntwerp Discovery Service. Peer-reviewed journals were searched from Bio Med Central, BMJ Open journal, National Center for Biotechnology Information (NCBI), SAGE, Springer, Wiley Online Library, Elsevier Science Direct, Pub Med Health, and Google Scholar. DHS reports were searched for on Google, the USAID Demographic Program (http://dhsprogram.com/) and the Global Health Data Exchange (http://ghdx.healthdata.org/) websites. The combination of words used in searching included maternal, child, healthcare services, demand, determinants, factors, health surveys, Sub-Saharan Africa, Demographic Health Surveys+country names.

Table 1: Summary of data sources.

Source type	Number of articles	*Number of SSA countries	Type of data sought
Peer-reviewed studies	29 Journal articles	19	Determinants of demand for maternal and child health
Grey literature	13 DHS reports	13	Quantitative data on the status of maternal and child health care services sought from the formal health care system

*The 13 countries whose DHS reports were used are also part of the 19 countries used for peer-reviewed studies with exception Namibia which was only used for DHS data.

Sampling criteria

Initially, 173 peer-reviewed studies were accessed. Then a screening process for study inclusion and exclusion began based on the country, topic, content language, and year of publication. 102 articles were excluded, and 71 were considered for further appraisal. Then, the abstract and conclusion based appraisal was done to check for content relevance, quality, and coverage on maternal and child health services. 42 articles were then excluded at this stage because the content was not specific on determinants of demand for maternal and child health care services. Finally, 29 articles were considered for use in this review. For grey literature, the content language, period of publication and country name were used to include or exclude a DHS report. A total of 13 country DHS reports were considered for use in this review. Therefore, for any literature to be considered relevant it had to fit the following criteria:

- Study topic is on maternal and child health care services.
- Country of study is in the SSA region
- Peer-reviewed studies and the latest available DHS reports for SSA countries published between the year 2008 and 2018
- Content language is English
- Content is on demand for maternal and child health care services and the determinants of this demand. The health services include Antenatal Care (ANC), delivery at health facilities, Skilled Birth Attendance (SBA), Postnatal Care (PNC) for mother and newborn, immunization, and family planning services.

Limitations to this methodology

Firstly, this paper specifically focuses on the demand for health services related to maternal and child health. Secondly, not all SSA countries have been represented in this review, but at least an even distribution of countries across the SSA sub-regions has been considered. However, the fact remains that country contexts differ. Thirdly, comprehensive discussions on specific countries should not be expected in this paper. Additionally, a discussion of strategies implemented in SSA countries, whether successful or failed, is not considered but, where necessary such evidence will be used for justification purposes. Perhaps a context-specific analysis of these strategies may be necessary for future reviews to reveal what strategies work in which contexts of SSA. Fifthly, this is not a comparative analysis between countries but rather a discussion on the status of demand for health services. Lastly, the selection process of peer-reviewed articles did not consider proportionate distribution per country because such reviews are not evenly available for access. Regarding the use of DHS reports, other SSA countries are not represented because their DHS reports were either (a) unavailable [at least not accessible through internet search], (b) reported in different languages other than English such as French and Portuguese, or (c) were conducted before 2008.

Maternal and child health care service demand in SSA

According to the DHS reports, maternal and child health services are mainly provided through both public and private facilities. Generally, such a combination improves quality service provisioning though people in the lowest wealth quintiles may not benefit from private service provisioning. Access remains a challenge especially the poor in both pre-urban and rural areas across the region. Table 2 shows the results of percentage demand for maternal and child health care services from DHS reports in SSA countries.

Generally, the performance in the six categories of maternal and child health services is above 50 percent except for PNC services for

newborn children and the use of modern contraceptives where the majority of countries are performing poorly. For example, Rwanda is performing well in demand for the one ANC visit services (99%) but poorly performing in demand for PNC for newborns during the first two days after birth (19%). Ethiopia and Nigeria are performing very poorly in almost all six categories. Ethiopia only has a 62% performance for the one-time ANC from a skilled provider while Nigeria only has 61% for the one-time ANC and 51% for at least four or more visits for ANC from a skilled provider. The rest of Ethiopia's and Nigeria's demand performances are below 50%. This poor performance may be attributed to both individual or socio-cultural and economic determinants at household, community or health facility levels. For example, in Nigeria, in addition to child deprivation factors, a mother's health-seeking behaviours influence the demand for child health care [6] (Table 2).

It is recommended that pregnant women go for a minimum of four visits for ANC from a skilled provider but women in all the selected SSA countries seem to differ from this recommendation [20]. Majority of countries are relatively performing well in the demand for at least one visit for ANC services but beyond one visit the demand for ANC from a skilled provider diminishes. In this regard, Ethiopia and Rwanda are performing very poorly because more than half of women that go for at least one visit for ANC from a skilled provider do not make it for four or more visits. This poor performance is associated with aging among mothers, low education levels among households, women being part of the poorest quintile, limited access to information about pregnancy and services, negative attitudes about pregnancy, no or limited approval and support from husbands, and use of TBAs [21,22].

On the other hand, South Africa and Zimbabwe are relatively performing well in demand for at least all maternal related services. For example, Zimbabwe's good performance may be attributed to factors such as highly subsidized costs through government financing of health services [23,24]. Other determinants of demand for maternal and child health services in the SSA region are discussed in the next section.

Determinants of demand for maternal and child health care services

According to Anderson and Newman's model of health care utilization, the demand for a health service is a resultant component of predisposing factors to receive a health service (predisposing), conditions to make the health service available (enabling), and perception of the need for the health service and therefore responding to it (the need) [4]. These factors determine the individual's behavior to seek (or not) a health service. In the SSA region, these determinants vary from individual to community, to a health facility, regional and national levels.

The use of ANC and child immunization reduces with increase in age of mothers especially in Ethiopia, Rwanda, Senegal and Swaziland [21,22,25,26]. Also, a mother's perceptions and health-seeking behaviour have an impact on the level of demand for maternal and health care services [6,27]. Perceptions and health-seeking behaviours are associated with education levels. Low levels of education among women (and partners) influence the low use of maternal and child health services [28-32]. Therefore, education level increases with an increase in health service use [33]. Gender norms also influence health service demand in SSA. Partner's knowledge, perception, attitude, and support (e.g. financial support and social support in decision-making) predict women's choices of demand [28,30,34,35].

In addition to gender norms, other socio-cultural factors such as traditional beliefs, religious affiliations, and ethnicity significantly determine the level of demand [23,27,36]. For example, among the nomads in Sudan, religious leaders negatively manipulate perceptions on service utilization thus influencing low demand [32]. Evidence from Eritrea and Ethiopia also shows that these socio-cultural factors are associated with the use of Traditional Birth Attendants (TBAs) and home deliveries [21,37]. On the other hand, the preference of using TBAs is also influenced by long distances to health facilities and high costs of SBA services. TBAs are easily accessible, they understand the cultural norms of mothers, and their service costs are low and flexible compared to the choice of using SBA [31,32,38].

The demand for maternal and child health services in SSA is significantly linked to poverty at the individual, household and community levels [22,26,28,39]. Poverty influences low levels of demand for health services because poor women cannot afford health service costs. A combination of poverty and limited access to information negatively affects the choices of service demand. For example, a participant in a study in rural Nigeria reported that "I did not know of any free treatment at the health centre, if not I would have gone. I thought of the money I will spend at the health centre since I did not have, I decided to deliver here at the TBAs home where it is free" [40].

So, women have limited choices for better quality maternal and child health services. Evidence from Zimbabwe and Nigeria show that removal of direct costs positively affects demand for ANC, SBA, and PNC [24,40]. [23] also established that low out-of-pocket expenditures (per-capita) influence frequency and timely use of ANC in Zimbabwe. Additionally, poor women have limited access to information thus limiting their awareness about health services. So, limited access to information reduces the demand for health care services [21,40-43]. However, in some cases as [44] established in their study in Kenya, awareness about the service may not guarantee utilization.

Geographical disparities between country regions, urban and rural, and even community differences also predict the level of demand. For example, [45] established that there were low rates of full immunization of children aged 12-13 months in the eastern administrative regions compared to other regions in Senegal. Also, in Liberia, it was found that these disparities contribute to long distances between households and health facilities thus causing low demand [46]. The geographic place of residence is associated with the presence of health facilities and services in a particular locality, distance to health facilities, and more so the differences between the rich and poor people [26,30,42]. Urban residence and wealthiest quintiles are positively associated with SBA demand than for rural residence and poorest quintiles [28].

According to the DHS reports, apart from Rwanda and Namibia where there are equal chances of both urban and rural women to demand ANC by a skilled provider, it is evident that in other countries women in urban areas are more likely to demand ANC by a skilled provider compared to rural women. The demand differences, especially in Nigeria and Ethiopia, are associated with household poverty and inequalities in health service supply between rural and urban areas [40,42]. Moreover, most poor women reside in rural areas. Although poor women in urban areas may as well experience inequalities in health service supply, the experience of supply inequalities is worse for poor women in rural areas. For example, in rural Zambia, women living in remote rural communities are more disadvantaged than women residing in centralized rural communities [47].

The capacity of a health care system to deliver affordable and accessible health services also determines whether poor people will demand services. Availability and frequent supply with better services influence mothers to trust the health care system and therefore

Table 2: Maternal health and child health care services demand during the 5-year survey in 13 selected SSA countries.

Countries (DHS Year)	*Maternal health and child health care services demand (%)						
	At least one visit for ANC from a skilled provider	At least four or more visits for ANC from a skilled provider	Delivery care at a health facility	PNC for mothers (during first 2 days after birth)	PNC for newborns (during first 2 days after birth)	Children (age 12-23 months) who received basic vaccinations	Modern contraceptive usage among women (married and aged 15-49)
Ethiopia (2016)	62	32	26	17	13	39	35
Ghana (2014)	97	87	73	81	23	77	22
Kenya (2014)	96	58	61	53	36	79	53
Liberia (2013)	96	78	61	71	35	55	20
Malawi (2015-16)	95	51	91	42	60	76	58
Namibia (2013)	97	63	87	69	20	68	50
Nigeria (2013)	61	51	36	40	14	25	10
Rwanda (2014-15)	99	44	91	43	19	93	48
South Africa (2016)	94	76	96	84	86	61	54
Tanzania (2015-16)	98	51	63	34	42	75	32
Uganda (2016)	97	60	73	54	56	55	35
Zambia (2013-14)	96	56	67	63	16	68	45
Zimbabwe (2015)	93	76	77	57	73	76	66

* This data was compiled from the most recent accessible country-specific DHS reports conducted after 2008.

Data Sources: Central Statistical Agency (CSA) and ICF [7]; Ghana Statistical Service (GSS), Ghana Health Service (GHS), & ICF International [8]; Kenya National Bureau of Statistics (KNBS), Ministry of Health (MOH) [Kenya], National AIDS Control Council, Kenya Medical Research Institute, National Council for Population and Development, and The DHS Program, ICF International [9]; Liberia Institute of Statistics and Geo-Information Services (LISGIS), Ministry of Health and Social Welfare [Liberia], National AIDS Control Program [Liberia], and ICF International [10]; National Statistical Office (NSO) [Malawi] and ICF [11]; The Nambia Ministry of Health and Social Services (MoHSS), and ICF International [12]; National Population Commission (NPC) [Nigeria], and ICF International [13]; National Institute of Statistics of Rwanda (NISR) [Rwanda], Ministry of Health (MOH) [Rwanda], and ICF International [14]; National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), and ICF [15]; Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) [Tanzania Mainland], Ministry of Health (MoH) [Zanzibar], National Bureau of Statistics (NBS), Office of the Chief Government Statistician (OCGS), and ICF (2016)[16]; Uganda Bureau of Statistics (UBOS) and ICF [17]; Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International [18]; Zimbabwe National Statistics Agency and ICF International [19].

positively affect the demand for the services. For instance, in rural Tanzania, advice from community health workers and trust in the health system increase the use of PNC [30]. A study in the Democratic Republic of Congo established that the reputation of the facility that offers service, friendliness of service providers and level of client satisfaction regarding providers being accessible and understanding the clients influenced the utilization of maternal in Kinshasa [29]. Moreover, health facilities are also equipped with inadequate staff thus contributing to inadequate services, limited attendance, the longer time taken to provide services (or sometimes not) to everyone. These findings are congruent with studies in Kenya, Malawi, and South Africa [34,38, 43]. Where health services are poorly delivered by providers, there is limited demand [21,27,40]. For example, [43] found less demand for services among teenage mothers in Eastern Cape South Africa because the service providers had negative attitudes towards pregnant teenagers especially those with Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS). It is evident that further improvement is needed in upgrading healthcare systems in SSA to improve the demand for maternal and child health care services.

Does improvement in access translate into utilization?

As noted earlier in the introduction, improvements have been made in SSA on maternal and child health because of improved access to health services. Nevertheless, improved access may not guarantee improved utilization (demand). For example, even with improved access in countries such as South Africa, Rwanda, Namibia, and Zimbabwe, the demand for modern family planning methods remains low. Utilization, according to the DHS reports, seems to be context-specific and is determined by individual choices in addition to other determinants as discussed in the previous section.

Utilization depends on the perceived need to seek health services. In his distinction between perceived and observed illness, [49] asserts that public health decisions sometimes are unresponsive to the people's own perception of illness, suffering, and healing. The perception of illness and the need for healthy lives determine people's health-seeking behaviors [4]. However, [49] cautions that sometimes reliance on people's perceptions of illness and need for health services may as well mislead health service providers. In his view, sometimes a patient's perception of illness may be deficient and limited by lack of information or limited education, thus rendering the patient to perceive the illness based on the social-context and experiences. So, reliance on patient's internal perceptions may sometimes mislead the health service providers and policy-makers. Therefore, to cater to individual choices-especially the poor who get accustomed to their health predicaments without using formal health services-maternal and child health promotion interventions should be designed and implemented with a contextual understanding of beneficiaries.

The personal, socio-cultural, economic, health systems related factors may condition a person's demand choices regardless of the need for a particular health service. To address such health service demand issues, one might turn to Sen's capability approach viewpoint to gaze at how expanding people's choices -especially poor women-might help to improve the demand for maternal and child health services in SSA.

The capability approach perspective

Although the capability approach does not give sufficient attention to the influence of groups, social networks, and social structures, it remains a significant approach to understanding and addressing individual freedoms as means to achieving lives that are valued by people themselves [50]. The demand for maternal and child health care services is not only dependent on availability or affordability (ability to access) but also on whether mothers (and fathers) have a reason to value the service and therefore to choose to use it. The capability approach focuses on the ideal principle that people should enjoy the freedom to live the lives they value [5]. For example, value to be treated with a sense of humanity or value in the service that one needs to use. Such values relate to individual rights and freedoms.

All DHS reports refer to the inability to make use of maternal and child health care services as "problems in accessing". This indicates a general assumption that accessibility of services translates into use or rather the ability to benefit. Nevertheless, there is a likelihood that even if the service is accessible, individuals may choose not to use it, or the service cannot benefit the user because of its quality in provision. Women should not only have the ability to access and benefit but also to choose from alternative maternal health care services, and even so, depending on the quality. The ability to be healthy requires more resources than just an individual's choices and therefore institutions ought to invest in expanding freedoms and choices [5]. People's choices are dependent on what institutions and social structures present to them. [51] assert that governments need to work towards meeting women's standards to give them satisfactory reasons to trust in the public health system care and therefore use the services.

Policy implications

Improving demand for maternal and child health care services in SSA requires health reforms that are geared to enhancing human development by expanding freedoms and choices for poor people to benefit from the service they choose to value. There is a need to focus on reforms that give power to people to choose to demand what they value. Expanding poor people's choices in the health sector will influence high levels of demand for maternal and child health care services. So, the commitment of all maternal and child health care service providers-especially the governments-is paramount.

According to [52], three main policy options may improve poor people's health service choices and demand, i.e. (a) increasing poor people's power over providers through cash transfers or vouchers (thus increasing their purchasing power), (b) increasing competition among health service providers as an incentive for them to perform well, and (c) improving access to information about services and providers. These three approaches improve choices and increase people's bargaining power and may influence them to participate (even collectively) in demanding for better services [52]. According to [53], public financing through cash transfer and vouchers tied to maternal and child health care service positively influence demand for these services. Also, experiences from Burkina Faso, Zimbabwe, and Nigeria have shown that free service provisioning improves willingness to demand health services [24,36,40]. Participants in a study in western Kenya reported that they would go for antenatal and delivery care services if the services were free [38].

If not well managed, public financing may benefit women from wealthy households rather than poor women. Additionally, this approach requires sources of sustained findings. [5] asserts that if the government fails to expand choices, then reforms which motivate-and where necessary control-the private service providers are needed. Generally allowing a competitive service provisioning through private service provisioning helps to expand choices because service providers must perform well to attract demand for their services [52]. Nevertheless, the challenge is that as much as the quality of services provided by private health institutions might be better than public providers, people in the lowest wealth quintiles may have less to benefit from it. Public financing improves access but may not automatically improve demand or ability to benefit from the service because of other factors. For example, access to information is paramount for expanding poor women's awareness and choices about health services and therefore contributes to improved demand. However, this too requires institutional reforms and policies, such as public investment in education, which would first improve women's exposure to media.

If improvements in expanding choices and demand are to be realized then reforms that would address social structural challenges such as gender inequalities are needed. Policy-makers and health service providers need to understand that people or women in need of health services are not homogeneous groups. There is a difference between women in the lower quintiles and upper quintiles of the total population (vertical inequalities) but also differences between women in the same strata (horizontal inequalities). Policy reforms need not to only concentrate on addressing specific constraints to health service demand but demand but also focus on uprooting formal and informal institutional challenges. Therefore, multi-sectoral policy approaches are needed to ensure holistic mechanisms of increasing women's agency to collectively demand maternal and child health services and rights.

Conclusion

The review results indicate that the demand for maternal and child health care services in the SSA region is still a great challenge not only for those in need of the services but also the providers at the service delivery frontline and policy-makers. The performance in health service demand in Ethiopia and Nigeria is very poor compared to other selected SSA countries. Most of the selected countries are performing poorly in the demand for modern contraceptive usage among women and PNC services, especially for the newly born children. The poor performance in the demand for maternal and child health care services is attributed to negative perceptions on health services among potential users, poor attitudes among service providers, poor quality of services, socio-cultural factors such as use of TBAs, geographic locations affecting mostly rural women, inequalities related to information access, and most importantly household poverty affecting women in the poorest quantile. On the other hand, results indicate that South Africa and Zimbabwe are relatively performing better compared to others. This is mainly attributed to factors such as highly subsidized costs or free service costs through government financing of health services and improved service delivery for both rural and urban dwellers.

However, improved access may not guarantee demand for maternal and child health services because the choices to demand these services are limited and conditioned by several determinants which keep poor people (women) disadvantaged. Policy interventions to improve the

demand for services should thus focus on expanding poor people's choice to accord them opportunities which can enhance individual or collective bargaining power for which they can use to demand maternal and health services. The policy interventions may include pro-poor healthcare service provisioning through public financing, improving women's education, improving women's access to information, etc. Moreover, a multi-sectoral approach is necessary for addressing other demand determinants at all levels. For future studies, there is need to explore contextual meanings of the term "skilled services", explore the possibilities for sustaining public financed maternal health care services which would benefit the poorest wealth quintiles, and explore context-specific strategies for improving demand for maternal and child health in SSA countries.

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