A review of evidence on barriers to and facilitators of the utilization of reproductive, maternal and neonatal health services among pastoralist communities in Sub-Saharan Africa

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Abstract

Background: The coverage and uptake of reproductive, maternal and neonatal health services among pastoralist communities in the developing world is low. However, there is a paucity of information on the barriers to and facilitators of the uptake of these services among pastoralists in developing countries.

Objective: The aim of this review aim to assess the available evidence on the barriers to and facilitators of the uptake of reproductive, maternal, and neonatal health services among pastoralist communities in Sub-Saharan African.

Methods: A systematic electronic literature search from 2001 to 2016 was undertaken using the online databases of PubMed, Google Scholar and Google Advanced Search using key terms. Initial screening was done by the 'preview, question, read and summarize' system using key screening terms. A quality assessment of individual studies was carried out. A total of 21 papers were reviewed, focusing on reproductive, maternal, and neonatal health services of pastoralist communities in Ethiopia, Sudan, Djibouti, and Kenya.

Results: The major barriers to the utilization of reproductive, maternal and neonatal health services were lack of awareness; lack of trust in the quality of health services; unfavorable behavior of health professionals; the presence of male midwives; disbelief in modern treatment; long travel distances to health facilities; lack of transportation; and certain socio-demographic variables had an impact on the uptake of these services, such as age, educational status, monthy income, number of under five children and religious belief.

Conversely, male involvement, the use of existing community structures, mobile clinics and the 'One Health' approach were shown to be facilitators of the uptake of reproductive, maternal and neonatal health services among the pastoralist communities in Sub-Saharan Africa.

Conclusion: To improve the use of reproductive, maternal and neonatal health services in pastoralist settings, it is necessary to promote female empowerment and male involvement; make optimal use of existing community structures; provide culturally acceptable and context-specific quality of care; and institutionalize the 'One Health' approach. [*Ethiop. J. Health Dev.* 2018;32(Special Issue):43-49]

Keywords: Reproductive, Maternal, Neonatal, Review of evidence,Sub-Saharan Africa

Introduction

Pastoralism is one of the predominant livelihoods found in East and Central Africa, with an estimated 50 million pastoralists living in Sub-Saharan Africa (1). Pastoralists settle in arid area, and contributes economy for urban agricultural (2). Addressing the deep-rooted problems of pastoralists by innovative and context-specific health approaches could contribute a great deal to national economies. Innovative approaches such as 'One Health' are particularly well suited to serve mobile pastoralists (3). However, more evidence is needed about pastoralist communities' health in general and their use of reproductive, maternal, and neonatal health (RMNH) services, , to improve their livelihoods.

Social and health planning relies on accurate data for fertility, mortality and causes of death (4). In addition to social and health planning information, identifying the coverage, barriers and facilitators relating to RMNH services is crucial to improving the health of pastoralist communities. Nonetheless, in most countries, little demographic data are available for pastoralist communities (5). Among the notable barriers faced by pastoralist mothers are access to media; age and educational status; distance to health facilities; lack of awareness; and cultural and religious beliefs (6-10). Women in pastoralist communities are less educated, face discrimination, have little decision-making power, receive less medical assistance, lack of reliable RMNH data, and under-reporting of deaths (10).

However, there is some literature on the barriers to and facilitators of RMNH service utilization in pastoralist communities to guide policy makers. Targets set on RMNH services by Sub-Saharan African countries would be difficult to achieve without considering the high maternal mortality rate and low coverage of RMNH services by women from pastoralist communities. In light of this, this review of evidence attempts to identify the barriers to and facilitators of RMNH service utilization among pastoralist communities in Sub-Saharan African countries with a view to suggesting how these services can be improved.

Methods

A systematic electronic literature search for documents published between 2001 to 2016 was undertaken using the online databases PubMed, Google Scholar and Google Advanced Search. The key terms that were the basis for the search included antenatal care (ANC), delivery service, place of delivery, institutional delivery (ID), postnatal care (PNC), family planning (FP), contraceptive, RMNH services, barriers, facilitators, possible intervention, pastoralist health, pastoralist women's health. The search focused on

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difference countries, and both individual terms and combinations of terms were used.

Once the literature search was completed, abstracts were screened and read to assess their relevance. Papers and reports whose full text dealt with information regarding RMNH (ANC, place of delivery, PNC and FP) services in pastoralist communities were included, while those papers published before 2001 and those that did not address RMNH services were excluded (see Figure 1).

Initial screening was done by PQRS (preview, question, read, summarize) using key screening terms – such as ANC, place of delivery, PNC, FP, contraceptive and RMNH service use, barriers, facilitators and possible intervention – on both the topics and abstracts. This was done after removing duplicates. Finally, full texts were assessed and summarized.

Assessment of the study quality: To limit bias in conducting the review of evidence, a quality assessment of individual studies was carried out. To compensate for the scarcity of studies, different study designs for the main outcomes, namely, barriers and facilitators/interventions, were included. Thus, qualitative and quantitative studies, mainly cross-sectional, were included for the barriers, whereas intervention studies which were done across the different countries were used to prepare a tailored and comprehensive review of interventions which facilitate/enhance better utilization of RMNH services among pastoralist communities in Sub-Saharan countries.

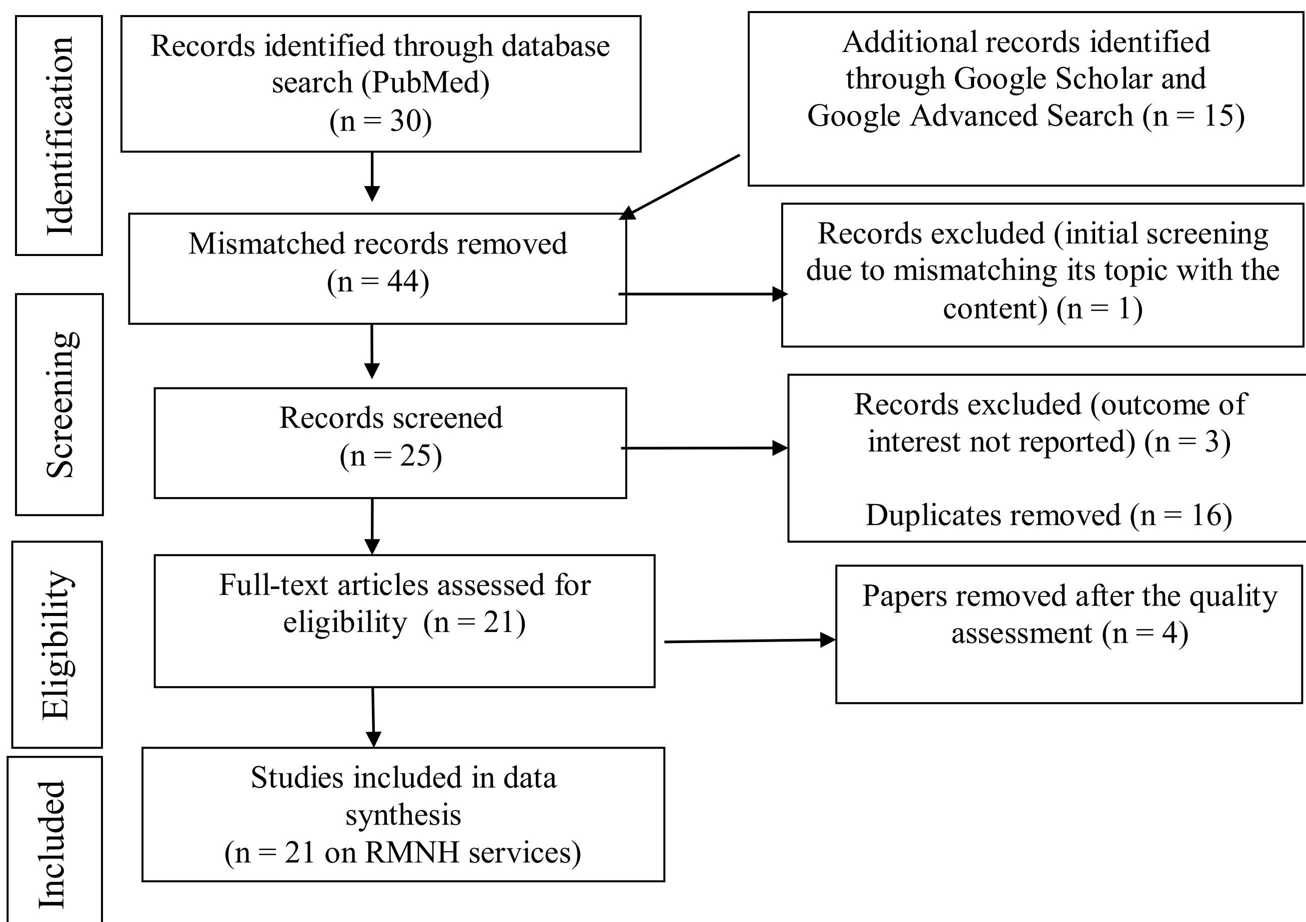

Figure 1: **Schematic presentation of the systematic review process on the RMNH service among women from the pastoralist communities**

Description of studies: The review of evidence included 21 peer-reviewed papers focusing on studies carried out in Ethiopia, Djibouti, Sudan and Kenya. Of these studies, seven were cross-sectional, five were purely qualitative (10-14), two employed a mixed-method approach (7, 11), one was a 'pre and post' study (15), two were reviews, and four were document reviews/reports. Majority of the papers were peer reviewed (8-14, 16-23). Only one paper tried to quantify the magnitude of FP [9]. Nine studies broadly covered maternal health services, particularly on ANC, delivery service and PNC. The majority of studies (n = 18) attempted to cover the delivery practice of women from pastoralist communities. Three studies mainly focused on interventions for enhancing better utilization of RMNH services among pastoralist women (12, 15, 24). In addition, reviews of different literature and reports carried out in different areas were also included (7, 15, 24-26) (see Table 1).

Table 1: **Description of reviewed studies on RMNH services among women from pastoralist communities of Sub-Saharan Africa, 2018 (n=21)**

FP	ANC	PNC	ID
AMREF, 2009 Report[7]	AMREF, 2009, Report[7]	AMREF, 2009, Report[7]	AMREF, 2009, Report [7]
Alemayehu *et al.,* 2016, PR [9]			
			Byrne *et al.,* 2016 PR [16]
	Nejimu et al., 2016, PR [20]		
			King et al., 2015, PR [11]
			Medhanit et la., 2012, PR [17]
Ergano et al., 2012, PR [10]	Ergano et al., 2012, PR [10]		Ergano et al., 2012, PR [10]
	USAID, 2012, Literature review [25]	USAID, 2012, Literature review[25]	USAID, 2012, Literature review[25]
			Jackson et al., 2016, PR [13]
	Yousuf et al., 2011, PR [23]	Yousuf et al., 2011, PR [23](10)	Yousuf et al., 2011, PR [23](10)
	AMREF, 2013, Report [24]	AMREF, 2013, Report[24]	AMREF, 2013, Report [24]
			Caulfield et al., 2016, PR [14]
	Downie et al., 2011, Report[26]	Downie et al., 2011, Report[26]	Downie et al., 2011, Report [26]
	Coppock et al., 2008, PR[18]	Coppock et al., 2008, PR[18]	Coppock et al., 2008, PR[18]
	Jillo et al.,2015, PR[12]		Jillo et al.,2015, PR [12]
	Duba et al., 2001, PR [19]	Duba et al., 2001, PR [19]	Duba et al., 2001, PR [19]
			Nejimu, 2014, PR,[8]
			Dejene et al., 2015, PR[21]
	El Shiekh et al., 2015, PR[22]	El Shiekh et al., 2015, PR[22]	El Shiekh et al., 2015, PR[22]
	Khogali et al., 2014, Report[15]		

PR= Peer reviewed

Results

A total of 21 studies and reports on RMNH services (ANC, ID, PNC and FP) and 7,886 study subjects were included in the review. Most of the studies were from the pastoralist communities of Ethiopia. Studies that focused on women of reproductive age were given priority, although studies that included both sexes were also considered.

Magnitude of RMNH services among pastoralist communities: Women who had at least one ANC visit ranged from 42.4% to 63.8% in different parts of Ethiopia (7, 17, 20) and Sudan (22). The proportions of women who had four or more ANC visits were 19.5% in Dubti district of Afar region (20), 49.6% in South Ari, and 39% in Malle, South Omo, Southern Ethiopia (10). The proportion of women who had an institutional delivery (ID) ranged from 7.4% to 16.7% in different parts of Afar region (7, 8). As regards future intention of place of delivery, 90% of women preferred home deliveries (7) and the magnitude of PNC was 22.5% (7). The prevalence of FP ranged from 8.5% to 24% in Afar region (7, 9), 36.2% in South Ari, and 40.3% in Malle, Southern Ethiopia (10).

Barriers to RMNH service utilization: A study conducted in Afar pointed out that a lack of awareness/knowledge and long travel distances to health facilities were the main barriers to using ANC services (7, 20). Other barriers were not having enough money, lack of trust in the quality of the health services (20), and husbands' permission (7). Barriers to ID were a lack of awareness, money and transportation, long travel distances, emergent labo(women who were close to giving birth) bad behavior of health professionals, presence of male midwives, and lack of awareness about modern treatment (7, 8). Comparing Afar region with Southern Ethiopia, the reasons given for selecting a home delivery were urgency of labour (51.5% versus 82.3%), long travel distance (15.3% versus 33.8%) and comfortable household environment during delivery (13.1% versus 46.5%), respectively (7, 10).

A review by USAID (2012) indicates that community perceptions and knowledge about pregnancy and labor complications lead to a number of barriers to maternal health care utilization. Besides, the communities view pregnancy and childbirth as low risk, or do not believe that prolonged labor and bleeding are problematic. Such beliefs may be the result of a lack of knowledge about the risks of pregnancy or a lack of maternal health service promotion (25). Finally, the most common reasons mentioned for poor use of FP among the Afar pastoralist communities in Ethiopia were related to religious beliefs (85.3%), the desire to have

more children (75.3%), and objections on the part of husbands (70.1%) (9).

Urban residence (AOR = 2.2, 95% CI: 1.38, 3.60), availability of radio/TV in the household (AOR = 3.1, 95% CI: 2.20, 4.457) and monthly income of $50 and above (AOR = 1.6, 95% CI: 1.10, 2.55) were found to be significant predictors of ANC service utilization in the Dubti district of Afar (8). Age and number of children had a positive and significant impact on self-reported use of ANC services among women in Afar pastoralist communities (10). In the case of using FP, women who had a positive attitude towards it (AOR = 4.7, 95% CI: 2.1, 10.3), where households owned radios (AOR = 1.8, 95% CI: 1.0, 4.2), where women were literate (AOR = 4.4, 95% CI: 1.8, 11.1), where households had a monthly income of U$27–U$55 (AOR = 2.0, 95% CI: 1.9, 4.7) and where households had a monthly income > U$55 (AOR = 4.6, 95% CI: 1.2–17.2) were predictors of using FP (9). In addition, the educational status of women was found to be a significant predictor of ANC use and ID (10, 15, 17).

Significant factors associated with ID included age at first marriage, number of children (10) , and attending ANC services (17). The educational status of women was found to be a significant predictor of ID and ANC attendance. A study from Southern Ethiopia indicates that predictors of ID are women who listen to a radio at least once a week (AOR = 3.4, 95% CI: 1.2, 9.89), male involvement at ANC services (AOR = 4.1, 95% CI: 1.3, 13.3), knowledge about the danger signs of pregnancy (AOR = 2.6, 95% CI: 1.0, 6.5), maternal knowledge about the need for professional help during childbirth (AOR = 3.6, 95% CI: 1.40, 9.30) and expectations of birth complications (AOR 3.7, 95% CI: 1.4, 9.7) (10).

Ruth Jackson's study (2016) reveals that with ambulance services to transfer women to health facilities, pregnant women would attend only for a tetanus toxoid vaccination, or to get care for sickness or problems during birth. The study also noted that women were too frightened to seek skilled birth attendance in a health facility unless it was an emergency (13). A study from Kenya showed that a lack of education was a reason for home delivery. It also pointed out that the synergy of women's lack of health awareness and men's ignorance of women's health led to exposure to reproductive health problems (19). The notion that health facilities should be visited solely for a current ailment or birth complication was found to be one of the main barriers to ANC, skilled birth attendance and PNC among women from the pastoralist communities of Ethiopia (25).

Cultural and religious beliefs: A review from Sudan indicates that the health and wellbeing of women are strongly influenced by beliefs related to religion (22). Moreover, women are fearful of seek health care services because they don't want to expose their bodies to male health care providers, which they think is against their religion (7, 23). Similarly, the Borana pastoralist community from Oromia, Ethiopia believe that reproductive health problems are caused by supernatural forces (18). Religious beliefs and traditional attitudes were among the factors that contribute to delays in seeking health care and the preference for home delivery in Afar pastoralist communities – religious leaders keep pregnant women at home and pray for them (7, 23). Women from pastoralist communities in Sudan and Ethiopia opted for self-care or home remedies, and consulting traditional religious healers. The traditional healers are perceived to have extraordinary powers to cure illnesses and other health problems (22, 23, 25). Another review from Ethiopia also points out that herbal solutions are used as primary remedies to treat birth complications. Danger signs and complications are initially identified and treated by traditional birth attendants (TBAs) before any decision is made to seek care for the expectant mother, and a mother can also be exposed to 'evil eye' while she is seeking PC (25). Among women from the pastoralist communities in Kenya, the fear of being naked and feeling ashamed were cited as barriers to ID (14).

Decision-making power/female empowerment: According to the literature review of pastoralists in Sudan, women's decision-making power is tempered by their husbands and religious leaders (22). Husbands generally control household income because they are the breadwinners. For most communities, women need approval from their husbands, and are not likely to make decisions independently. Not only do women need their husbands' approval so that they can access health care, but they also need to get money for transportation and service charges (18).

Perceived quality: The perceived quality of RMNH services provided by the health facilities in pastoralist communities is a critical precondition to improving service use by women. The evidence generated from the reviewed documents in the current study indicates that there is a perception that the quality of care provided at health facilities is poor (14). Evidence of the negative attitude of TBAs towards skilled birth attendants (SBAs), and women's perceptions of potential verbal and/or physical abuse by health care providers, were factors limiting the uptake of skilled birth attendance in Kenya. Separating a woman from her close relatives during skilled birth attendance was also reported as a factor that contributes to the low uptake of the services (14, 25). Some other culturally insensitive equipment and procedures could also inhibit the service. For example, beds in health facilities that do not allow women to deliver in a semi-sitting position was reported as a barrier to using skilled birth attendance in the pastoralist communities of Afar (23). Conversely, the current review revealed that the presence of ranges of health care services, well-equipped health facilities with necessary drugs and materials, as well as trained health professionals, would help women develop confidence to use RMNH services in these communities (14).

Travel distance: The long travel distance to reach health facilities from the spatial settlement of

pastoralists was found to be one of the main barriers to using RMNH services. Studies from Afar, Borana district and Malle district in the South Omo Zone of Ethiopia reveal that health care services are based in small towns, which are not easily accessible to mobile pastoralist women. Women may take three or four days to reach a hospital, and those who accompany them may need to walk or climb long distances, sometimes to the top of hills, to get a mobile phone signal network toto call an ambulance (7, 16, 18). Similarly, findings from pastoralist communities in Kenya and Sudan show that pregnant women are unable to walk long distances to reach the health facilities for ID and hence opt for home delivery (18, 22).

Affordability of services: Women's marginalized economic power and the high cost of RMNH services, including the indirect costs(cost related to family expense) in the pastoralist communities, were noted in the current review. In addition, the limited access to services and the expenses related to service use deter women from using RMNH services. Women in Borana perceived the existing health care delivery service to be expensive, even though the RMNH service is free in Ethiopia. Such a misconception may compel many women to rely more on traditional healing and traditional medicines (18). Moreover, women in Afar found assistance from TBAs more affordable than facility-based deliveries and have a greater trust in TBAs because of their shared belief system (23). The expense of medical services and transportation cost were also reported as a barrier to ANC and ID in Kenya (16).

Facilitators for increasing the use of RMNH services in pastoralist communities: The current study reviewed effective or high-impact interventions to facilitate/improve the uptake of RMNH services in the pastoralist communities of Sub-Saharan Africa. The high-impact interventions are AMREF Kenya's Boma model, the Ng'adakarin Bamocha model, mobile clinics, the 'One Health' approach, and Attendance incentives' (12, 24).

AMREF Kenya's BOMA model: In response to the non-sedentary(mobile) life of the pastoralist communities in Kenya, the Boma model has been designed to ensure that community migration does not disrupt access to health services. The model forms the lowest structure in terms of leadership, which is an ideal interface between the semi-migratory community and the other levels of health care delivery. It is an entry point to the households and community. In this intervention, men attend a half-day sensitization meeting on maternal, newborn and child health (MNCH) issues that seeks to promote male involvement. Men who participate in the sensitization session are required to share the information with other community members in the Boma. The model makes community health workers (CHWs) responsible for their own Boma first, and if migration takes place, it is common for a number of Bomas to relocate together, making it easy to track them. Hence, CHWs travel with the community, and households are easily traced as Boma members travel together (24). Following the implementation, it was observed that there were improvements in MNCH service use, case management of childhood illnesses, community mobilization, male involvement, integration of community structures (TBA, CHW, peer educators, mother–girl forum, cultural elder forum) to health-related issues, female empowerment, and community participation in health service delivery (24).

Ng'adakarin Bamocha model: This model was based on migratory routes of the Turkana pastoralists. It was adopted in 2007 to improve access to maternal and child health services. The intervention included introducing 20-feet long cargo container clinics that were strategically located along migratory routes to ensure the Ng'adakarin are always within walking distance of Level I (lowest health service) facilities. The container clinics are only operational when the communities have migrated to within their vicinity. When the community moves away, the next closest clinic is opened. A trained community nurse and CHW operate the clinics. Mainly, they provide curative services, immunization, and referral to Level II health facilities and community education. Community mobilization is used to raise awareness, increase health knowledge, and meet the demand for health care. The container is modified into two rooms, with one room operating as a clinic (fridge, radio, basic drugs and laboratory test kits) and the second providing accommodation for the attending nurse (12). Finally, results from pre- and post-interventions indicated that the number of women attending ANC more than once, and births assisted by trained medical practitioners, increased significantly, while those attending four or more ANCs, and deliveries without assistance, decreased significantly (12).

Mobile clinic: This review of evidence also indicates that the delivery of health services through mobile clinics is recognized as the best way to provide care to continuously moving pastoralists. Mobile clinics have been observed to be more cost-effective than fixed facilities. And it would be vital in pastoralit context the coverage of infrastructure basically road, electricity, water and health facility is limited. Hence, it redice the delay assoacited with decion making at household, accessing transport and getting qulity of acre which is vital in reduce maternal and child morbidity and mortality by providing the care at the grassroot level (22).

'One Health' approach: The 'One Health' approach – which is based on joint training and interventions for the vaccination of children, women and livestock – is also regarded as an effective approach to improve the uptake of RMNH services among women from the pastoralist communities of Sub-Saharan Africa (26). Where geographical barriers and transport problems are common, building maternity or maternity waiting homes (MWHs) was reported as a strategy to overcome

the challenges pastoralists encounter to uptake SBAs (22).

Attendance incentives': In Ethiopia, offering women an incentive package (a bar of soap and a bucket at the first visit; a mosquito net at the second visit; sugar, cooking oil and a jerry can at the third visit; and a delivery kit at the fourth visit) resulted in an increase in those accessing ANC services. As a result of this intervention, ANC 1 showed a 48% increase and, ANC 2 increased by 60%. There was a slight increase in the number of subsequent visits during the first year, followed by a drop in the number of visits in the second year. While there were logistical problems in the second year of this programme, resulting in items not being stocked (15), the success of the initiative suggests that, more generally, incentives could prove to be an effective way of increasing the use of ANC and other RMNH services.

Discussion

The review of the literature indicates that the main barriers to the uptake of RMNH services by women from pastoralist communities in Sub-Saharan Africa are long travel distances, lack of awareness, cultural and religious beliefs, women's lack of decision-making power, unfriendly behaviors of health workers, male midwives, and the poor quality of health care services. Conversely, factors associated with the use of RMNH services were the availability of a radio/TV in the household, having high monthly income, delays the age of the mother at first birth, having good knowledge about the danger signs of pregnancy and birth complications, and educated mother.

The review of evidence indicates that a lack of awareness about complications associated with pregnancy, and their consequences, deters the uptake of RMNH services. Likewise, cultural and religious beliefs about the causes of ailments and complications, and relying on TBAs and religious leaders to treat illness during and following pregnancy, continue to be significant barriers to the uptake of RMNH services. Besides, women's low decision-making power to visit health facilities, difficulties getting money to pay for costs related to services, and gender norms such as feeling ashamed to receive services from male health professionals, also hinder service use. Pastoralist women who overcome the above barriers to use RMNH services could also face challenges relating to long distances to reach health facilities, and the quality and affordability of services. This implies that there is a need to address female empowerment – education for girls and women, creating job opportunities for women, and male involvement if the barriers to RMNH service utilization are to be overcome.

To address the needs of pastoralist communities in terms of RMNH services, efforts have been made to design health care systems that fit with their culture, economy and lifestyle. Members of pastoralist communities are closely tied to each other and headed by elders. With this in mind, efforts to design health care delivery that reaches each group and clan have been implemented by local and international organizations, and some interventions have been found to be effective, such as the deployment of HEWs in Ethiopia, the Boma and Bamocha models in Kenya, the 'One Health' approach, mobile clinics, and the construction of MWHs. All of the interventions adopted a participatory approach and used men, clan or religious leaders as gatekeepers for health delivery. This may indicate that improving the participation of the community to design and implement RMNH services should be given due focus in interventions targeted at pastoralist communities.

Limitations of this review

This review of evidence did not involve a rigorous methodology and is not a systematic review. We did not include literature out of English language about pastoralist communities in relation to RMNH services. We reviewed the available literature, which included a mix of different types of study: literature reviews, reports, and document reviews and observation. Because of limited space, we did not include detailed descriptions of each paper: objective, study design, number of participants, sampling procedure, data collection method and type of analysis. We encourage interested researchers to explore in more detail the studies summarized in this review.

Conclusion and recommendation:

The coverage for RMNH service among pastoralist community was not adequate. TBAs were the most attendants of home delivery. Little evidence was obtained about RMNH service in general and Family planning and postnatal care service in particular. Lack of awareness, lack of husband permission, lack of trust on the quality of health service and bad behavior of health professional, presence of male midwives and disbelief in modern treatment lack of transportation, early marriage and pregnancy, low decision making power of women, lack of money, emergent labour ,and distance were factors hinders use of RMNH service among pastoralist community.

Male involvement on RMNH service utilization, the use of existing structure in the pastoralist community and integrates health related issues in the community(Boma and Bomacha), mobile clinic and one health approach which is the joint training and interventions for the health of human being and their livestock was found effective in addressing the RMNH issue among pastoralist community.

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