REVIEW ARTICLE

Demand for Women's Health Services in Northern Nigeria: A Review of the Literature

Irit Sinai[1], Jennifer Anyanti[2], Mohsin Khan[3], Ramatu Daroda[4] and Olugbenga Oguntunde[1,5]*

Palladium, 1331 Pennsylvania Ave., NW, Washington, DC 20004[1]; Society for Family Health, Abuja, Nigeria[2]; eHealth Africa, Kano, Nigeria[3]; UNFPA ESARO[4]; Maternal Newborn and Child Health (2) Programme, Kano, Nigeria[5]

*__For Correspondence__: Email: *Irit.sinai@thepalladiumgroup.com*; Phone: +1 202 7759680

Abstract

Demand for and utilization of women's health services in northern Nigeria are consistently low and health indicators in the region are among the poorest in the world. This literature review focuses on social and cultural barriers to contraceptive use, antenatal care, and facility births in northern Nigeria, and influencers of young women's health-seeking behavior. A thorough search of peer reviewed and grey literature yielded 41 publications that were synthesized and analyzed. The region's population is predominantly Muslim, practicing Islam as a complete way of life. While northern Nigerian society is slowly changing, most women still lack formal education, with a significant proportion married in their teens, and the majority neither socially nor economically empowered. The husband largely makes most household decisions, including utilization of healthcare services by members of his household. These practices directly impact women's health-seeking behaviors for themselves and for their children. Programs seeking to improve women's health outcomes in northern Nigeria should involve women's influencers to affect behavior change, including husbands, religious leaders, and others. More research is needed to identify pathways of information that can be utilized by programs designed to increase demand for health services. *(Afr J Reprod Health 2017; 21[2]: 96-108).*

Keywords: Maternal health, family planning, demand-side, Northern Nigeria, literature review

Résumé

La demande et l'utilisation des services de santé des femmes dans le nord du Nigeria sont toujours faibles et les indicateurs de santé dans la région sont parmi les plus pauvres du monde. Cette revue de la documentation se concentre sur les obstacles sociaux et culturels à l'utilisation de contraceptifs, les soins prénatals et les naissances dans des établissements dans le nord du Nigéria, et les influences du comportement de recherche de la santé des jeunes femmes. Une recherche approfondie de la documentation grise et évaluée par les pairs a permis d'obtenir 41 publications synthétisées et analysées. La population de la région est majoritairement musulmane, pratiquant l'islam comme toute une mode de vie. Tandis que la société au nord du Nigeria évolue lentement, la plupart des femmes manquent encore d'éducation formelle, avec une proportion importante mariée dans leur adolescence et la majorité n'étant ni socialement ni économiquement habilitée. Le mari prend en grande partie la plupart des décisions du ménage, y compris l'utilisation des services de santé par les membres de son ménage. Ces pratiques influent directement sur les comportements de recherche de la santé des femmes pour eux-mêmes et pour leurs enfants. Les programmes visant à améliorer les résultats de la santé des femmes dans le nord du Nigeria devraient impliquer les gens qui influencent des femmes pour affecter le changement de comportement, y compris les maris, les chefs religieux et d'autres. De plus amples recherches sont nécessaires pour identifier les voies d'information qui peuvent être utilisées par des programmes conçus pour accroître la demande de services de santé dans la région. *(Afr J Reprod Health 2017; 21[2]: 96-108).*

Mots clés: santé maternelle, planification familiale, côté de la demande, nord du Nigeria, revue de la documentation

Introduction

Women are part of their community, and do not live in isolation. Every decision a woman makes is influenced by those around her – her husband, relatives, friends, and the community. While women may receive accurate health information from facility- and community-based health providers, their health-seeking decisions are influenced also by stories that circulate in the community and their observations of how others around them behave. Therefore, programs that

seek to increase demand for services must understand the cultural milieu and community perceptions and values that drive demand, as well as who influences women's health service-seeking decisions and how.[1,2]

This paper reviews the literature relating to women's health-seeking behavior in northern Nigeria, a region with an estimated population of about 70 million.[3] Health indicators in northern Nigeria are among the poorest in the world. The total fertility rate for north-west Nigeria in 2013 was 6.7, only slightly down from 2008 (7.3), compared to the national figures of 5.7 and 5.5 for 2008 and 2013 respectively. Similarly, only 3% of women in the north-east region of the country were using contraception in 2013, and the figure is even lower for rural areas in the region.[4]

While studies exist on demand for health services in sub-Saharan Africa, not much has been published about the unique case of northern Nigeria. This review fills this gap by evaluating the existing literature (peer-reviewed and grey) about women's demand for and utilization of family planning and maternal health services in northern Nigeria, to present a complete picture of all information available on this topic to date. We also examine the types of people who influence young women's health-seeking behaviors or interventions that they utilized to affect behavior change. This review offers programmatic implications for projects aiming to improve young women's health outcomes in northern Nigeria.

Methods

To identify all published literature on the topic of interest, we searched bibliographic databases, including PubMed/MEDLINE, POPLINE, Web of Science/Social Science Citation Index, and EBSCO host Academic SEARCH Complete. Throughout the search we identified additional literature through web searches, review of relevant international agencies and project websites, current awareness searches of relevant journals, blogs and listservs. The search included a combination of MeSH Terms including "Nigeria" and: "Maternal health services"; "Child health services"; "Decision-making"; "Health, Knowledge, Attitudes & Practice"; "Culture"; "Socio-economic factors"; "Family planning"; "Pregnancy"; and "Contraception behavior".

Keyword searches were supplemented with free-text and Google searches for those articles not assigned MeSH Terms, including the phrases: "Peer networks", "Social networks", "Social network analysis", and immunization. Additional searches for northern Nigeria and "ethnographic" or "sociocultural factors" were undertaken. Some identified reports included useful bibliographies which were screened for relevant references not retrieved elsewhere. We did not limit our search to a specific time period. Including older literature in the analysis allowed us to review trends over time.

The search was limited to the following north-east and north-west Nigerian states: Adamawa, Bauchi, Borno, Gombe, Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, Taraba, Yobe, and Zamfara, as these are relatively homogenous in terms of geography, ethnicity, religion, and culture. The full search yielded 697 references. We screened titles, and when available abstracts, of all identified publications using the following inclusion criteria to identify studies that: (1) relate to women's health in northern Nigeria; (2) are about health-seeking behavior related to family planning, antenatal care, and obstetrics; (3) describe the northern Nigerian culture; (4) assess the effect of northern Nigerian culture on utilization of health services, and on demand-side factors for health-seeking behaviors; (5) describe programs influencing health-seeking behaviors, or people or organizations that can influence health-seeking behaviors, and programs utilizing them.

We excluded publications pertaining to Nigeria as a whole with no specific reference to northern Nigeria; publications focusing on health-related behaviors associated with other services such as nutrition, HIV testing, and general education; publications stating that religion and culture are determinants of behavior without providing specifics (e.g., the percent of respondents who claim they do not use services for religious reasons); and those discussing supply-side programs and other interventions that do not refer to cultural norms or conventions, or to people who are influential in women's decision making. At this stage, we also excluded literature related to

demand and utilization of immunization and child health services.

This process resulted in 62 references for which we obtained full copies, which were then read thoroughly to ascertain that they met the above criteria, and many were excluded from this review. We included all viewpoints, and used data from formal and grey literature, from quantitative and qualitative data sources, to ensure that the final synthesis provides a complete picture of: (1) aspects of northern Nigerian culture that influence women's health behavior (related to contraceptive use, antenatal services, and birth); (2) people and groups who influence women's health decisions; and (3) every program documented to have used influencers to affect behavior change related to women's health.

The final number of publications synthesized in this literature review was 41. Given the small number of publications, we used all sources we found, regardless of year or type of publication. The publications are listed on Table 1. Figure 1 summarizes the type of publications we reviewed. More than half were published in peer reviewed journals, and about half were published between 2011 and the present (Figure 1).

Analysis included a through reading of the selected manuscripts, review of themes, finding similarities and differences, triangulating the different resources, and synthesizing all the available information. Initial review was done by one of the authors, and results were further assessed and refined by other authors and members of the broader research team, to assess emerging themes and interpret findings.

Results

A cohesive and consistent story emerged from our synthesis of the evidence which we present here. We start with a description of elements of northern-Nigerian culture that are relevant to women's health decisions and how these elements influence demand for and utilization of family planning, antenatal care, and facility delivery services. We continue with a discussion about women's influencers, and conclude with a review

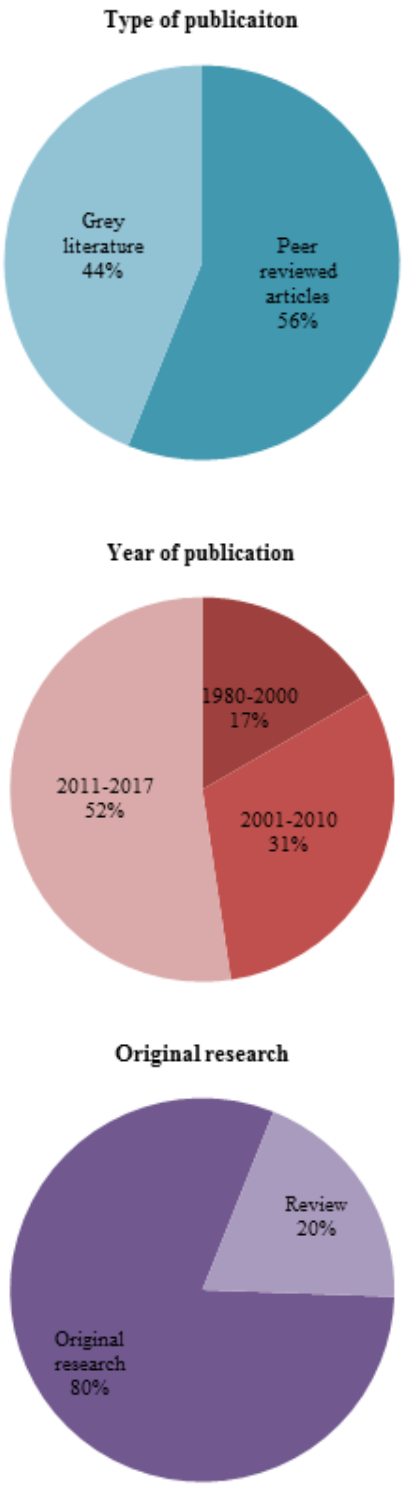

Figure 1: Classification of Reviewed Sources

Table 1: Reviewed References

Author	Year of publication	Methodology	Type	State
Abdul et al.	2012	Review	Grey	Northern Nigeria*
Abdulkarim et al.	2008	Qualitative	Peer reviewed	Borno
Adamu and Salihu	2002	Survey	Peer reviewed	Kano
Adbdulkareem	2011	Review	Grey	Northern Nigeria
Ankomah et al.	2011	Survey	Peer reviewed	Northern Nigeria
Ankomah et al.	2013	Qualitative	Peer reviewed	Northern Nigeria
Aradeon et al.	1992	Review	Grey	Northern Nigeria
Aransiola et al.	2014	Qualitative	Peer reviewed	Kaduna
Austin et al.	2015	Survey	Peer reviewed	Northern Nigeria
CEDPA	2012	Intervention	Grey	Northern Nigeria
Csapo	1981	Review	Peer reviewed	Northern Nigeria
Doctor et al.	2012	Mixed methods	Peer reviewed	Katzina Yobe Zamfara
Gummi et al.	1997	Intervention	Peer reviewed	Kebbi
Ibisomi	2007	Qualitative	Peer reviewed	Northern Nigeria
Idris et al.	2015	Survey	Peer reviewed	Kaduna
Iliyasu et al.	2012	Mixed methods	Peer reviewed	Kano
Izugbara and Ezeh	2010	Qualitative	Peer reviewed	Jigawa, Kano
Izugbara et al.	2010	Qualitative	Peer reviewed	Jigawa Kano
Khalid	2004	Qualitative	Grey	Kebbi
Kisekka	1988	Review	Grey	Northern Nigeria
Krenn et al.	2014	Survey	Peer reviewed	Kaduna
Mairiga	2007	Qualitative	Peer reviewed	Borno
Mangywat	2003	Project report	Grey	Northern Nigeria
Mercy Corps	2013	Project report	Grey	Northern Nigeria
NURHI[a]	2011	Qualitative	Grey	Kaduna
NURHI[b]	2011	Qualitative	Grey	Kaduna
Nyako et al.	2011	Intervention	Grey	Northern Nigeria
Ojanuga et al.	1992	Survey	Peer reviewed	Kaduna
Okeshola and Sadiq	2013	Mixed methods	Peer reviewed	Kaduna
Public Opinion Polls	1993	Qualitative	Grey	Bauchi
Schwandt	2011	Qualitative	Grey	Kaduna
Segun et al.	2007	Qualitative	Grey	Kano Zamfara
Shamaki and Buang	2014	Review	Peer reviewed	Northern Nigeria
Shamaki and Buang	2015	Survey	Peer reviewed	Sokoto
The Mitchel Group	2014	Project report	Grey	Niger Sokoto Zamfara
Tukur et al.	2010	Survey	Peer reviewed	Kaduna
Ujuju et al.	2011	Intervention	Peer reviewed	Katsina
UNFPA	2008	Conference nots	Grey	Northern Nigeria
Wall	1998	Review	Peer reviewed	Northern Nigeria
Wolf et al.	2008	Review	Grey	Northern Nigeria
Yusuf	2005	Curriculum	Grey	Northern Nigeria

*The category 'Northern Nigeria', includes studies that occurred in more than three states, and papers that discussed northern Nigeria in the aggregate.

of the few documented programs that used influencers to affect behavior change in northern Nigeria.

The northern Nigeria cultural milieu

Religion and culture are closely intertwined in northern Nigeria; both involve systems of actions, justified by values and beliefs. The region's ethnic majorities are Hausa and Fulani, and the population is predominantly Muslim. Islam in northern Nigeria is a complete way of life, governing behaviors both inside and outside the home.[5] Women in northern Nigeria often refrain from going out, socializing, and working without their husband's explicit permission. Some are not even permitted to see their natal relatives after they marry.[6] When married women cannot leave their homes they rely on their daughters as the main contact with the outside world, including buying and selling at the market, which these young girls do instead of going to school[7].

About two thirds of women of reproductive age in northern Nigeria have no formal education; and of these, about three quarters are illiterate[4]. While younger women are generally better educated, the figure for women 15-24 years old with no education is still 58.1% and 55.5% for north-west and north-east regions respectively[7]. Early marriage remains a common practice[7,8]. In 1981 Csapo stated that "*In most parts of Hausaland child marriage is the rule […] the father has the right to contract his virgin daughter in marriage regardless of her wishes and without consultation with the mother*"[9]. Marital age has not increased much since Csapo published his work more than thirty years ago. The 2013 DHS showed that among married women in northern Nigeria, age 15-24, the median age of marriage was 15, and many girls married when they were 12 years old or younger[4].

Men in northern Nigeria are considered leaders, bread winners, and the authority within the family, community, and society[10]. Women are valued mainly for their reproductive function and the number of children they bear. Women are therefore highly dependent on their husbands, and defer to them in all household decisions, including decisions relating to their own health[6,8,11].

Demand for family planning services

Couples in northern Nigeria desire many children, and therefore do not wish to use contraception[12-15]. Several religious and cultural norms contribute to this phenomenon. A 1991 national study found that most Muslim participants followed the religious injunction to procreate with a prevailing belief that children constitute a continuous flow of gifts from divine providence, and, as such, none should be refused[12]. Focus group discussions conducted with men and women in 2007 and 2013 showed that in Kano State, for example, this very literal interpretation of the scriptures still prevailed[13-15]. People wanted to have many children also so that their lineage is continued and their prestige improves. An older study found that parents wanted to have many children in the hope that at least a few will be successful enough to provide financial security for the rest of the family[12]. No recent study was found to corroborate this cultural preference.

Since polygamy is a common practice in the region, wives compete to bear the most children in order to inherit a larger share of their husbands' property[8]. Women in monogamous marriages often desire more children, to dissuade their husbands from seeking a second wife[12,16]. Preference for male children, who are perceived to bring honor to their parents, increases the desire for more children[8,12], and some men simply feel pride in having more children[17].

When couples do want to limit the number of children they have, perceived societal opposition or disapproval inhibits contraceptive use. Women who use contraception are often perceived to be promiscuous; men who allow their wives to use contraception are considered weak[14].

Demand for antenatal care and hospital delivery

Maternal mortality rates in northern Nigeria are among the highest in the world. This can be attributed largely to women avoiding antenatal and postnatal care, and the choice of many to deliver their babies at home and alone, as they perceive

that doing so gives them prestige[18].

Socio-cultural conventions drive these behaviors, as confirmed by a study conducted in Zamfara and Kano States[19]. The study identified many reasons for not delivering in a hospital, including poor services (unpleasant attitudes of health workers; lack of adequate equipment, drugs and skilled medical personnel; having male medical personnel attend to pregnant women); others reflected cost and lack of access; but many were socio-cultural. A recent study identified religion in Nigeria as a determinant of poor maternal health utilization, as Muslim women were significantly less likely to obtain services than other women, even when controlling for geographic region[20].

A 2002 study surveyed all pregnant women in a rural area in Kano State (n=107) and found that 88% were not receiving antenatal care. When asked why, 17% said that their health is 'God's will', and 8% said there was no reason for them to attend, as they were perfectly healthy[21]. A more recent study found some improvements. The authors interviewed women in Katsina, Yobe, and Zamfara States. Only 27% of those with a live birth in the previous five years (n=1,189) had attended at least one antenatal consultation. While 30% sought advice from friends, family or traditional birth attendants in their community, the remainder did not seek or receive pregnancy-related advice from anyone, not even their mothers[22]. In focus group discussions the researchers probed and discovered a very deeply ingrained belief that pregnancy is a normal part of married life, and pregnant women do not need any assistance or special treatment. A 1988 presentation claimed that Hausa pregnant women are expected to practice the custom of disguising signs of pregnancy and labor and refraining from discussing their pregnancy, especially their first pregnancy. With the onset of labor, the young mother-to-be is supposed to exhibit bravery and endure pain silently[23]. This custom was confirmed by Wall (1998)[24]. The findings from Doctor *et al*.[22] suggest that not much has changed since these earlier studies were published, as only 13% of women delivered their most recent baby in a health facility (compared to the national average of 35%)[4]. Of those who delivered at home, many preferred to deliver completely on their own without assistance from anyone. In focus group discussions the view was that there is no reason for mothers not to deliver at home without outside help[22]. Similarly, respondents to in-depth interviews in Kaduna State said that delivering at home and alone is as safe as in the hospital[25].

Of interest also is the couple's decision-making process in cases of an obstetric emergency. A 2010 study described how pregnant women in three rural northern Nigerian communities responded to maternal complications outside of a hospital setting[26]. They interviewed 322 women who had recently given birth, of which 15% had at least one complication. Some 20% did nothing, as they waited for their husband to return and give them permission to seek help (an average of two hours); 35% consumed or applied herbal remedies, and only went to the hospital when these did not work.

Who influences women's health decisions?

A large survey examined the rates of contraceptive use by women's communication about family planning. Results show that women who discuss child spacing with others are much more likely to practice contraception than women who do not. Women who talk about contraceptive use with school teachers are most likely to be using family planning (16%), followed by women who discussed it with religious leaders (15%) and parents (15%)[27]. While the study did not include women's communication with their husbands, men are obvious influencers in women's health decisions, since they are considered to be the authority within the family[10]. An older study[28] found that more than three quarters of respondents in a survey of men, senior and junior wives believed that men are, and should be, decision-makers with respect to their wives' health. In a more recent study, when asked who women can talk to about family planning, women in Kaduna State said 'their husband'[29]. The author quotes a focus group respondent, who said: "She should consult her husband first because he owns her." When asked who else they could talk to, women mentioned their mothers, mothers-in-law, and friends, to ask for advice about how to talk to their husbands (rather than consult them about

contraceptive use). Women could also ask their mothers or mothers-in-law to initiate the contraceptive conversation with their husbands for them[29].

In-depth interviews with young women and men in Kano and Zamfara States found that most believed the men to be the ultimate decision-maker regarding child spacing and contraceptive use[30]. Another study found that most men will only allow contraceptive use when the woman's life is in danger[14]. While there is some covert use of modern contraception, this is mitigated by the common belief that a man would leave his wife if he discovers that she uses contraception without his knowledge[14].

Couples in northern Nigeria do not usually communicate about contraceptive use and child spacing. It is difficult for wives to initiate the family-planning talk, as many fear the prospect, especially if they suspect that their husband is opposed to contraceptive use[14]. Formative research for Nigerian Urban Reproductive Health Initiative (NURHI) in four states, among them Kaduna State in the north, found that women felt men should start the conversation, and men felt their wives should start the conversation, and so the contraceptive conversation never happened[31]. Poor spousal communication is, in many ways, driven by the many reasons couples want to keep having children, as described above[32].

Many women in northern Nigeria are still not allowed to leave their home without their husband's permission. Many husbands do not give permission, as indicated by the various studies in which respondents said they did not attend antenatal services, or did not deliver in a facility, because they did not have their husband's permission[19,21,22,33-35]. Yet many women would prefer to deliver in a hospital given the opportunity. A 2013 study in Kaduna State found that 83% of women would prefer to deliver in the hospital if they could, mostly for the safety of mother and child[25].

Men are not women's only influencers. A study that examined communication patterns between mothers and daughters in northern Nigeria found that the majority of daughters acquired reproductive health education from their mothers[36]. Yet some young women feel that they cannot talk to their mothers about their pregnancy, and are forced to rely on their friends for information, which is often inaccurate and misleading[6]. Given how closed the society is, and the difficulty women have of leaving their home, of interest also is where social interactions occur. Younger and older groups of women in Kaduna State recognized schools, mosques, community leaders' palaces, and restaurants as places for social interaction[37].

The literature shows that religious and community leaders can also influence women's decisions about their health. Religious leaders who were discussants at a United Nations Population Fund (UNFPA) conference on roles of traditional and religious leaders in maternal health, held in Sokoto State, acknowledged that traditional and religious leaders can make substantial contributions to reducing maternal mortality, provided they are sufficiently informed and effectively mobilized[38].

A study in Borno State interviewed a representative sample of religious leaders and Muslim scholars and found a lot of ignorance about reproductive health issues. Yet, when the concepts were explained to them, they adopted positive attitudes toward reproductive health programming, provided that activities did not conflict with Islamic teaching[39]. Also, in many cases leaders influence men more than they do women[11]. Therefore they can influence women through influencing their husbands.

A 2010 study interviewed religious leaders in Zamfara State. Respondents indicated religious tolerance to hospital delivery, and identified programmatic opportunities to increase demand for hospital delivery by engaging religious leaders to give their congregation the message that Islam supports hospital delivery and orthodox medicine[19].

The impetus for this literature review was the idea that innovative programs to increase demand for maternal and child health services can be developed to educate people who influence women's health-seeking behaviors. This possibility was acknowledged in focus groups in Borno State, designed to assess community perceptions of maternal mortality. Respondents suggested that to improve health outcomes,

religious leaders should be informed and husbands should be educated and counseled on allowing their wives to attend antenatal services and deliver in a health facility[40]. Few interventions in northern Nigeria utilized influencers to effect women's health seeking behavior. In the next section, we present those that we could find.

Interventions involving religious or political leaders

A 1997 study described a community education intervention in Kebbi State, designed to make opinion leaders, such as village chiefs, change agents in the community. To encourage use of emergency obstetric services they were trained in key messages for four months[41]. Community awareness and other indicators improved, however since this was one of a package of interventions undertaken in the community concurrently, increases in demand for services cannot be attributed to this intervention alone. Still, the researchers concluded that involving opinion leaders in their communication effort was successful in getting new information to women and men in the community. Note that utilization of services improved in some facilities but declined in others, suggesting that improved knowledge does not necessarily translate to behavior change.

Center for Development and Population Activities (CEDPA) implemented a program in northern Nigeria aimed to improve family welfare by training Imams and sensitizing religious leaders to take action to promote safe motherhood, birth spacing and education of girls. These leaders were also urged to advocate for reproductive health and family planning support. The Chief Imam clarified Islam's position on using modern contraception, affirming the critical message that birth spacing is desirable for the well-being of mother and child. Getting buy-in from the Chief Imam helped to positively influence the network of Islamic leaders in northern Nigeria. No information is available on the impact of this project on health-service utilization[42].

A project implemented by Development Research and Projects Center targeted some of the most conservative religious leaders in zones with the highest maternal mortality rates. Using a multi-stage leadership development model, they trained religious leaders, supported them to attend a study tour in Egypt, facilitated their use of internet and mobile communications technologies to host community dialogues with Egyptian scholars participating via video link to reinforce correct messages, and convened step-down trainings for lower level religious leaders. By the end of the project there was a reduction in negative and incorrect statements by religious leaders and increase in positive and correct pronouncements. An increase in utilization of maternal and child health was noted in all project areas. These results were available on the project web site when we began our review, with no information about how they were obtained or measured. Since then the project ended, and their web site is no longer active. We found reference to the project in the final report of the United States Agency for International Development (USAID) 'The leadership development for family planning/reproductive health for political office holders, traditional and religious leaders' project, but with few details[43].

Interventions involving men

The USAID-funded Maternal and Child Health Integrated Program trained 247 male motivators in Kano, Katsina, and Zamfara States to counsel men, religious leaders and traditional rulers in the communities on the importance and benefits of healthy timing and spacing of pregnancies and the use of modern contraceptives. Their intervention demonstrated that male involvement in family planning programming can be successful in increasing demand for family planning services, in northern Nigeria. The 19% contraceptive acceptance rate in the project was significantly higher than the known figures for the region (3% per 2008 DHS[44]). However, this result means that 81% of the counseled men did not receive a method for themselves or their wives, suggesting that there is room for much improvement[45].

A safe motherhood project in Kano State involved fathers' clubs. The project linked high profile opinion leaders to these clubs to improve social learning among peers[39]. No information is available about the influence of this intervention

on uptake of health services.

Fertility awareness-based methods of family planning are unique in that they are not women's methods (such as contraceptive pills) or men's methods (such as condoms). Rather, they are couple methods, and cannot be practiced without consistent couple communication. CycleBeads is a modern fertility awareness-based method that is currently available in public health facilities in several northern Nigerian states, as part of the basket of services available to women. The method identifies days 8-19 of the menstrual cycle as fertile for all users, and is most effective for women with cycles that usually range 26-32 days. Users utilize a string of beads (CycleBeads) to determine the days in which they should avoid unprotected intercourse to prevent pregnancy[46]. An intervention in Katsina State that introduced CycleBeads to couples found that men were very receptive to it. Results show that men who learned about the method and introduced it to their wives were very likely to use the method correctly. An added benefit in polygamous marriages, was that men whose wives were using CycleBeads chose which wife to spend the night with based on the days the method identified as not fertile. The authors concluded that the method should be introduced broadly in the region to increase contraceptive prevalence overall[47].

Interventions involving peers or older women

Most traditional birth attendants in northern Nigeria are uneducated and the care they provide is often questionable, yet they have an established role in many communities as respected figures that are thought to promote health. CEDPA implemented a project that used traditional birth attendants in northern Nigeria to distribute contraceptive methods. They were able to reach women in purdah, and were trusted within the community, giving them access to women[39]. No information is available about changes in uptake of contraception as a result of the program.

We could not identify in the literature programs involving peers or older women, other than traditional birth attendants, to improve health-seeking behaviors of young women. However, the 100 Women Groups is a strategy that may be used for this purpose. The strategy fosters the participation of women's groups in traditional, political, and legislative decision-making processes, by harnessing the strengths of existing traditional women's organizations and community-based organizations, in support of civil society. The program brings together various women's groups (cultural, religious, economic, social, or professional), to create larger, stronger, more influential groups. After a large group is formed, members are given an orientation to the program, and are trained in mobilization and networking skills. The groups meet regularly to discuss issues that the group should address. In northern Nigeria, the program's success revolved around raising awareness of reproductive health, safe motherhood, and the importance of girls' education[48].

Discussion

The literature presents a consistent picture of northern Nigeria as a conservative society, with cultural and religious conventions that still limit demand for and utilization of health services. It is not surprising that after years of programming, maternal and child health indicators in northern Nigeria have not significantly improved and are still among the poorest in the world. Women who are not allowed to go out do not attend services even if they understand the need for them; couples who want to have many children do not use contraceptives; women who believe that only God can influence their health, do not seek health services. Therefore programs aimed at improving women's health outcomes in northern Nigeria should not only present women with information. To affect behavior change they should influence perceptions, beliefs, and norms, and create enabling communities that allow women to adopt health-seeking behaviors without being stigmatized.

The literature confirmed that influencers play an important role in women's health behaviors. The most obvious influencer is the woman's husband. Since women need their husband's approval for most actions and decisions they make, one way to change women's behavior

is to educate their husbands. Men need to understand the advantages of having fewer children, utility of contraceptives, importance of antenatal services, and the life-saving benefits of facility-based deliveries. We posit also that programs should promote the practice of men giving their wives blanket permission to go out and seek health services for themselves and their children. This will reduce mortality in medical emergencies where the husband is not at home. Religious and traditional leaders may also influence women's health-seeking behaviors. Programs that employ them may contribute to increased demand for services, but only if they target not only the young women, but also their husbands. Since religious beliefs are very deeply ingrained, it is crucial for such programs to exclude messages that could be perceived as inconsistent with the teachings of Islam. Moreover, the literature suggests that religious leaders can be more effective when they do not only preach or promote certain behaviors, but when they practice these behaviors themselves, and make this known to the community. Therefore programs that use religious and traditional leaders as role models hold promise. Older women (mothers, mothers-in-law) may also be used in programs to increase young women's demand for health services, but the connection is less obvious. While mothers largely educate their daughters, there is not always communication between them about maternal health. Also, after women marry, some still have little contact with their mothers. Mothers-in-law may therefore be a better programmatic option. It is quite possible that other groups or individuals can be identified to influence women's health decision making. One study suggested that women who discussed child spacing with school teachers were more likely to use contraception, yet no program has been implemented using school teachers. Another example is the wives of religious leaders, as in some Muslim communities they influence women's opinions more than their husbands. On the other hand, knowing who the people are who can potentially influence women does not tell us much about who would be the most effective influencers or how a program can achieve real measurable change by employing them. For example, while teachers can influence women's behavior, if few girls get formal education, they are not exposed to teachers, and working with teachers may therefore not make a substantial difference in health outcomes.

While this review has clear programmatic implications, much more can be learned to guide the design of innovative programs with a chance of improving demand for women's health services, despite cultural opposition to services. For example, social network analysis studies with women and men can provide information important to program design, by more clearly outlining the pathways of information flow in the community, and identifying who, exactly, women and men talk to and seek advice from. Programs can then be designed that capitalize on these relationships to affect behavior change. It may be helpful to study the reasons why men do not give their wives permission to seek health services. Ignorance about the benefits of services and cultural or religious beliefs may be only partially to blame. It is possible, for example, that men cannot afford to give their wives money for transportation to the facility, and withhold their permission so as not to lose face.

Many women in northern Nigeria do not leave their homes without their husbands' approval. Therefore, for these women to attend services, or deliver in a hospital, several things must happen: (a) the woman should know about the availability of these services, (b) services must be accessible and affordable, (c) the woman should believe that these services will contribute to her health and the health of her baby, (d) community perceptions of the services should be positive, (e) the woman should feel empowered to ask her husband for permission to attend services, and (f) the husband must agree. The 2013 DHS[4] shows that most women are already aware of services. Several programmatic and research lines of work emerge as promising in improving health outcomes in northern Nigeria. While supply-side programming (availability, quality, accessibility) are essential, demand-side interventions can and should be implemented that work not only at the individual and couple levels, but also at the community level, to create enabling communities without stigma or negative perceptions toward

maternal and child health services. Few studies evaluated programs that used influencers to affect change in health-seeking behaviors. Therefore studies to determine how these influencers can be used in programs will also be useful. Programs using more than one type of influencer (such as religious leaders and mothers-in-law), should also be designed. These programs must then be evaluated by rigorous operations research. Finally, dose-response studies may also be helpful, to identify the tipping point after which demand for services begins to increase more readily.

Limitations

This review had some limitations. The literature on our issues of interest is limited. Some resources are old enough that social conventions may have changed since they were written; also we did not assess the quality and methodological validity of reviewed sources. Therefore some assertions we make in the review are based on only one or two studies, sometimes from grey literature, and cannot always be substantiated, validated, or generalized. And yet the compelling story the literature presents is consistent, suggesting that it is a true representation of women's health decision-making in northern Nigeria today.

Conclusion

Maternal health indicators in northern Nigeria are still among the poorest in the world. This literature review focused on demand-side factors to health service utilization, and confirmed that women are influenced by those around them as they make decisions to utilize health services for themselves and their children. Things are changing in northern Nigeria, albeit slowly. Interventions designed to increase utilization of maternal and child services that involve the people who influence young women's decisions, including their husbands, religious leaders, and older women, hold promise.

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Contribution of Authors

Irit Sinai initiated the literature searches, reviewed all references, synthesized the findings, and prepared a first draft of the manuscript; Jennifar Anyanti, Mohsin Khan, and Ramatu Daroda contributed to interpretation and synthesis of the findings; Olugbenga Oguntunde conceptualized the literature review and contributed to research design, interpretation and synthesis of findings. All authors reviewed the manuscript and approved of it.

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