REVIEW ARTICLE

Engendering the Attainment of the SDG-3 in Africa: Overcoming the Socio Cultural Factors Contributing to Maternal Mortality

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Abstract

At the conclusion of the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) provide an opportunity to ensure healthy lives, promote the social well-being of women and end preventable maternal death. However, inequities in health and avoidable health inequalities occasioned by adverse social, cultural and economic influences and policies are major determinants as to whether a woman can access evidence-based clinical and preventative interventions for reducing maternal mortality. This review discusses sociocultural influences that contribute to the high rate of maternal mortality in Nigeria, a country categorised as having made "no progress" towards achieving MDG 5. We highlight the need for key interventions to mitigate the impact of negative sociocultural practices and social inequality that decrease women's access to evidence-based reproductive health services that lead to high rate of maternal mortality. Strategies to overcome identified negative sociocultural influences and ultimately galvanize efforts towards achieving one of the tenets of SDG-3 are recommended. *(Afr J Reprod Health 2016 (Special Edition); 20[3]: 62-74).*

Key Words: Maternal Mortality, Preventable maternal death, SGD, Cultural Factors, Respectful Maternal care, Nigeria

Résumé

Comme le rideau est tiré sur les Objectifs du Millénaire pour le développement (OMD), les objectifs de développement durable (ODD) offrent la possibilité d'assurer une vie saine, promouvoir le bien-être social des femmes et mettre fin à la mortalité maternelle évitable. Cependant, les inégalités en matière de santé et les inégalités en matière de santé évitables occasionnés par des influences et des politiques sociales, culturelles et économiques défavorables sont des déterminants majeurs quant à savoir si une femme peut accéder à des interventions cliniques et préventives fondées sur des preuves pour réduire la mortalité maternelle. Cette revue discute des influences socioculturelles qui contribuent au taux élevé de mortalité maternelle au Nigeria, un pays classé comme ayant fait "aucun progrès" vers la réalisation de l'OMD 5. Nous soulignons la nécessité d'interventions clés pour atténuer l'impact des pratiques socioculturelles négatives et les inégalités sociales l'accès des femmes à cette diminution des preuves basées services de santé génésique et de plomb à taux élevé de mortalité maternelle. Les stratégies visant à surmonter les influences identifiées socioculturelles négatives et, finalement, de galvaniser les efforts en vue d'atteindre les objectifs de développement durable sont recommandés. *(Afr J Reprod Health 2016 (Special Edition); 20[3]: 62-74).*

Mots clés: mortalité maternelle, mortalité maternelle évitable, SGD, facteurs culturels, soins maternels respectueux, Nigeria.

Introduction

The Sustainable Development Goals (SDGs), officially known as "transforming our world: the 2030 Agenda for Sustainable Development," are an intergovernmental set of 17 aspiration Goals with 169 targets[1]. The Goals are contained in paragraph 54 United Nations Resolution A/RES/70/1 of 25 September 2015. Adopted in September 2015, the post-2015 development agenda seeks to reinforce commitment to achieve all Millennium Development Goals (MDGs) as well as break new grounds with goals on inequality, economic growth, decent jobs, energy, climate change, sustainable consumption and production, peace, and justice, among others. The thrust of the third goal of the SDGs is to *ensure healthy lives and promote well-being for all at all ages*[1]. SGD3 was designed, in part, to conclusively address the unfinished business of MDG 5a which called for a 75% reduction in maternal mortality rate from 1990 to 2015. This is important because pregnancy and birth-related complications constitute major drivers to the increasing burden of death and disability, especially in low-income countries.

As of 2015, global reviews of progress towards achieving MDG 5a indicated a steady

decline in the maternal mortality ratio (MMR) with sub-Saharan Africa recording a 49% decrease in comparison with 1990 values[2]. However, this was still far below the global target of 75% reduction. Interestingly, data from the Nigerian 2015 MDGs Endpoint Report suggests that the country did indeed, exceed the global target with a 75.7% reduction in MMR[3]. The report stated that "Nigeria began to find its rhythm in the implementation of the MDGs from 2005." According to the report, MMR decreased consistently in the following years to 545 in 2008 culminating in the end-point status of 243 per 100,000 live births in 2014. By contrast, global assessment of country-level progress revealed that Nigeria was one of the 26 countries categorized as having made "no progress" towards achieving MDG5[4]. In fact, point estimates suggested that of the 26 countries, Nigeria was one of the four likely to have experienced an increase in MMR[5]. This should not be surprising considering that the estimated annual rate of decline over 25 years was 3.0%, compared to expected annual reduction rate of 5.5%[6]. This data; corroborated by the most recent Demographic and Health Surveys (DHS) for Nigeria, showed an increase in maternal mortality ratio from the previous 545 per 100, 000 to 576 maternal deaths per 100,000 live births[7]. Taken together, data from the Endpoint Report appear not to be reliable to draw confident conclusions that progress has been made towards the MDG 5a target. Additionally, evidence from more reliable data indicates that the maternal mortality rate in Nigeria remained one of the highest in the world over the course of the MDG period[6]. Indeed, recent global estimates show that India and Nigeria accounted for over one-third of all maternal deaths worldwide in 2015, with an estimated 58, 000 maternal deaths (19%) and 45 000 maternal deaths (15%) in the countries respectively[6]. The report, described as "the most accurate maternal mortality estimates yet for all years in the 1990–2015 [MDG] period", estimated the maternal mortality ratio for Nigeria to be 814 per 100,000 in 2015[6]. Notably, results from our own more recent quasi-randomized study conducted across hospitals with high patient loads in 4 of the six geopolitical zones in Nigeria revealed an overall MMR of 1,748 per 100,000[8]. Although these are institutional rates that are expected to be higher than community rates, it testifies to the continuing high rate of maternal mortality in Nigeria.

Clearly, the MMR for Nigeria is still unacceptably high. The incongruity between locally reported successes and a collective lack of reduction in the global maternal mortality burden remains a major challenge in global maternal health[9]. That said, it is worthwhile to note that the vast majority of maternal deaths are avoidable and preventable when women have access to vital health care before, during and after childbirth[10]. In recognition of this fact, the new SDGs have established a transformative agenda for maternal health towards ending preventable maternal deaths. Target 3.1 of SDG 3 aims to reduce the global MMR to less than 70 per 100, 000 live births by 2030[1]. A more recent World Health Organization (WHO) publication titled "Strategies toward ending preventable maternal mortality (EPMM)", establishes that no country should have an MMR greater than 140 per 100, 000 live births by 2030[10] although it has already been projected that sub-Saharan Africa is likely to lag behind both the national and global targets[11].

We know that to prevent women from dying during pregnancy and childbirth, all women must receive basic preventive and primary reproductive health care services, including preconception and inter-conception care, comprehensive sexuality education, family planning and contraception, as well as adequate skilled care during pregnancy, childbirth, and the postpartum period[10]. We, however, emphasize that basic inequities in health and avoidable health inequalities occasioned by social, cultural and economic conditions and policies remain which limit women's access to evidence-based clinical and preventative interventions aimed at reducing maternal mortality[12]. Notably, these disparities in access to and in the quality of health care exist in the presence of any factor that increases the chances of discrimination and unequal treatment[10]. Factors including "wealth, geography, gender, ethnicity, class, caste, race and religion" can create advantages in the social context for one group over the other[10]. It is, therefore, imperative that efforts targeted at reducing maternal mortality

include those that address social, cultural, economic, legal and religious factors that stand in the way of women accessing equitable health care.

Finally, the Nigeria 2015 MDG Endpoint report recognized that "in the context of the SDG agenda, there is a need to devise strategies to overcome the many challenges that hampered the full attainment of the MDGs." Notably, the report listed, inter alia, social inequality and escalating insecurity of lives and property among the challenges that constrained the wholesome implementation of the MDGs. In the light of this knowledge, there is the need to understand better the challenge that social inequality poses for the prevention of maternal mortality. This is particularly important within the context of Nigeria, which has festering inequality and inequity issues that are damning for women's reproductive health and social well-being.

We present here some of these sociocultural influences and make recommendations on ways to narrow their contributions to adverse maternal health outcomes in Nigeria.

Educational and Literacy factors

The positive influence of education on maternal mortality ratio in Nigeria was first documented as far back as 1979 in the landmark paper by Professor Kelsey Harrison titled *Childbearing, Health, and Social Priorities: a survey of 22774 consecutive hospital births in Zaria, Northern Nigeria*[13]. In the paper, it was found that "in women who had never had any formal education nor received antenatal care, that is 33 % of the survey population, maternal mortality ratio was 2900 per 100,000 total births." By contrast "with education and antenatal care combined, as was the case in only 10 % of the survey population, the maternal mortality ratio was 250 per 100,000 births[14]." Again, findings from a recent World Health Organization Global survey on maternal and perinatal health indicate that maternal death was three times more likely in women with no education in comparison with women with a tertiary level of education. These arguments are further buttressed by data from the Nigerian DHS which show remarkable regional differences in the relationship between educational attainment and maternal mortality ratio. In the report, the proportion of women with no formal education in the southeast and southwest geopolitical zones were 6.3% and 6.0% respectively, compared to 68.1% and 74.3% of women in the northeast and northwest regions[7]. Available evidence suggests that MMR is higher in Northern Nigeria when compared with Southern Nigeria[15,16], especially among poorly educated women. Clearly, the lack of education is a major socio-cultural factor that contributes to maternal mortality.

Data from the 2015 MDG report indicate that the net enrollment in primary schools reached 91% in developing regions in the year 2015 rising from 83% in 2000[2]. Overall, primary education was reported to have recorded the most significant improvement in key performance indicators in sub-Saharan Africa with "many more girls now in school compared to 15 years ago" [12]. Nevertheless, gender disparity in school enrollment remains common in the countries in these regions; the preference being to enrol the boy child in favour of the girl child. Data from the Nigeria 2015 MDGs Endpoint Report suggest a net enrollment rate of 54%[3]. The report also acknowledged that the patriarchal culture and practices in most parts of the country militated against the achievement of gender parity in school enrollment. Indeed, an earlier report from the United Nations Educational, Scientific and Cultural Organization (UNESCO) had suggested that of the 50 African countries where data was available, the gender parity indices recorded in 31 countries was less than 1[17]. In Nigeria, this gender disparity in school enrolment is particularly evident at the post-secondary school level.[3] Even when the decision is taken to educate the girl-child, reports suggest that late school enrollment, high dropout rate, missing of classes and repeating of classes are common as the general perception is that "girls don't really need to go to school[18]." Their role in the family is viewed as transitory because of marriage, especially in cultures where they are married off early. As a result, girls are more likely to be engaged in agricultural work, caring for their siblings at home and helping out with house chores, involved in economic activities, being used as child labour, working with their parents in petty shops or assisting with the family businesses, instead of being in school[19]. A report investigating

the effect of child labour in Southern Nigeria found that "working children" were more likely to be absent from school, more likely to repeat a class and more likely to experience episodes of illness in comparison with other children[20].

Consequently, literacy rate remains low in many sub-Saharan countries despite the reported global increase (with global rates approaching 91%) and reported narrowing of gaps between women and men[2]. Data from the end-point MDG report, mentioned earlier, indicate a literacy rate of 66.7% for Nigeria. The highest rate of illiteracy was recorded in the North-eastern part of the country. Knowledge of the literacy rate is important because "the more literate the female population, the lower the maternal mortality rate[21]." Recall that MMR is highest in Northeastern of Nigeria[15,16]. In Nigeria, as in many parts of sub-Saharan Africa, conflict and insurgency are common and have contributed significantly to the destruction of schools, reduction in school enrollment, with school children constituting a significant proportion of displaced persons. The Boko Haram insurgency in Nigeria is largely limited to the Northeastern part of Nigeria where both illiteracy rate and MMR are highest. Clearly, a synergy exists between education, recognised as a standalone goal (SDG 4) and the reduction of maternal mortality, a core aspect of SDG 3. Indeed, an ecological study investigating the factors associated with maternity mortality in sub-Saharan found a significant and strong inverse relationship between the educational indicators identified above (i.e. primary female enrolment rate, ratio of female literacy rate to male rate, net primary enrolment rate, net primary enrolment rate female and education index) and MMR[22].

Education should also focus on the provision of comprehensive sexuality education especially as a well-designed and properly implemented programme will be helpful in reducing the dangers associated with high-risk sexual behavior[23,24]. In spite of this knowledge, political, religious, economic and cultural factors continue to exacerbate difficulties with acceptance of comprehensive sexuality education programme in Nigeria[25-27]. For example, teachers in Eastern Nigeria remain averse to the teaching of sexuality education because of sociocultural inhibitions despite possessing the requisite knowledge[27]. Beyond the documented opposition, other barriers to effective programme implementation include low morale of teachers and school administrators, crowded classrooms and inhospitable school environment, inadequate number of trained teachers, insufficient teaching material and high staff mobility occasioned by frequent transfers[28]. The need to strengthen "ongoing sensitization, advocacy and consensus-building activities to overcome resistance and to create and sustain support from young people, parents, school administration, religious leaders and state governments" has been highlighted[28]. This will be helpful in influencing uptake or rather refusal of sex education in Nigeria.

Clearly, education affects the health-seeking behaviour of women and girls, which in turn impacts their health. An educated woman can take a decision on where to go for treatment because of the good understanding of the physiology of reproduction and pathology of illnesses that she possesses about diseases. Again, when compared with uneducated women, educated women are less likely to accept that the complications of pregnancy and childbirth are inevitable acts that have been destined to happen. Studies have shown that the higher the level of education of a woman, the more chances of survival of the child and the mother during delivery[29,30]. Altogether, educated women tend to marry and to bear children later than their less educated peers; they are more likely to control their family size. Therefore, education of a woman makes childbearing safer[31]. Similarly, poor educational attainment can also affect health when it limits young women's knowledge about nutrition, birth spacing, and contraception. It is, therefore, evident that education is an instrument that enables informed decision making and in addition shapes an individual's interaction with the surrounding world.

Education has been described as the key to the achievement of the SDGs being a well-recognized enabler for the SGDs in general and the improvement of maternal health in particular[32]. Therefore, efforts must be intensified towards deepening social protection programmes that minimise the patriarchal culture and practices,

common in many cultures in sub-Saharan Africa, which promotes the pre-eminent value placed on the education of only the boy child. Such programmes including school feeding, free supply of tuition materials, as well conditional and unconditional cash transfers have been reported to improve the rates of school enrollment, reduce school dropout rate and reduce the prevalence of child labour[32].

Socio-economic status and the role of Poverty

The International Conference on Population and Development stated in its Programme of Action that "improving the status of women also enhances their decision-making capacity at all levels in all spheres of life, especially in the area of sexuality and reproduction[33]." Women's status remains low in Nigeria where a patriarchal social system exists and children are considered the father's property. One report that analysed secondary data from Nigeria DHS to assess the relationship between women's position in the household and the utilisation of maternity services highlighted the need to promote women's' empowerment particularly with regards to decision making and self-worth.[34]. Such autonomy in decision making derived from women's position within the household is believed to facilitate the degree of women's access to and control over material resources (income, land, and food) and social resources (knowledge, power, and prestige) within the family, the community and the society[35]. In many African societies, women in labour may not be in full control of the decision to seek delivery in a facility; they often rely instead on the decisions made by others, including elder women, husbands, family members, and neighbours. The most important of these actors, in many settings, appears to be the husband who is expected to provide the money to pay the hospital fees[36]. However, the final authority does not always rest with the husband. In fact, "these actors may have competing interests in the choice of a woman's delivery location leading to delay in decision making. In addition, obtaining advice and approval from them often delays or prevents facility delivery, particularly because these decisions are often sought after labour has begun[37]."

The association between economic status and health stems, in part, from women's experiences of poverty. A systematic analysis of data from the Nigerian DHS showed that only 8% of women from the poorest 20% of families deliver in a healthcare facility compared to 86% of women from the richest 20% of families[38]. We have previously argued that this is a significant equity gap, probably the most serious in sub-Saharan Africa, which provides further evidence that inadequate means of livelihood and poverty are critical factors reducing the ability of women to seek quality evidence-based maternal and child health services[15]. Importantly, SDG 1.1 is targeted at ending extreme poverty. Poverty is a major determinant of maternal mortality, as it prevents many women not just from seeking maternity care, but also reduces their ability to rest and to eat balanced diet which is essential to safe pregnancy and delivery. When a woman is malnourished, it causes anaemia which increases the woman's susceptibility to illness, pregnancy complications and maternal death. It also increases the danger of haemorrhaging at childbirth. A woman stunted from poor feeding and weakened by anaemia starts pregnancy in poor condition. Stunted growth surrogates contracted pelvis which may culminate in obstructed labour, thus setting the path to maternal mortality. Malnourished women are sicker, have smaller babies and die earlier.

At the national level, the Gross Domestic Product (GDP), which measures the economic output of nations, has been found to be a strong predictor of MMR. The results of assessment of maternal mortality in 181 countries found that higher GDP correlates well with low rates of MMR[39]. It has been suggested that developing countries should allocate a minimum of 3% of their GDP to their total health expenditures. Of this, it is recommended that governments should allocate a minimum of 25% to reproductive health[40]. The fund will be useful in providing social protection, such as health insurance, which will reduce poverty arising from the catastrophic spending associated with out of pocket expenditure and the dependence on husbands and family members for money to pay hospital bills

(SDG 1.3). Sadly, the coverage for social protection programmes has been reported to be low in Nigeria and particularly acute in many sub-Saharan African countries[11]. Accordingly, the place of universal health coverage as a tool to reduce the negative impact of out of pocket expenditure needs to be stressed[41]. In this direction, we suggest that governments in sub-Saharan Africa and in Nigeria, in particular, should commit to ensuring the uptake and scaling of country-wide health insurance programmes that will guarantee access to essential maternal and child health services to a large segment of the population.

Gender inequalities/social disempowerment of women

High maternal mortality rates are an indication not only of poorly functioning health systems but also a reflection of deep-seated gender inequality. Inequality with their menfolk's leaves women with limited control over decision-making and thus restricts their access to social support, economic opportunities and health care[42]. These gender inequalities manifest early in life. For example, girls born into poverty are more vulnerable to child marriage and exploitation, such as sex trafficking, forced labour or compromised marriage. Child marriage, itself a form of gender-based violence, increases the vulnerability of these child brides to abusive sexual relationships, physical violence, and deprivation[43]. Such deprivation manifest as a decrease in the likelihood of receiving any form of prenatal care and a decreased likelihood of delivery being attended by a skill birth attendant[44]. The high maternal mortality rate amongst this population is thus explained, albeit in part, by a lack of access to a skilled attendant at birth. In addition, child marriage contributes to MMR through prolonged obstructed labour; a recognised complication of early childbearing in girls with poorly developed pelvis. Moreover, early marriage predisposes young women to high rates of fertility and the risk of maternal death from high parity. Globally, pregnancy is reported to be the leading cause of maternal death amongst women aged 15 to 19[45]. Child marriage is a cultural practice that is endorsed by Islam. However, the practice has been sustained over the years by increasing poverty; the betrothal of girls before the age of 18 largely used as a strategy for poverty alleviation as it is believed to consolidate economic relationship and to reinforce the social status of families[46]. This same poverty drives transactional sexual relationship among young people. In these relationships, adolescent girls frequently lack the power to negotiate condom use because most of the sexual encounters are contracted in exchange for money or material benefit with older men who have the capacity to provide such benefit[47]. Consequently; they find themselves at a high risk for pregnancy that is largely unwanted. The situation is made worse by the negative attitude of health workers towards the provision of contraceptives to unmarried adolescents[48].

In many developing countries, legal systems offer women and girls little support in protecting their reproductive rights. As an example, the Nigerian Senate has been hesitant in passing laws to abolish child marriage but was quick to pass a law abolishing same-sex marriage[49]. Notably, a bill designed for the promotion of sexual and reproductive health ended up been tagged an abortion bill. The bill was blocked in the Senate after intense opposition from many antagonists of abortion, including religious leaders, "on the ground that the passage of the bill into law would lead to moral decadence[50]." Thus, in many cases, the existing laws remain restrictive, deliberately denying women and girls' access to safe reproductive health services. Sadly, in settings where non-discriminatory laws exist, these laws are not enforced universally. The practice of child marriage is prevalent in Northern Nigeria despite the passage of the Child Rights Act (CRA) of 2003, which abolished the practice[51]. The CRA prohibits the marriage and betrothal of children as well as those considered to be children. It is stated in Part III Section 21 that: "No person under the age of 18 years is capable of contracting a valid marriage, and accordingly a marriage so contracted is null and void and of no effect whatsoever.' In addition, Part III Section 22, maintains that 'no parent, guardian or any other person shall betroth a child to any person.' The recommended sanction in the event of a violation

of these sections of the Constitution was a fine of 500, 000 Naira or imprisonment for a term of five years or both. Despite the existence of this law, Ahmad Yerima, then a serving Senator, got married to a 13-year-old girl in 2010. He is yet to be prosecuted till date because of arguments that the marriage was contracted under Islamic law and therefore not subject to national jurisdiction[52]. Clearly, this is a manifestation of gender inequality which continues to put women's lives at risk, without the state legal system being able to act to defend the rights of women and girls.

Harmful traditional and cultural practices

An important element of public health is the need to provide adequate and timely medical information and care. Unfortunately, mis-information continues to thrive because it has been shown that women in many parts of Nigeria have "little or no contact with the health care system for reasons of custom[53]." In some cultural settings, pregnant women are not allowed to eat certain foods that should ordinarily provide them with the nutrients required for the proper development of pregnancy. For example, in some parts of the country, pregnant women are not allowed to eat snails which contain iron because of the belief that the child will drip saliva. Again, some folklore prohibits pregnant women from eating eggs so as to prevent the unborn child from stealing. In Southern Nigeria, pregnant women are not allowed to take beverages because of the belief that it will cause the baby to be too big thereby increasing the need for delivery by caesarean section.

Some parents and relatives give their daughters concoctions to make the baby small in utero. This practice which is designed to facilitate delivery and obviate the need for caesarean section, however, does not take into cognizance the possible side effects of the herbal preparations both to the mother and the fetus. Again, Hausa/Fulani women in Northern Nigeria traditionally drink kunun zaki (a solution of whole grains of millet) when in labour. This practice is believed to have the capacity to ease delivery. In Southwestern Nigeria, Yoruba women insert 'ewedu' leaves into their vagina to facilitate labour instead of accepting to be induced in the hospital. Further, sociocultural influences have been identified as stumbling blocks to the use of modern family planning methods in Nigeria. Correct and persistent contraceptive use in developing countries have been shown to decrease the number of maternal deaths and could prevent more than half of all maternal deaths if the full demand for birth control is met[54]. These benefits are achieved through reducing the number of unplanned pregnancies that subsequently result in unsafe abortions and preventing pregnancies in those at high risk[54,55]. Although, data from the Nigerian DHS indicate an improvement in unmet need for family planning[7], overall contraceptive uptake remains low as negative perceptions regarding the use of contraception persists. Women attribute non-contraceptive practice to a need to abide by religious injunctions which teach that procreation is the primary reason for sexual relations within marriage[56]. They also cite rejection by husband and negative advice from friends and family members as reasons for non-use of modern contraceptive methods[57]. Behind all these is the unfounded cultural belief that contraception may lead to sexual promiscuity and infertility[48]. All these point to a lack of reliable and accurate information on contraception in many communities in Nigeria. Accordingly, there is a need to properly educate women on accurate contraceptive use, dispel unfounded cultural beliefs and to increase the involvement of men in family planning programmes.

Several cultural practices impact on maternal health which invariably paves the way for the emergence of maternal mortality. Female genital mutilation, child sex preference, patriarchy and child marriage and early pregnancy, certain birthing practices are some cultural practices that can affect maternal health. For example, female genital mutilation predisposes women to the risk of obstructed labour and haemorrhage in labour. Other traditional practices that are deemed harmful include direct taboos and indirect restrictions which have the capacity to prevent women from discussing their health needs and risks. Social seclusion as in the practice of purdah in some religious setting prevents women from associating with others; including refusing antenatal consultation with or delivery by a male doctor[53].

This is likely to result in difficulty in finding health information and taking healthy steps towards safe pregnancy and childbirth. Clearly, these factors condition women's sexual and reproductive health intentions and impact negatively on their health and quality of life.

The local customs so described are used to control women such that a woman cannot make decisions for herself until the husband decides. The restrictions mean that women are dependent on the decision of others about medical attention; whether to delay or prevent pregnancy; have antenatal examinations during pregnancy; arrange for skilled delivery attendant; determine the sex and number of children they want and how they want their births spaced. It is evident that women do not always get the support they need to fulfill their reproductive intentions. Consequently, many resort to clandestine treatment for fear of disapproval of the husband and the family. Therefore, cultural restrictions limit choice. Lastly, care-seeking may be delayed in situations where certain health problems are viewed as spiritual in nature rather than physical, such as eclamptic seizures.

Clearly, these traditional practices predispose women to the increased risk of dying during pregnancy, delivery and the period after delivery. Regardless, it must be noted that not all traditional practices influence maternal health negatively. Indeed, several practices in many Nigerian cultures which have endured centuries actually serve to improve maternal health and should, therefore, be promoted. Such beneficial practices include, but are not limited to prolonged breastfeeding and placing recently delivered on special diet and care (omugor).

Religious factors

The literature is replete with links between religion and sexual and reproductive health. Through religious influence on individuals, the different religions critically shape people's attitudes towards reproduction and sexuality. The situation arises where due to religious beliefs, women would seek to patronise faith-based facilities in the face of medical emergencies. Some religious sects do not believe in modern contraception, thus exposing their followers to the attendant consequences of unwanted pregnancy. In disobeying such doctrines, one is seen to be a deviant.

Nonetheless, a recent publication that investigated antenatal attendees from two tertiary health institutions in Southwest Nigeria found that pregnant women frequently desire spiritual care during pregnancy and childbirth[58]. This is explained in part by the perception in many African settings that pregnancy is a period of increased risk of attacks by witches and other satanic forces[59]. Pregnant women, therefore, see care and delivery in faith-based facilities as a safe haven. In the study by Adaniki et al., majority of the women interviewed were of the viewpoint that the likelihood of delivery in a hospital would be greatest if collaboration existed between their religious leaders and healthcare workers[58]. This mentality has encouraged the argument that a hospital environment that is faith tolerant is likely to improve women's use of evidence-based maternity care services in Nigeria. Indeed, focus groups discussion with women receiving maternity services in 8 referral hospitals in Nigeria further buttressed this point and provided evidence of the importance that women place on faith-based maternity care[60]. Therefore, taking into consideration their reach and influence, religious groups could be relied upon to raise awareness on critical issues in maternal health. The need "to establish stronger partnerships with them in Africa as an untapped route to achieving" development goals has, in fact, been suggested[61].

Local knowledge and health-seeking behavior

Reproductive health programming requires an amalgam of local systems of knowledge and health practices. Cultural context is central to the response to health and illness, with knowledge relating to health and ill-health shaped by culturally-specific practices which vary between different social groups or networks. Consequently, the meanings attributed to health-related behaviour by health professionals are often very distinct from those of lay-people. The social experience of health and illness contributes to the construction of local knowledge that informs health-seeking behaviour. Therefore health programmes should

be developed with the sociocultural context in mind so as to engender community participation and ownership.

Recommendations

It is evident that elimination of negative sociocultural influences is desirable to increase access to services for pregnant women and to reduce maternal mortality in Nigeria. Although it has been suggested that the organization of health service delivery with a focus on access and quality of care as component dyads in efforts to reduce maternal mortality is essential[62], a discourse on the availability, coverage and quality of maternity care is beyond the scope of this review; we focused on the complex relationship between social inequities and inequality and uptake of available healthcare services in Nigeria. We showed, in the review, that sociocultural inhibitions have limited women's contact with healthcare services. This has implications for the future reproductive health of women and on the quest to meet the crucial SDG goal of improving maternal health in Nigeria. Accordingly, we recommend that to mitigate the impact of negative sociocultural factors on MMR in this country; there is a need for increased advocacy efforts at the community level with a focus on community and opinion leaders including traditional and religious leaders. The process should also involve engagement of pregnant women and other community members to empower them to have greater control of decisions concerning pregnancy and childbirth. This will promote ownership and participation in programmes designed to reduce Nigeria's unacceptably high MMR. Confidence in this engagement is supported by evidence from the results and outcomes of our high level advocacy efforts that culminated in the declaration of a policy of free maternity services by the Federal Government and several states in Nigeria[41]. The elements that were responsible for the high-level success of that campaign[41] can be easily replicated to galvanize support for the promotion of maternal health through the creation of social conditions for behavioural change.

In particular, these engagement efforts should be complimented with Behaviour Change and Communication (BCC) that include the distribution of Information, Education and Communication (IEC) materials that address the specific needs of the targeted population. Additionally, the involvement of the mass media and the use of community networks will be helpful in stimulating social change which will ultimately lead to an improvement in health seeking behaviour and service utilisation. We believe that a better knowledge of how harmful traditional practices are to the health of women and girls as well as the benefits of discontinuing these practices in the community could contribute to the overall reduction in the MMR burden. For example, entertainment education and mass media campaigns (two recognized BCC tools), have been used to great effect in improving family planning uptake in Nigeria[63]. This should provide encouragement that BCC strategies are effective in bringing about positive change in health behaviour[64]. Clearly, "effective communication [that] includes greater public enlightenment, focusing on the removal of sociocultural barriers; informational barriers; systemic barriers; the improvement in the general public's base knowledge"[65]. on social inequalities and inequities should be considered a priority in this war against maternal mortality. Fatusi and Jimoh have lucidly described how these techniques can be effectively used to improve maternal health in Nigeria[64].

The positive impact of family planning on the burden of MMR and the barriers to contraceptive uptake has been documented[54]. Again, we highlighted evidence showing how BCC has been used to great effect to improve client uptake of family planning services in our setting[63]. Going forward, we opine that there is the need to specifically include family planning education and counseling in community-based services using the strategy of Community-Based Family Planning (CBFP) Programme. This approach is designed to bring information on family planning to women and men in their respective communities (using vehicles like community health workers) as against the need for them to visit health facilities[66]. We recommend that this should be "considered as part of a broader community health intervention—known as a Total Market Approach (TMA)—to ensure that the

CBFP approaches offer a sustainable solution for meeting the FP needs of the population[66,67]." The strategy is particularly useful in a country like Nigeria where the health system is weak and the demand for, access to and use of family planning is low[7]. Findings from a community-based distribution of particular contraceptive methods in northern Nigeria lends credence to the fact that the method is feasible and effective especially in settings like ours with obvious sensitivities about family planning[68].

We have argued, in this paper, that adolescents, especially girls, are often exposed to vulnerabilities in the sphere of sexuality and childbearing with many forced into unwanted sex or marriage; many face high risks of STIs and HIV, unwanted pregnancies, unsafe abortions, and from childbirth[45,47]. Consequently, they are prevented from realizing their fullest potentials and denied access to available investment to achieve this[69]. The role of a well-designed and properly implemented comprehensive sexuality education in improving maternal health and in resolving the aforementioned sexual and reproductive health challenges has been well described[23,24]. However, barriers to its effective implementation persist[25-28]. Accordingly, we recommend that stakeholders make urgent efforts to address these barriers and dismantle sociocultural impediments to reproductive health information and care for adolescents. In particular, we suggest the continued engagement of government (at both the Federal and State level) to ensure sustenance of political and budgetary support needed for increasing the cadre of trained teachers, retaining and incentivizing trained ones as well as the provision of hospitable classrooms and sufficient teaching materials. Again, community engagement, using the techniques previously described[63,64], will be helpful in mitigating community and opinion leaders' continued call for dilution of the curriculum content and other forms of opposition to the delivery of sexuality education.

Lastly, this seminal paper has shown abundant evidence of discrimination against girls and disempowerment of women despite the fact that gender equality is a human right that is key to the attainment of developmental goals. In the light of this knowledge, we recommend strict enforcement of girl child education and empowerment of women as the first step towards the improvement of the status of women en route to correcting the festering gender inequality that is prevalent in Nigeria.

Conclusion

In conclusion, reliable data indicate (in contradistinction to the 2015 MDG Endpoint report) that the MMR for Nigeria increased over the MDG period. However, the SDGs offer renewed hope of a significant improvement in our health indices, not the least, maternal health. To achieve the ambitious SDG goals, it is important to review current development strategies particularly in the context of identified social inequalities and inequities. This is important because socio-cultural factors determine the utilisation of maternal health services including antenatal care, delivery, and postnatal care. This has a direct effect on maternal mortality and the attainment of the SDGs; a point which was acknowledged in the 2015 MDG Endpoint report.

This review has shown that in other to fight the war on maternal mortality and win it, it is imperative and absolutely important to tackle and remove socio cultural barriers that prevent women from accessing antenatal services and skilled delivery. All effort should be made to identify traditional practices, which are detrimental to maternal health and appropriate communication strategies adopted to address these while adopting helpful sociocultural practices, which promote maternal health. We believe that adopting the recommendations made here will improve women's capacity to make informed decision about their care and ultimately lead to a significant increase in access to evidence-based care and a reduction in maternal mortality. Additionally, further consolidation of the approaches will galvanize efforts to successfully overcome the sociocultural obstacles to achieving the developmental goals.

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