

Review

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Sub-Saharan Africa**

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Obstetric Fistula: A Hidden Public Health Problem In Sub-Saharan Africa

*FW Kalembo^{1, 2}, M Zgambo³

¹Maternal and Child Health Department, Tongji Medical College, Huazhong University of Science and Technology, Hang Kong Lu, 430030 Wuhan, China.

²Faculty of Health Sciences, Mzuzu University, Mzuzu, Malawi.

³University of North Carolina Project, Private Bag A 104, Lilongwe, Malawi.

*Correspondence to: Fatch W Kalembo, kalembofatch@yahoo.com

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Abstract

Obstetric fistula (OF) continues to devastate the lives of women in sub-Saharan Africa. Many women with the condition are suffering in silence. They are unaware of the available treatment options or unaware of where to get treatment. Yet, the condition is treatable and preventable. Recently, many countries and nongovernmental organizations (NGOs) in the region embarked on interventions to address the impact of the condition, however, much emphasis is put to identifying and treating the existing cases with less emphasis put to public health interventions that can help to prevent and eventually eradicate the condition in sub-Saharan Africa. Therefore, the purpose of this review is to explore the impact of obstetric fistula in the region and to propose effective public health interventions that can help to prevent the condition with a long-term goal of eradicating the condition.

Keywords: *Obstetric fistula; public health interventions; prevention.*

1. Introduction

Obstetric fistulas (OFs) are most common in sub-Saharan Africa and South Asia where access to or use of obstetric care is limited. It is estimated that more than 2 million young women live with untreated OF in Asia and sub-Saharan Africa. Each year, between 50,000 and 100,000 women worldwide develop OF [1]. An OF usually occurs when a woman experiences obstructed labor for days without any adequate obstetric care, and has no access to a facility where she could be delivered by cesarean section. The prolonged, constant pressure of the fetal head in the birth canal cuts off the blood supply to the soft tissues surrounding the woman's bladder, rectum, and vagina, resulting in a hole between her bladder and vagina and/or rectum. Obstructed labor leads almost invariably to the death of the fetus during birth and is one of the leading causes of maternal death. When the woman survives, she is left with constant leaking of urine and/or feces and is often rejected by her husband, blamed by the community, and forced to leave her home [2].

Many women are still unaware of the availability of treatment and it is estimated that 80% of women with fistulas never seek treatment. The main reason for this is lack of knowledge [3]. Many live with the condition for several years. It is estimated that 80% women never seek treatment, yet when repaired by an expert, success rates are reported as high as 87–93% [4]. It is therefore highly likely that most OF cases remain

undetected in the community and that the burden is far greater than has been estimated previously [5]. The OF is still largely neglected in the developing world. It has remained a 'hidden' condition, because it affects some of the most marginalized members of the population; poor, young, often illiterate girls and women in remote regions of the world [6, 7]. The purpose of this review therefore is to explore the impact of OF in the region and to propose effective public health interventions that can help to prevent the condition with a long-term goal of eradicating the condition. The review is presented in the following subheadings: prevalence and incidence, predisposing factors, impact of OF on women's lives, treatment, and public health intervention to mitigate the impact of OF and recommendations.

2. Methods

The review used published peer reviewed articles of research studies conducted in sub-Saharan Africa to appreciate the impact of OF and to propose innovative strategies that can help to address the condition. Data for the review were searched from four databases Embase, Medline, CINAHL, and PsycINFO. Additional data were obtained from WHO, UNFPA, and Google Scholar websites.

2.1 Prevalence and incidence of OF

Prevalence and incidence rates of OF in sub-Saharan Africa vary among countries. A study conducted in Malawi, revealed that the prevalence of OF was 1.6 per 1000 women. Women endured the condition for a median duration of 3 years [7]. Data from African countries estimate the incidence of OF to be between 1–3 per 1000 deliveries for West Africa and 5–10 per 1000 deliveries in some rural areas of Africa [5]. A survey conducted in Ethiopia involving 19,153 households with 97,765 inhabitants reported a lifetime prevalence of 2.2 per 1000 women of reproductive age [8]. Another study conducted in Ilorin, Nigeria, found an estimated prevalence of 1.1 per 1000 births based on the identification of 34 clinical fistula cases that were treated over a 10-year period [9]. In Eritrea, incidence of fistula is projected to be 1–3 per 1000 deliveries in areas without access to emergency obstetrical services [10]. A population-based prospective study of severe maternal morbidity was carried out in six major West African cities: (Burkina Faso, Côte d'Ivoire, Mali, Mauritania, Niger, and Senegal) and in a rural area Kaolack Region, Senegal. In this study, 19,342 women were followed up until the post-partum period, two cases of vesico-vaginal fistulae occurred. Data collection was based on the women's self-reports in interviews, followed by a gynecologic examination for those who mentioned having problems. The incidence rate was 10.3 per 100 000 deliveries (95% CI: 0–37). Its incidence rate in major cities was 0 per 100,000 deliveries (95% CI: 0–18). The two cases occurred only in rural area of the study. The overall incidence rate of obstetric fistulae in the region was 123.9 per 100,000 deliveries (95% CI: 15–446) [11].

2.2 Predisposing factors of OF

Women with fistula are often small and short, an indication of pelvic immaturity or cephalopelvic disproportion (CPD). They are also usually young, illiterate, and poorly educated. Marriage and causative pregnancy mostly occur before the age of 20 [4]. In Zambia, a study of 259 women with OF at Monze Mission Hospital found that median age at marriage was 18 and at the onset of the development of the fistula was 22 years. Delays in receiving emergency obstetric care (EmOC) were experienced at home (67.5%) and at clinics (49.4%), usually due to transport difficulties. About 89.1% of women delivered in a health facility, 50% did not complete primary education [4].

The Ministry of Health in Kenya, supported by UNFPA, undertook a study based in four districts to better understand the underlying sociocultural factors, health seeking behaviors and availability and utilization of essential obstetric services. In this study, it was found that the combination of rugged landscape, long distances to health facilities, and societal preferences for delivery with a traditional birth attendant contributed to delays in accessing necessary obstetric care. Prevention of OF was further hindered by low utilization of the partograph to monitor labor and human resource limitations including nursing shortages and inadequate supportive supervision [12]. In Burkina Faso, few community members understood that fistula was a medical condition. Many believed that fistula was the result of fate or divine punishment inflicted for bad behavior (infidelity, disrespect of elders) or a curse by an offended party [13]. Results of a needs assessment conducted by Engender-Health organization in sub-Saharan Africa countries revealed that poverty, lack of skilled attendance at birth, Lack of emergency obstetric care, Lack of transportation, a shortage of trained providers for fistula repair, limited awareness about repair possibilities, poor integration of services, and marginalization of women with fistula are some of the contributing factors to high-prevalence rates of obstetric fistula in the region [14].

2.3 Impact of OF on women's life

2.3.1 Psychosocial impact

Obstetric fistula is having a great psychosocial impact on the lives of women in sub-Saharan Africa. In Zambia, a study on women with OF receiving care at Monze Hospital found that three-quarters of women with fistula were married, 15.1% divorced, 7.5% single, and 1.7% widowed. Of the 45 women who were no longer living with their husbands, 31(67%) stated that this was due to their fistula. 17 4.0% (153/239) of women received help in paying travel costs to Monze Hospital, suggesting that many came from impoverished backgrounds [4]. In another study on incidence of depression in women with OF in Kenya, depression was present in 51 (72.9%) patients, with 18(25.7%) meeting criteria for severe depression. Depression was significantly associated with women older than 20 years of age ($P = 0.01$), unemployment ($p = 0.03$), lack of social support following fistula ($p = 0.04$), and living with fistula for over 3 months ($p = 0.01$) [15]. In Guinea Women who develop OF often suffer stigma, abandonment, loss of self-esteem, and varying degrees of social isolation. They are considered perpetually unclean as sometimes they are even excluded from food preparation, social events, and prayer ceremonies [16].

In a study conducted in Nigeria about 33% of women with fistulas were psychologically depressed, and an additional 51% were bitter about life [17]. Another study in Nigeria, reported that immediately after the fistula occurred, 14% of new patients were divorced by their husbands and only 42% continued to live with their husbands and if the condition persisted, 28% of the women were divorced and only 11% were allowed to stay [18]. In Nigeria, married women with OF are returned to their parents' home where they are not allowed to cook food, participate in social events, or to perform religious rituals [17]. In Niger, among women affected with OF, 63% were divorced [19]. According to reports in sub-Saharan Africa, more than 50% are divorced by their husbands. Other consequences include severe social stigmatization and loss of support from families and communities. Women with fistula often travel long distances to reach repair services and many live with the condition for several years [4].

2.4 Reproductive health impact

It is estimated that between 25% and 55% of women remain incontinent after successful fistula closure, but there are no data on the rates of women in whom normal sexual function returns or who bear children. It is believed, however, that many have painful intercourse or are not able to have intercourse because of scarred vaginas [4]. In either situation, complaints of coital difficulties emerge after the mandatory 3-month postoperative period of abstinence. A study in Nigeria found that women with unrepaired OF have a spontaneous abortion rate of nearly 50%, whereas the rate in those with a repaired OF drops to 6% [20]. A study in Kenya found that almost 60% of women with repaired OF report miscarriage [21]. Women with OF are often primiparous, babies usually stillborn, and secondary infertility common, the childlessness is so devastating in a culture where a woman's status is largely determined by her reproductive functioning [4].

2.5 Treatment of OF

Successful surgical treatment is possible. Reconstructive surgery can mend this injury, but women are either unaware that treatment is available or cannot access or afford it. If the fistula is successfully closed and the comorbidities are treated, women can resume full and productive lives, become pregnant, and deliver healthy newborns. The reported rates of successful closure are between 70% and 90% for simple OF and between 30% and 60% for complex or complicated OF [2]. A study in Zambia of 259 women managed of OF at Monze Mission Hospital found that 72.9% of repairs were successful, 17.3% resulted in residual stress incontinence and 9.8% failed. Failure was significantly associated with previous repair [4]. In Liberia, first time repairs had a higher continence rate compared with women with previous repairs, 78% and 54% respectively ($p = 0.15$). In other African countries, surgical success is reported to be between 72% and 92%, with greater success for first time repairs and in those with minimal scarring at the time of repair [22]. Although fistula repair has been performed in several countries, there are few hospitals, such as the Hamlin Addis Ababa Fistula Hospital in Ethiopia, that are dedicated only to fistula repair. Similar sites in Ethiopia, Kenya, Malawi, Mali, Mozambique, Niger, and Nigeria are reported to have inadequate training and limited supplies, resulting in restricted availability of treatment [23].

Findings of facility and community needs assessment conducted by UNFPA in 24 sub-Saharan countries revealed that in Kenya, there is an estimated 3000 new fistula cases each year, with only 7.5% currently treated. In Burkina Faso, women were reported to wait as long as 60 months for treatment, and records revealed that some of those who reached the facilities never received treatment. Human resources and basic infrastructure at facilities were found to be generally inadequate. In 7 of the 20 countries, 5 or fewer physicians were performing fistula repairs. In Mozambique, only three physicians were known to have the necessary skills and actually provide fistula repairs and in Burkina Faso, permanent fistula repair surgeons were not available. Very few training opportunities were available other than informal on-the-job guidance. The incentives for surgeons to train in fistula repairs remained low because of the potentially high failure rate of repair, low salary, stigma associated with the condition, and lack of opportunities for training and work. Tanzania and Nigeria lacked special equipment for fistula repair [24].

2.6 Public health interventions to mitigate the impact of obstetric fistula

Prevention is the key to decreasing the incidence of OFs. Community-level prevention measures and social support mechanisms can help reduce the burden of disease in sub-Saharan Africa. Few public health interventions have been employed in sub-Saharan region to mitigate the impact of OF. Public health

campaigns are being done in some countries and are having tremendous effects for instance in Niger, 62 women came together 11 months following public campaigns, with 82% of them diagnosed as suffering from OF and likewise more than half of these patients (66%) had a history of previous attempts for repair [25]. Reaching communities with messages about fistula prevention and treatment has been done through radio announcements, village theatre, print media, and community education messages relayed in markets, schools, and community gatherings [23]. In some locations, women who had fistulas repaired now serve as ambassadors to their communities, sharing information and organizing resources for women who are pregnant or who, too, need a repair. Because of the extreme social isolation (and, often, ostracism) experienced by women with OFs, these ambassadors may be the most important persons in their lives as they speak with them, dismantle their shame, and facilitate their social reintegration once the fistula is closed [26].

Two community organizations in Mali have experience in supporting women living with fistula. Delta Survie has been providing skills training in textile production, with the aim of improving the socioeconomic situation of women with fistula. Another organization, Lamaneh Suisse, has been involved in identifying and assisting women with fistula to access treatment services and following-up after treatment to prevent recurrence in the next pregnancy. In Niger, the organization Dimol has established a center to train women who had OF surgical closure in income-generating skills, and accompanies women to their communities to conduct health education sessions and counsel their families. Similar skills training initiatives are also underway in Chad. In addition, an organization, Engender-Health is in the process of developing a curriculum to train a range of providers in the provision of counseling for women with fistulas. In Niger, the network for fistula eradication was established. The network focuses on synchronizing interventions, monitoring implementation of the national strategy, advocacy and resource mobilization for OF and emergency obstetric care. While still at an early stage, the network has already begun to reduce taboos surrounding fistulas [13]. In Eritrea counseling has been seen to have a positive effect in improving knowledge and self-esteem of women with OF. Data from the questionnaires and focus groups revealed significant improvements in women's knowledge about fistula, self-esteem, and behavioral intentions following counseling. To evaluate the impact of the counseling program, clients were interviewed both before preoperative counseling and again after postoperative counseling.

A questionnaire was used in the interviews to assess women's knowledge about fistula, self-esteem, and their behavioral intentions for health maintenance and social reintegration following surgical repair. In addition, two focus groups were conducted with 19 clients assessing their experiences with the surgical care and counseling [10]. In Guinea Conakry, the Fistula Care Project is working with the people of Kissidougou to initiate a reintegration program that begins in the Regional Hospital and continues in the community. While healing from fistula surgery, women receive both physical and psychological therapy. After discharge, women live on a voluntary basis with local host families as part of a social immersion strategy. During the social immersion period host families are thanked by government officials and selected women provide sensitizations at baptism and wedding ceremonies. Women are trained in interpersonal communication skills to enable them to more effectively sensitize others when they return to their home communities. Reports indicate that fistula survivors who have participated in the social immersion program demonstrate improved confidence, self-esteem and emotional health. The reintegration approach has improved links between the fistula repair facility and the surrounding community. With empowerment from the social immersion program, fistula survivors have actively advocated for those without a voice [16].

3. Recommendations

Sub-Saharan Africa needs public health interventions that aim at preventing OF, identifying those with the condition so that they can receive treatment, providing timely treatment and rehabilitating those who received treatment and are healing from the condition. Adequate medical care and emergency obstetric services, particularly cesarean deliveries, should be made available for all pregnant women through strong educational efforts from communities and health professionals. These initiatives will eventually help to prevent OF. In addition, young girls should not be exposed to the risk of childbearing until their reproductive physiology has matured. Delaying marriage and providing contraception are means to preventing childbearing at a young age. Girls and women with OFs in addition to surgical treatment for their condition also need counseling for their psychological and emotional damage, and support for social reintegration [2].

Prevention strategies must also focus on factors predisposing to prolonged obstructed labor, early childbearing, malnutrition, and female genital mutilation. Indirect risk factors such as poor education, poverty, lack of antenatal care or skilled birth attendance, and low status of women, which may limit access to services that could prevent the onset of such conditions, should also be included. Governments should address the transport problem by building roads and hospitals near communities in order to ensure that all pregnant women have timely access to EmOC. Health workers particularly nurses and doctors must recognize the importance of swift referral of women in obstructed labor, also referral systems and transportation to hospital for emergencies must be supported and healthcare providers must be fully educated in managing prolonged obstructed labor. Additionally, it is important to improve community health education, raise awareness of labor complications, and support campaigns encouraging women to give birth at health facilities. The provision of maternity waiting homes, where women from remote areas can await delivery, avoids the problem of 'obstructed transport' should complications arise. Increasing the educational status of women is also essential for prevention of OF. The length of time some women lived with fistula before treatment also demonstrates the need to raise awareness about repair services. Effective repair centers must be made accessible and affordable and training programs for fistula repair surgeons increased [4].

Furthermore, the primary objective of the public health community interested in fistula research should be in developing and implementing more comprehensive and sensitive research. Research on areas that expose women to the risk of developing an OF, such as early pregnancy, lack of education, severe poverty, and cultural bias, will be necessary if OFs are to be prevented. Providing former fistula patients with income-generating skills can restore them to their homes and villages and help them regain, if not surpass, their presurgery status. There is need to build public health/clinical partnerships which should include religious, social groups and families in assisting former fistula patients in becoming champions of change capacity building and for strengthening clinical training in sub-Saharan Africa, so that treatment may be offered to all women with OFs [2]. Women with obstetric fistulas are predisposed to high levels of depression. A holistic management approach, including mental health care and family support is recommended [15].

Pooled OF surgeries should be recommended where surgeons of various hospitals form an alliance to assist each other by performing surgeries together. A good example is in Nigeria, where structured quarterly retreats and pooled effort surgeries resulted in improved management of fistula repair work across hospitals. The five participating hospitals demonstrate increasingly uniform pre-, intra-, and postoperative practices [27]. In countries with a high OF prevalence, it is recommended that training be included in undergraduate programs for nurses, midwives, and physicians. Based on established criteria, all training concerning the repair of simple and complex fistulas should promote teamwork [28].

4. Conclusion

Prevention is always better than cure. Preventing and managing obstetric fistula will contribute to achieving improved maternal health, the fifth Millennium Development Goal. Problems of fistula in sub-Saharan Africa can best be solved by identifying and addressing the predisposing factors. Most of the OF programs in sub-Saharan Africa focus on treating women with OF, few focus on preventive measures and integrating women who underwent OF repair in the community. Public health interventions are urgently required in sub-Saharan Africa and must be carried out in collaboration with all stakeholders; government, nongovernmental organizations, health workers, communities, traditional and religious readers only then will OF be prevented and eradicated.

Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions

FWK and MZ participated in searching for data, writing and critical review of the manuscript.

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