

Clinical and Psychosocial Outcomes of Obstetrics Fistulae in Sub-Saharan Africa: A Review of Literature

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Received date: 10-03-2020; Accepted date: 04-05-2020; Published date: 11-05-2020

ABSTRACT

Obstetrics fistulae are preventable and treatable diseases of immense public health importance which render women debilitated and devastated with physical, mental, psychological, economic and social problems. It is prevalent among the less privileged with limited access and utilization of reproductive health services which reflect the state of health care delivery especially emergency obstetric care in a country. Over the years, the impact of obstetrics fistulae has led to several studies on the prevalence, clinical outcome and experiences of affected women, but there is paucity of information on the psychosocial and economic impact of obstetrics fistulae in developing countries. This review is therefore an attempt to bridge this gap and hopefully point attention to the need to consider these impacts when designing further interventions for patients with Obstetrics fistulae.

Keywords: Vesicovaginal fistula, Rectovaginal fistula, Psychosocial, Economic, Clinical outcome

INTRODUCTION

Obstetric fistulae (OF) comprising of vesicovaginal fistula (VVF) and rectovaginal fistula (RVF) occur in situations where women involuntarily leak urine and/or feces through the vagina following a complicated delivery. VVF and RVF are preventable diseases that are mainly caused by prolonged obstructed labor and affect women in low-income countries with subsequent significant impact on their quality of life and psychosocial functioning. These women are often stigmatized, lacking self-worth and relational ability with 97.2% reporting being humiliated by family members and friends [1,2].

Fistula continue to disproportionately affect women in the Sub Sahara Africa (SSA) where the reported incidence rates were 1-4 per 1,000 deliveries [3]. Nigeria has been reported to have a high prevalence in the world with about 400,000-800,000 cases and about 13,000 new cases occurring annually [3,4]. Though research works on repairs of OF have been largely successful, prevention holds better promise in reducing the psychosocial and economic burden and promoting reproductive health of the women at risk.

Previous reviews had focused on incidence and prevalence of OF as well as associated risk factors in low-resource countries and globally [5,6]. This review is focusing on the clinical and

psychosocial outcomes of the disease condition such as quality of life alongside interventions for prevention.

Prevalence and incidence of obstetrics fistula

A systematic review of prevalence and incidence of OF in low and middle-income countries reported a prevalence of 1.57 per 1000 women of reproductive age in sub-Saharan Africa compared with 1.2 per 1000 women in South Asia, and with an overall figure of 0.29 per 1000 globally [5]. Several studies have documented the preponderance of OF among all VVF and RVF in SSA [5-7,8]. Obi et al. (2008) documented that 87% of VVFs were OF with most resulting from vaginal delivery and then followed by caesarean deliveries, caesarean hysterectomy and instrumental deliveries [6]. However, there has been reduction in the proportion of VVFs that are OFs from 95% in 1981 to 60% in 2005 and 40% in 2017 which indicate significant improvements in maternal care over the years, though the increasing incidence of iatrogenic fistulae has been worrisome [5,6,9]. Ethiopia has the highest burden of obstetric fistulae globally with a lifetime prevalence of 7.1 per 1000 women of reproductive age and 3 per 1000 in SSA [8].

Epidemiology of obstetric fistula

Prolonged obstructed labour (POL) is the major cause of fistula while other strong predisposing factors are low

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DOI:

10.4103/2278-960X.1945139

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socioeconomic class and early marriage/pregnancy [10-13]. Other documented factors included short stature, malnutrition, underweight, lack of formal education, failure to access antenatal care, residence in rural area or living far away from a health facility, use of abdominal compression during delivery, home delivery, delay in seeking health care, delay in reaching a health-care facility, delay in receiving prompt and adequate health care, lack of equipped health facilities, and shortage of trained health care personnel [4,5,14,15]. These points were corroborated in a systematic review of national demographic surveys in 27 sub-saharan countries with the report of illiteracy, short stature, sexual violence and young age at sexual debut or at first childbirth being risk factors that remains strongly associated with OF [10]. However, some studies reported non-significant association between education and fistula apparently without considering that education plays important role in age at marriage and at first childbirth [10,16,17]. Though, it will be worthy to note the vast variability in the quality of education in different countries in SSA [10].

Parity has shown inconsistent results as a risk factor for fistula [5,11-13,15,18]. Contrary to studies before twentieth century where most women were deserted and divorced or separated, more women with fistula have remained currently married which implied a better understanding of the clinical condition in the society [5,11,13,15-17].

Experience/Perspectives of patients and family members

Women with VVF and RVF in SSA face enormous challenges in accessing care because of low socioeconomic status, non-availability of transportation coupled with poor state of road networks in many communities [19,20].

VVF does not only affect those with the condition but the experiences of the women often have impact on their husbands, family members, peers and the community. Family members are often burdened, anxious, sad and helpless over the condition with a greater burden on the families of divorced or separated women [20]. The husbands and family members are also saddled with the responsibility of caring, seeking for medical care and mobilizing funds for care, providing support during the pre- and post-operative care and rehabilitation of the affected women [20].

Other documented barriers to accessing care include poor recognition of the severity of the condition because of lack of proper information or non-availability of treatment as well as deficient maternal health services, personnel, and limited fistula repair services [21,22].

Effect of fistula on women's social functioning

The severity of OF relates to the profound effect on daily living of the affected women especially with their husbands, in laws, family and the community. Separation and divorce have been reported as a common occurrence mostly because of the associated stigmatization or because they fail to satisfy their husband's sexual needs and/or failure to bear children [23-25]. Other problems include unemployment, isolation, shame, reduced sense of worth and sexuality concerns [25-27].

A study in Ugandan reported that the families of the women with fistula have a higher frequency of abandonment compared with women having other genital disorders like pelvic organ prolapse and severe obstetric tears [21]. The women were sometimes unsure of where to live, with mixed opinions about whether to stay with their families or husbands while some were disallowed from eating with family members or joining community groups [28,29].

Concerning the effect of neglect, abandonment or rejection, Siddle et al. (2013) in a retrospective review of patients that presented for surgical care in Tanzania reported that women with fistula seemed to be affected more when isolated by husbands and the community compared to when abandoned by their own family [26]. However, of greater concern is their future fertility which remains a major burden for most OF patients as those that never had children are worried about whether they could bear children later in their lifetime [28]. Often, as the women become incapable of performing their family roles as expected, they are perceived as "useless" beings and even after undergoing fistula repair their acceptability after re-integration back into the community is impeded by different socio-cultural factors [24].

Outcome/Success rate of repair

Fistula repair has become largely successful as documented in several studies (Table 1), although there have been inconsistencies on the actual definition of a successful outcome [30]. Some authors refer to success as favorable outcome after closure of the hole while others define it as closure of the hole without stress incontinence at the time of discharge whereas some others view success as continence in the months after repair [30,31]. According to the World Health Organization (WHO), a successful repair of fistula is achieved if the fistula is closed, continence is achieved and the woman reintegrated into the family and community (that is, to make the woman able to resume a full and active life) [31].

Numerous interventions and/or innovations have been

Study	Country/Study population	Factors associated with closure and incontinence	Median fistula duration	Closure rates	Continence rates
Tebeu et al. 2014 [32]	Cameroon			Discharge and 3 months HIV+83.3% HIV-80% 6 months HIV+91.7% HIV-89.7% 12 months HIV+91.7% HIV-94.7%	Discharge and 3 months HIV+100% HIV-87.5% 6 months HIV+100% HIV-85.7% 12 months HIV+100% HIV-86.1%
Siddle et al. 2014 [7]	Tanzania			Discharge: 92%	61% on discharge
Maulet et al. 2013 [23]	Mali, Niger		4 years (IQR=8.5)		Recruitment 9(8%) 6 months (30%) 18 months (37%)
Hawkins et al. [14]	Kenya			First time VVF (n=185): 86.5% Previous repair attempted VVF (n=60): 73.3% First time VVF+RVF 2 weeks post repair (n=9): 66.7% Previous repair attempted VVF+RVF (n=6): 50%	

Kayondo et al. 2011 [33]	Uganda	Closure: Large fistula size; Circumferential fistula, moderate to severe vaginal scarring* Residual stress incontinence: Type IIb fistula*, Circumferential fistula, previous unsuccessful repair*		77.9% (n= 77)	
Kirschner et al. 2010 [34]	Nigeria	Continence more likely in patients with intact urethra, an upper or midvaginal fistula, and less fibrosis. Incontinence after first surgery: younger, lower parity, fewer living children, more days in labour, more months with fistula at time of first surgery	Mean time with fistula (months): 53.6 (SD=77.5)	Successful fistula closure (n=977): 84.1%	Postsurgical continence (n=977): 70.5% Dry at discharge 1st Surgery (n=926): 64.2% 2nd Surgery (n=131): 56.5% 3rd Surgery (n=25): 60% 4th Surgery (n=2): 100%
Savan et al. 2010 [35]	Niger and Turkey	Patients reviewed 4 to 10 weeks after surgery		Overall (n=53): 94.3% after first attempt	Continence: 4 of 29 in Turkey 5 of 24 in Niger
Nielsen et al. 2009 [36]	Rural Ethiopia				% dry (n=38) Completely dry: 57% Incontinence: 35% Still had fistula: 8%
Lewis et al. 2009 [37]	Sierra Leone	Associated with surgical success: Older age at fistula occurrence, index pregnancy 4+, location (midvaginal best, circumferential worst), surface area (<2cm), urethral status (intact), and fibrosis*	Mean fistula duration: Primary repair cases: 62.1 months Subsequent repair cases: 92.9 months		Primary operative success: 70%
Browning et al. 2008 [38]	Ethiopia	Women with less urethral involvement improved better over follow up time	Follow up rate: 62%		Among 240 index cases returning for follow up: 85.1% of 148 cured at discharge remained cured, 14.9% worse 53.3% 92 discharged with same incontinence grade, 44.6% had incontinence score improved
Raassen et al. 2008 [39]	Kenya, Tanzania, Uganda	Patients operated within 3 months had better outcome	Mean duration of fistula=36.4 months; Median duration 11 months (Range 0.25-516 months)	581 first time obstetric fistulas caused by obstructed labour Overall closure rate: 93.8%	
Roenneburg et al. 2006 [40]	Niger				Primary Fistula repairs in 65 women: Complete healing 57% (22% of those with complete healing had continued incontinence from stress incontinence, mixed incontinence or detrusor overactivity) Failed repair 17% Lost to follow up 26%
Husain et al. 2005 [41]	Eritrea		Mean fistula duration: 4.1 years (Range 3 months to 20 years)		Successful repair Among primary VVF: 63% Among recurrent VVF: 61% Urethral reconstruction in urethrovaginal cases: 77% RVFs: 87%

Table 1: Outcomes of VVF and RVF repair in SSA studies.

implemented to improve the outcomes of OF surgical repair (Table 2). A shorter duration of catheterization has been shown in an Ethiopian study to be equally as successful as a 14-day option [42]. Even though, the same author had previously demonstrated with a retrospective study that there was no difference between 10, 12 and 14-day catheterization post repair [43]. In addition, a randomized controlled trial, explored the effect of bladder trimming and found out that it did not significantly influence success of repair; however, those fistulae trimmed left larger holes compared with those repairs where the bladder was not trimmed [44].

Fewer studies examined the control of incontinence after repair with findings of post-fistula stress incontinence [43]. A

retrospective study examined three different types of sling procedures for stress incontinence but found no significant difference [19]. Regarding the role of physiotherapy, Castille et al. (2014) compared the postoperative outcomes of 2 consecutive groups of women with OF, and showed that physiotherapy improves the chance of a successful outcome after surgical repair [48].

In addition, good outcomes were reported with the use of local anesthesia for simple uncomplicated VVF repair and performing the procedure as a day case [45-47]. Also, one stage repair for a combined fistula (VVF and RVF) instead of multiple stage repairs has been done with successful outcome [45]. Therefore, it will be expedient for surgeons involved in fistula

Author and year	Country	Intervention/Innovation	Finding
Nardos et al. 2012 [42] Randomized Controlled Trial	Ethiopia	2 alternative durations for bladder catheterization	10-day bladder catheterization (n=107) Fistula cure rate=97.2% 14-day bladder catheterization (n=82) Fistula cure rate=92.7% 10-day bladder catheterization (n=107) Continence rate=86% Retention rate=8.4% 14-day bladder catheterization (n=82) Continence rate=87.8% Retention rate=7.3%
Shaker et al. 2011 [44] Randomized Controlled Trial	Egypt, Niger	Vaginal anatomical closure in 3 layers	Bladder edge trimmed: 67.6% Bladder edge not trimmed: 75% Difference between groups NS 100% cure rates for primary repair in both groups; Fistula after trimming gets larger compared to non-trimming group Difference between groups S
Ascher-Walsh et al. 2010 [19]	Niger:	Sling procedure for stress incontinence post VVF surgical repair	Sling type Fascia lata sling (n=96): 25% dry, 4.2% retention, 16.7% detrusor instability, erosion 0%, stress incontinence 35.4% Rectus sling (n=16): 12.5% dry, 6.3% retention, 18.7% detrusor instability, erosion 0%, stress incontinence 50% Synthetic sling (n=15): 33.3% dry, 6.7% retention, 0% detrusor instability, erosion 20%, stress incontinence 26.7% Difference between groups NS
Nardos et al. 2008 [43]	Ethiopia	Retrospective study comparing bladder catheterization: 10 days vs 12 days vs 14 days	Outcomes assessed at discharge and 6 months follow up Breakdown of repair seen in 1.5% of 10-day group compared to 0% in 12-day and 2% in 14-day group Difference was NS
Ojengbade et al. 2007 [45]	Nigeria	Use of local anesthesia for the repair of simple VVF	Women with simple midvaginal VVF (n=21) Most patients reported adequate analgesia All fistulas repaired without postoperative complications
Ojengbade 2013 [46]	Nigeria	VVF repair as a day case	2 women with simple VVF Huge costs saved Reduces patient load in busy centers Allows early integration with family
Ojengbade 2007 [47]	Nigeria	One stage repair for combined fistulas (RVF+VVF)	20 women with RVF+VVF All patients healed successfully and regained complete continence 1 stage repair without temporary colostomy is feasible and safe Early reintegration of patients possible

Table 2: Interventions and Initiatives for the prevention or management of VVF and RVF in SSA.

repair in resource poor settings such as SSA to consider more cost effective approaches to treatment such as single stage repair of combined fistula, shorter duration of catheterization and hospital stay post repair as well as physiotherapy for post repair incontinence [49].

Mental Health, Psychological outcomes and quality of life

Women with fistula often experience adverse mental health problems such as depression, post-traumatic stress disorder (PTSD), hopelessness, fear of future life, loss of dignity and feelings of dependency. These often results from the stress of the condition, lack of support, social stigma, economical incapability, lack of knowledge about fistula treatment, people's comments and reactions, and the perceived causes [24]. Very high rates of depression with worse severity have been reported among African women with VVF and RVF which decrease their chances of seeking treatment [18,26,50,51]. An Ethiopian study found almost all women with fistula had depression compared to about two-thirds in patients with advanced pelvic organ prolapse [52]. Another study found significantly higher rates of depression, PTSD, somatic complaints and maladaptive coping among OF patients compared to other women attending gynecology clinic for other gynecological conditions [53].

Depression is commoner among older women, divorcee, unemployed, self-perception of fistula as a severe problem, those without social support and those living with fistula for more than 3 months [51,52]. Over half of women with OF in an Ethiopian study had suicidal ideations alongside other feelings such as shame, loneliness and being devalued as a woman [18,29].

Appropriate interventions could significantly reduce the prevalence of depression among women with OF as well as decrease the risk of suicidal ideations, PTSD, somatic complaints and maladaptive coping mechanism. Group psychological therapy

significantly reduced depression scores, suicidal ideation and improved self-esteem among women with OF in Nigeria after surgical repair [49]. Additionally, in some settings, religion has been shown to play a major role in the alleviation of psychological distress among them [54]. Thus, clinicians and psychotherapists need to explore and take advantage of the high level of religiosity in many African communities to plan interventions for women with fistula. This should however be done in conjunction with religious leaders whereby spiritual counseling can be offered alongside psychotherapy and clinical treatment while ensuring compliance and acceptability [54]. These religious groups can also be utilized to drive community awareness and education on OF prevention.

Regarding quality of life (QOL) of women with OF, some studies in the SSA focused on activities most commonly affected by fistula as an index of QOL. Among Tanzanian women, community and religious activities, attendance at local meetings were more affected when compared to activities of daily living [26]. In Nigeria, when the QOL in different domains were considered pre and post fistula repair, the most affected domains before repair were the mental and social health which significantly improved after successful repair [55,56].

Social reintegration /Rehabilitation

Maulet et al. described four mobility patterns of fistula patients as homebound, itinerant, institutionalized and urbanized [23]. These categorizations reflect the pattern of care received, with the homebound group wishing to settle at home soon after repair while the itinerant category makes regular returns to the hospital for repeated repair. The institutionalized women tend to stay in the hospital for longer periods while those urbanized stayed in the vicinity of the repair centre [23].

Rehabilitation and integration of women with fistula back into the society is a key component of their care. Women usually suffer adverse change of social status either from

losing their jobs, being abandoned by husbands, families and society. Therefore, following the repair of fistula, there is need for getting them back into their normal functioning [18]. Family support and getting back to work have been reported as key factors in the recovery of social status but the return to normal life is found to be affected by the length of years the woman lived with fistula [28,57]. Women that have lived with fistula for several years requires special psycho-social support during reintegration [28]. Studies have also identified the need to obtain more of the opinions and desires of the affected women as opposed to those of their healthcare providers, in planning their reintegration into society [58]. However, majority of the women with successful surgical repairs reported that, over a period of time, they were able to resume many of the social and economic activities they engaged in prior to the development of the fistula [57].

In addition to rehabilitation, there have been concerns about future fertility and pregnancies, this area deserves attention by counselors educating women on life after successful fistula repair [57].

Knowledge/Perceived causes/Views of patients

Correct knowledge of the causes, symptoms and prevention of fistula is crucial in efforts at combating and eradicating OF. Though a Nigerian study reported that 70% of women with VVF correctly identified POL as a cause of fistula, misconceptions were still common among women with the condition [59]. Common misconceptions are that God or evil spirits, curse or sin caused OF as a form of punishment, mismanagement during caesarean section or adjunct care given to them in the management of obstructed labour [59-61]. These misconceptions coupled with the poor state of the health system have significantly discouraged women from utilizing healthcare facilities [20,59]. Poor or low knowledge about the risk factors, symptoms, course and available treatment options of OF have also been reported in different studies [62,63].

Table 3 shows awareness, knowledge and misconceptions about fistula in SSA studies. Mass health education campaigns are needed to improve the awareness and knowledge of OF while correcting the misconceptions.

Study and year of publication	Methodology	Country	Sample characteristics	Key findings: Awareness, source of information and associated factors	Misconceptions
Banke-Thomas 2013 [62]	Quantitative	Burkina Faso	121 women in rural and urban areas Median age 19 years. 50.4% had no school education; 45.5% married	36.4% aware of OF (37.9% rural, 34.9% urban) 47.6% urban vs 24.1 % rural sufficiently informed Source of information: media (45.5%) Family and friends (41%) Rural women less likely to receive information from media Identified means of transport in emergency: Motorcycle: 71.7% Ambulance: 15.7%	11% thought they could have pregnancy complications needing emergency treatment
Kazaura 2011 [63]	Quantitative and Qualitative	Tanzania	334 participants 21.9% aged 25-29 years; about 60% less than 35 years; 9.3% males 24% never attended school, 57% only had primary education 30.9% delivered at home	61.1% aware of OF 18.5% of men vs 19.4% have seen a case of OF Local names exist for OF Source of information: mostly from neighbours, followed by health personnel, electronic media, by seeing a case, relative, print media 3% associated OF with prolonged labour Other causes: Wrong operation during CS 24% Baby too big 11.5% Poor family planning 3.1% FGD and IDI findings: Health workers feel OF is not a big problem in area contrary to community members perceptions Perceived causes: Short height, narrow birth canal	Fetus passing through wrong path 2.1% Sex in the puerperium 2.1% FGDs and IDIs Health worker mistakenly puncturing the bladder when removing catheters Sorcery Having sex before recovery from CS
Kasamba 2013 [64]	Qualitative	Uganda	4 FGDs (10-14 participants each) males and females aged 18-49 years	Majority aware about obstetric fistula Perceived causes: Delays to access medical care Induced abortions Conception at an early age Utilization of traditional birth attendants at delivery Complications during surgery for difficult deliveries	Misuse of family planning, having sex during menses Curses by relatives Sexually transmitted infections, Rape Gender-based violence
Zheng 2012 [60]	Quantitative	Uganda	20 sisters of 12 VVF AND RVF cases Sisters mean age: 37 years (range, 21-70 years; mostly farmers (n=16)	All sisters aware of OF as a health condition Awareness of symptoms: Lack of control of urine/feces 15/20 Smell 7/20	Aetiology: Delivery/operation 12/20 Health worker directly caused fistula 6/20
Velez 2007 [65]	Needs assessment, Qualitative	20 countries (5 in SSA)- Burkina Faso, Cameroon, Eritrea, Kenya, Zambia	NA	Burkina Faso Minority think due to difficult delivery Cameroon Identified difficult delivery, Aware condition causes suffering Eritrea Most ware of cause of fistula Kenya Completely unaware of fistula cause Zambia Unaware of fistula cause	Burkina Faso: Fistula as punishment for wrongdoing Cameroon Sexually transmitted infection, Rape, Sorcery, Infidelity, evil spirits Eritrea God's will Kenya Woman not man enough Adultery Witchcraft Zambia Husband's infidelity during pregnancy

Table 3: Community awareness and perceptions concerning VVF and RVF.

Author and year	Country	Sample characteristics	Psychosocial burden/financial burden	Intervention	Social integration
Krause et al. 2014 [21]	Uganda	69 women who underwent surgery for repair of (VVF)	7 (10 %) women identified lack of money as the reason they could not access treatment. 25 (42 %) of these women were rejected by their husbands, 29 were not sexually active.	Education and training in obstetric management was recommended	
Khisa et al. 2012 [25]	Kenya	8 women. 5 had successful surgery. 3 were unsuccessful	3 were divorced while 1 was married but living separately in the same compound with her husband. The women lost their relationships, experienced infertility, were stigmatized, had psychological trauma, and economic loss.	Establish community perceptions of and support to women who had suffered obstetric fistula.	One of the women was undergoing vocational training at a local polytechnic.
Maulet et al. 2013 [23]	Mali and Niger	120 fistula patients' cohort. At 6 months follow-up n=115 At 18 months follow-up n=109	Marriage of majority of the patients was affected. Some husbands absconded while some had to share their husbands with co wives.		Urbanised pattern women (n=23). They were opportuned to work in/near fistula repair centre or in town while awaiting new surgery.
Siddle et al. 2013 [26]	Tanzania	Fistulae women recruited from the disabled ward at Comprehensive Community Based Rehabilitation in Tanzania (CCBRT), n=100	38 of the women had feelings of isolation from their husband and community affected the women in 45 % of cases, inability to fulfil daily commitments and participate in community activities affected 79 % and 80 respectively.	66 % of the patients used the transportMyatient scheme to access the fistula service at CCBRT	
Mselle et al. 2012 [28]	Tanzania	n=151 recruited at CCBRT.	(51.3%) felt they won't be accepted by their husbands and (89%) was afraid of unacceptance from friends even after successful fistula repair.		About (80%) the women have hope and expectation of working and becoming self-sustaining after surgery
Pope et al. [57]	Tanzania	Affected women who had already received treatment and returned to their communities (n-25), non-affected women matched by age and socio-economic circumstances (n-25) and affected women awaiting surgery or discharge (n-21). N=71	52% of those who already had repairs reported problems such as physical weakness, economic hardships and emotional issues, 56% were divorced	Follow-up of the women	68% reported that help from family members with chores or with starting businesses made reintegration easier.
Ojengbede et al. 2014 [49]	South Sudan	120 women with OF that presented for the fistula campaign programme, 73 were repaired but only the results of 60 were considered for analysis.	Participants exhibited different grades of mental ill health	Group psychological therapy (GPT). The mental health status of the participants before and after GPT was assessed	A systematic reduction in proportion of all mental ill health measured after GPT was observed.
Weston et al. 2011 [51]	Kenya	70 obstetric fistula patients attending a national fistula camp.	72.9% of the OF patients were depressed. 84.6% had difficulties in activities of daily living due to depression	Mental health care and family support were recommended.	
Umoiyoho et al. 2011 [55]	Nigeria	QoL of 150 women was compared before and 6 months after successful repair	Before repair, In the mental health domain, the mean quality of life score was 32.4 ± 8.7 and the social health domain mean score was 20.2 ± 2.7	Successful fistula repair	Significant improvements were reported in the women's interpersonal relationships, sexual functioning and level of support from friends and relatives.
Fiander et al. 2012 [69]	Tanzania	Fistula referrals from regions in Tanzania	Transport burden of accessing fistula care	TransportMYpatient initiative	The transportMYpatient initiative transported 166 fistula patients from almost all regions in Tanzania in 2011, accounting for 49% of total repairs
El Ayadi et al. 2019 [75]	Uganda	Follow-up of 60 women a year after obstetric fistula surgery	There was improvement in all psychosocial health indicators in all the women.	Post-surgical reintegration success as regards long-term success of post-surgical family and community reintegration.	Reintegration, self-esteem and quality of life all increased through 6 months and remained stable thereafter.
Donnelly et al. 2015 [76]	Ethiopia	51 post fistula repair surgery women	They all had fear of developing another fistula, most commonly from sex or childbirth, isolation, marital conflict, and/or economic vulnerability	Involvement of women affected by fistula for community outreach and metrics for evaluating rehabilitation and social reintegration efforts were suggested	
Mohamed et al. 2016 [77]	Kenya	190 young fistula survivors	The main psychological effects of fistula were sadness, shame and loss of self-worth.	Community sensitisation, counselling services and skills / vocational training sessions should be part of psychosocial support services to fistula victims and survivors	
Odu et al. 2013 [1]	Nigeria	252 VVF patients	stigmatization, low self-worth and rational ability of patients	It was recommended that adequate support by family and friends be given to VVF patients	

Table 4: Psychosocial outcomes of VVF and RVF.

Interventions for prevention of Fistula

There is need for community involvement and strategies aimed at preventing fistula and/or getting more women with the condition to access care. Short and long-term strategies of preventing OF using the Haddon matrix have been postulated [2]. Short-term strategies appeared most effective and include enhanced surveillance of labour, improved access to emergency obstetric services with competent medical care for women both during and after obstructed labour, and the development of specialist fistula centers to treat injured women in areas with high prevalence. The long-term strategies should include universal access to emergency obstetric care, improved access to family planning services, increased education for girls and women, community economic development, and enhanced gender equity [2]. Additionally, the implementation of catheterization as a primary prevention of fistula in women with prolonged/obstructed labour among healthcare workers will reduce the incidence of obstetric fistula [66].

In Ethiopia and Uganda, the use of volunteer teams of midwives and obstetricians to build capacity of local staff in emergency obstetric care improved hospital attendance rates for obstetric services and reduced maternal mortality and proportion of deliveries resulting in fistula over a three year period [67]. A similar volunteer pilot programme using community mobilization where women identified in prolonged or difficult labour are helped to access care early before complications occur recorded no case of OF in the period after the intervention [68].

In Tanzania, transportMYpatient initiative used mobile phones to transfer funds to women with OF to enable them to transport themselves to the facility; this resulted in increased number of fistula repairs in the community [69,70].

Other interventions that have yielded positive results include a counseling programme for women with fistula in Eritrea which improved the knowledge and self-esteem of the women [71]. Mass treatment programmes for fistula patients have also been reported in some SSA countries such as Nigeria, Guinea and Ethiopia [5,72,73]. In addition to treating patients such mass campaigns potentially increase the level of awareness of communities about aetiology of OF and its prevention. Linked to community campaigns is the use of aggressive community screening for case finding in order to obtain estimates of prevalence and incidence of the condition [74].

Psychosocial outcomes of Obstetric Fistulae patients

Psychosocial barriers are essential factors that can affect a woman's care seeking decisions. Aside enduring the ordeal of obstructed labour, women with obstetric fistula face significant psychosocial challenges [75]. In addition to urinary, faecal or combined incontinence, the psychosocial morbidity including societal stigmatization, divorce and separation, loss of income due to difficulty in securing a job or livelihood and reproductive system difficulties like infertility are enormous consequences (Table 4) [1,21,23,25,26,70].

Low self-esteem, feelings of rejection, stress, anxiety, mental health dysfunctions, and PTSDs, loss of dignity and self-worth, loss of sexual pleasure, depression and suicidal thoughts are other documented psychosocial consequences that can follow this morbidity [1,28,49,51,57,76].

A unique approach to the treatment of fistula is the establishment of fistula hospitals that provide holistic approach to the management of women with the condition especially in countries with high incidence of the disease. Such hospitals will form a veritable hub for fistula treatment, rehabilitation and research. This will also give room for women with OF to relate and encourage themselves while formulating behavioural changes in improving their management [46,47,64,65,77].

There is need for more studies on the burden of mental illness among women with fistula in SSA. Additionally, research is needed on the effect of different interventions that could help reduce mental health morbidity among these women.

CONCLUSION

This review examined the literatures in detail and summarizes the clinical and psychosocial outcomes among women with fistula with a focus on SSA. It also highlighted various aspects of the clinical care in SSA. Additionally, it offers a synthesis of the literature on the suffering and frustration encountered by women with VVF and RVF in SSA by providing evidence of poor psychosocial outcomes among the women. Interventions are urgently needed to prevent this disease and improve the quality of life of those affected by the condition.

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