



Urinary Incontinence Among Women in Sub-Sahara Africa: A Review Article

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Abstract

Among women worldwide, Urinary Incontinence (UI) is very common. With particular examples from Nigeria, we examine UI, its effects, and treatment in sub-Saharan Africa in this review paper. It is challenging to determine the incidence of UI in sub-Saharan Africa, particularly Nigeria, due to the wide range of reporting that occurs from patients concealing their illness because of the stigma attached to it in many communities. Although a large portion of the literature from low- or low-middle-income nations concentrates on pelvic floor fistula UI, new research shows that mixed UI, non-fistulous stress, and urgency are very common in sub-Saharan Africa.

The risk factors for non-fistulous incontinence are similar to those found in high-income countries: high parity, vaginal and assisted delivery, gestational age, constipation, obesity, chronic cough, and ageing. Urinary incontinence has significant social and emotional consequences, with a high proportion of women in African countries reporting relationship problems, depression, and suicidal ideation. The perceived aetiology of incontinence in sub-Saharan Africa is poorly understood, which may, in part, prevent women from seeking medical assistance. To assist the as-yet-unquantified number of women with non-fistulous leaking, more physicians, medical officers, and improved resource prioritisation will be needed due to a shortage of experts qualified to treat women with UI. If the stigma associated with incontinence is removed and women are encouraged to seek treatment, better patient perinatal education may further lower the prevalence of fistula.

Keywords: Urinary incontinence; Obesity; Fistula; Sexual abuse

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Abbreviations

CUI: Continuous Urinary Incontinence; NOFIC: National Obstetric Fistula Center FF: Fistula Foundation; FGM: Female Genital Mutilation; HIC: High-Income Country; LMIC: Low- Or Lower-Middle-Income Country; MUI: Mixed Urinary Incontinence; n-Fui: Non-Fistulous; UINGO: Non-Governmental Organization; SSA: Sub-Saharan Africa; SUI: Stress Urinary Incontinence; UI: Urinary Incontinence; UNFPA: United Nations Population Fund; UUI: Urgency Urinary Incontinence; VVF: Vesico-Vaginal Fistula

Introduction

Involuntary urine loss, or Urinary Incontinence (UI), is thought to impact more than 300 million women globally [1]. It was previously believed that other types of UI, like Stress Urinary Incontinence (SUI), were not nearly as common in sub-Saharan Africa (SSA), where UI is frequently mentioned in relation to Vesico-Vaginal Fistula (VVF) [2,3], which causes Continuous Urine Incontinence (CUI) [4,5]. However, recent data indicates that other types of female incontinence are as prevalent, indicating that this is not the case [6]. The frequency, aetiology, and effects of female UI in SSA are examined in this review article, along with some of the current treatments available.

Prevalence

Because there is a dearth of locally obtained data and potentially erroneous assumptions from other sources, it is challenging to determine the frequency and incidence of UI in SSA. Numerous observational studies have tried to assess the prevalence of UI, but because of a lack of reporting, they most likely understate the disease burden. The best current estimate of prevalence, based on a recent systematic review and meta-analysis that included 17863 women from nine SSA countries, is 21% across all included studies [6].

With a prevalence that ranges from 0.6% in Sierra Leone to 42.1% in Tanzania in the setting

of comparable socioeconomic populations, even this comprehensive evaluation revealed notable variation among the included studies. Urinary leakage has been difficult to report in other studies as well, which may be due to patients concealing their condition out of shame, embarrassment, or a lack of trust in the medical system, as well as a lack of awareness that incontinence is a treatable condition rather than a normal ageing process [7].

It is even more difficult to determine the prevalence of the subtypes of UI in SSA. According to a meta-analysis of national household survey data from the Demographic and Health Surveys and Multiple Indicator Cluster Surveys, household-based surveys that used a multistage stratified cluster sampling design to select a nationally representative sample of women of reproductive age, the lifetime prevalence rate of VVF in SSA was estimated to be 3 per 1000 women of reproductive age [8]. The World Bank estimated that the annual global prevalence of VVF was 50-100,000 in 2015, with 50-90,000 of those cases occurring in SSA [3]. There are fewer studies that examine Non-Fistulous UI (n-fUI), which includes SUI, Urgency UI (UUI), and Mixed UI (MUI), because this was not considered to be such a prevalent health concern [3]. Studies showing a lower prevalence of SUI in Black African women believed that this was due to racial differences in connective tissue [9]. However, recent systematic reviews, which comprised 14 research, found that the estimated prevalence's of SUI were 52%, UUI [10] were 21%, and MUI [11] were 27% [6]. This demonstrates the substantial burden that female populations in low- or Low-Middle-Income Countries (LMICs) in SSA bear due to pelvic floor fistulas that cause UI and n-fUI.

Aetiology

Fistulous urinary incontinence

Obstetric aetiology accounts for approximately 90% of VVF instances in LMICs, with obstructed labour being the most common cause. The foetal head and the posterior surface of the pubic symphysis compress the anterior vaginal wall, bladder base, and urethra during a normal labour. The intervening tissues become ischaemic during prolonged, obstructed labour, which leads to the development of a fistula and incontinence [12]. Foetal malpresentation and cephalo-pelvic disproportion are frequent causes of obstructed labour. Women of short stature, those who were young at the time of their first sexual encounter, and those who were young at the time of their first delivery are especially vulnerable to the cephalo-pelvic disproportion, which can be caused by a narrow pelvis, maternal malnutrition, or prior infections [8]. Obstructed labour is a serious danger for younger women with small pelvises and a larger diameter of malpresentation of the presenting region [13]. Obstetric-related fistulas may also be iatrogenic, resulting from unintentional harm sustained during instrumental or Caesarean birth, or they may develop following a symphysiotomy to correct cephalo-pelvic disproportion.

Although they are far less frequent, traumatic VVFs can be caused by non-obstetric factors including sexual assault or Female Genital Mutilation (FGM). In SSA, sexual assault has been shown to be a risk factor for the development of VVF. The frequency varies by country, perhaps due to conflict areas where rape may be prevalent [14]. Given that women with VVF who have been sexually abused frequently also have a substantial obstetric history, the extent of the issue is unknown [15]. Nonetheless, since these women would have distinct rehabilitation needs throughout the postpartum phase, it is crucial to elicit a history of sexual abuse.

According to some cultural beliefs, female genital mutilation is a vital element of raising a girl in order to ensure her premarital virginity and marital fidelity, as well as to prepare her for adulthood and marriage [16]. It is widely acknowledged as a violation of women's and girls' human rights and is almost always performed on children. Although almost all kinds of FGM constrict the vaginal exit during parturition (Table 1), increasing the risk of neonatal death, its association to traumatic VVF is uncertain. However, some smaller studies have indicated a connection to the most severe types of FGM, including Type 4, Gishiri cutting, and Type 3, infibulation [17,18].

Non-fistulous urinary incontinence

Childbearing, constipation, obesity, chronic cough, and ageing are all recognised as substantial independent risk factors for the development of n-fUI in SSA, and these risk variables are the same as those seen globally [6,19,20].

Due to a combination of nerve injury during pregnancy and labour and mechanical damage to the pelvic floor muscles and connective tissue, childbearing is a known risk factor for UI [21]. Compared to nulliparous women, multiparous women are more likely to experience stress and overall UI. Additionally, there is a direct correlation between prevalence and parity number; for example, women with a parity of 1 had an odds ratio of 1.43, whereas those with a parity of ≥ 3 had an odds ratio of 1.58 [22]. With an average of 4.7 children per female life, SSA has the greatest average fecundity in the world, significantly increasing the significance of childbearing as a risk factor for the development of n-fUI [23]. Although it still occurs after Caesarean birth, the chance of n-fUI is still highest with vaginal delivery and further raised with aided, instrumental, or forceps delivery [24,25].

Caesarean sections are not very common in SSA, and they vary greatly by region [26]. Numerous factors contribute to this, such as access issues brought on by long commutes and inadequate transportation, a shortage of obstetric services, and a shortage of qualified personnel, supplies, and medications. An elevated risk of UI has also been linked to gestational age. According to a study conducted in Ethiopia, pregnant women in their second or third trimester had a 9.6-fold higher risk of developing UI compared to those in their first trimester [27]. Other studies worldwide do support increasing gestational age as a significant risk factor, though this may be an overestimation because of the study's relatively low numbers [28]. Hormonal changes, weight growth, and increased uterine weight are probably to blame for this, as they cause the pelvic floor muscles to relax and become weaker.

Cross-sectional studies from Nigeria revealed that non-fistulous urinary incontinence was more prevalent, with adjusted odds ratios of 1.39 and 1.6 for women who were overweight or obese [29] and a twofold higher risk in individuals with a history of constipation [30]. Lastly, research conducted in Ethiopia and Ghana has indicated that women with a history of persistent cough may be up to four times more likely to have UI [31,32]. Chronic respiratory disease is becoming more prevalent in SSA, according to research [33], and this could play a bigger role in the future development of female UI.

In SSA, increasing age has also been shown to be a risk factor for n-fUI [32-34]. In addition to changes in the patient's functional status, such as decreased mobility, older women experience a number of changes that increase their risk, such as hypoestrogenism, decreased urethral closure pressure, decreased bladder sensation, development

Table 1: The WHO classification of female genital mutilation.

| Types of FGM | Mutilation performed |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type 1 | Partial or total removal of the clitoral glans and/or the prepuce/ clitoral hood |
| Type 2 | Partial or total removal of the clitoral glans and the labia minora, with or without removal of the labia majora |
| Type 3 | Infibulation. Narrowing the vaginal opening through the creation of a covering seal by cutting and repositioning the labia minora, or labia majora with or without removal of the clitoral prepuce/clitoral hood and glans. |
| Type 4 | All other harmful procedures to the female genitalia for non-medical purposes, e.g., pricking, piercing, incising, scraping and cauterizing the genital area. Gishiri cutting is performed commonly by the peoples of the Hausa and Fulani regions of northern Nigeria and southern Niger. It consists of an incision of the posterior vagina into the perineum and is used by traditional healers to treat a range of gynaecological complaints. |

of detrusor overactivity, and increased nocturnal urine production [35].

Implications of female incontinence

The health and social issues faced by women with obstetric fistulas have been examined in a community study conducted in Ethiopia [36]. Despite the small sample size ($n = 52$), the study showed a substantial effect on mental health, with 53.8% reporting suicidal thoughts and 92.3% reporting various levels of depression. The substantial stigma attached to obstetric fistula was further evidenced by the substantial impact on family life, with 19.2% being prohibited from eating with family members and 69.2% being divorced [3]. It is challenging to determine the actual effects of stigma and how it affects a woman's decision to seek medical attention. Seventy-three percent of women with VVF symptoms had sought therapy, according to a meta-analysis of household survey data in SSA [14]. Cost (23.8%), not knowing where to obtain therapy (22.3%), not knowing the condition was curable (21.1%), and feeling too ashamed (10.9%) were the most frequently cited reasons by those who hadn't. Untreated VVF has a significant negative influence on a woman's earning potential, which is crucial in mostly agrarian civilizations where women may make significant financial contributions to the family [3]. Furthermore, women with untreated or treated obstetric fistulas have significantly lower fecundity, either as a result of pelvic adhesions in the treated cohort or because of their pre-existing social isolation in the untreated group [3].

Studies conducted in High-Income Countries (HICs) have shown that n-fUI significantly impairs sleep, mental health, interpersonal relationships, and social life [37]. According to a research article examining results in LMICs, the impact on their quality of life was considerably more severe. In these women, n-fUI was linked to feelings of loneliness, shame, embarrassment, frustration, melancholy, annoyance, and being dirty, as well as difficulties with physical tasks like housework, social activity limits, and urine leaking during sexual activity [38]. The second most popular religion in SSA is Islam, and Muslim women who have n-fUI deal with particular issues that have a big influence on their quality of life. According to one study, 65% of women experienced low self-esteem because they felt filthy because they were wet, and 90% of women said that their inability to pray was the most upsetting thing [39].

Current provision of treatment

Providing treatments for UI is typically low on the priority list in LMICs' overburdened healthcare systems. The care of n-fUI varies greatly, and local surgeons operating camps supported by donor agencies or Non-Governmental Organisations (NGOs) typically treat patients with VVF.

In Nigeria, the prevalence of UUI and SUI is estimated to be 52.7% [40], although some epidemiological studies indicate that the prevalence of UI is 26.5% in women aged 35 to 64 and 41% in those

over 65. This could be even higher, as the majority of incontinent women do not present because of the stigma associated with the condition. When women do present, they are typically of childbearing age. Only infrequently do children, teenagers, and adults over 50 ask for assistance.

While children present to paediatric surgeons or urologists on referrals from other healthcare facilities, women with UI typically seek treatment from a urologist or urogynecologist in a specialised facility. Only a small portion of the incident population is seen because the majority of these specialised facilities are located in Nigeria's main cities.

The majority of women who need evaluation, treatment, or surgery for their faecal and urine incontinence do so through camps that are planned and promoted by non-governmental organizations.

While women with overactive bladder, overflow incontinence, and other causes of UI are treated with medication and, if required, catheterization. Women with moderate incontinence are taught pelvic floor exercises and monitored. In order to help these women, overcome the stigma associated with their condition and encourage treatment adherence as well as future health-seeking behaviour, a team of counsellors is essential.

Dealing with obstetric fistula

Two methods of care are required due to Nigeria's high rate of obstetric fistulas. All-year-round routine free repairs at National Obstetric Fistula Centers (NOFICs) and other fistula centers, as well as coordinated efforts, particularly during outreach in camps for rural women unable to receive routine care.

A charitable organization that helps women and girls by offering free surgery to cure their fistulas and free maternity care to prevent fistulas and promote safe childbirth, the Fistula Foundation (FF) is one of several non-governmental organisations. These organisations connect patients with care providers and fund a number of fistula facilities in Nigeria. Their all-encompassing strategy comprises a program for patient empowerment, education, and rehabilitation that includes microfinance access, a solar project, literacy and numeracy training, and arts and crafts instruction.

Urinary incontinence and its future in sub-saharan africa

Though the medical community in SSA has a decent understanding of UI, this understanding is not mirrored in what women in the region believe to be the root of their issues. 39.1% of 5001 Nigerian women who participated in a community survey said they were aware that women could develop UI [41]. When asked what they thought the cause was, almost half of these ladies either did not answer at all or said they did not know. Pregnancy/childbirth (8.4%), medical comorbidities (9.2%), uncontrollable circumstances (14.6%), pelvic floor or bladder-related reasons (20.5%), and part of being female (8.8%) were the most frequently mentioned causes among the women

who identified them. In addition, 46.1% of women in a community-based survey conducted in Ethiopia blamed sin, curse, or evil spirits for the development of their obstetric fistula [38]. VVF is regarded by some tribes as a kind of retribution for witchcraft or unethical sexual activity [36]. There is a clear need for education regarding the aetiology of UI in SSA, as this lack of knowledge and stigma may be preventing some women with UI from seeking medical advice.

Even while providing quality obstetric care may effectively prevent obstetric fistulas, this is unlikely to happen in the near to medium term because of the stark differences in access to medical professionals between LMICs and HICs. Even though the NGO camps offer effective obstetric fistula surgery, the number of women treated is a small fraction of the total number of obstetric fistula patients in many areas, especially those with n-fUI. There is a significant unmet demand for fistula care and a mostly undiagnosed need for the management of various kinds of female incontinence in SSA because of the stigma attached to incontinence and a lack of knowledge about the available therapies.

Women in SSA bear a heavy burden from pelvic floor fistulas that cause UI and n-fUI, which leads to medical, social, and mental issues. To lessen the stigma attached to UI and to encourage women to seek treatment—which has been proven to be extremely effective for both pelvic floor fistula and n-fUI—it is necessary to educate women and their communities on the aetiology and management of UI [3,42-45].

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