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The Silent Suffering: Obstetric Fistula in Ethiopia

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ABSTRACT Obstetric fistula is a maternal complication that accounts for 6% of all maternal deaths worldwide (Muleta, 2006). This condition occurs most commonly in areas of sub-Saharan Africa and rural south Asia where access to medical care and maternal education is not readily available (Sartin, 2004). During prolonged or obstructed labor, a fistula can form connecting the rectum or urinary tract with the vagina. The condition is more common in young mothers, as they are often pressured by their community, culture, or partners to have children early (Andargie & Debu, 2017). This has severe and potentially devastating lifelong consequences. Women living with obstetric fistula experience chronic incontinence with associated odors, social and psychological isolation, and severe pain (Bashah et al., 2018). Over half of women with obstetric fistula may develop urinary tract infections (Dereje et al., 2017). Despite the condition being preventable and treatable with surgery, there is still a high prevalence in low-income countries (Browning & Syed, 2020). Although the incidences of obstetric fistula are difficult to document due to the lack of medical reporting, this analysis will focus on the effects of the disease in Ethiopia, one of the poorest countries in the world (The World Bank, n.d.). The devastating impact of obstetric fistula on maternal health, particularly in low-income countries such as Ethiopia, demands urgent attention and intervention.

INTRODUCTION AND BACKGROUND

Obstetric fistula is a severely debilitating condition in which there is an abnormal connection between the vagina and the rectum and/or urinary tract. Without access to appropriate, high-quality medical care and resources, women can experience prolonged labor and severe complications during childbirth. It is estimated that one in twenty babies descend into the birth canal with an abnormal presentation; in 3-4% of pregnancies there is a breech presentation (Mohammed & El-Chaâr, 2022). Malposition can result in fistula, for example if the bladder becomes trapped between the baby's head and the woman's pubic bone (Muleta, 2006). The prolonged pressure can result in tissue death and the formation of a fistula (Muleta, 2006). Obstetric fistula has an especially high incidence in young mothers and girls who give birth before the pelvis is fully developed (Cook et al., 2004). Many who develop obstetric fistula endure prolonged labor, with the mean duration of labor being 2.5 to 4 days; and in 90.1% of cases the baby is stillborn (S. Ahmed et al., 2016; Tebeu et al., 2012).

The first evidence of obstetric fistula was found while examining the remains of an Egyptian queen's mummy from 1550 B.C. In the 11th century, the Persian physician Avencien connected prolonged and obstructed labor with obstetric fistulas (Zacharin, 2000). The mummified remains of Queen Henhenit of Egypt (c. 2050 A.D) contain the earliest known human remains with a vesicovaginal fistula. The fistula, discovered upon close anatomical examination in 1935, revealed that due to the maternal shape of the pelvis the baby's head would not have passed through easily, resulting in a wound that potentially led to the woman's death (Zacharin, 1988).

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In the early 1800s, physicians were attempting to close obstetric fistulas and change the lives of women who were forced to live with the condition. The first obstetric fistula treated in the United States was in 1838 by Dr. John Peter Mettauer in Virginia and was followed seven years later by a similar surgery performed by Dr. J. Marion Sims (Zacharin, 2000). It took Dr. Sims 30 different surgeries to discover how to close the fistula safely using wire sutures. He published his first article on fistula repair and is now known as the “father of American gynecology,” opening a fistula hospital in New York, which is now the Waldorf Astoria Hotel (Muleta, 2006). Dr. Sims, while celebrated for his advancement in the gynecological field, is also known to have exploited enslaved women and poor immigrants to further his research (Sartin, 2004). This raises larger questions on the historic inequities Black individuals, especially Black women, have faced in the name of medical progress.

This background is important because it portrays the current crisis through the lens of its history. Obstetric fistula, a condition Dr. Sims spent 30 surgeries attempting to fix, is now virtually non-existent in high-income countries with available access to medical care. It was not until 1959 – nearly 100 years later – when Dr. Catherine Hamlin and Dr. Reginald Hamlin left Australia to found a midwifery training hospital in Ethiopia focusing exclusively on obstetric fistula. That hospital now sees 1,200 cases per year and has a 92% success rate of curing the condition (Muleta, 2006).

Surgery has had a profound effect on women living with obstetric fistula. However, areas with the highest incidence are least likely to have qualified medical professionals to treat the condition (Browning & Syed, 2020). This analysis will focus on Ethiopia, located in the Horn of Africa. With 115 million people, Ethiopia is the second most populated nation in Africa and has one of the fastest-growing economies in the region with 6.1 percent growth in 2019-2020 (The World Bank, n.d.). However, despite economic growth and urban development, obstetric fistula remains one of the most devastating conditions affecting women who live there.

EPIDEMIOLOGY AND SOCIAL DETERMINANTS

The World Health Organization (WHO) estimated that at least 50,000 to 100,000 cases of obstetric fistula occur every year and approximately 2,000,000 women live with obstetric fistula worldwide (World Health Organization, n.d.). These cases are most common in sub-Saharan Africa and southern Asia but have the highest prevalence in countries that have high maternal mortality (Figure 1) (Ridder, 2012). In a 2000 Global Burden of Disease report it was estimated that 2.15% of all “neglected obstructed labor births” and 0.08% of all births resulted in an obstetric fistula (Dolea & Abouzahr, 2000; Adler et al., 2013). The true percentage is likely much higher due to lack of reporting data.

Various social determinants can lead to a woman being at risk of obstetric fistula (Figure 2) (Andargie & Debu, 2017). A comprehensive study conducted in 2017 demonstrated the importance of social determinants of health in understanding obstetric fistula incidence. The study surveyed 4,000 women around Ethiopia and collected data to build a better picture of obstetric fistula prevalence (Andargie & Debu, 2017). Factors such as poverty, lack of access to quality healthcare due to place of residence, limited education, and early marriage contribute significantly to the vulnerability of women to obstetric fistula (Andargie & Debu, 2017). The study also highlighted the association between age at first birth and obstetric fistula, indicating that approximately 29.9% of Ethiopian women who have their first birth before the age of 15 develop obstetric fistula. This decreased to 19.4% between 15-19 and down to 13.8% for women with their first birth at the age of 25 (Andargie & Debu, 2017).

Geographic regions in Ethiopia were also shown to be a significant determinant of obstetric fistula incidence. The region of Amahara had the highest prevalence of obstetric fistula, with a 30.8% incidence rate. This was followed by Oromia and Gambella, which had a prevalence of 27.4% and 24.1%, respectively (Andargie & Debu, 2017). The lowest prevalence was found to be in the capital, Addis Ababa, with a prevalence of 6.3%. A major risk factor in the development of obstetric fistula were delays in care-seeking. It has been recommended that treatment should be provided for obstetric fistula within three months of delivery (Dennis et al., 2016; Lyimo & Moshia, 2019; Mohamed et al., 2018; Waaldijk, 2004). It was found that those with accessible hospitals and prenatal care were less likely to develop fistula, while women who opted for at-home delivery had higher risk (Andargie & Debu, 2017; Roka et al., 2013; Tebeu et al., 2012). Urban areas such as Addis Ababa benefit from healthcare infrastructure, while rural regions such as Amhara, Oromia, and Gambella may face challenges in care-seeking due to limited access to medical resources. With an estimated 80% of its population residing in rural areas, Ethiopia’s population distribution may contribute to the prevalence of obstetric fistula in rural regions. Home delivery is likely more common in rural areas, and has been shown to be a risk factor for obstetric fistula (OECD & Policy Studies Institute, 2020b, 2020a; Bihon et al., 2022).

Education status and literacy may also play a role in the determinants of obstetric fistula development. Of those who had no education, 19.4% developed obstetric fistula; this is compared with 16.2% and 17.9% who had primary and secondary or higher education respectively (Andargie & Debu, 2017). It is well documented that limited education translates to a lack of awareness about maternal health, family planning, and the significance of seeking timely medical care during pregnancy and childbirth (Falkingham, 2003; Karlsen et al., 2011; Onah et al., 2006; Raghupathy, 1996). One study conducted in Peru, a nation with eleven years of compulsory schooling for children, found with compulsory schooling the probability of severe maternal health complications decreased by as much as 29% (Weitzman, 2017).

Socioeconomic factors are also significantly correlated with risk for obstetric fistula. Women from lower income families were found to be at a significantly higher risk of developing obstetric fistula compared to those from higher socioeconomic status (Andargie & Debu, 2017). This disparity underscores the importance of addressing economic inequalities and improving access to healthcare services for vulnerable populations to reduce the burden of obstetric fistula. Targeted interventions are needed that not only address the medical aspects of obstetric fistula but also address the underlying social determinants to effectively prevent and manage this debilitating condition (Link & Phelan, 1995).

PERSONAL ACCOUNTS

Interviews conducted with women in the Amhara region of Ethiopia were recorded to document the social isolation and difficulty in living with obstetric fistula (Animut et al., 2019). One thirty five year old woman describes her experience: “I am passing urine continuously day and night. I can’t get good sleep. My sleeping ‘Agoza’ [a local sleeping pallet made of animal skin] is always wet. Sometimes, I prefer to lie on the bare ground rather than on the ‘Agoza’. I would prefer to live a healthy life for five years than die having lived with this problem for 20 years” (Animut et al., 2019).

Some speak of attempting to cope with the condition by constantly washing their clothes or self-isolating (Andargie & Debu, 2017). Due to the taboo nature of the condition, many women do not seek help. One woman comments on her experience saying, “my brother’s daughters and sons ostracize me due to an offensive smell... If I [didn’t get] married early, I wouldn’t get this disease. Now I am living alone in a little hut” (Animut et al., 2019). While interviewing these women, the authors noticed a recurring theme: many women do not understand the cause of obstetric fistula. Instead, they blame doctors whose hands “tore” at them or, in some cases, blame themselves (Animut et al., 2019). This mistrust of healthcare workers may lead to more extensive problems in the future. The misconceptions behind obstetric fistula must be remedied in these communities. Untreated obstetric fistula may result in severe health complications, in addition to ongoing suffering for affected individuals and a perpetuation of the cycle of misinformation and stigma (Muleta, 2006). Trust in the African healthcare system is particularly tenuous due to the history of colonialism and a lack of culturally sensitive healthcare practices (Lowes & Montero, 2021; Simon & Mosavel, 2008; Tilley, 2016). Widespread mistrust in the healthcare system may lead to general delays in care-seeking and suboptimal health outcomes, including vaccine hesitancy and decreased utilization of essential medical services. Addressing these issues is crucial for promoting community well-being and fostering a more positive relationship between communities and the healthcare system.

INTERVENTIONS: CURRENT ACTION AND DISCUSSION

One of the reasons obstetric fistula is so unfortunate is because the condition is preventable. In Europe and the United States, virtually all known cases of obstetric fistula were eliminated between the years 1935 and 1950 (Ahmed et al., 2016). This is due, in part, to readily accessible safe delivery care. However, in countries such as Ethiopia where many women live in rural communities hours away from medical care, this approach is not always possible. This is one of the greatest obstacles facing eradication of obstetric fistula in rural and low-income countries (Muleta, 2006). Medical infrastructure is expensive and often not feasible in rural areas which can be many hours away from hospitals.

Current action begins at the level of understanding the scope of obstetric fistula in Ethiopia. In Ethiopia, the health system is organized into regional and district levels known as woredas (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). Due to the fragmented nature of the woredas, it can be difficult to consolidate information and build a clear picture of the problem in Ethiopia (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). This lack of clear data hinders policymakers from understanding the scope of obstetric fistula and the need to act.

Prevention of obstetric fistula begins with appropriate education surrounding fistula for both women, their partners, and the community. This educational process and community involvement is important since it is very young women who most often develop obstetric fistula. Hence, emphasizing family planning in this educational initiative empowers women and their families to make informed decisions and support one another, even before pregnancy (Ridder, 2012). Men should be educated regarding reproductive health, the importance of pre and post-natal care, and the significance of skilled birth attendants. Sex education could also be incorporated into curriculums to increase awareness surrounding reproductive rights, safe childbirth practices, and the consequences of early pregnancy. This is especially important because in some regions of Ethiopia child marriages are especially common. In the Amhara region, it has been reported that the most common age of marriage is 12 years old and 80% of women are married before the age of 18 (Tekile et al., 2020). This education would also provide a basis for understanding pregnancy and delivery.

Stigma surrounding obstetric fistula may also be alleviated through educational outreach programs and community initiatives. Studies have shown that the psycho-social impact of obstetric fistula may be devastating, necessitating a solution that includes surgery and a holistic approach (Khisia & Nyamongo, 2012; Mselle et al., 2011). Women from rural areas who might have poor personal hygiene and a lower education status may receive less careful care from health professionals, and thus educational programming should also focus on healthcare workers (Muleta, 2006). As previously noted, negative healthcare outcomes may contribute to a negative healthcare attitude and underutilization of available health resources (Ridder, 2012).

Enhanced surveillance of labor and improved emergency obstetric services must also be utilized to prevent obstetric fistula. In cases of prolonged or arrested labor, or if there are complications in delivery, an emergency cesarean section can prevent obstetric fistula. This comes with access to hospitals and the development of gynecological infrastructure in more rural communities.

A study conducted in 2018 noted that in Uganda treatment for women with obstetric fistula cost an estimated 378 USD per person (Epiu et al., 2018). However, this treatment can be life-changing and has been statistically proven to lead to improved quality of life for those affected (Debela et al., 2021). Treatment centers with expertise in treating obstetric fistula should be established. These centers and dedicated clinics have proven to be a beneficial intervention in low-middle-income countries. Between 2014 and 2018, clinics throughout Mali treated 1,214 women for obstetric fistula and trained 520 healthcare workers. At a fistula clinic at Mungola Hospital in Uganda, 300 women are treated for obstetric fistula annually, with a surgical success rate of over 80% reported (Nalubwama et al., 2020; *Uganda National Obstetric Fistula Strategy*, 2016). These clinics, in addition to providing necessary services for women with obstetric fistula, often provide post-surgery care and recovery services. The clinics also allow for research to be conducted in the region, which assists in disseminating information and guiding further interventions.

In Ethiopia, there has been a dedicated effort to opening fistula centers and decreasing the prevalence of obstetric fistula. Located in Northern Ethiopia, the Mekelle Hamlin Fistula Center was recorded to have conducted 2000 surgeries per year from 2010 through 2013; of these operations, 89.3% were successful (Bihon et al., 2022; Kumsa Meikena et al., 2023). In Southern Ethiopia, the Yirgalem Hamlin fistula center had less success, with a rate of repair failure of 28.8%. The authors note that surgery failures were more likely in women who had very extended labor and larger fistulae, which highlights the need for further preventative measures in addition to treatment (Tadesse et al., 2022). Personalized treatment offered at fistula centers could also build a stronger relationship between health professionals and the community. With increased global awareness, organizations such as The Fistula Foundation have begun raising funds for these treatments. Unfortunately, some individuals take advantage of the funds raised and attempt to perform surgeries without the appropriate training (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). In response to this, the International Federation of Gynecology and Obstetrics founded a global fistula training program to increase the number of skilled providers. This program has proven to be successful, decreasing the prevalence of fistula in Ethiopia in recent years (Gele et al., 2017).

Between 2005 and 2016, a statistical analysis mapped obstetric fistula in Ethiopia. In 2005, almost 100,000 women were known to have an obstetric fistula, while in 2016 only ~72,000 women suffered from the condition (Deribe et al., 2020). This demonstrates that cases have declined in recent decades and shows a substantial reduction in prevalence across Ethiopia (Figure 3) (Deribe et al., 2020). These data can support programs and resources targeted geographically to regions with the highest prevalence.

The decline in obstetric fistula cases in Ethiopia can be attributed to multiple factors. Since 2005, the Ethiopian

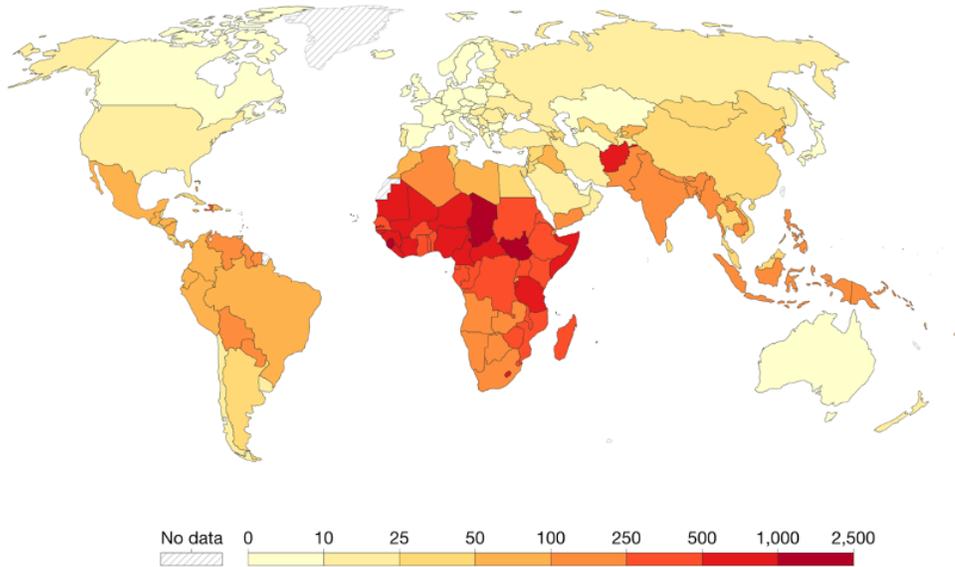
Ministry of Health has deployed initiatives to prioritize maternal health and improving healthcare infrastructure (*Federal Democratic Republic of Ethiopia Ministry of Health. (2010). Health Sector Development Program IV 2010/11-2014/15. Ministry of Health Addis Ababa.*). Efforts to increase access to cesarean sections, coupled with training programs for health professionals, likely also contributed to the decline in cases associated with prolonged obstructed labor (Wright et al., 2016). Healthcare extension workers are also being deployed to regions in need (Gedefaw et al., 2021). Continued efforts are needed to address remaining cases especially in rural regions, and further improve maternal health services.

The consequences of fistulas can be more severe than the condition itself. These consequences can persist even following, and include severe mental health issues (Debela et al., 2021; Dennis et al., 2016; Khisa & Nyamongo, 2012; Mselle et al., 2011). Further research is necessary on the mental well-being of women living with obstetric fistula, who have been alienated by their communities. Mental health services may be necessary following treatment and while living with the condition. Post-treatment care should include access to physical and emotional therapy tailored to the unique needs of fistula survivors. Such therapies can play a pivotal role in the recovery process, aiding in both the physical healing and the emotional resilience of these women. The reintegration of fistula survivors into their communities cannot be overstated. Social reintegration programs should be designed and implemented to provide women with the necessary tools and support to rebuild their lives. These programs not only restore a sense of belonging and dignity but also contribute to breaking the cycle of silence and stigma that surrounds obstetric fistula.

CONCLUSION

Obstetric fistula remains a prevalent and debilitating condition in Ethiopia, particularly in regions marked by poverty, limited healthcare access, and educational disparities. The persistence of this condition, despite the relatively inexpensive treatment, underscores the urgency for concerted action at local, national, and international levels. Obstetric fistula is not only a medical issue but is deeply rooted in social inequities. The specific stories and accounts of women affected with the condition and living in isolation show that those with obstetric fistula must live with both physical and psychological trauma. The nature of this condition demonstrates that comprehensive and robust intervention is needed, with increased investments in healthcare, accessible maternal health services, and educational initiatives. It is necessary to challenge the cultural norms and social pressures that contribute to early pregnancies, in addition to combating the stigma and social isolation surrounding the condition.

It is also important to empower women through education and facilitate access to family planning, thereby fostering safe pregnancies and deliveries. Simultaneously, investments in healthcare infrastructure, particularly in remote rural areas, are imperative to ensure prompt access to emergency obstetric services is equally necessitated. Obstetric fistula is a global human rights issue, as it exemplifies the systemic challenges faced by women in resource-limited settings, where the right to safe motherhood, comprehensive healthcare, and dignity are violated. The eradication of obstetric fistula requires a holistic approach, addressing not only the medical aspects but also dismantling the societal structures that perpetuate inequality.



Source: Gapminder (2010); WHO (2019); OECD (2022)

OurWorldInData.org/maternal-mortality • CC BY

Figure 1. Global disparities in maternal mortality rates 2020 (World Health Organization, n.d.).

Global maternal mortality rates between nations show a profound disparity. Maternal mortality ratios are expressed as a rate per 100,000 live births and signifies the count of women who lose their lives due to pregnancy-related factors during pregnancy or within 42 days after the conclusion of pregnancy. Most high-income countries have extremely low maternal mortality ratios, such as the average rate in the European Union at only eight maternal deaths per 100,000 live births. Conversely, the contrast is striking in Sierra Leone, where a woman's risk of maternal death during pregnancy is 300 to 400 times higher. The estimated rate in Ethiopia corresponds to 401 deaths per 100,000 (Rosser & Ritchie, 2013).

Variables	Categories	Counts (%)	Being Experienced OF		d.f	Chi-Square	P-Value
			No	Yes			
Age at first Marriage	Below 15 years	1022(32.1)	78.5%	21.5%	3	18.542	0.000*
	15 – 19 years	1626(51.2)	84.4%	16.6%			
	20 – 24 years	439(13.8)	81.1%	18.9%			
	25 years and above	91(2.9)	74.3%	25.7%			
Age at first Birth	Below 15 years	254(8.0)	70.1%	29.9%	3	10.767	0.013*
	15 – 19 years	1820(57.3)	80.6%	19.4%			
	20 – 24 years	886(27.9)	84.5%	15.5%			
	25 years and above	218(6.8)	86.2%	13.8%			
Educational Status	No education	2391(75.2)	80.6%	19.4%	2	253.41	0.000*
	Primary	524(16.5)	83.8%	16.2%			
	Secondary and Higher	263(8.3)	82.1%	17.9%			
Place of Residence	Urban	491(15.4)	94.6%	5.4%	1	176.77	0.000*
	Rural	2687(84.6)	78.8%	21.2%			
Marital Status	Married	2998(94.3)	81.1%	18.9%	2	2.493	0.288
	Widowed	74(2.3)	79.7%	20.3%			
	Divorced	106(3.4)	86.8%	13.2%			
Wealth Index	Poor	1412(44.4)	86.8%	13.2%	2	74.301	0.000*
	Middle	562(17.7)	83.6%	16.4%			
	Rich	1204(37.9)	73.7%	26.3%			
Employment Status	Currently working	2165(68.1)	84.0%	16.0%	1	33.092	0.000*
	No currently working	1013(31.9)	75.3%	24.7%			

Figure 2. Social determinants of health and obstetric fistula incidence rates in Ethiopia (Andargie & Debu, 2017).

Table 1 unveils critical determinants impacting obstetric fistula. A substantial proportion (31.9%) were unemployed and had a heightened obstetric fistula prevalence (24.7%). Most women (51.2%) entered marriage during their adolescence (15-19 years), while 32.1% married before age 15. Obstetric fistula was notably high among women marrying at 25 plus (25.7%) and those marrying before 15 (21.5%). Age at first childbirth was significant, with the highest fistula prevalence among teenage mothers (29.9%), particularly those under 15. Educational status played a significant role; most (75.2%) had no formal education, and they exhibited the highest fistula prevalence (19.4%). Among factors examined, including age at first marriage, age at first birth, education, wealth, and employment, all significantly impacted obstetric fistula incidence at $p < 0.05$ (Andargie & Debu, 2017).

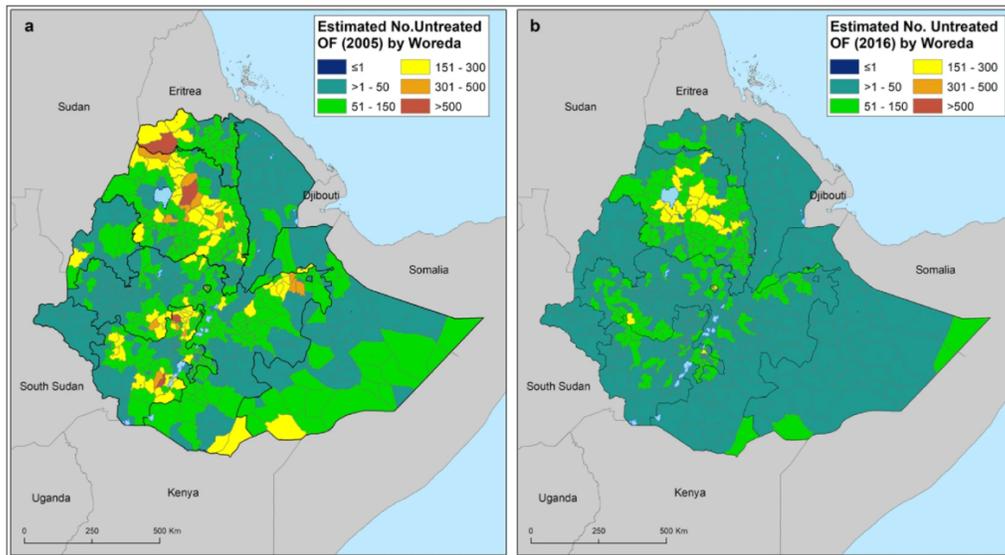


Figure 3. Obstetric fistula incidence in Ethiopia in 2005 compared to 2016 (Deribe et al., 2020). Estimated prevalence of vaginal fistula among childbearing women aged 15 to 49, as delineated by district, in the years 2005 (a) and 2016 (b). A significant shift is seen between 2005 and 2016 when the number of districts containing more than 200 cases decreased from 54 districts to only six. Most of these persisting districts with untreated cases were primarily concentrated in the Amhara, Tigray, Southern Nations, Nationalities, and Peoples (SNNP), and eastern Oromia Regions. This evolving landscape underscores the progress made in addressing this health issue while underscoring the areas that still require heightened attention and intervention (Deribe et al., 2020)

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