Comprehensive Abortion Care: An Investigation of Women's Acceptance and Satisfaction with a Pilot CAC Program in Tigray, Ethiopia

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A thesis submitted in partial satisfaction of the requirements for the degree of

Master of Science

In

Health and Medical Sciences

In the

Graduate Division

Of the

University of California, Berkeley

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Spring 2012

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For my children Tsimona and Tedros

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Acknowledgments

The Joint Medical Program at the University of California, Berkeley provided the Health and Medical Sciences Thesis Research Grant to fund this study. I would like to thank Ndola Prata for her mentorship and guidance, Douglas Jutte for his support, and Maureen Lahiff for her teaching and insight. Most importantly, I am grateful to the women who shared their feelings and impressions about their experiences with the CAC pilot project, without them, this work would not be possible.

Paper One: Review of the Literature on Unmet Family Planning Need and Safe Abortion Services in Ethiopia

Executive Summary

The first section of this paper will explore the general trends and policy shifts in abortion safety and accessibility in Africa. Then the focus will shift to looking at the current trends in reproductive health, family planning and abortion in Ethiopia where the research is based. I explore political, religious and cultural trends and the complex interplay between all three in regards to abortion and the legal history and shifts that are the underpinnings of the pilot project that is being studied.

Next I look at the evolution of family planning healthcare provision in Ethiopia, from post-abortion care (PAC) services to the highly integrated and innovative comprehensive abortion care (CAC) services that are being studied currently. Specifically, I explore the changes in availability of safe services that has been facilitated through provider training and new medical approaches to abortion and family planning, and I attempt to make the case for CAC as a far better model of care than PAC.

Next, I explore the current literature on assessing patient satisfaction with safe abortion care and family planning services, focusing again on work that has already been done in Africa. There are several challenges documented in assessing satisfaction with such a stigmatized and legally ambiguous medical experience, and with defining what satisfaction means in the context of diverse cultural and contextual settings. I review the tools that have been used previously to assess satisfaction and the influences that are important in developing a comprehensive picture of patient satisfaction with CAC.

Finally, I will explore the current gaps in the literature regarding CAC service provision and satisfaction data in Ethiopia, and briefly laying out the proposal for my analysis, that aims to discover what elements of the CAC experience contribute to patient satisfaction and acceptability in an innovative pilot CAC program in Northern Ethiopia.

Introduction

Global estimates in the past decade indicate that as many as 53 million pregnancies are terminated by induced abortion each year. [1] This large number is a product of a lack of access globally to family planning services and contraceptives and a growing number of women who desire greater spacing between children and fewer children in general. Attempts at increasing access to family planning have not kept pace with these changes in desired family size and spacing, therefore a large need for induced abortion persists globally. Unfortunately, only a small fraction of those abortions are performed in a safe manner, particularly in developing countries. Unsafe abortion is defined as a procedure for terminating an unwanted pregnancy that is performed by persons lacking the necessary skills or in an environment lacking minimal medical standards (or both). [2] It has been recognized as an important public health problem that makes significant contributions to elevated maternal mortality rates globally. [2] One study estimated that globally approximately 67, 900 women die each year as a consequence of unsafe abortion, which constitutes about 13% of all maternal mortality; and around 5.3 million suffer temporary or permanent disability. [3]

Part 1: Abortion in Africa

The African continent accounts for a large proportion of the world's overall burden of disease [4]. And, in particular, its share of global reproductive health issues is the largest. It could be argued that of all reproductive health issues that Africa faces today, access to safe abortion and contraceptives is the most neglected. This in large part has to do with a historical lack of access because of prohibitive laws, and subsequent limited services, in addition to social, cultural and religious stigma and shame associated with abortion and contraception in Africa. This combination of factors accounts for a persistent low prioritization of safe abortion, contraception, and a lack of voice in framing these services as reproductive and/or human rights of women. This low prioritization and avoidance of addressing these needs has led to large-scale neglect by governments, funding bodies and communities in addressing this pertinent public health issue.

The extent of the issue has been documented to be quite dire. Though representing 15% of the planet's population, the African continent accounts for 25% of all illegal abortions performed worldwide and less than 1% of all legal abortions. It is further estimated that 99% of all abortions carried out in Africa are unsafe; and the risk of death is one in 150 procedures, by far the highest in the world. [5] The WHO estimates that 5.5 million unsafe abortions are performed in Africa every year, and poor, rural and young women are disproportionately represented in this statistic. Paradoxically, the estimated proportion of all pregnancies terminated by legal and illegal induced abortion in Africa is only 15%, the lowest for any continent. However, Africa has the largest burden of maternal morbidity and mortality due to unsafe abortion, both legal and illegal, and lack of access to family planning services that could reduce the rate of all abortions. [3]

In June 2009, the UN Human Rights Council passed a landmark resolution that recognized preventable maternal mortality and morbidity as a pressing human-rights issue that violates a woman's right to health, life, education, dignity, and information. Additionally the Millennium Development Goals (MDG) outlines in goal 5 aims to reduce maternal mortality by three quarters by the year 2015. [6] Of particular relevance to these political declarations are the elevated maternal mortality rates in Sub-Saharan Africa, which has the world's highest maternal mortality ratios (MMR). In this region 3.9% (range 0.0–23.8%) of maternal deaths are due to induced abortion arising from an estimated 19 million unsafe abortions performed annually. Unsafe abortion is said to account for 14% of all maternal deaths in this region [7, 8] and the WHO estimates that in Eastern Africa, unsafe abortion accounts for one in seven maternal deaths. [7, 9] Recent studies found however that mortality due to unsafe abortion was over 33% in Kenya and in Ethiopia was as high as 50% of all maternal deaths, levels that are higher than what was originally estimated for the region.[5]

Cost

In addition to the untold cost in human suffering and lives lost due to unsafe abortion, there are astronomical costs to the healthcare infrastructure in Africa due to unsafe abortion. The African healthcare infrastructure struggles to address the disproportionate burden of disease beyond the scope of reproductive health that affects this region of the world, and therefore it is understandable that resources are already scarce in addressing reproductive healthcare needs. Additional costs for addressing unsafe abortion complications therefore create a large burden on already struggling

healthcare systems. One study reported that almost three-quarters of emergency or gynecological admissions to some hospitals in Africa in the 1990's were due to complications of unsafe abortion. Furthermore severe complications such as hemorrhage and sepsis were the most common complications, and also the most costly and complex to manage. [5]

The cost of treating these complications represents many times the total per capita health expenditure in most African countries. In some countries, treating complications of unsafe abortion consumes up to 60% of the total annual budget for gynecologic care. [2] Along the same lines, it is hypothesized that in some African countries, women hospitalized for post-abortion complications occupy two in three maternity beds in gynecological wards, and up to half of all OB/GYN budgets can be spent on the management and treatment of these complications alone. [3]

One study in Tanzania in 1993 estimated that the cost per day of providing post-abortion complication care was more than seven times the annual amount allocated by the Ministry of Health for per capita health expenses. [5] According to the Ministry of Health in Ethiopia, post-abortion complications are the fifth leading cause of hospital admissions for Ethiopian women. [10] One study estimated that the annual cost of treating abortion complications in Ethiopia- including costs to either the women or the healthcare system- was almost US$8 million in 2000; a number that has most likely increased in the past 11 years. [2]

An additional "cost" of unsafe abortion in Africa that has been documented in the literature is that to the families and communities of the women who experience the adverse effects of unsafe abortion. This is apparent in loss of productivity, childcare and community participation, deaths of heads of households or providers, as well as disabilities that affect all of these vital tasks those women perform. Thus unsafe abortion, and lack of comprehensive family planning services is not "just a woman's issue" but rather one that affects the core of social structures. [5]

Policy Shifts

A landmark meeting took place in 1994, the International Conference on Population and Development (ICPD). Paragraph 7(2) of the Program of Action from the ICPD defined reproductive health as, "…a state of complete physical, mental and social well-being…in all matters relating to (a woman's) reproductive system and to its functions and processes…" This broad definition dictated that all practices, behaviors, structures and policies that directly or indirectly affect women's reproductive health needed to facilitate a woman's right to complete physical and mental health as distinguished from the mere absence of infirmity or disease.

In the decade following the ICPD and the Fourth World Conference on Women in Beijing in 1995, a shift in discourse in the policy environment based on these profound statements and agreements among many nations began. Additionally a slow growth in information and safe technology for abortion care occurred and an emphasis on training providers to have better skills, knowledge and competency with the new technology created a shift in the care provision environment. Furthermore, there has been a continent-wide effort to ease abortion law restrictions, which in theory helps to increase access to safe abortion. Perhaps most importantly, there has been a slow change in the status of women culturally and politically, especially in urban centers, which together with the political and technological shifts has led to a slow progression towards

recognizing and taking action on comprehensive reproductive health. This dynamic wave of change has offered African countries, leaders and healthcare providers an opportunity to continue the work that has begun in developed countries to reduce and eradicate abortion-related morbidity and mortality. [5]

The Ethiopian health ministry has made a strong political commitment through endorsing the ICPD, the MDG and other international accords and conferences, to address these very pertinent issues in their country, however implementing change is slow and met with opposition from persistent cultural, religious and political forces.[11]

Part 2: Abortion in Ethiopia

Demographics

Ethiopia is the second most populous country in Africa, with over 77 million people. A majority of the population lives in rural areas. As reported in the Demographic and Health Survey of 2005, the countries total fertility rate (TFR) has declined modestly from 6.4 in 1990 to 5.4 in 2005. Furthermore the percent of all women in 2005 who used any method of contraception was 14.7, and those using a modern method was 13.9, an upward trend from levels of 4.8 for any method and 2.9 for modern methods in 1990. Yet a total unmet need for family planning of 33.8 percent persists in Ethiopia as of 2005.

The country's maternal health statistics were as follows in 2010: One in 7 women die from complications of pregnancy or childbirth[11], the number of maternal deaths is fifth highest in the world and the maternal mortality ratio is estimated to be 673 per 100,000 live births as projected by the 2005 Ethiopian Demographic and Health Survey (DHS). This ratio is extremely high in comparison even to other countries in Africa. In fact only a handful of other countries, including Eritrea, Malawi, Chad and Central African Republic had higher ratios as of 2005. [12] Furthermore, an Ethiopian woman's lifetime risk of dying of maternal causes is 1 in 14, a stark contrast to 1 in 2566 among women living in North America. [9]

Because treatment of complications resulting from unsafe abortion requires accessible and high-quality medical services, which do not exist in most of Ethiopia, one can infer that unsafe abortion is a major contributing factor to Ethiopia's high level of maternal mortality. [2] [13] [9] According to a large-scale study in Ethiopia in the year 2000, of 15 hospitals in nine of the country's 11 regions, more than half of women treated for complications of induced abortion had gone to an untrained provider or had induced the abortion themselves.[13] Furthermore the Ministry of Health in Ethiopia reports that abortion complications are the fifth leading cause of hospital admissions and the second leading cause of death amongst hospitalized women. [11]

Religious and Cultural Attitudes Towards Birth and Abortion

Discrimination against women as defined by the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) is, "any distinction, exclusion or restriction made on the basis of sex, which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women…on a basis of equality of men and women of human rights..." Ethiopia is a signatory of this agreement in addition to having a constitutional guarantee of women's rights, yet the laws and agreements have not affected the practices and norms of the society. [11]

Because these human rights guarantees are routinely ignored, approaching safe abortion and comprehensive family planning from a rights-based perspective is less effective and less appealing to leaders, policy makers and the community at large. Approaching safe abortion from the public health perspective of preventing maternal morbidity and mortality is more broadly appealing and less likely to evoke social, cultural and religious issues that can be barricades to progressive change. [11]

As is the case in many countries, even in the United States, the strongest opposition to liberalizing abortion laws in Ethiopia comes from very strong and influential religious groups. Not only do these institutions oppose abortion but also they oppose all forms of family planning, yet they do not offer any alternative options for women to ensure their reproductive wellbeing. Because of the immense religious influence in the country, the hope would be that through using the public health angle of reducing maternal mortality and therefore reduce human suffering, rather than the women's rights angle which is not in the realm of the religious discourse, the religious powers in the country might be willing to play a more realistic and productive social role. This could include having the church promote the changes in the constitution and in public policy that aim to reduce maternal mortality, and specifically making safe abortion and family planning a real and accessible part of the healthcare system in the country.

Currently women's rights advocates and public health officials rely on a constitution that states that, at least in theory, Ethiopia is a secular republican state and has been liberalized to allow safe abortion and family planning in certain settings. This change allows the forces working towards the reduction in maternal mortality to counteract the regressive and oppressive forces of religion in the country. [11]

Reproductive Health Trends

Advocates working against all these forces in the past have had an agenda that is broad reaching. The advocacy issues included female genital mutilation, early marriage, abduction/forced marriage, rape, and HIV/AIDS, in addition to unsafe abortion, which until recently was not taken into consideration in most conversations about women's reproductive health and advocacy issues. However, now unsafe abortion is at the forefront of the policy discussion in large part because of the decriminalization of abortion through legal modifications to the constitution in 2005.[11]

Urban and Rural Trends

There are some well-documented changes and trends in women's feelings about reproductive health and family planning in Ethiopia. The desire for smaller families is increasing, which is reflective of social and economic changes that are occurring in the country. The average desired family size declined from 4.9 in 2000 to 4.0 in 2005. This downward trend continues today. Although family planning services and contraceptive use has increased during this same time period, the change in desired family size has out paced the demand for contraceptives, and there continues to be an unmet need for family planning in the country. [13] In 2005, one study found that 34% of married women aged 15–49 were fecund and did not want a child soon or wanted no more children, but were not using a method. In addition, 14% of unmarried women aged 15–24 in 2005 had initiated sexual activity. But because Ethiopia is a society with a strong social stigma against premarital sexual activity, few were likely to visit clinics to obtain contraceptives, leaving themselves at risk of out-of-wedlock pregnancy and abortion. [14]

Women in urban centers such as the capital city of Addis Ababa are also delaying marriage into their 20's, which has economic consequences. In times of adverse economic conditions, women tend to leave the home to work and become involved in careers that delay the time of marriage and the desire for children. Sexual activity then increases amongst unmarried women, which is a particularly sensitive and difficult demographic to address in public health and public policy work in countries such as Ethiopia that have highly stigmatized religious and cultural beliefs around sexual behavior outside of marriage. In Demographic and Health Surveys (DHS) of Ethiopia, unmarried women rarely report ever having been sexually active, but some smaller-scale studies suggest that this group is in fact sexually active. This stigma and lack of recognition of the sexual behavior of unmarried young women, leads to a lack of services and access to family planning and safe abortion for this particularly vulnerable group who has an increased risk of unintended pregnancy and a higher need for family planning and safe abortion services. [13] The above described proximal determinates of fertility are less relevant amongst rural women in Ethiopia, who make up the majority of women with unmet reproductive needs in the country. Their predicament is more directly influenced by proximate determinates of fertility, including ones which increase fertility rates such as exposure to marriage at an early age leading to an earlier sexual debut, and an assumed higher frequency of intercourse. In addition, they are more directly influenced by ones that reduce fertility rates such as lactational infecundability and those physiological factors such as duration of fertility period, intrauterine mortality and sterility, that are assumed to not be under the control of a woman and which are influenced on a population level by such factors as genetics and nutrition.[15-17]

The popular perception in Ethiopia of abortion and family planning is influenced by politics, religion, cultural norms and geography. As mentioned above, the majority of the population of Ethiopia lives in remote rural regions, where access to care and dissemination of current and accurate information about reproductive care specifically is limited and challenging. As an example, one community-based study conducted as recently as 2007 found that among ethnic Guraghes living in rural areas south of Addis Ababa, women recognized the need for safe abortion services and expressed sympathy for women seeking safe abortion services. Yet they were not educated on where and how to get an abortion, and they believed that they were prohibitively expensive and only available in Addis Ababa. [2] Another study found that the predominant perception is that abortion is restricted to a small section of society, usually unmarried and irresponsible urban young women. In fact, researchers found that the reality is far different. Two thirds of women seeking treatment for post-abortion complications were in fact married, and nearly 60% were between the ages of 20 to 29 years. So the need is not limited to young unmarried urban women and, in fact, that population might be getting the most access while those in the rural areas who are married and wanting abortion services for lack of contraception and a desire for greater spacing between children might be the most underserved because they are perceived as not wanting or needing services. [11]

One study showed that overall 42% of all pregnancies in Ethiopia in 2008 were unintended. [9] And it is true that the proportion was much higher in Addis Ababa (72%) and was lower than average in Tigray (26%) and other rural regions (15%). [2] As women in rural areas begin to choose to space out their children and have fewer children,

unintended pregnancy might become a more pressing concern. Another study indicated that with a rapidly growing population size and declining agricultural land per capita in Ethiopia, the rate of induced abortion in rural communities may increase markedly in the near future. [13] Without increased access to contraception to counter the increased desire to reduce the total number of pregnancies and increase spacing between pregnancies, unintended pregnancy rates in rural areas will increase, and this will account for the predicted increase in desire for induced abortion. [13]

Although it is no longer true that Addis Ababa is the only place to receive safe abortion services in the country, there have been documented regional variations in the abortion morbidity and mortality that may contribute to the differences in the way that safe abortion is perceived and accepted in different regions of the country. It has been documented that women who sought post-abortion care at a facility in Addis Ababa were less likely than those in other more rural regions to have complications. Only 21% of women presenting with complications for post-abortion care in Addis Ababa had moderate to severe morbidities as compared to 43% in other regions.[2] These trends also held true in other more urban areas of the country including Dire Dawa and Harari where 31% of post-abortion care was for moderate to severe morbidities, further making the case for the need to educate and increase access for rural underserved women, who make up the majority of the population. [2]

Legal History

Twenty-six percent of the world's population lives in countries where abortion is either completely prohibited or permitted only in very narrowly defined circumstances, such as is the case in Ethiopia.[3] Many of these prohibitive abortion laws limiting access to safe abortion are in African countries and are remnants of colonial power. These laws were supposedly not created on moral or religious principle but rather were created to protect women from being harmed by untrained providers without the proper skills necessary to perform safe abortion. For example, Mitchell et al. in a study in Mozambique highlighted this point by documenting that the current law on the permissibility of safe abortion stated that decisions about abortion provision would be made on a case-by-case basis only at the hospital level. This law is a legacy of Portuguese colonial rule in that country. [18]

It is a cruel irony that the laws that were created to supposedly prevent deaths of women in the 19th century should now be causing the unnecessary morbidity and mortality caused by unsafe abortion that plagues post-colonial Africa. [5] It has been well documented that the liberalization of abortion laws is not sufficient to make safe abortion accessible and satisfactory to women who are the most in need of the services, however it is a vital and necessary first step, especially in countries with historically highly restrictive laws.

Before law reform came to Ethiopia in 2005, the Ethiopian Penal Code on Abortion, written in 1957, stated that abortion would be allowed only to save the pregnant woman from grave or permanent danger to life or health. This determination had to be made my two doctors, one having to be a specialist in the given medical condition or fetal abnormality being documented in order to certify the need for abortion. This highly restrictive penal code was enough to keep many women from receiving safe abortion in the public healthcare sector, but insufficient to deter women who were

determined to terminate unwanted pregnancies from risking their lives by attempting unsafe abortions by unskilled providers in often unsanitary care settings.[11, 19]

Ethiopia's penal code was extremely limiting to women's reproductive rights and autonomy in another key way as well. Not only did it put strict prohibition on abortion, it also penalized the advertising and sale of contraceptives. Not until 1999, was that particular provision repealed because of its violation of the constitutional guarantee of the "information and means" to regulate fertility. This provision was also a violation of the 1993 Population Policy adapted in Ethiopia that hoped to increase family planning and contraceptive use from 4% in 1993 to 44% in 2015. However the current contraceptive use rate among married women has been documented at only 8% for any method and 6% for modern methods. [20] This demonstrates the disconnect between law reform and actual policy implementation which is a barrier to real substantive change and the connection between contraceptive prevalence rates and the need for safe abortion services in the face of lack of access and disappointing rates of contraceptive uptake.[11]

Legal Reform

In August 2003, the heads of government that are members of the African Union, strived to make safe abortion and abortion law reform an issue central to reducing maternal mortality that was rising in the region. They approved the Additional Protocols to the African Charter on Human and People's Rights. As a first step, Article 14(2c) of the Protocols called for the involvement of States and their duty to protect the lives of women who are vulnerable to the fatal consequences of unsafe abortion. [5]

In 2005, the Ethiopian penal code was amended to allow abortion in a much larger set of circumstances. These included rape, incest, fetal impairment; if pregnancy continuation or birth would endanger the health or life of the woman or fetus; if the woman had physical or mental disabilities; and for all women who are considered minors and/or who are physically or mentally unprepared for childbirth. A key to this law change was that a women's statement was sufficient to establish the need for the abortion legally, removing the previous clause of having two physicians sign off on the necessity of the procedure.

This significant change opened up a huge potential space for the development of safe abortion services throughout the country, reaching those, particularly the young and the least empowered, who needed these services the most. But despite the legal reform, social norms and stigma around abortion as discussed above continue to be slow to change. Additionally, medical advancements are slow to reach a country with limited resources and infrastructure in the healthcare arena. One study in 2008 found that medical abortion using a combination of the drugs mifepristone and misoprostol, which has been on the WHO's complementary List of Essential Medicines since 2005, has transformed the safety and accessibility of abortion by revolutionizing how safe abortion can be provided and experienced by women. But the slow response to the change in law and in the perception of abortion has led to a lag in creating access to this form of abortion that has great potential for meeting the goals of the initial reform. [21]

Another study in 2008 found that despite the law reform of 2005, three years later only 27% of abortions performed in their survey region were legal. Nationally this number varied from zero per 1,000 women aged 15-44 in the rural areas surveyed to 41-46 per 1,000 in Addis Ababa and two other urban regions. The researchers inferred that possibly an additional 15% of all induced abortions were safe and possibly legal outside

of their survey areas, which still assumed that over half of all induced abortions were illegal and unsafe at that point in time. [9, 13]

In addition, another study in 2008 estimated that 382,000 induced abortions were performed in Ethiopia that year, and 52,600 women were treated for complications of abortion, a number that is much higher than in other countries with legal safe abortion provision. [13] The emphasis therefore beyond legal reform has to continue to focus on reducing cultural stigma, informing citizens and providers of their rights and legal privileges regarding safe abortion care. Additionally the inequality in access, shortage of trained personnel and inadequacies in the healthcare infrastructure especially in the large rural population has to be addressed.[2] [13]

Part 3: The Evolution of Abortion Care in Ethiopia

A broader focus should also include an emphasis on addressing constraints and inadequacies throughout the health care system, above and beyond women's health. There is a vital link between a lack of resources and funding in general for healthcare that trickles down to an even more extreme lack of funding for reproductive health services, as historically they have not been a priority in the allocation of limited healthcare resources and they have just begun to enter the discourse of what are considered vital and life sustaining services. [13]

Improvements and changes in the allocation and priorities of the medical system in Ethiopia are paramount to the success of improving access to safe abortion and reducing maternal mortality in Ethiopia. However, reducing the degree to which health services such as safe abortion and family planning are medicalized has also been proven to improve access with similar efficacy and safety. This process includes: adoption of simpler technology and service protocols, authorization and training of qualified lower level providers, simplification or elimination of facility requirements, establishment of robust referral links to hospitals and increasing access for user control and self-medication. [21]

This progression towards making safe abortion more accessible both within the medicalized and demedicalized framework continues to be a slow progression of peeling away layers of historical limitations and conventions in Ethiopia. Since the time of restrictive abortion laws to the present day, there has been progress from a system that only provided Post Abortion Care (PAC) to women with a myriad of complications related to illegal and often unsafe abortion, to the current day, when Comprehensive Abortion Care (CAC) is being piloted in the country. This progression is discussed in detail in the following sections.

Role of Limited Training

Restrictive laws form the foundations for limitations that have plagued abortion care in Ethiopia. However, another layer is the restrictions on care providers and the limitations, both political and cultural, that traditionally restrict the training of physicians and their authorization to perform abortions. Further, even where policies or regulations do not explicitly restrict abortion care to physicians, it has been challenging for non-physician healthcare providers, such as midwives, nurses and health extension workers (HEWs) to learn the clinical skills needed to provide abortion care. [21] One study found encouraging data that the number of health extension workers in Ethiopia nearly doubled

from 8,900 in 2005 to 17, 600 in 2006. The hope is that further research will document whether this increase in primary care providers will create measurable change in service provision and accessibility of quality abortion care services for women with limited access. [13]

Availability of Services

One layer of restrictions is in what services are actually offered, even in the legal medicalized arena. Before the liberalization of safe abortion laws, many countries were only able to provide post-abortion care (PAC) in addition to very limited safe abortion services. In many countries, including Ethiopia, the main focus was to improve access and quality of PAC to address the myriad complications related to the predominance of unsafe abortion in the country. Between 1994 and 2004, access to abortion-related care greatly improved in many African countries, despite the fact that direct safe abortion care was still so limited. Hospital based post-abortion care training and services were introduced to varying degrees in countries such as Egypt, Ghana, Kenya, South Africa, Zimbabwe and Ethiopia amongst others.[5]

The goal was to increase access to PAC services, but not necessarily to reduce the number of unsafe abortions being performed. Increasing access to providers who can stabilize and alleviate risk of morbidity and mortality for women who are not able to access safe abortion care because of legal or logistical issues was the initial priority. This increase in access to hospital-based PAC had the benefit of easing some of the financial burden on families for getting patients to distant medical facilities and ensuring that women had less severe complications from unsafe abortion. It also has had the interesting effect of getting a higher proportion of women with post abortion complications in some areas, especially rural areas, into the hospital than those who come to the hospital for labor and delivery. [2] It did not, however, do anything to increase initial access to safe abortion or increase access to family planning services even further upstream in the preventative care model, and therefore was more of a palliative model of care. [10] [5]

Despite the increase in access to PAC, many women continue to die because they do not or cannot seek care for their symptoms, they die before they reach care facilities, or seek care from traditional practitioners who cannot address their needs. A 1996 National Safe Motherhood Needs Assessment in Ethiopia found continued lack of availability and quality of PAC, particularly in health centers. In this study, only 46% of the care facilities surveyed could perform an emergency uterine evacuation (UE) to treat common complications of incomplete and unsafe abortion. Additionally it found the most common treatment was sharp curettage, an outdated practice that has phased out due to recommendations from the WHO that health facilities should adopt simpler, safer, and equally effective manual vacuum aspiration (MVA) and medical abortion with mifepristone and/or misoprostol. [19] The key to these recommendations is that lower-level providers, such as trained midwives and nurses, can perform these procedures safely, where sharp curettage had traditionally only been provided by physicians and higher level providers. [10]

Now for the majority of women who mostly live in rural areas and access health services almost exclusively at local, decentralized health centers, access to PAC has been improved in theory. The Ethiopian Federal Ministry of Health officially adopted the promotion of MVA by midlevel providers as a way to provide PAC to women in the most

distant regions of Ethiopia. In 1999, they acknowledged this adoption of policy in the Health Sector Development Program and continued promoting midlevel MVA PAC in the Health Sector Strategic Plan for 2005-2010. [10]

Additional recommendations from the WHO safe abortion guidance in 2003 reiterated that safe abortion services in addition to PAC should be provided at the lowest appropriate level of the healthcare system. The recommendations stated that MVA can be provided at the primary care level up until 12 weeks gestation and additionally that medical abortion can be provided in the same care setting up until 9 weeks gestation and that mid-level providers can be the primary providers for this care; including initial abortion services in addition to PAC. The WHO stated that these mid-level providers could be trained competently in bimanual pelvic exam to determine if the patient was pregnant and the position of the uterus, the use of ultrasound for the same determinations, trans-cervical procedures related to abortion care, the actual provision of abortion and the critical skills for recognition, management and referral for complications. [22] These recommendations contributed to a culture shift in the restrictive framework of abortion care and how it had been previously executed, beyond just improving PAC services.

Yet studies as recent as 2004 have found that a consistent supply of MVA continues to be a challenge for the Ministry of Health and associated health centers in Ethiopia. In this study MVA equipment was supplied to an intervention group, and yet 17% of the facilities in the intervention group and 70% of those in the comparison group had no functioning MVA equipment when evaluated. This example highlights the lack of infrastructure in the supply chain throughout the very large, decentralized rural areas of the country and a need for more effective and consistent procurement avenues and systems of maintaining equipment. [10]

Medical abortion is yet another approach that is recommended by the WHO and has great potential to reduce the cost of equipment, procurement, maintenance and training in providing safe abortion services and PAC services at all levels of care. Studies in Kenya, Myanmar and Uganda have successfully proven that trained midlevel providers in the community setting can provide safe abortion services.

Medical Options for Abortion

Misoprostol use for early abortion was pioneered in Mozambique and Cuba. Misoprostol has more side effects and a higher failure rate than a combined regimen of mifepristone and misoprostol. However, as a stand-alone method, Misoprostol is less expensive, more widely available, and stable at ambient temperatures, and is over 80% effective when administered as an oral, buccal, sublingual, or vaginal abortofacient. Its increasing utilization worldwide is thought to contribute to observed declines in abortion-related mortality in restrictive legal settings.[18]

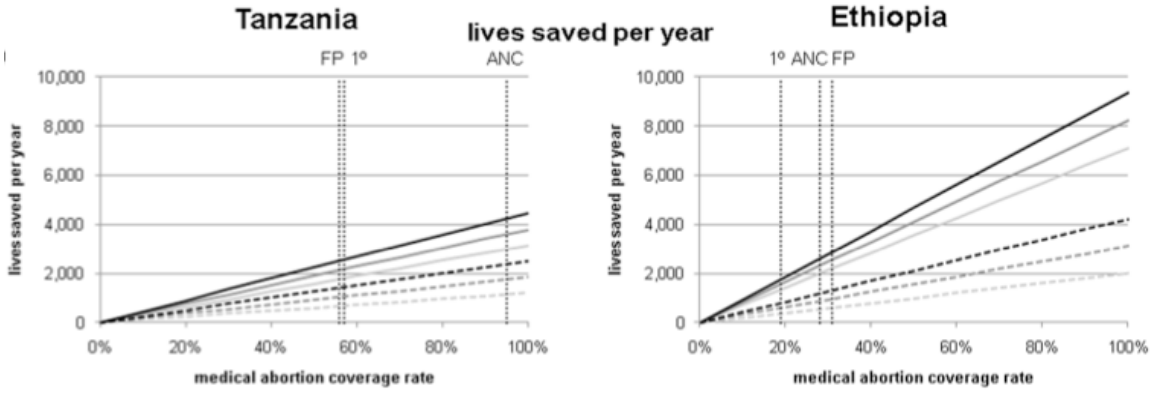
A regimen that allows the choice of home administration can potentially make medical abortion more acceptable to women and providers by eliminating the need for additional clinic visits that may be costly and inconvenient. Clinical studies and evidence-based regimens in many countries show that medical abortion with home administration of misoprostol is a safe and effective option [9–11]. Evidence from clinical studies in low-resource settings confirms that women can safely administer the misoprostol at home [2,12–14]. The International Planned Parenthood Federation (IPPF) and the professional association of abortion providers in the United States, the National

Abortion Federation (NAF), both advise that women can be given the option of home administration of misoprostol.[4]

As an alternative, a paired protocol of mifepristone and misoprostol is the most common protocol used with a documented success rate of 94-97%. However, mifepristone use in developing countries has traditionally been extremely limited due to licensing restrictions that stem from political and legal policies that are prohibitive and out of sync with medical advancements and the promotion of safe abortion and PAC services at lower levels of care that the government has adopted as official policy. Mifepristone has also been limited in use in developing countries like Ethiopia because of its prohibitively high cost.

Misoprostol is more widely used for treating other conditions and is already a registered drug in many countries, including those like Ethiopia with a history of restrictive abortion laws. Therefore, although the misoprostol-only protocol is documented to be less effective it has been accessed by women and doctors to induce abortion illegally, prior to law changes, and it is being explored further as a legal option under new law. Harper et al. (2007) used a simple model to demonstrate the number of abortion-attributable deaths that could be avoided if misoprostol alone was made more readily available by legalization and distribution. They reported that up to 68% of abortion related deaths in Africa could be prevented if the majority of women on the continent had access, and specifically modeled the lives saved per year if the medical abortion coverage rate increased in Ethiopia.

Figure 1. Lives saved per year with increase in the medical abortion coverage rate in Ethiopia and Tanzania.



This is a staggering figure for a drug that is extremely cheap and already in large distribution, making two of the potential hurdles to using it as a safe abortion and PAC drug non-issues. Additional avenues of procurement and distribution of mifepristone are being explored more recently, to make as many efficacious options available to women for safe abortion and PAC services. [23] [3]

A recently published study looked at a nationally representative sample in Ethiopia of 344 public and private health facilities between 2007 and 2008 and found that mifepristone or misoprostol was used rarely in any type of facility (1% of cases overall). Additionally it found that physicians still delivered post-abortion care 43% of the time and midlevel providers only did 35% of the time in the facilities they surveyed. [2]

Another important concern beyond procurement and distribution of the actual medical abortion drugs are the drugs and equipment used to address complications of abortion, even when safe. These include vital pain control medications, which can have a large impact on the satisfaction and acceptability of abortion services for women who receive them. A study in 2004 found that only 51% of all facilities and 64% of those that provided surgical uterine evacuation (UE) reported availability of pain control medications. These shortages could lead to rationing of pain medications for other types of procedures and ailments and general dissatisfaction and determent from using safe abortion facilities. [10]

Family Planning and Comprehensive Abortion Care

Despite the generally discouraging current statistics on low-level provider and medical abortion with combined regimen utilization, advancements continue in Ethiopia towards a more comprehensive approach to safe abortion services. One additional piece beyond the provider level and service provision type is the incorporation of family planning services into the comprehensive picture of abortion care. Incorporating family planning services has been found to be the most cost effective method of reducing maternal mortality in countries such as Mexico. [24] This was supported by modeling in one study that predicted that family planning would lead to significant reductions in maternal mortality because the most lives saved through medical abortion provision that they were using as their model services, were among women with unwanted pregnancies who would otherwise have continued to term. Therefore preventing those unwanted pregnancies would reduce maternal mortality by preventing potential issues in the first place. [2, 3]

Additionally, studies have shown that even in a care setting where PAC only is offered (as opposed to more comprehensive services) contraceptive counseling is a critical element and decreases the likelihood of unintended pregnancy or unsafe abortion in subsequent pregnancies. Additionally, this study found that it is critical to incorporate contraceptive counseling and distribution at the main point of care, as opposed to providing referrals for distribution at other facilities because there is a much greater proportion of contraceptive uptake among women who receive contraceptives at the time of their initial contact with the care system. [10]

More encouraging statistics have recently been generated about the uptake and increase in contraceptive use in Ethiopia. Getahun et al (2000) reported that the proportion of all women in Ethiopia aged 15-49 using a contraceptive method has increased from 22% in 2001-2002 to 34% in 2006-2007. Additionally, they found that the overall contraceptive prevalence rate among married women aged 15-49 also increased, from 8% in 2000 to 15% in 2005. Most importantly, they found that the proportion using modern methods increased from 6% to 14% during that time as well, showing that programs and interventions that aimed to incorporate family planning and contraceptive distribution into their care model were having moderate success. [13] Yet Ethiopia still faces contraceptive shortages due to changing donor commitments. The government has been encouraged to purchase a greater share of equipment and contraceptives needed in order to stabilize funding and commodity gaps and increase access throughout the country and stabilize the supply chain. [10]

Creating more programs that are collaborative between the government and NGOs that incorporate safe medical abortion, referral services and family planning

contraceptive services is the ultimate goal. Additionally, providing these comprehensive services in the more rural and isolated areas, such as Tigray (with 35% morbidity rates from post abortion complications), Affar, Somali, Benishangul-Gumus and Gambela regions (with 32% morbidity rates from post abortion complications), which have been shown to have the most severe morbidity rates from post abortion complications in the country and the worst access to all healthcare services including reproductive services and CAC. [2]

In 2000, a study found that in these regions it is estimated that 80% of public health centers which are the most accessible to women, provide post-abortion care but only 34% provide abortion services and even fewer incorporate referral services and contraceptive counseling and distribution, making these regions the most relevant focal point for future interventions and expansion of services. [13] Beyond expanding safe and reliable services, an additional public education piece must be implemented, especially in these rural regions, to educate women and the larger community on their reproductive rights under the law. [2] But studies on the levels of unsafe abortion and post-abortion complications in addition to studies on the efficacy and acceptability of safe abortion services and comprehensive abortion care in the region are limited. These vital data must be collected in order to access the current care environment and to help better educate the government and the society at large on what services should be legal and affordable to women, where the current services are in addressing the needs of the society and what changes need to be implemented in order to better serve women and their families. [13] [10] There is potential to expand the healthcare system to develop the medical infrastructure to maintain a more comprehensive system, but the current system is weak and until recently the funding has been limited per capita for reproductive care, therefore making alternative means for distribution and implementation of a comprehensive system a necessity. [3]

Part 4: Assessing Patient Satisfaction with Abortion

In an attempt to create a tool with which to assess the development of a CAC program in Ethiopia and to collect vital data about the program, one must first review the current literature to see what tools and areas of focus have been used previously in analyzing satisfaction and acceptability data of this nature. The next section attempts to summarize the tools that have been used previously in similar settings, the areas of focus in analyzing patient satisfaction with abortion care services, and the common trends that have been elicited in previous studies both in Africa and globally.

One of the major outcomes to be determined in this study is patient satisfaction with their care. Assessing patient satisfaction and acceptability of any medical service is challenging. In the case of satisfaction and acceptability of abortion services the task is even more challenging, given the stigmatized and legally ambiguous nature of abortion. Most of what is known about women's perspectives on abortion methods comes largely from high-resource countries and structured questionnaires in efficacy studies where personal choices about setting, method and provider were prevented by randomization.[25] Therefore in resource poor settings or those where randomized trials are not feasible or ethical, the lack of randomization might be thought of as a limitation. However, previous studies on acceptance of safe abortion services have shown the importance of choice of method in influencing satisfaction with treatment and therefore,

assessing the satisfaction and acceptability of the choices given becomes essential to understanding how women interpret their experiences. [26, 27]

Some research has shown that the inherent challenges of researching stigmatized and legally ambiguous medical experiences often favor a mixed-method approach. Comparison of findings from structured and unstructured methods can shed light on a particular topic such as fear, preferences and accessibility of services from several different angles allowing for a more comprehensive understanding.[18]

Regardless of how one collects satisfaction and acceptability data, it is important to understand the analysis within the context of the culture, community and circumstances of the services provided. In many instances, safe abortion services are novel and women's experiences prior to the implementation of the services being studied are highly influenced by negative perceptions and experiences that shape the context of "satisfaction". It must be recognized that women's relief in completing a safe abortion may override expectations about quality of care in the short run. Pittrof, Campbell, and Filippi (2002) caution researchers not to impose a decontextualized perception of quality of care and satisfaction with services, and to not confuse apparent satisfaction with women's sense of relief after surviving a difficult situation that might have historically been perceived as deadly and horrible.[28] It was hypothesized in another study that in places where maternal mortality from unsafe abortion is high, and meaningful interaction with health professionals is limited, women may report satisfaction when care exceeds relatively low expectations formed by prior experiences and not because it reflects their expressed needs or a true objective quality of care. [29] [30]

Because of the circumstances of the services being provided or the lack of safe and comprehensive services provided before the program being evaluated was piloted, women may overlook areas that are true objective components of quality care, such as contraceptive counseling and high quality pain management if areas they value more such as privacy, safety, and effective termination are provided.[18]

As satisfaction and acceptability data from abortion services has often been used to inform policy choices and expansion of services in a region it is equally important to use the data as a jumping off point not as an end point. One must be very careful in ensuring that abortion service satisfaction and acceptability is maintained in non-study conditions including changes in the service setting, say rural and peri-urban settings if the initial study was urban, and with providers who are not specifically sympathetic or trained in the pilot project but rather regular community providers with no vested interest in the success of safe abortion beyond their own practices and beliefs. Unique study-related benefits (e.g. follow up, telephone nurse support, travel reimbursement, and free medications) therefore have to be accounted for in the assessment of satisfaction and acceptability of services. One must assess if women's level of satisfaction and acceptability of services are the same without these study-related benefits, or ensure that the benefits are maintained, before scale-up is attempted in order to avoid the collapse of an already tenuous and often limited service expansion.[18]

As an example, in one study done in urban Mozambique, women shared many of the same concerns regarding satisfaction and acceptability of services as women in higher resource settings, but the practical implications for their method choices and other preferences were often different. Where in one culture women chose to have a surgical abortion in the hospital setting for fear that prolonged bleeding and cramping at home

might disclose that she is having an abortion, another woman might choose to have a medication abortion at home because she perceives a longer hospital stay as a potentially risky exposure in the community that might disclose her status. Understanding the context and constraints in which their method choices were made can assist in understanding the highly contingent and at times contradictory research findings between studies in different cultures and in different regions within the same culture. The key to the utilization of satisfaction and acceptability data is eliciting the nuances of the fine balance between listening to what women and providers want in the context of the very challenging circumstance of abortion decision making and being effective in reducing maternal death and disability from unsafe abortion.[18]

Tools

The tools used to collect these data vary greatly between studies, both in content, length and style. The goal of the satisfaction and acceptability data collection is to record efficacy, side effects, pain management, perceived quality of counseling, patient education, cost and experiences with one (or in some cases two) abortion methods, settings and providers. [18]

Most commonly a standardized questionnaire is either self-administered by patients or administered in a face-to-face interview with a trained care provider.[4, 31] This can either be done pre-abortion or post-abortion or both, and often is performed at the follow up appointment a couple of weeks after the procedure. This can pose some limitations because of recall bias but is often the most convenient time to talk to women about their completed experiences. A third option is supplying each patient with an evaluation form after the abortion and asking them to fill the form out on their own time and return it by mail or at a follow up appointment. Again, this poses challenges with recall and loss to follow up.[32]

In more developed countries, where phone services and infrastructure are better developed and available, women are often contacted by phone to complete structured questionnaires. And when time and resources allow, focus groups are employed, particularly with care providers such as clinic nurses, midwives and physicians, to get a more in-depth perspective on their perceptions of satisfaction and acceptability of the services they provide. [18, 33]

Assessment of Satisfaction

In every study reviewed, a measure of overall or general satisfaction was employed to gauge on a global scale what women's perceptions were. This general assessment was taken most often from a standardized questionnaire but the form of the questions asks and analyzed varied to some degree. The extent to which women perceived that they had autonomy and choice in provider, method and setting preferences and their interpretations of the process, meaning and outcomes of abortion have emerged as central concerns for 'demand-driven' and 'woman-centered' service delivery, and are therefore essential to the analysis of satisfaction. [34] It has been shown that women tend to be more satisfied when they have been offered choices and therefore eliciting the impact of the choices made and the areas where choice or autonomy were lacking is essential. [18]

Additionally, offering women complete and adequate information and appropriate counseling about the procedural options and experiences is essential to measures of high satisfaction and acceptability. Women are typically asked questions about whether or not

they perceived that they had received enough information concerning the treatment, and if they felt calm and safe during the procedure and at subsequent visits. Acceptability is measured through questions in which women are asked to state if the termination procedure overall was as expected, better than expected or worse than expected and through stating their preferred future choices in setting, provider and method type, were they to have another termination of pregnancy.[26]

Interestingly, in many cases when a women reports that the experience was worse than expected she would none the less choose the same method again, because of fear of the unknown regarding different procedures or because the perceived positive aspects still outweighed the negative parts of the experience. This highlights the challenge that women face in abortion related decision-making and in reporting satisfaction and acceptability of a service that is so undesirable and emotionally charged.[32]

Another commonly used angle for analysis of overall satisfaction is asking women about whether or not they would refer a friend to the procedure/provider/care center where they received care. In cultures where direct questioning or direct assertions might be less socially desirable, asking about satisfaction in a more indirect fashion can be effective in eliciting more honest perspectives. [32]

A final question style for assessing general satisfaction cited several times in the literature has to do with women identifying the best and worst features of their experience. This can allow a women to give more socially desirable positive answers that she might perceive as being the "correct" answer while coupling them with the more difficult, negative experiences so as to feel safer reporting those feelings. [35, 36]

Regardless of question style, one persistent challenge in more generalized questions about satisfaction and acceptability is that women who are served through study-related safe abortion services generally report a "very satisfactory or satisfactory" experience, regardless of ones more objective decontextualize perceptions of the quality of services actually provided. Although women with method failure or severe side effects tend to be less satisfied, in one study more women reported overall satisfaction than reported method success and therefore it can be concluded in some cases that method failure and side effects are not necessarily always linked to levels of reported satisfaction.[35]

This harkens back to the concept that satisfaction is very subjective and must be considered in the context of cultural, historical and political circumstances in the particular care setting and population. Women with more dire and concrete priorities like mortality, privacy and access may rate a service satisfactory that would otherwise be considered unsatisfactory, especially in the instances of low-resource, rural and traditionally underserved settings. This begs the question of how effective overall measures of satisfaction and acceptability are in eliciting the finer nuances of perceived quality of care. [4]

Part 5: Conclusion & Proposed Research Project

Without changes in global access to family planning services to address changes in desired family size and decreasing fertility rates, a need with persist for access to safe abortion, particularly in areas with the least access to family planning and contraceptive services. Unfortunately access to safe abortion is limited in these areas, and particularly in sub-Saharan Africa. Few comprehensive abortion care services have been offered in

this part of the world because of restrictive laws and social and cultural shame. Even fewer studies have looked at women's satisfaction with and acceptance of safe abortion services, primarily because they have not been offered in this part of the world, until the Comprehensive Abortion Care Pilot Project was initiated in Tigray, Ethiopia in 2009.

This study will attempt to address these documented limitations in services and assessment of satisfaction with services by examining data from a pilot project, taking place currently in the Northern regions of Ethiopia. I will attempt to elicit key information about what factors affect patient satisfaction and acceptability with Comprehensive Abortion Care services in Tigray, Ethiopia. Specifically, I will look at the role of key socioeconomic and reproductive factors such as age, education, geography, gravity and parity and prior abortions in predicting patient satisfaction. In addition, utilizing a composite adverse side effects score and other indicators of satisfaction I will try to try to better understand the complex interplay between demographics, reproductive history and personal experiences in influencing satisfaction with CAC in this region of East Africa.

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Paper Two: Comprehensive Abortion Care: An Investigation of Women's Acceptance and Satisfaction with a Pilot CAC Program in Tigray, Ethiopia

ABSTRACT

Background

Unsafe abortion is a major cause of morbidity and mortality in Ethiopia, though access to safe abortion has increased following liberalization of abortion laws in 2005. In 2009 and 2010, the Tigray Health Bureau and partners implemented a pilot program of comprehensive abortion care (CAC), which provided care to approximately 5000 women over 15 months.

Methods

This study aimed to assess the satisfaction and acceptability of CAC for 1706 participating women, each of whom was offered a 60-question survey at follow-up.

Key Results

Results show that 98% of women rated their overall experience as satisfactory, 99% were satisfied with the provider and method used, 95% said they were able to talk about their feelings, and 90% said counseling prepared them for the procedure. Women in the study also showed a strong preference for medical abortion with only 22% of women who received surgical abortions saying they would have a surgical abortion again, as compared to 78% of women who had combined misoprostol and mifepristone medical abortion and 83% of women who had misoprostol only medical abortions. Women attended by nurses and doctors had significantly higher odds of feeling that time with the provider was too short, as compared with those attended by a Health Extension Worker (OR 10.9, $p < 0.001$, [95% CI 3.1, 37.8]).

Conclusions

This study shows that CAC service provision is highly satisfactory to women in the region and that well-trained lower level providers are satisfactory and acceptable for women seeking services. This program has the potential to reduce abortion-related morbidity and mortality in a way that is acceptable to the women seeking services. It is recommended that in training providers, an emphasis be put on counseling women more extensively and for longer periods of time to reduce fear associated with home administration of abortion and to increase satisfaction with providers.

INTRODUCTION

Background

Global estimates in the past decade indicate that as many as 53 million pregnancies are terminated by induced abortion each year. [1] This figure is a product of a lack of access globally to family planning services and contraceptives and a growing number of women who desire greater spacing between children and fewer children overall. Attempts at increasing access to family planning have not kept pace with changes in desired family size and spacing, therefore a large need for induced abortion persists globally. Unfortunately, only a small fraction of those abortions are performed in a safe manner, particularly in developing countries and sub-Saharan Africa. It is estimated that 99% of all abortions carried out in Africa are unsafe and the risk of death is 1 in 150 procedures, the highest risk in the world. [2] In sub-Saharan Africa, unsafe abortion is said to account for 14% of all maternal deaths, and in Eastern Africa unsafe abortion accounts for one in seven maternal deaths. [3, 4]

Ethiopia is the second most populous country in Africa, with over 77 million people. A majority of the population lives in rural areas. As reported in the preliminary results of the Demographic and Health Survey of 2011, the country's total fertility rate (TFR) declined by 25% from 1990 to 2011 (6.4 to 4.8 average children per woman). In 2011, 28.6% of women used any method of contraception and of those 27.3% used a modern method. This is an upward trend from levels of 4.8% for any method and 2.9% for modern methods in 1990, but a total unmet need for family planning of 25.3% persists in Ethiopia as of 2011.

In 2010, one in seven women in Ethiopia died from complications of pregnancy or childbirth, the fifth highest rate in the world. [5] The maternal mortality ratio was estimated to be 673 per 100,000 live births, an extremely high ratio in comparison even to other countries in Africa. [6] Because treatment of complications resulting from unsafe abortion requires accessible and high-quality medical services, which do not exist in most of Ethiopia, one can infer that unsafe abortion is a major contributing factor to Ethiopia's high level of maternal mortality. [7-9]

According to a large-scale study in Ethiopia in the year 2000, of 15 hospitals in nine of the country's 11 regions, more than half of women treated for complications of induced abortion had gone to an untrained provider or had induced the abortion themselves. [8] Furthermore, the Ministry of Health in Ethiopia reports that abortion complications are the fifth leading cause of hospital admissions and the second leading cause of death amongst hospitalized women. [5, 10] One study estimated that the annual cost of treating abortion complications in Ethiopia- including costs to either the women or the healthcare system- was almost US$8 million in 2000; a number that has most likely increased in the past 11 years. [7]

In 2005, the Ethiopian penal code was amended to allow abortion in a much larger set of circumstances. These included rape, incest, fetal impairment; if pregnancy continuation or birth would endanger the health or life of the woman or fetus; if the woman had physical or mental disabilities; and for all women who are considered minors and/or who are physically or mentally unprepared for childbirth. A key to this law change was that a women's statement is sufficient to establish the need for the abortion

legally, removing the previous clause of having two physicians sign off on the necessity of the procedure.

This legal liberalization has lead to an opportunity to create more programs that are collaborative between the government and NGOs that incorporate safe medical abortion, referral services and family planning contraceptive services. [11]

Comprehensive Abortion Care (CAC) pilot project

Out of this opportunity a Comprehensive Abortion Care (CAC) pilot project was developed. This project was a collaborative effort of the Tigray Regional Health Bureau, Venture Strategies Innovations and the Bixby Center for Population, Health, and Sustainability at the University of California, Berkeley. The goal was to introduce a Comprehensive Abortion Care Pilot Program that included provision of safe abortion, a referral system, treatment of incomplete abortion and post abortion contraceptive services. In addition, this project aimed to make CAC available in the community by utilizing health extension workers at community health posts, in addition to nurses, health officers and physicians at health centers and hospitals. The aim was to assess the feasibility of having all levels of the health care offering medical abortion, including at the community setting. The broad goal of the pilot program was to reduce abortion-related morbidity and mortality in the region and provide evidence to inform future safe abortion service provision and programs in Ethiopia and the greater region.

The purpose of this study was to analyze the patient satisfaction and acceptability data that was collected during the CAC pilot project, to answer the question: what factors are associated with women's acceptance of and satisfaction with the provision of medication abortion in the community setting?

RESEARCH METHODS

Data Source

The data in this study came from the aforementioned larger parent pilot Comprehensive Abortion Care project in the Tigray Region of Ethiopia between June 2009 and September 2010. During the study period each participant had a service delivery form that documented her clinical course through the project and then all women were offered the choice of completing an exit interview survey. The service delivery form and the exit interview form were the sources of data for this study.

Tools-Exit Interview

The exit interview was a 60-question validated survey tool. Participation in the exit interview was optional and informed consent was obtained verbally prior to the interview. It was completed at the two-week follow up appointment after service provision. A trained service provider, who was different from the provider who treated the patient, administered the exit interview in a face-to-face oral interview in as private a setting as possible.

The interview addressed satisfaction with and acceptability of services provided in the following domains: satisfaction with the services received at the health facility including pre-procedure examination and counseling, experience with the procedure, post-procedure pain management and contraceptive counseling, in addition to overall experience and satisfaction. The interview also collected details of the services provided

including information on provider type, method type, and referral and follow up visit logistics.

Service delivery forms were collected from 4,354 women, and exit interviews were collected from 2,210 women, or 51% of the participants. Of the 2,210 exit interviews collected, 1,706 were included in our analysis.

Satisfaction measures

Patient satisfaction was analyzed using a number of different questions in the categories of satisfaction and acceptability of the provider and satisfaction and acceptability of the method. Experience with side effects was accounted for in the analysis of method satisfaction by creating a composite side effect severity and acceptability score. Each side effect recorded was considered severe if the patient recorded a side effect severity of 4-5 on a 1-5 scale (1 being least severe, 5 being most severe), or it lasted for greater than 30 minutes, or it required medication. Then women were categorized by having 0, 1, or 2 or more severe side effects.

Descriptive analysis

Descriptive analysis was completed looking at demographic variables including district of residence, age, education level and marital status. Additional descriptive analysis was performed looking at reproductive variables such as uterine size measured by weeks of gestation, gravida, and number of live children, previous abortions, previous contraceptive use, whether or not the pregnancy was wanted and post-abortion contraception uptake.

Bivariate analysis

Bivariate analysis was then carried out in the domains of acceptability of method used for the abortion and acceptability of provider. In the method domain, analysis was done using variables that addressed side effect acceptability, whether or not a patient would recommend the method she used to a friend in need of services and whether or not she would choose the same method again if they needed another abortion. These variables were then cross-tabulated by method sub-type categorized as surgical (manual vacuum aspiration or MVA) or medical (misoprostol only or misoprostol and mifepristone combined).

In the provider domain, analysis was done using the survey questions that addressed total satisfaction with provider, whether or not a patient would recommend the provider that attended them to a friend in need of services, and whether or not they would choose the same provider again if they needed another abortion.

Logistic Regression

Multivariable logistic regression analyses were conducted to assess factors associated with patient satisfaction. Results are presented as odds ratios and 95% confidence intervals. Two questions with variability in satisfaction response were used as outcome variables. For the analysis of satisfaction with provider, a logistic regression model was built using the question, “the time I was able to spend with this provider was a bit too short”. This question was answered on a 5-point Likert scale; from strongly disagree to strongly agree. The answers were then dichotomized into yes and no for

logistic regression, by grouping all positive answers such as strongly agree, agree, etc. into the yes category and all negative answers into the no category. Provider type indicators of doctor, health officer and nurse categorized the results of this analysis with health extension workers as the reference group. The variables that were controlled for in this model included age, geographic region of residence, education level, marital status, number of live children, gestational age, gravida, if the pregnancy was wanted or not, and prior contraception use.

A second logistic regression model was built to analyze satisfaction with abortion method. This model used the question, "I was worried or afraid to be at home during part of the termination". This question was also answered on a similar 5-point Likert scale, with answers then dichotomized in a similar yes-no fashion as described above. The model controlled for region of residence, age, education, marital status, gestational age, gravida, number of live children, if the pregnancy was wanted or not, prior contraception use, provider type, side effect severity score, and contraception uptake after abortion. This model was run for two different groups of patients: women who only received medical abortion and women who had either surgical or medical abortions.

RESULTS

Data from 1,706 exit interviews were included in the analysis. Table 1 shows the participant socio-demographics for the sample. The mean age of the sample was 23 years with a range from 14-48 years. A majority of our patients had some educational attainment and 61% identified as single. Table 2 shows that the mean uterine size or weeks gestation at first visit was only 9 weeks, and for nearly 90% of the patients this was their first abortion. Almost 50% of women had used contraception previously, but 95% said that they did not want to get pregnant at all, that they wanted to get pregnant later or that they wanted the pregnancy at first but didn't at the time they requested an abortion.

Table 3 shows the results of bivariate analysis comparing percentage satisfaction with the provider, by level of provider. Results show that overall satisfaction with the provider was high at 96% satisfied with health extension workers, 99% satisfied with nurses, 99% satisfied with health officers, and 100% satisfied with doctors. The results were similar when patients were asked if they would recommend their provider to a friend who was seeking services. Fewer women said they were confident that the counseling provided to them prepared them for their procedure, especially for women attended by a physician. Only 79% of these women reported that they felt the counseling prepared them, compared to 92% who were attended by a health extension worker, 95% who worked with a nurse, and 94% who worked with a health officer.

Table 4 shows the results of bivariate analysis comparing measures of satisfaction with the method, by method type. 96% of women who had a surgical abortion reported acceptable side effects, and 98% of women with either form of medical abortion reported acceptable side effects. A majority of women said they would recommend the method they used to a friend, with 94% of surgical patients reporting this, and 97% of combination (mifepristone and misoprostol) medical abortion, and 98% of misoprostol only medical abortion patients reported that they would recommend the method to a friend. However, only 22% of patients who received a surgical abortion reported that they would use the same method again if they needed another abortion, compared to 78% of

women who received a combined medical method and 83% of women who received the misoprostol only medical method.

Table 5 shows the results of logistic regression analysis using the question, "The time I was able to spend with the provider was a bit too short" as the outcome variable, controlling for socio-demographic and reproductive history variables. Results show that compared to women attended by a health extension worker, women attended by a physician had ten-fold higher odds of saying they felt the time spent with the provider was too short (OR 10.9, $p<0.001$, 95% CI 3.1, 37.8). In contrast, women were less likely to feel that the time spent with the provider was too short if they had been attended by a health officer, compared with those attended by health extension workers (OR 0.2, $p=0.002$, 95% CI 0.1, 0.5). Other significant associations for stating that time spent with their provider were too short included women who lived in the most rural areas and women with no prior contraception use.

Table 6 shows the results of logistic regression analysis using the question, "I was worried or afraid to be at home during part of the termination" as the outcome variable, with results categorized by risk factors and protective factors for being worried or afraid during medical termination at home. In this analysis we controlled for age, education level, marital status, gravida, live children, and prior contraception use. Additionally, we adjusted for gestational age, whether or not the pregnancy was wanted, and side effect number and severity when they were not the predictor of interest. Several significant results were found in this analysis. Women who were between 10-12 weeks gestation had 1.6 times the odds of saying that they were worried or afraid to be at home during their termination as compared to those who were less than 10 weeks gestation ($p= 0.020$, 95% CI 1.1, 2.3). Women who were attended by a physician had 23.1 times the odds of saying they were worried or afraid to be at home during the termination as compared to those attended by health extension workers ($p=0.005$, 95% CI 2.5, 211.7). Additional risk factors significantly associated with fear of being home for part of the termination included having an unintended pregnancy; having a nurse as a provider; having 2 or more severe side effects; and being from the urban region. Significant protective factors included 2nd pregnancy, prior contraception use and adoption of contraception after abortion.

Table 7 shows results of a logistic regression using the same explanatory variables, except it includes women who received both surgical and medical abortion methods. The same significant associations were found as when the analysis was run only including women who received medical abortion- unintended pregnancy, nurse or physician provider, two or more severe side effects, and urban residence – with the exception of gestational age 10-12 weeks. Protective factors found were having only one severe side effect and contraception uptake after participation in the CAC pilot project.

DISCUSSION

In a study of 1706 patients receiving Comprehensive Abortion Care in Ethiopia, we found that women generally were satisfied with the services provided. Overall, we found that satisfaction and acceptance of the services provided was high, and that women preferred medical abortion to surgical abortion. Satisfaction with providers was high, especially with health extension workers and health officers, however satisfaction appeared to be lowest with provider counseling, especially with physicians. This

manifested in two different ways in our analyses. Women reported having more fear when completing their abortions at home when they were attended by physicians and also reported feeling that the time in counseling with the provider was too short, when attended by physicians.

We are not entirely sure if this is a function of provider quality of services, as there is an inherent variation in quality with such a large service area, or more specifically a function of time spent with the provider. It appears that particularly with physicians, women felt less prepared for their procedure, and this could be due to feelings of inadequate time spent with the physician.

Additionally, women who were from the most rural region, felt that the time with the provider was too short. This could be a function of several things; rural providers being overwhelmed by the volume of patients, rural women having to travel farther for services and therefore hoping to spend a greater amount of time with the provider as return and follow up visits are more challenging.

It appears that being attended by a health officer is protective against feeling that the time with the provider was too short, which is a testament to the quality of services and time allotted by health officers.

Having used contraception prior to participating in the CAC pilot program was protective against feeling the time with the provider was too short, which might be due to the fact that women who have used contraception before might have more familiarity and comfort with reproductive health matters and therefore might need less time with the provider to feel prepared for the procedure.

It appears that women were at greater risk for feeling afraid to self-administer at home if their pregnancy was unwanted, 10-12 weeks gestation, if they came from an urban area, or if they were attended by a physician or nurse. Again there are a multitude of reasons why all these variables could contribute to higher odds of being afraid, but likely they are a function of quality and time spent in counseling with the provider, similar issues as mentioned above for variation in regional expectations of care and actual quality of care, and higher level of fear associated with more severe and unpleasant side effects.

Women had less odds of being afraid at home during the termination if this was their second pregnancy, if they had used contraception prior to this pregnancy, if they had only one severe side effect, and if they took home contraception after the abortion. Again these variables are associated with increased levels of comfort and familiarity with pregnancy, reproductive health issues, body issues, and less adverse feelings given fewer side effects.

Satisfaction with the methods used for abortion also appeared to generally be very high. In particular women seemed satisfied with the side effects after all procedures. However, there was an overriding theme of higher satisfaction and acceptance of medical abortion. This could be related to several factors, including the privacy afforded to a woman who can self administer part of her medical abortion in her own home, and the lower risk profile of medical abortion verses surgical abortion.

This is the first study on abortion-related service satisfaction in sub-Saharan Africa and Ethiopia. Therefore the results from this study will help to inform future programs in the area and will help to develop a body of knowledge pertaining to women's preferences in the provision of abortion related services in the region.

A majority of the women served were young and single, with low gestational age and a high level of unintended pregnancy. This tells us several things about the population we are serving in the region. One is that women who are young and single are the most vulnerable in terms of having unmet family planning needs and high motivation to seek safe abortion services. The low mean gestational age of our study population tells us that women were able to access the services of the CAC early on in their pregnancies, which is helpful both to the women and the providers in reducing risk, complications, morbidity and mortality and increasing satisfaction and acceptance.

Only a handful of other studies have been published addressing abortion satisfaction and acceptance in Africa. There are two studies, in Uganda and Mozambique, countries that both have similar fertility and maternal mortality profiles to Ethiopia. In both cases, it was found that abortion services were unsafe and less than ideal, due to the stigma of illegality surrounding abortion, and due to poor training of providers, leading to less than ideal safety conditions and poor contraceptive counseling and provision and low perceived satisfaction for patients. Both studies support the fact that a CAC model of care is ideal for countries in Africa, especially those that address abortion care needs utilizing lower level providers and home administration of medical abortion. [12, 13]

More extensive and similar studies have been conducted in Tunisia, where patient satisfaction with safe abortion services utilizing community provision of medical abortion were executed as a pilot project that was then expanded. The study found similar findings of high levels of satisfaction, particularly with home administration of medical abortion due to women's feelings of confidentiality, ease and convenience of administration, and decrease in cost and inconvenience of travel and repeat clinic visits. [14-16]

LIMITATIONS

This study is not without limitations. There was a 20% loss to follow up rate at the two-week follow up visit. Furthermore not all women who volunteered to complete the survey could be interviewed, because in some instances a second provider was not available to interview a woman. Therefore we will never know about satisfaction or acceptability for these women who were not included.

Additionally, we have to be concerned for social desirability of the answers that women provided for the survey. Because the survey was administered in an oral interview with a provider, women might have felt compelled to give the answer they thought they should be giving, because of feelings of guilt or shame. Additionally, this is a sensitive topic, and a matter of death or disability. Studies have shown that women will typically report high levels of satisfaction and acceptability of services because they are grateful to be alive and to no longer be pregnant.

CONCLUSIONS

Results from this study of satisfaction and acceptability of Comprehensive Abortion Care services in Ethiopia, combined with results from the parent project on the success of clinical services, demonstrate that service provision of medical abortion from well-trained lower level providers in the community setting are satisfactory and have high clinical success. There is a demonstrated need for improvement, particularly in the length, depth and quality of pre-procedural counseling, particularly for doctors and nurses

in urban areas. Additionally women who are between 10-12 weeks gestation need more thorough counseling, to quell fear about at home medical abortion completion.

Satisfaction and acceptability of services must be continuously assessed, ensuring that abortion service satisfaction and acceptability is maintained in non-study conditions including changes in the service setting, and with providers who are not specifically sympathetic or trained in the pilot project. Unique study-related benefits (e.g. follow up, telephone nurse support, travel reimbursement, and free medications) therefore have to be accounted for in the assessment of satisfaction and acceptability of services. One must assess if women's level of satisfaction and acceptability of services are the same without these study-related benefits, or ensure that the benefits are maintained, before scale-up is attempted.

This study adds to this small but convincing body of evidence that CAC is effective both as a safe and feasible model of abortion care in Africa, but also as a satisfactory and acceptable model. Overall, the goals of bringing medical abortion to the community setting utilizing well-trained lower-level providers in a satisfactory and acceptable manner were met.

TABLE 1-Participants Socio-Demographics		
Total Sample Size	1706	
Age (y)	**Frequency**	**Percent**
<20	514	30.2
20-25	665	39.0
25-30	297	17.4
30+	229	13.4
Education Level		
No formal education	324	19.4
Primary	506	30.3
Secondary	686	41.0
Above secondary	157	9.4
Marital status		
Single	972	61.5
Married/in union/cohabitating	441	27.9
Widowed/divorced	167	10.6
Region of Residence in Tigray		
Ganta-afeshum (Rural)	633	37.1
Kola tembien (Suburban)	275	16.1
Mekele (Urban)	798	46.8

Table 2-Participants Reproductive Characteristics		
Total Sample Size	1706	
Gestational age (weeks)	**Frequency**	**Percent**
<10	1108	66.3
10-12	282	16.9
13-17	187	11.2
18+	95	5.7
Total number of pregnancies		
<2	892	52.7
2-3	552	32.6
4+	249	14.7
Number of living children		
0	961	56.9
1	326	19.3
2	176	10.4
3+	226	13.4
Number of previous abortions		
0	1476	87.3
1	190	11.2
2+	23	1.4
Previous contraception use		
Yes	734	44.8
No	904	55.2
Unintended/Unwanted Pregnancy		
Yes	1527	95.0
No	80	5.0

Table 3-Bivariate analysis comparing measures of satisfaction with the provider, by provider type					
	Provider Level				
Outcome	Doctor	Health Officer	Nurse	Health Extension Worker	X^2 P value
Totally satisfied with provider	100%	98.8%	99.2%	96.0%	0.436
Recommend provider to friend	100%	99.4%	98.7%	96.0%	0.544
Counseling prepared client for the procedure	79.3%	93.9%	95.0%	92.3%	<0.001

Table 4- Bivariate analysis comparing measures of satisfaction with the method, by method type				
	Procedure Method			
Outcome	Surgical (MVA)	Medical-Misoprostol only	Medical-Misoprostol and Mifepristone	X^2 P value
Side effects were acceptable	95.8%	97.5%	97.9%	0.963
Recommend procedure to a friend	94.1%	97.7%	97.1%	0.017
Would choose procedure in future	21.9%	82.6%	78.3%	<0.001

Table 5- Logistic regression using the question, "The time I was able to spend with the provider was a bit too short" as the outcome variable, adjusting for age, education level, marital status, gravida, live children, gestation age, whether or not the pregnancy was wanted.				
Variable	***OR***	***P-value***	***95% CI***	***Overall Effect Test***
Provider				<0.001
Health extension worker provider	ref			
Doctor provider	10.9	<0.001	3.1, 37.8	
Health Officer provider	0.2	0.002	0.1, 0.5	
Nurse provider	0.6	0.367	0.2, 1.8	
Region				0.0015
Mekele- urban region	ref			
Ganta afeshum- rural region	1.4	0.013	1.1, 1.9	
Kola tembien- suburban region	0.6	0.057	0.4, 1.0	
Wantedness of pregnancy				0.5633
Intended pregnancy	ref			
Unintended pregnancy	0.8	0.563	0.4, 1.5	
Contraception use				0.0183
No prior contraception use	ref			
Prior contraception use	0.7	0.018	0.6, 0.9	
Number of pregnancies				0.2584
1st pregnancy	ref			
3rd pregnancy	0.8	0.324	0.5, 1.2	
2nd pregnancy	1.1	0.519	0.8, 1.5	
Uterine size/gestation				0.6379
<10 weeks gestation	ref			
10-12 weeks gestation	0.9	0.599	0.7, 1.3	
13-17 weeks gestation	1.2	0.473	0.8, 1.7	
18+ weeks gestation	0.8	0.436	0.5, 1.4	
Marital status				0.9029
Single/never married	ref			
Married	1.0	0.860	0.7, 1.5	
Widowed	0.9	0.750	0.6, 1.5	

Table 6- Logistic regression using the question, "I was worried or afraid to be at home during part of the termination" as the outcome variable, adjusting for age, education level, marital status, gravida, live children, gestation age, and whether or not the pregnancy was wanted. Results are categorized by risk factors and protective factors for being worried or afraid during termination at home for only medical abortion.

Variable	*OR*	*P-value*	*95% CI*	*Overall Effect Test*
Uterine size/gestation				0.0251
<10 weeks gestation	ref			
10-12 weeks gestation	1.6	0.020	1.1, 2.3	
13-17 weeks gestation	0.7	0.132	0.5, 1.1	
18+ weeks gestation	0.9	0.612	0.5, 1.5	
Wantedness of pregnancy				0.0071
Intended pregnancy	ref			
Unintended pregnancy	4.7	0.007	1.5, 14.4	
Provider				0.0003
Health extension worker provider	ref			
Nurse provider	8.8	0.044	1.1, 72.5	
Health Officer provider	3.6	0.243	0.4, 31.8	
Doctor provider	23.1	0.005	2.5, 211.7	
Side effects				0.0003
0 severe side effects	ref			
1 severe side effect	0.7	0.258	0.4, 1.3	
2+ severe side effects	1.7	0.021	1.1, 2.7	
Region				<0.001
Kola tembien- suburban region	ref			
Ganta afeshum- rural region	1.2	0.630	0.6, 2.1	
Mekele- urban region	3.7	<0.001	2.1, 6.6	
Number of pregnancies				0.0346
1st pregnancy	ref			
2nd pregnancy	0.5	0.027	0.2, 0.9	
3rd pregnancy	1.0	0.948	0.3, 2.7	
Contraception use				0.0490
No prior contraception use	ref			
Prior contraception use	0.7	0.031	0.5, 1.0	
Contraception uptake				<0.001
No contraception uptake	ref			
Contraception uptake	0.5	<0.001	0.4, 0.7	
Number of live children				0.3697
0 live children	ref			
1 live child	1.7	0.132	0.8, 3.6	
2 live children	1.8	0.142	0.8, 4.0	
3+ live children	1.2	0.704	0.4, 3.6	

Table 7- Logistic regression using the question, "I was worried or afraid to be at home during part of the termination" as the outcome variable, adjusting for age, education level, marital status, gravida, live children, gestation age, and whether or not the pregnancy was wanted. Results are categorized by risk factors and protective factors for being worried or afraid during termination at home for medical and surgical abortion.

Variable	*OR*	*P-value*	*95% CI*	*Overall Effect Test*
Uterine size/gestation				0.0557
<10 weeks gestation	ref			
10-12 weeks gestation	1.4	0.072	1.0, 2.0	
13-17 weeks gestation	0.7	0.093	0.5, 1.1	
18+ weeks gestation	0.9	0.611	0.5, 1.5	
Number of pregnancies				0.5050
1st pregnancy	ref			
2nd pregnancy	0.7	0.337	0.4, 1.4	
3rd pregnancy	1.1	0.876	0.4, 2.8	
Wantedness of pregnancy				0.0062
Intented pregnancy	ref			
Unintended pregnancy	2.8	0.008	1.3, 6.0	
Provider				0.0023
Health extension worker provider	ref			
Nurse provider	8.5	0.045	1.0, 69.5	
Health Officer provider	4.2	0.190	0.5, 35.5	
Doctor provider	19.4	0.008	2.2, 174.4	
Region				<0.001
Kola tembien-suburban region	ref			
Ganta afeshum- rural region	1.1	0.809	0.6, 1.8	
Mekele- urban region	3.3	<0.001	2.0, 5.5	
Side effects				<0.001
0 severe side effects	ref			
1 severe side effect	0.6	0.038	0.3, 1.0	
2+ severe side effects	1.6	0.027	1.1, 2.4	
Contraception use				0.1829
No contraception uptake	ref			
Contraception uptake	0.5	<0.001	0.4, 0.7	
Marital status				0.7898
Single/never married	ref			
Married	1.13	0.516	0.8, 1.7	
Widowed	1.1	0.665	0.7, 1.8	
Number of live children				0.7827
0 live children	ref			
1 live child	1.4	0.354	0.7, 2.6	
2 live children	1.3	0.421	0.7, 2.7	
3+ live children	1.0	0.997	0.4, 2.7	

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