Received: 27 May 2016 | Revised: 19 September 2016 | Accepted: 3 November 2016 | First published online: 23 November 2016

DOI: 10.1002/ijgo.12035

CLINICAL ARTICLE

Gynecology

WILEY International Journal of Gynecology Obstetrics

Provision of harm-reduction services to limit unsafe abortion in Tanzania

Catherine Kahabuka[1]* | Andrea Pembe[2] | Alejandra Meglioli[3]

[1]CSK Research Solutions, Dar es Salaam, Tanzania

[2]Department of Obstetrics and Gynecology, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania

[3]International Planned Parenthood Federation/Western Hemisphere Region, New York, NY, USA

*Correspondence
Catherine Kahabuka, CSK Research Solutions, Dar es Salaam, Tanzania.
Email: ckahabuka@cskresearch.com

Funding Information
International Planned Parenthood Federation/ West Hemisphere Region

Abstract

Objective: To investigate the feasibility of providing harm-reduction services to reduce unsafe abortion in Tanzania.

Methods: A cross-sectional study was conducted among 110 women who received harm-reduction counseling at a public health center in Dar es Salaam between February 10 and October 10, 2014. Background and clinical information was collected for all women; a subgroup (n=50) undertook a semi-structured survey that measured the type of services women received, women's perception of the services, and pregnancy outcome. The main study outcomes were attendance at the follow-up visit, type and quality of information women received on both visits, and misoprostol use for pregnancy termination.

Results: Overall, 55 (50.0%) women attended follow-up services. Misoprostol was used for induced abortion among 54 (98.2%); 38 (70.4%) of these women had obtained contraception at the follow-up visit. Likelihood of attendance for follow-up was increased among women who were older than 34 years (odds ratio [OR] 2.2, 95% confidence interval [CI] 0.1–35.8), were married (OR 2.1, 95% CI 0.8–5.7), and had a post-primary education level (OR 2.0, 95% CI 0.8–5.3). On average, 44 (87.0%) women received all required information at the initial counseling session and none reported major complications that required hospitalization.

Conclusion: Harm-reduction services for unsafe abortion are feasible and acceptable, and could provide an excellent opportunity to fight abortion-related morbidity and mortality in Tanzania.

KEYWORDS

Clandestine abortion; Contraception; Counseling; Harm reduction; Maternal mortality; Misoprostol; Unintended pregnancy; Unsafe abortion

1 | INTRODUCTION

Unintended pregnancy is a well-documented reality for women in Africa.[1] Nevertheless, the highly restrictive abortion laws of most African countries force many women to turn to clandestine providers or unsafe methods of induced abortion.[1,2] In East Africa, unsafe abortion is the cause of one in every five maternal deaths.[3,4]

Liberalization of abortion laws could lead to major reductions in abortion-related morbidity and mortality in Africa;[5] however, such policy changes are slow to occur, suggesting that targeted interventions must

be initiated during the interim period. A risk-reduction approach to unsafe abortion—i.e. harm reduction—has proven an effective strategy for reducing maternal deaths in Latin America and the Caribbean.[5] Harm reduction involves the implementation of strategies that aim to reduce damage caused by behaviors that cannot easily be changed, especially in settings where such behaviors are driven underground by prohibitive and stigmatizing policies and practices.[6] The best-known application of this approach is needle-exchange programs that are highly effective in preventing transmission of HIV among users of illicit drugs.[7]

The harm-reduction model for unsafe abortion is centered on the right to information, focusing on the periods before and after the procedure. Women with unwanted pregnancies and no legal grounds for accessing induced abortion are given evidence-based information and counseling about alternative options, the risks involved in clandestine methods, and the option to self-administer misoprostol. All women are also invited for the follow-up visit scheduled 1–2 weeks later. During the follow-up visit, complications are ruled out for the women who chose to undergo induced abortion, whereas those who continued their pregnancy are linked with prenatal care services. Women who undergo induced abortion are also offered contraceptives to avoid future unwanted pregnancies. In Uruguay, this model dramatically reduced maternal deaths owing to unsafe abortion from approximately 28%–47% of all maternal mortality in 2000 to approximately 0% in 2008–2009.[8,9]

In Tanzania, induced abortion is permitted only when pregnancy endangers the life or health of the woman,[10] and unsafe abortion is reported as the second leading cause of maternal deaths in this country.[3,4,11] The aim of the present study was, therefore, to investigate the feasibility of applying the harm-reduction model to the problem of unsafe abortion in Tanzania.

2 | MATERIALS AND METHODS

A cross-sectional survey was conducted among a group of women who had received harm-reduction services for unsafe abortion at a public health center in Dar es Salaam, Tanzania, between February 10 and October 10, 2014. The present study was conducted with ethical oversight from the Tanzania National Institute for Medical Research, located in Dar es Salaam, Tanzania, with support from the Dar es Salaam regional health authorities. Written informed consent was obtained from all participants before data collection.

All women with a suspected or confirmed unwanted pregnancy who received harm-reduction services for unsafe abortion were included in the present study regardless of their age and parity. Women were only excluded from the study if they refused participation in the study.

During the initial visit, potential participants were offered a urine test to confirm the pregnancy. Gestational age of the fetus was then ascertained, including the provision of ultrasonographic testing for women who could not remember the date of their last menstrual period. If discussions established that the pregnancy was potentially unwanted, the provider initiated harm-reduction counseling. All women received information on the health risks associated with various methods of induced abortion, as well as information on the unsafe procedures commonly used in Tanzania. Furthermore, all women were informed that misoprostol is the proven safer alternative for abortion induction, particularly in countries with highly restrictive abortion laws, and were given comprehensive information about this drug, based on WHO guidelines,[12] including appropriate dosage, adverse effects, and cautions. No information was given about where or how to obtain misoprostol and the drug was not prescribed by the attending clinician.

All women were invited to attend the follow-up visit, which was scheduled for 7–14 days after the initial visit. Participants were also advised to come to the health facility immediately if they experienced symptoms such as prolonged heavy bleeding, sustained fever, and severe abdominal pain. During the follow-up visit, women who chose to terminate their pregnancy were offered a medical examination to confirm that the induced abortion was complete. All women were also informed about the immediate risk of becoming pregnant again and offered contraception free of charge. Women who had decided to continue their pregnancy were linked with prenatal care services.

A supplementary clinical form was used by the attending providers to document background information for all women who received the initial harm-reduction consultation (n=110). In addition, a semi-structured survey was administered to a subgroup of the participants (n=50). All participants were requested to undertake this survey, regardless of whether or not they attended the follow-up visit; however, only those women who consented were requested to provide telephone numbers to enable the study coordinator to contact them 14–20 days later. Interviews were conducted at a location other than the health center, on a random day, depending on the woman's schedule, until a minimum sample of 50 women was reached. This sample size was decided arbitrarily on the basis of the researchers' available time and resources. The semi-structured survey assessed the type and quality of information and services provided during the two visits, the incidence of misoprostol use, and the frequency and types of complications experienced.

The main outcome measures were: the proportion of women who used misoprostol for induced abortion; the likelihood that women would attend the follow-up visit; the final pregnancy outcome, including any post-abortion complications; and the proportion of women who adopted contraception at the follow-up visit.

Information collected in the supplementary clinical forms and semi-structured surveys was entered into EpiData version 3.1 (EpiData Association, Odense, Denmark). The data were then analyzed using SPSS version 21 (IBM, Armonk, NY, USA). Descriptive statistics were used to describe women's background characteristics and their distribution across the various outcomes of interest. Cross-tabulations were performed to determine how the women who attended the follow-up visit differed from those who did not. Multivariate analyses (α=0.05, two-sided test) were conducted to establish the likelihood of attending the follow-up visit among women with different background characteristics. $P<0.05$ was considered statistically significant.

3 | RESULTS

Table 1 outlines the background characteristics of the 50 women who participated in the semi-structured survey versus those of the 110

TABLE 1 Characteristics of the participants.[a]

Characteristic	Received initial harm-reduction counseling (n=110)	Undertook the semi-structured survey (n=50)[b]
Age, y		
<18	4 (3.6)	1 (2.0)
18–24	45 (40.9)	20 (40.0)
25–34	49 (44.5)	25 (50.0)
35–45	11 (10.0)	3 (6.0)
Missing information	1 (0.9)	1 (2.0)
Level of education		
Primary	62 (56.4)	29.0 (58.0)
Secondary	44 (40.0)	19 (38.0)
College or university	3 (2.7)	1 (2.0)
Missing information	1 (0.9)	1 (2.0)
Marital status		
Single	41 (37.3)	17 (34.0)
Married or cohabiting	68 (61.8)	33 (66.0)
Missing information	1 (0.9)	0 (0.0)
Occupation		
Student	10 (9.1)	3 (6.0)
Housewife	18 (16.4)	10 (20.0)
Peasant	3 (2.7)	0 (0.0)
Employed	15 (13.6)	7 (14.0)
Petty trader	62 (56.4)	27 (54.0)
Missing information	2 (1.8)	3 (6.0)
Gestational age of fetus, wk		
<8	73 (66.4)	26 (52.0)
8–12	32 (29.1)	21 (42.0)
>12	3 (2.7)	2 (4.0)
Missing information	2 (1.8)	1 (2.0)

[a]Values are given as number (percentage).
[b]The survey assessed the type and quality of information and services received by the women during both the initial and follow-up visits, the incidence of misoprostol use, and the frequency and types of abortion complications experienced.

women who received harm-reduction services. In the latter group, 94 (85.4%) women were aged 18–34 years, 62 (56.4%) had received primary level education, 68 (61.8%) were married or living with a partner, and 62 (56.4%) were petty traders. Gestational age of the fetus was less than 8 weeks for 73 (66.4%); mean gestational age was 7.9 weeks. The mean maternal age was 26.5 years (range 13–42). The background characteristics of the women who participated in the semi-structured survey were similar to those of the total cohort.

The multivariate analysis of background characteristics that might influence attendance at the follow-up visit is presented in Table 2. In all, 55 of the women who had received initial harm-reduction counseling also attended the follow-up visit. A trend was observed for women aged older than 34 years, married women, and women with post-primary level education to be more likely to attend the follow-up visit than women younger than 18 years, single women, and women with only primary level education; however, these differences were not statistically significant. A nonsignificant trend for follow-up visit attendance was also observed for housewives and employed women versus students.

In all, 54 (98.2%) of the 55 women who attended the follow-up visit reported using misoprostol to induce abortion. Of these 54 women, 38 (70.4%) received contraception, the majority of whom (n=21 [55.3%]) were long-acting methods (implants or intrauterine devices). One woman decided to continue her pregnancy after the initial harm-reduction counseling. No severe complications or maternal deaths as a result of induced abortion were reported; however, three women experienced prolonged bleeding from incomplete procedures. These three women received manual vacuum aspiration as part of routine postabortion care.

Of the 50 women who participated in the semi-structured survey, 48 (96.0%) had undergone induced abortion. Among the 38 (79.2%) women who used misoprostol, 33 (86.8%) stated it was very easy to access the drug; 34 (89.5%) reported obtaining it from local pharmacies without a prescription; and 29 (76.3%) reported using the correct amount of misoprostol as advised at the initial visit. Seven of the nine women who did not use the correct dosage of misoprostol reported receiving different advice where they purchased the drug. The two main reasons given for not using misoprostol were inability to afford the drug (n=5) and preference for manual vacuum aspiration (n=5).

Table 3 depicts the types of information and services received by the 50 women who participated in the semi-structured survey. Except for information about the 12 weeks' gestational age limit for misoprostol use, more than 85% of women received all of the required information during the initial visit as specified in the harm-reduction services clinical guidelines that were used for training the healthcare providers. Moreover, 37 (78.7%) of the 47 women who had received information on misoprostol stated the information was "very easy" to understand. When asked how satisfied they were with the information provided, 44 (88.0%) of 50 were "very satisfied," 5 (10.0%) were "somewhat satisfied," and 1 (2.0%) was "somewhat dissatisfied." When the women were asked what they would do if faced with a similar situation in future, 35 (70.0%) said they would return to the center to seek harm-reduction services, 9 (18.0%) said they would self-administer misoprostol, 5 (10.0%) said they would avoid future unintended pregnancies, and 3 (6.0%) said they would continue the pregnancy to term. When the women were asked what they would do if a friend or relative was in a similar situation, 44 (88.0%) said they would recommend harm-reduction services, 4 (8.0%) said they would provide information about self-administration of misoprostol, and 1 (2.0%) said she would advise continuing with the pregnancy.

4 | DISCUSSION

The present study established that harm-reduction services were feasible and highly acceptable among women with unwanted pregnancies in Tanzania. This approach also provided good linkage to contraceptive services among women most in need. Moreover, no maternal deaths or severe complications owing to induced abortion

TABLE 2 Multivariate analysis of factors influencing attendance for the follow-up visit.[a]

Characteristic	Received initial harm-reduction counseling (n=110)[b]	Attended the follow-up visit (n=55)	Did not attend the follow-up visit (n=55)[b]	OR (95% CI)[c]	*P* value[d]
Age, y					
<18	4	1 (25.0)	3 (75.0)	Reference	
18–24	45	22 (48.9)	23 (51.1)	1.1 (0.1–13.6)	0.914
25–34	49	25 (51.0)	24 (49.0)	1.0 (0.1–12.7)	0.992
35–44	11	7 (63.6)	4 (36.4)	2.2 (0.1–35.8)	0.580
Marital status					
Single	41	17 (41.5)	24 (58.5)	Reference	
Married or cohabiting	68	38 (55.9)	30 (44.1)	2.1 (0.8–5.7)	0.136
Education					
Primary	62	30 (48.4)	32 (51.6)	Reference	
Post primary	47	25 (53.2)	22 (46.8)	2.0 (0.8–5.3)	0.145
Occupation					
Student	10	3 (30.0)	7 (70.0)	Reference	
Housewife	22	14 (63.6)	8 (36.4)	4.7 (0.7–30.7)	0.105
Employed	15	10 (66.7)	5 (33.3)	5.0 (0.8–32.4)	0.095
Petty trader	62	28 (45.2)	34 (54.8)	1.8 (0.3–9.2)	0.506

Abbreviations: CI, confidence interval; OR, odds ratio.
[a]Values are given as number or number (percentage), unless otherwise stated.
[b]Data missing for one participant.
[c]Binary logistic regression was used for multivariate analysis.
[d]$P<0.05$ considered significant.

TABLE 3 Types of information and services received by the participants (n=50).[a]

Variable	No. (%)
Received a urinary pregnancy test	30 (60.0)[b]
Received an ultrasonographic examination to confirm gestational age of the fetus	3 (6.0)
Received information on unsafe and safe abortion methods (including misoprostol)	45 (90.0)
Received information on the risks of unsafe abortion	48 (96.0)
Received information on misoprostol	47 (94.0)
Received information about the benefits of using misoprostol instead of other methods for induced abortion	46 (92.0)
Informed about the 12-wk gestational age limit to induced abortion with misoprostol	31 (62.0)
Received information about dosage and correct administration of misoprostol	43 (86.0)
Informed about how their body would react after taking misoprostol	45 (90.0)
Informed about the warning signs after taking misoprostol that would require medical attention	43 (86.0)

[a]Data are provided for the subgroup of women who undertook a semi-structured survey to assess the type and quality of information and services received by the women during both the initial and follow-up visits.
[b]The remaining 20 (40.0%) women had already performed a pregnancy test at home.

were reported among the present cohort, indicating that the harm-reduction model was potentially safe, although further studies are required to confirm this finding.

In 1995, two United Nations conferences led to government-level agreement that unsafe abortion was a global public health issue requiring an intensive and collaborative response.[13,14] Many African countries, including Tanzania, subsequently invested in improving emergency treatment for women with incomplete or septic induced abortions.[15] Nonetheless, the provision of such post-procedure care is a poor substitute for access to safe and legal induced abortion services.

Legal restrictions do not reduce the incidence of unwanted pregnancies or abortion; instead, such restrictions force women to seek unsafe abortion services.[16] Notably, the number of induced abortions has risen in countries with restrictive abortion laws versus countries where induced abortion is legal, which have seen a stabilization or reduction in the number of induced abortions performed.[2] In East Africa, the number of induced abortions rose by 24% between 1995 and 2008.[2] Furthermore, hospital admissions owing to complications from unsafe abortion continue to exert a substantial but unnecessary burden on already fragile health systems in most African countries.[17] For example, the estimated cost of treating an abortion-related complication in Tanzania is seven times the annual per-person expenditure for health care.[18] Implementation of safer abortion alternatives might save resources that could otherwise be channeled to further life-saving interventions. The present study recorded no major complications among the women who used misoprostol. This observation is

in agreement with data from Latin America that identified an association between increased use of misoprostol and decreases in both the rate and severity of complications associated with unsafe abortion.[17]

Women enrolled in the present study faced no challenges in accessing misoprostol because it was readily available in local pharmacies and sold without prescription. Although the scientific literature on this issue is scarce, articles published in the popular media support the assertion that misoprostol is easily accessible for induced abortion in Tanzania. For example, an article published on an online forum found that this drug could be obtained from pharmacies and retail drug outlets in Tanzania for the extremely affordable price of US$1.00.[19] Furthermore, a UK newspaper claimed that "buying misoprostol from Dar es Salaam pharmacies is as easy as taking sweets home from the neighbourhood grocery shop."[20] Although readily available, it should be stressed that incorrect use of misoprostol for induced abortion can lead to detrimental outcomes, such as uterine rapture and death. Hence, harm-reduction counseling might help to provide Tanzanian women already accessing misoprostol with the correct information to minimize postabortion complications.

The main limitation of the present study was that the specified outcomes could be assessed only among the subgroup of women who attended the follow-up visit and those who agreed to participate in the semi-structured survey. Although the background characteristics of the 55 women who participated in the survey were similar to those of the total cohort of 110 women, the fact that the outcomes might be different could not be ruled out. Moreover, the small sample size of women greatly affected the significance of the statistical tests for the study.

In conclusion, the findings of the present study suggested that harm-reduction services should be implemented in countries with high rates of unsafe abortion, including Tanzania. The fact that most women surveyed would return to the health center to seek harm-reduction services if faced with a similar situation, and would recommend these services to a friend or relative, indicated that the approach taken in the present study was highly acceptable to the target population. Furthermore, harm-reduction services might also increase access to contraceptives and so prevent future unwanted pregnancies.

AUTHOR CONTRIBUTIONS

AP and AM designed the present study and provided technical input for its implementation. CK supervised the implementation of the present study, conducted the interviews, analyzed the data, and drafted the manuscript. AP and AM reviewed the manuscript and approved it for publication.

ACKNOWLEDGMENTS

The present study was funded by International Planned Parenthood Federation/West Hemisphere Region.

CONFLICT OF INTEREST

The authors have no conflicts of interest.

REFERENCES

1. Sedgh G, Singh S, Hussain R. Intended and unintended pregnancies worldwide in 2012 and recent trends. *Stud Fam Plann*. 2014;45:301–314.
2. Shah I, Ahman E. Unsafe abortion: global and regional incidence, trends, consequences, and challenges. *J Obstet Gynaecol Can*. 2009;31:1149–1158.
3. United Republic of Tanzania - Ministry of Health and Social Welfare (MOHSW). *The National Road Map Strategic Plan to Accelerate Reduction of Maternal, Newborn and Child Deaths 2008–2015 (Sharpened One Plan)*. Dar es salaam, Tanzania: MOHSW; 2014.
4. Woog V, Pembe A. Unsafe abortion in Tanzania: A review of the evidence. *Issues Brief (Alan Guttmacher Inst)*. 2013:1–4.
5. Dzuba IG, Winikoff B, Peña M. Medical abortion: A path to safe, high-quality abortion care in Latin America and the Caribbean. *Eur J Contracept Reprod Health Care*. 2013;18:441–450.
6. Erdman JN. Access to information on safe abortion: A harm reduction and human rights approach. *Harv J L Gender*. 2011;34:413–462.
7. Dutta A, Wirtz AL, Baral S, Beyrer C, Cleghorn FR. Key harm reduction interventions and their impact on the reduction of risky behavior and HIV incidence among people who inject drugs in low-income and middle-income countries. *Curr Opin HIV AIDS*. 2012;7:362–368.
8. Pan American Health Organization (PAHO). *Changing Relationships in the Health Care Context: The Uruguayan Model for Reducing the Risk and Harm of Unsafe Abortions*. Montevideo, Uruguay: PAHO; 2012.
9. Miranda L, ed. *Expansion and Implementation of the Uruguayan HR Model to Prevent Unsafe Abortion in Latin America*. XX World Congress of Gynecology and Obstetrics; 11 October 2012; Rome, Italy.
10. Centre for Reproductive Rights. *A Technical Guide to Understanding the Legal and Policy Framework on Termination of Pregnancy in Mainland Tanzania*. NY, United States: Centre for Reproductive Rights; 2012.
11. Sorensen BL, Elsass P, Nielsen BB, Massawe S, Nyakina J, Rasch V. Substandard emergency obstetric care–a confidential enquiry into maternal deaths at a regional hospital in Tanzania. *Trop Med Int Health*. 2010;15:894–900.
12. World Health Organization. *Safe Abortion: Technical and Policy Guidance for Health Systems*. Geneva, Switzerland: WHO; 2012.
13. McIntosh CA, Finkle JL. The Cairo conference on population and development: A new paradigm? *Popul Dev Rev*. 1995:223–260.
14. Plattner M. The Status of Women Under International Human Rights Law and the 1995 UN World Conference on Women, Beijing, China. *Ky LJ*. 1995;84:1249–1303.
15. Tripney J, Kwan I, Bird KS. Postabortion family planning counseling and services for women in low-income countries: A systematic review. *Contraception*. 2013;87:17–25.
16. Sedgh G, Singh S, Shah IH, Åhman E, Henshaw SK, Bankole A. Induced abortion: Incidence and trends worldwide from 1995 to 2008. *Lancet*. 2012;379:625–632.
17. Vlassoff M, Walker D, Shearer J, Newlands D, Singh S. Estimates of health care system costs of unsafe abortion in Africa and Latin America. *Int Perspect Sex Reprod Health*. 2009:114–121.
18. Mpangile GS, Leshabari MT, Kihwele DJ. Induced abortion in Dar es Salaam Tanzania: the plight of adolescents. POPLINE, 1999. http://www.popline.org/node/527779. Accessed August 25, 2015.
19. Sharifa Kalokola. Tanzania: Abortion pills now sold over the counter! Published 2011. http://www.jamiiforums.com/jf-doctor/101251-tanzania-abortion-pills-now-sold-over-the-counter.html. Accessed May 4, 2016.
20. The guardian reporter. City pharmacies dish out abortion pills across counters, damn ethics. Published 2014. http://www.ippmedia.com/frontend/?l=64088. Accessed January 21, 2016.