

ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE SCHOOL OF PUBLIC
HEALTH

**PATTERN OF KNOWLEDGE AND PRACTICE OF PHARMACISTS REGARDING
MEDICATION ABORTION IN PRIVATE PHARMACIES IN ADDIS ABABA
ETHIOPIA: A MYSTERY CLIENT STUDY**

A THESIS SUBMITTED TO SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH
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ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES
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Acronyms/Abbreviations

AACAHB	Addis Ababa City Administration Health Bureau
ADR	Adverse drug reaction
EC	Ethiopian Calendar
ETB	Ethiopian Birr
FMHACA	Food, Medicine and Health care Administration and Control Authority
GC	Gregorian calendar
GMP	General Medical Practitioners
INT	International
MMM	Maternal Mortality and Morbidity
MMR	Maternal Mortality Rate
MD	Medication Abortion
PO	Per Oral
IUD	Intra uterine Device
TFR	Total fertility rate
TOP	Termination of pregnancy
WHO	World health organization

ANNEXES

- Annex 1 English version questionnaire for facility based interview
- Annex2 English mystery client form on practice of pharmacists in provision of medication abortion at private pharmacies, Addis Ababa Ethiopia
- Annex 3 English version consent form for pharmacy managers
- Annex4 English version consent form for mystery clients

Abstract

Background

Comprehensive abortion care holds particular promise for Africa where abortion-related morbidity and mortality are high [2]. In Ethiopia, the service is available and is semi legalized with listed indications. One of the method for terminating pregnancy is medication abortion. In many developing countries pharmacy employees, many with no training in medication abortion sell the pills without prescription [4]. In this study we examined the pattern of knowledge and practice of pharmacists on medication abortion in private pharmacies Addis Ababa using mystery client study.

Methods

A descriptive cross sectional design was used using both facility based assessment and mystery client observation. From 8 sub cities that were selected randomly 84 pharmacies were chosen by an equal probability systematic sampling. Facility based data collection was done using interview with the pharmacist then after a month undercover clients returned to these pharmacies to gather data using observation. A bivariate analysis was conducted to examine pharmacy workers' behavior, and dispensing practices and $P < 0.05$ was considered statistically significant.

Results

All pharmacies that were visited provide medication abortion service. In the facility based data 8(10.3%) said they give the service using prescription, but in the mystery client study none of the pharmacists asked for prescription to give the service. Concerning dosage of drugs only 33(71.74%) told the women the correct dose of the drug.

Discussion

The overall practice of the care providers in this study show that even if the law does not allow for pharmacists to provide medical abortion drugs without prescription, over-the-counter sales without prescriptions is widespread.

Conclusions

Access to medical abortion has significantly increased in private pharmacies but knowledge and practice regarding medication abortion provision is sub-optimal among pharmacists.

Recommendation

It is recommended that focus should be given in addressing the most vulnerable groups in the community by creating awareness concerning constitution and technical guideline of safe abortion.

Background

1. Introduction

Globally, the World Health Organization (WHO) estimates that 22 million unsafe abortions occur each year, resulting in the death of nearly 47 000 women [1]. In the proposed study I seek to examine knowledge and practice of pharmacists regarding medication abortion in private pharmacies Addis Ababa Ethiopia using a mystery client study.

Medical abortion is an option for women seeking abortion that involves the administration of tablets which initiate uterine contractions that lead to natural miscarriage without surgery [2]. This procedure was introduced after the invention of the drug misoprostol (RU-486) by French pharmaceutical company in 1985.

Before May 9, 2005, Ethiopia's policy towards safe abortion only allowed the procedure to be implemented to save the life of a woman or protect women's physical health. Currently that is after May 9, 2005, Ethiopia expanded its abortion law by making it legal for cases such as rape, incest or fetal impairment. In addition, if the woman's life or her child's life is in danger, if continuing the pregnancy or giving birth endangers her life, if she is unable to bring up the child owing to her status as a minor or to a physical or mental infirmity [3]. One of the methods of safe abortion that is medical termination of pregnancy was first framed in 2008 and went into effect in 2009. In the year 2014, the government introduced a further amendment to medication abortion service stating the service should be implemented for women with gestational age till 28 weeks. Mifepristone and Misoprostol were the drugs that are approved and registered for the use of medication abortion by the department of drug administration and control agency of Ethiopia.

These drugs are prescription-only-products and abortion services can only be offered by health professionals who are certified and who operate within accredited abortion facilities. These facilities will prescribe the drugs to pharmacies and the pharmacist will dispense the drug using prescription and the pharmacist that is going to dispense the drugs should be trained to give the service.

Despite the potential advantages of working through pharmacies to decrease complications due to medical abortion, there are challenges for ensuring accurate information and quality care [3] In many developing countries, there are few trained professional pharmacists; those who are well trained may not always be present in the pharmacies where they work. Pharmacy

employees, many with low levels of education and without formal pharmacy training, sell medication abortion pills without prescriptions or support from a trained health-care professional [4]. This often leads to inaccurate advice and incorrect dispensing that leads to unnecessary complications endangering the women's life [3]. This incorrect dispensing practice includes incorrect or incomplete information about the route of administration, dosages, danger signs, side effects, gestational limits for medications, including providing the service without prescription.

A survey conducted in India using simulated client/patient on medical abortion drug dispensing behavior among 380 pharmacists indicated that only 42% of the pharmacists behaved correctly on all three key indicators (asked for doctors' prescription, recommended correct dose and route for administration) pertaining to medical abortion drug regimen. The above study also shows that pharmacists do dispense misoprostol, regardless of local regulations intended to prevent pharmacists from prescribing medications and that they frequently do not request a prescription [5].

The effective implementation of the revised abortion law in Ethiopia has the potential to promote women's access to safe abortion services and support reductions in complications of unsafe abortion. Despite these facts, there is no study done in Ethiopia showing the status of the service being given in private pharmacies. So this study aims in examining the three key indicators regarding medical abortion care that are asking for doctors' prescription, recommending correct dose and route for administration of medical abortion in Addis Ababa where hostile and stigmatizing attitudes about induced abortion still result in a high rate of unsafe abortions.

2. Statement of the problem

Even if all girls and women have access to effective contraception, circumstances would still arise in which a pregnancy is or becomes unwanted and the woman in question will feel the need to end it in a safe way. So expanding access to safe abortion is a simple and cost-efficient intervention that can prevent pregnancy-related deaths. Unsafe abortion is the most common cause of maternal death. It is also one of the most easily preventable and treatable condition [6]. In Africa, 13% of maternal death is due to unsafe abortion [7].

Ethiopia has amended its abortion law in 2005 and since then scaling up of elective abortion services throughout the health care system has progressed at a relatively rapid pace [8,9]. One of safe abortion care that is being given is Medical abortion. This method is generally quite safe when it is done using WHO and other authoritative regimens precisely but the risk of complications or incomplete abortions still exists and likely increases with the poor service that the health professional give [6]. Currently medical abortion is the choice of more than half of women seeking an early abortion in both public and private sectors [8, 9]. One of the private sectors involved in the provision of medication abortion include private pharmacies. According to Ethiopian revised technical guideline pharmacists are expected to dispense medication abortion drugs with prescription and should be trained to give services like advice on how to take the drug, when to take the drug, dose and route of the drug, side effect of the drug and what to do if side effect occurs. If the service does not conform to minimal medical standards mentioned above the abortion is, strictly speaking, unsafe. A 2008 mystery client study of pharmacies in neighboring country that is Nairobi, Kenya indicate that many pharmacy workers lack basic knowledge about medical abortion Use and dosing which lead to many induced abortion complication [10].

When we see the status of Ethiopia even if there are studies done concerning general induced abortion complications there is no data that mentions specifically the safe abortion service that is being given in private pharmacies. Since this sectors are more accessible in giving medication abortion services there is a need to assess the safe abortion practice, so this study aims to assess knowledge and practice of pharmacists regarding medication abortion in private pharmacies Addis Ababa Ethiopia using mystery client study.

3. Significance of the study

I hope most of the findings of this study will inform program people about the strength and the operational challenges related to the provision of medical abortion in private pharmacies. Since it is a new service, the findings will serve as an input for the scaling up and expansion of the service in a safe way and based on the technical guide line .It is also hoped the results will serve as a baseline to other regions of the country to improve access to safe abortion and reduce maternal morbidity and mortality.

4. Literature review

Unsafe abortion contributes to maternal mortality worldwide, killing approximately 47,000 women each year (WHO2011). Analysis done by WHO in 2014 concerning causes of maternal deaths between 2003-2009 concluded that abortions (including induced abortions, miscarriages and ectopic pregnancies) were responsible for 7.9% of global maternal mortality (9.9% in Latin America and the Caribbean, 9.6% in sub-Saharan Africa [12]. In 2012, WHO and the Guttmacher Institute reported that 56% of abortions in developing countries were unsafe. The burden of maternal mortality and morbidity (MMM) due to unsafe abortions falls mainly on girls and women in developing countries: only 6% of abortions in the “developed world “were unsafe, while 98% of all unsafe abortions occurred in developing countries [13]. Every year, nearly 5.5 million African women have an unsafe abortion; as many as 36,000 of these women die from the procedure, while millions more experience short- or long-term morbidity [13]. International awareness of abortion increased following the 1987 Safe Motherhood Conference in Nairobi that drew attention to the need to reduce maternal mortality and morbidity.

Ethiopia has the fifth highest number of maternal deaths in the world: One in 27 women die from complications of pregnancy or childbirth annually [14].

From 2000 to 2011, contraceptive prevalence increased by more than threefold from 8.2% to 28.6%. Most regions, rural, urban areas as well as populations in different socio-demographics have seen significant increase in contraceptive use over the last decade. Nevertheless, Ethiopia still remains one of the countries with low contraceptive use rate. Unmet need is still high (25.3%) although it has declined in the last decade as contraceptive use has risen and about half of the women have unsatisfied demand for family planning[15]. The use of modern contraceptives is much higher in Addis Ababa (57% among married women aged 15–44) than in Ethiopia as a whole (14%). Modern method use in rural areas ranges from far below to just above the national average (3–16%). even if the use of modern contraceptive is higher in Addis Ababa the no of induced abortion is still increasing leading to complications of unsafe abortion[16].

A study conducted on abortion at Jimma Hospital, Southwestern Ethiopia also showed that the problem of induced abortion is quite significant. Among the total of 80 patients with a diagnosis of induced abortion, 50 (62.5%) were admitted for bleeding and infections [17]. The abortion

rate is considerably higher than the national average in urban areas: 49 per 1,000 in Addis Ababa, the country's most urban and economically developed region, and 184 per 1,000 in the smaller urban regions of Dire Dawa and Harari. The high abortion rates in these urban areas are likely the result of many factors, including that the availability of private health care providers in these commercial centers draws women from surrounding areas [11].

A Nepal-India cross-border abortion study among 1,380 women, carried out in 2010, showed that one in five women in the study sought abortion services or medications from private clinics and pharmacy shops across the border in India. About 28% of these women had experienced complications due to medicines obtained from pharmacy shops, and of these 71% had excessive vaginal bleeding associated with severe abdominal pains. Knowledge about regimens and effective routes of misoprostol administration for early first trimester abortion was poor among the Indian as well as the Nepalese pharmacy workers interviewed. Women who obtained drugs for medical abortions outside the legal sector in Nepal were found to have received ineffective and unsafe medications as well as incorrect dosages of abortion drugs from pharmacists [18].

Another study in India which was conducted in 2015 on 591 pharmacists in 60 local markets in city, town and rural areas of Madhya Pradesh using undercover patients indicates that 106 (38.5%) pharmacists asked clients the timing of the last menstrual period, 38 (13.8%) requested to see a doctor's prescription – a legal requirement in India, 59 (21.5%) pharmacists correctly advised patients on the gestational limit for medical abortion, 97 (35.3%) provided correct information on how many and when to take the tablets in a combination pack, and 78 (28.4%) gave accurate advice on where to seek care in case of complications. Advice on post-abortion family planning was almost nonexistent [18].

A study done in Zambia that focused on examining sales practices, knowledge, and behavior of pharmacy workers regarding medical abortion in 2009 and 2011 indicated that between the two studies done on 2009 and 2011, pharmacy workers exhibited increased awareness of misoprostol, less hostility, and more willingness to provide information, sell medical abortion drugs. However, pharmacy workers continue to provide inadequate information to patients who purchase misoprostol [19].

Abortion law was amended in 2005 and following the amendment of the law safe abortion is being widely practiced in Ethiopia especially in the capital city Addis Ababa. The most

common safe abortion method being practiced is medical abortion and the two drugs used for this method include mifepristone/misoprostol regimen [16]. Even if abortion law is amended complication of abortion is being widely seen. In 2008, an estimated 382,000 induced abortions were performed in Ethiopia, and 52,600 women were treated for complications of such abortions. There were an estimated 103,000 legal procedures in health facilities nationwide, 27% of all abortions. Nationally, the annual abortion rate is 23 per 1,000 women aged 15–44, and the abortion ratio is 13 per 100 live births. The abortion rate in Addis Ababa (49 per 1,000 women) was twice the national level. Over all, about 42% of pregnancies were unintended, and the unintended pregnancy rate was 101 per 1,000 women [16].

One of the facilities that is providing medication abortion is private pharmacies. These pharmacies are required to follow the technical guide line for safe abortion which was revised in 2014. One of the main principle that they have to follow is selling the drugs using prescription, giving professional advice to the client and the pharmacy professionals should be trained in order to give the service. Even if this is the case there is no study done indicating this is being implemented.

As we have seen from the above studies conducted in different countries we can see that Pharmacists appear to be liberal in selling medical abortion without prescription yet provide poor counseling to customers. The growth in the unregulated retail market for medical abortion poses a challenge for government and other agencies concerned with women's reproductive health. So the studies done in other part of the world give us an insight that study concerning provision of medication abortion in private pharmacies should be done in Ethiopia so this study focuses on investigating the practice of pharmacists in provision of medication abortion in Ethiopia.

5. Study Objectives

5.1 General objective

To examine knowledge and sales Practice of pharmacists regarding medication abortion in private pharmacies Addis Ababa Ethiopia.

5.2 Specific objectives

1. To assess the availability of medication abortion drugs at private pharmacies Addis Ababa Ethiopia.
2. To assess the practice and knowledge of pharmacists towards correct administration of dose, route and side effect of medication abortion at private pharmacies Addis Ababa Ethiopia.
3. To assess the practice of pharmacists in providing medication abortion using only prescription at private pharmacies Addis Ababa Ethiopia.

6. Method

6.1 Study setting

The study undertook in private pharmacies that provide medication abortion service in Addis Ababa Ethiopia. There are 95 private pharmacies that are currently giving the service.

6.2 Source population

Health care provider working at private pharmacies found in Addis Ababa Ethiopia.

6.3 Study design

A descriptive cross sectional design was used using mystery clients. This method involved mystery clients with scenarios based on structured questionnaires prepared to assess practice of pharmacists in the provision of medical abortion. This method was chosen because in many types of research, a phenomenon has been observed that when people are being observed or researched the quality of the activities they are doing improves. A mystery client survey minimizes the problems of bias that are encountered in direct observation where health professionals tend to perform better than normal as they know they are being observed, mystery clients surveys provide a useful means for program staff to get a picture of how providers perform when they are not being regularly supervised or knowingly observed.

6.4 Study population

Health care providers working at private pharmacies that provide medication abortion service in Addis Ababa Ethiopia.

6.5 Inclusion criteria

Pharmacy staffs that are involved in the provision of medication abortion service in private pharmacies at Addis Ababa Ethiopia.

6.6 Exclusion criteria

Private Drug stores in Addis Ababa Ethiopia.

6.7 Sampling size

Sample size was calculated Using single proportion formula that is:

$$n = \frac{Z_{\frac{\alpha}{2}}^2 \times p (1 - p)}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$$

$$n = 0.9604 \div 0.0025$$

$$n = 384$$

Where n= the minimum sample size required

P = estimated prevalence rate of health care providers in private pharmacies providing medical abortion service, in Addis Ababa. There for since there is no study an expected prevalence of 50% used.

d = the desired precision (marginal error) between sample size and population parameter is 5%.

$Z_{\frac{\alpha}{2}}$ = standard normal score at 95% confidence interval.

So the minimum sample size calculated is 384.

There for the total health professionals are 95 that is 1 health care providers for one pharmacy since the source population is less than 10,000 the sample size is adjusted with the following correction formula.

$$n_f = \frac{n_i}{(1 + (n_i/N))}$$

Where: n_f =final sample size, n_i =initial sample size and N =population size

$$nf = 384/1 + 384/95$$

$$nf = 384/5.02$$

$$nf = 76$$

Then a contingency of 10 % will be used for non-respondents, the required total sample size $76 + 0.1 \times 76 = 83.6 = 84$ is obtained $nf = 84$

6.8 Sampling procedure

From the 10 sub cities in Addis Ababa Ethiopia 8 sub cities were selected using random sampling method .These sub cities include Bole, kirkose, Arada ,Addis Ketema, lideta ,Gulele ,Kolfе-keranio and Nifas-silik-lafto. And 84 pharmacies were selected from these sub cities by an equal probability systematic sampling and out of these 77 were willing and signed consent form to participate in the study. Facility based data collection was done using interview with structured pre tested questionnaire with the pharmacist behind the counter then after a month undercover clients returned to these pharmacies to gather data. Drug stores were not included in the study since they are not allowed to give the service by Food, Medicine and Health care Administration and Control Authority.

6.9 Study variables

6.9.1 Dependent variables

Medication abortion related knowledge and practice of pharmacists at private pharmacies at Addis Ababa Ethiopia.

6.9.2 Independent variables

Socio-demographic factors including age, sex, level of education, profession, year of service of the pharmacy and number of medication abortion clients served in the pharmacy.

6.10 Data collection procedure

For the facility based information such as, the pharmacist's educational background, the sales, stocks, price of medical abortion and the pharmacist's knowledge of abortion, structured questionnaire was used and interview with professionals behind the counter was conducted to collect the data. These questionnaires are standardized by WHO for the use of mystery client study on medication abortion.

For the sale practice and knowledge of medication abortion service that is being given in the pharmacy mystery clients were used. We recruited five mystery clients 3 female and 2 male based on their age that is going to be between age 19 – 30. This age gap was chosen based on the study done in Addis Ababa regarding age distribution of abortion for induced abortions [25], educational status was above grade 10 to make sure that they write and read properly. And their residence was in Addis Ababa Ethiopia. These mystery clients were given two days training with different scenarios and role plays to practice. Each mystery client asked the pharmacy worker if they sold anything to induce an abortion, either for themselves or for a girlfriend. Mystery clients were trained to explain at the start that their (or their girlfriend's) period was late and that it was 8 weeks ago. The mystery clients had a list of possible probe questions to ask depending on the pharmacy workers' responses. Each mystery client would meet with the investigator of the study within one hour of their interaction with the pharmacist and the investigator recorded key information from the mystery client, on a standardized form. This was done to avoid recall bias. If the pharmacy worker offered to let them purchase something to induce an abortion, mystery clients were instructed to ask to see the product, to ask for information about its use and cost, and were told to then say that they needed to return to purchase the product. Compensation was paid for their time and transportation.

Regular and daily supervision of the data collection process was done by the principal investigator. Data was checked on a daily basis for consistency, completeness, clarity and accuracy.

6.11 Data management

Data was collected using mystery clients and these clients were trained with scenarios using a structured, pretested and piloted questionnaires and the data was checked and cleaned on a regular basis. In order to avoid recall bias on the mystery clients within an hour of their visit the

undercover clients met with their supervisor who used a structured questionnaire to note the observation.

6.12 Data analysis procedure

Both facility based and mystery client completed questionnaire were checked manually for completeness before data entry. The data were coded and entered into EPI Info version 3.5 and cleanup was made to check accuracy and consistency. Finally, data was exported to SPSS version 20 for further cleaning and analysis. A bivariate analysis was conducted to examine pharmacyworkers' attitudes, behavior, and dispensing practices related to medicalabortions and $P < 0.05$ was considered statistically significant.

7. Operational definitions

1. Knowledge of pharmacistswas measured by how correctly they responded to the knowledge questions according to the national technical guideline of safe abortion that is using prescription, correct route, correct dose, correct frequency, correct duration and advice on side effects.

2. Practice of pharmacists was measured by how correctly they followed the national technical guideline of safe abortion to give the service to the mystery client that is, using prescription, correct route, correct dose, correct frequency, correct duration and advice on side effects.

8. Ethical consideration

The study proposal was reviewed and approved by the Ethical Clearance committee of school of public health Addis Ababa university .There was no harmful action impose to study subjects. Anonymity of health care professional's information was maintained and a written consent was obtained from both pharmacy managers and mystery clients.

9. Dissemination of the result

The findings of this study will be communicated to stake holders working in reducing maternal mortality and the proposal will be given to school of public health so that it can be used as reference for other researchers. The findings will be used in improving access to safe abortion and can be used as base line for other reigns of the country.

10. Results

10.1 Availability of medication abortion drugs and characteristics of pharmacists in private pharmacies located in Addis Ababa Ethiopia

We went to 84 pharmacists that provide medical abortion service in 8 sub cities in Addis Ababa Ethiopia. Out of the 84 pharmacies 77(92%) agreed to be interviewed and signed the consent form for mystery client visit in their pharmacies. All the pharmacists reported selling medical abortion in the past year and out of the 77 pharmacies visited only 2 drug brands were identified these were 74 (96.10%) had combination kit Misoprostol and Mifiprostol drugs and 3(3.9%) offered Misoprostol only at the time of the interview 75 (97.4%) had stock on hand. Out of the 77 pharmacies visited 57(75%) of the pharmacies were opened 7 days a week. Average customers seeking for medication abortion monthly was 7. When we see the provision of the service only 11(14.29%) of the owners were responsible for running the pharmacy on daily bases. Which indicates that in 66(85.71%) of the pharmacies different pharmacists with different level of medication abortion knowledge and training gives the service. The median price of medication abortion we found in the facility based interview was 150 ETB but the data in undercover customer indicates that the median price for one combination pack medication abortion was 394 ETB.

Table 1 Characteristics of pharmacists and availability of medication abortion drugs in private pharmacies Addis Ababa Ethiopia

	N=77	%
Respondent Sex		
Male	44	57%
Female	33	43%
Staff working in diploma pharmacy	3	3.9%
Any staff working in BSC pharmacy	73	94.81%
Mean Age of the health professional in the pharmacy	Mean=36	
Pharmacy provide medication abortion		
Yes	77	100%
kind of medication abortion drugs pharmacy provide		
Misoprostol only	3	3.9%
Combination of Misoprostol and Mifiprostol	74	96.10%
Average customers seeking for medication abortion monthly	Mean=7	
Average combination kit of Misoprostol and Mifiprostol are sold last year	Median=70	
Average price for one combination medical abortion kit	Median =150	
Current stoke available on hand of combination of Misoprostol and Mifiprostol available	75	97.4%
Owner is responsible for running the pharmacy on daily bases		
Yes	11	14.29%
No	66	
Pharmacy is open 7days per week	57	85.71%
Median price for one combination pack of medical abortion	394	75%

10.2 Practice of pharmacists in providing medication abortion using only prescription at private pharmacies Addis Ababa Ethiopia (undercover customers)

The study also sought for practice of pharmacists in providing medication abortion only using prescription which is the legal practice in Ethiopia. This was done using both facility based and mystery client data collection method. And it was found that out of the 77 pharmacies visited by the mystery clients 57(74.03%) were interested in helping the client and out of which 11(19.29%) asked to see prescription and 46(80.7%) offered to sell the medication without prescription. Where as in the facility based study 57(74.03%) answered they would only depend on prescription to give the service. Bivariate Analysis with spearman correlation was done to look for factors contributing to provision of medication Abortion and it showed that there was significant association between number of other customers in the shop when the mystery client arrived and provision of medication abortion. And the association was negative (Spearman's correlation coefficient $r_s = -0.28$, 95% CI $p=0.014$). That is when there were other customers in the shop pharmacists tendency to give the service without prescription decreases. And also the pharmacist seem afraid to give the service with other customers in the shop ($r_s=0.568$ $p=0.001$, 95% CI $p=0.001$). Age of the pharmacist didn't have significant association with the provision of the service (Pearson correlation $r = -0.205$ $p=0.074$, 95% CI) but had negative relation that is when age increases recommendation decreases. And there was no significant association between sex and provision of the service.

Table 2 practice of pharmacists in providing medication abortion using only prescription at private pharmacies Addis Ababa Ethiopia (under cover customers)

	N=77	%
Pharmacist recommend any medication for abortion		
No	20	26%
Yes	57	74%
Pharmacist didn't recommend any medication for abortion because		
Was too busy and sent me away	12	60%
Referred me to a health facility	8	40%
Pharmacist reaction when asked for pills for abortion		
Was interested in helping	57	74.03%
Refused but gave some information/answered some questions	8	10.4%
Acted indifferent or unconcerned	4	5.19%
Pharmacist mentioned that abortion was illegal		
No	75	97.4%
Pharmacist tell mystery client that abortion is illegal if they do not have preconditions listed in the constitution		
No	75	97.4%
Pharmacist tell mystery client that abortion is illegal if they do not have a prescription		
Yes	11	19.29%
No	46	80.7%
Pharmacist offered to sell the mystery client abortion pill		
Yes	46	59.74%
No	31	40.26%
Pharmacist asked for a prescription		
No	46	100%

10.3 knowledge of health care providers towards recommending correct dose and route of medication abortion at private pharmacies in Addis Ababa Ethiopia (Mystery client Data)

When we see the administration of the drugs 40(86.9%) told when to use and out of which 33(71.7%) suggested the correct dose and duration. When we compare this with the facility based interview 3(3.8%) of the pharmacist interviewed know the correct combination and dosage and 57(74.03%) said they use the dosage in the prescription to give the drugs. When we see the estimation of gestational age before giving the drugs 34(73.91%) asked the last menstrual period of the client but only 7 (15.22%) calculated the gestational age and the others asked the women her gestational age and offered the service depending on that. When we compare it with the facility based interview 43(55.8%) responded they give the service after asking the women her gestational age, 16(20.7%) ask the women to bring ultra sound for confirmation and 8(10.3%) give the service using prescription only. Advice on post-abortion family planning was almost nonexistent and All the pharmacies didn't have either the 2006 or the revised abortion technical guide line as a reference for providing the service.

Table 3 Knowledge of health care providers towards recommending correct dose and route of medication abortion at private pharmacies in Addis Ababa Ethiopia

	N=77	%
Pharmacist ask mystery client when they had their last menstrual period		
Yes	34	73.91%
No	12	26.09%
Pharmacist calculated mystery client gestational period to determine their eligibility for the medication		
Yes	7	15.22%
No	39	84.78%
Pharmacist informed the mystery client any of the following information about the medication		
When to use it		
Yes	40	86.9%
No	6	13.04%
How to use it		
Yes	46	100%
Side effects of it		
Yes	18	39.13%
No	28	60.87%
When not to use the drug		
Yes	35	76.09%
Number of days the pharmacist suggested for taking the pills		
Correct response**	33	71.74%
Incorrect response	13	28.26%
Number of pills suggested by the pharmacist		
Correct response***	43	93.47%
Incorrect response	3	6.52%

** Five pills

***Mifepristone PO 200 mg then after 48 hours Misoprostol 800 µg vaginally, Insert misoprostol deep into the vagina

10.4 knowledge of the health care provider towards side effect of medication abortion at private pharmacies Addis Ababa Ethiopia

From all the care providers that offer to give the service 18(39.1%) of the care providers gave advice on side effect of the drugs out of which 31(67.39%) specifically advice on heavy bleeding and pain that lasts more than 2 weeks.

Table 4 Knowledge of health care providers towards side effect of medication abortion at private pharmacies Addis Ababa Ethiopia

	N=46	%
Pharmacist recommended to seek help when mystery client has Bleeding lasting more than 2 weeks		
Yes	15	32.6%
No	31	67.39%
Pain lasting more than 2 weeks		
Yes	15	32.6%
No	31	67.39%
High fever		
Yes	22	47.8%
No	24	52.17%
Pharmacist advice on post family planning methods		
Yes	45	98%
Pharmacist interaction with the mystery client was unfriendly or hostile		
No	46	100%

11. Discussion

This mystery client study assessed knowledge and sale practice of pharmacists regarding medication abortion in private pharmacies Addis Ababa Ethiopia. According to the study even if the availability of medication abortion service is 100% and 97.4% had current stock at hand, the quality of the service that is being given is not per the technical and procedural guidelines for safe abortion services in Ethiopia.

There are 95 pharmacies currently registered in food, medicine and health care administration and control authority to give service of medication abortion in Addis Ababa Ethiopia and out of these 77 pharmacies that were willing and signed consent form participated in this study. Almost all the pharmacies 96.1% had a combination pack that is misoprostol and mifipristol which is the recommended regimen in the country.

In this study it was indicated that the knowledge and practice of pharmacists on medication abortion is very far from what is stated in the technical guide line. Knowledge on the legality of abortion was poor, only 15.58% of the pharmacy workers stated that abortion is legal with preconditions which are the constitution in Ethiopia. When we see the overall practice of the care providers although the law does not allow for pharmacists to provide medical abortion drugs without prescription, over-the-counter sales without prescriptions are widespread. Clearly, over-the counter sales can be associated with some potentially negative consequences, such as inaccurate medical abortion regime prescriptions, lower rates of post-abortion family planning Uptake and less medical abortion counseling which definitely will lead to complication specially prolonged bleeding which consequently leads to hemorrhagic shock. According to the study done in Addis Ababa major hospital that is TikurAnbesa in 2008 the trends of abortions with severe complications had increased from 20% to 30%. The case fatality rate before and after legal revision was 1.7% (CI 0.8–3%) and 4.5% (CI 1.9–8.8%), respectively. The major complication detected was hemorrhagic shock 13 (2.2) in 2003 and after the legalization it was 19(5.1%) [27].

Out of the total pharmacies visited by undercover patients and facility based interview only 12.98% of the pharmacists know how to calculate the woman's gestational age, and, 62.34% depend on the women's word to decide the gestational age. From past experience women in desperate times like unwanted pregnancy tend not to tell the correct gestational age since the first priority of the women is to have an abortion So this clearly indicates that there is high risk

of unsafe abortion in those women who source the combination pack drugs from pharmacists without prescription. This in turn lead the women to either take the pills incorrectly or too late in pregnancy. All the pharmacists told the client how to use the drugs and 43(93.4%) suggested the correct number of pills. The main reason for this was the drugs are found in a combination pack so, the pills that the health care provider gives are fixed. But when we see the correct route of administration most of the health care providers 86.9%informed the client how to use the drugs but only 71.7%suggested the correct dose and duration. More than half of the health care provider didn't advice on side effect of the drug and when to seek help. Post abortion family planning advice was nonexistent.

Even if Pharmacists are often first-line health-care providers in the developing world and are often available health-care outlet in communities due to Pharmacy waiting times usually are short and services including information and direct sales of medications are easily accessible, there are challenges for ensuring accurate information and quality care. In many developing countries, there are few trained professional pharmacists specifically in medication abortion; those who are well trained may not always be present in the pharmacies where they work [19].

As we have seen in this study even pharmacists and pharmacy workers who were willing to provide information and sell the medicines often gave customers incorrect or incomplete information about the route of administration, dosages, side effects, and gestational limits for medications used for medication abortion. This widespread informal use of medication abortion can be taken as unsafe abortion since WHO defines the term unsafe abortion as a procedure for terminating a pregnancy performed by persons lacking the necessary skills or in an environment not in conformity with minimal medical standards, or both.

According to the World Health Organization (WHO), every 8 minutes a woman in a developing nation will die of complications arising from an unsafe abortion [1]. Treating medical complications from unsafe abortion places a significant financial burden on public health care systems in the developing world. According to a 2009 study, the minimum annual estimated cost of providing post abortion care in the developing world is \$341 million [28]. The uncontrolled retail market will pose challenge in decreasing maternal mortality by increasing complication of abortion. Even if there is an effort to make the service accessible and safe by government and non-governmental organization using training of the health care providers as the only option is not enough to ensure safe and proper service delivery. One of the main reason

is the incentive that the pharmacists get from selling the drugs without prescription is significantly high .In this study indicated that the median price from the undercover clients was 3 fold high when we compare it with the facility based interview with the care provider.

12. Strength and limitation of the study

12.1 strength of the study

In the present study mystery client method was used. This method was chosen because in many types of research, a phenomenon has been observed that when people are being observed or researched the quality of the activities they are doing improves. A mystery client survey minimizes the problems of bias that are encountered in direct observation where health professionals tend to perform better than normal as they know they are being observed, mystery clients surveys provide a useful means for program staff to get a picture of how providers perform when they are not being regularly supervised or knowingly observed.

The other strength of the study is the issue examined in this research is hardly investigated, if at all, elsewhere in Ethiopia as to the investigator's knowledge putting this finding as a breakthrough to document of provision of medication abortion at private pharmacies Addis Ababa Ethiopia. Attempt was made to include many of the points mentioned in the technical guide line of medication abortion in Ethiopia so that it would measure the quality of the service provision in the private pharmacies.

12.2 Limitation of the study

The study was restricted to private pharmacies in Addis Ababa Ethiopia and comparison of service between private and public pharmacies was not done.

13. Conclusion

Even if access to medical abortion has significantly increased in private pharmacies located in Addis Ababa Ethiopia, knowledge and sales practice regarding medication abortion service, expected outcomes, and complications is sub-optimal among pharmacists giving the service. This is due to failure to implement abortion technical guide-line in these sectors which intern leads to increased complications that result in increased maternal mortality and morbidity. The fact that there is no guideline as reference in any of the pharmacies indicate that there is no supportive supervision from both governmental and non-governmental stake holders regarding medication abortion service given in these private pharmacies.

14. Recommendation

The substantial knowledge-practice gap observed in this study suggests that increasing knowledge through training of pharmacists alone may not be sufficient to change practice. Ultimately, efforts to improve practice will require greater understanding of the incentives that the pharmacists get from selling the drugs for high price and how these influence their practice. Therefore focus should be given in addressing the most vulnerable population groups including adolescent and youth in the community. One means of doing this is by creating awareness concerning constitution and technical guideline of safe abortion. Some of the ways to address these vulnerable groups include working with health extension professionals, school, college and university, mass media and youth groups, using both private and governmental health facilities and mass media.

Involvement of both governmental and non-governmental stake holders in establishing a continuous monitoring and evaluation of the program is mandatory.

It is also recommended that the present study is repeated in public pharmacies to share experience if there is any.

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Annex 1 (Interview Data):- Dummy table on Pattern of knowledge and practice of pharmacists regarding medication abortion in private pharmacies in Addis Ababa Ethiopia: a mystery client study

Table 7. Characteristics of pharmacists

	N=77	%
Respondent Sex		
▪ Male		
▪ female		
Respondent is owner		
▪ yes		
▪ no		
the owner responsible of running the pharmacy on daily bases		
▪ yes		
▪ no		
Primary education		
Secondary Education		
Any staff working in certificate pharmacy		
Any staff working in diploma pharmacy		
Any staff working in BSC pharmacy		
Any staff working in masters pharmacy		
No staff with any health		
the pharmacy is open 6 days per week		
the pharmacy is open 7days per week		
Total Average customers per day		
Number of years established (years)		
drugs stored in the pharmacy		

Table 8: Provision of medication abortion at private pharmacies Addis Ababa Ethiopia

	N=77	%	
pharmacy provide medication abortion <ul style="list-style-type: none"> • Yes • No 			
medication abortion kits stored in the pharmacy <ul style="list-style-type: none"> • yes • no 			
kind of medication abortion drugs do the pharmacy provide <ul style="list-style-type: none"> • Misoprostol only • mifiprostol only • combination of Misoprostol and mifiprostol • any other drugs 			
Average customers seeking for medication abortion monthly			
Average combination kit of Misoprostol and mifiprostol are sold last year			
Average price for one combination medical abortion kit			
Average abortion kit sold by the pharmacist trained with abortion safety kit provision in the last year?			
Current stoke available on hand of combination of Misoprostol and mifiprostol <ul style="list-style-type: none"> • Available • Not available 			

Table 9 Knowledge and practice of pharmacists on medication abortion

	N=77	%	
<p>Is abortion legal in Ethiopia</p> <ul style="list-style-type: none"> • (correct response) Yes with preconditions • (Incorrect response) yes without preconditions (for all women) • No • don't know 			
<p>How do you calculate gestational age</p> <ul style="list-style-type: none"> • Correct response (beginning of last menstrual period) • Incorrect response (any other response) 			
<p>According to the new Abortion technical guide line of 2014 medication abortion is permissible up to how many weeks</p> <ul style="list-style-type: none"> • Correct response (till 28 weeks completed weeks since LMP) • Incorrect response (any other response) • Don't know 			
<p>How should combination pack medication abortion drugs be administered for the different gestational ages</p> <ul style="list-style-type: none"> • Correct response (Up to 9 completed weeks since LNMP o Mifepristone PO 200 mg followed 48 hours later by o Misoprostol 800 µg vaginally, Insert misoprostol deep into the vagina or instruct the woman to do so by herself.) • Incorrect response (any other response) • Don't know 			
<p>Do you have the new Abortion technical guide line of 2014 in the pharmacy for the purpose of reference</p> <ul style="list-style-type: none"> • Yes • No 			

Annex 2(Mystery client data)

Table 10 Provision of healthcare and characteristics of pharmacists

	N=77	%
Mean Age of the health professional in the pharmacy		
Sex of the health professional in the pharmacy		
<ul style="list-style-type: none"> • Male • Female 		
the position of the health professional in the pharmacy		
<ul style="list-style-type: none"> • Pharmacist • Druggist • Couldn't tell 		
Pharmacist didn't recommend any medication because		
<ul style="list-style-type: none"> • Said role was not to provide medical advice • Did not sell drugs to induce abortion • Did not know of any drugs to induce abortion • Was too busy and sent me away • Told I needed a prescription and sent me away • Referred me to a health facility • Referred me to another pharmacy • Referred me to a traditional healer • Referred me to a private doctor/midwife • Told me he/she is opposed to abortion and asked me to leave • Told me to come back later to get help • Told to go somewhere else 		
How did the pharmacist react when you asked for pills for abortion?		
<ul style="list-style-type: none"> • Was interested in helping • Completely refused any information • Refused but gave some information/answered some questions • Acted indifferent or unconcerned • Other (specify) 		
Did the pharmacist tell you that abortion is illegal		
<ul style="list-style-type: none"> • Yes • No 		
Did the pharmacist tell you that abortion is illegal if you do not have preconditions listed in the constitution?		
<ul style="list-style-type: none"> • Yes • No 		

<p>Did the pharmacist tell you that abortion is illegal if you do not have a prescription?</p> <ul style="list-style-type: none"> • Yes • No 		
<p>Did the pharmacist offer to sell you/your girlfriend the Abortion pill?</p> <ul style="list-style-type: none"> • Yes • No 		
<p>Did the pharmacist suggest you/your girlfriend to use contraception/family planning after the induced abortion?</p> <p>Yes</p> <p style="text-align: center;">No</p>		
<p>Were you asked for a prescription?</p> <ul style="list-style-type: none"> • Yes • No 		
<p>What was the number of pills suggested by the pharmacist?</p> <ul style="list-style-type: none"> • Correct response (5) • Incorrect response (any other response) • The pharmacist did not say how many pills 		
<p>Did the pharmacist ask you when you/your girlfriend last had your/her menstrual period?</p> <ul style="list-style-type: none"> • Yes • No 		
<p>Did the pharmacist calculate the gestational period to determine your/your girlfriend's eligibility for the medication?</p> <ul style="list-style-type: none"> • Yes • No 		
<p>Did the pharmacist tell you that you/your girlfriend should have been pregnant no longer than 24-28 weeks?</p> <ul style="list-style-type: none"> • No • Yes 		
<p>Did the pharmacist tell you any of the following information about the medication?</p> <ul style="list-style-type: none"> • When to use it <ul style="list-style-type: none"> ▪ Yes ▪ No • How to use it <ul style="list-style-type: none"> ▪ Yes ▪ No • Side effects of it <ul style="list-style-type: none"> ▪ Yes ▪ No 		

Annex3: Pattern of knowledge and practice of pharmacists regarding medication abortion in private pharmacies Addis Ababa Ethiopia: mystery client study

Facility based questionnaires

1. Provision of healthcare and characteristics of pharmacists

1.1. Pharmacy initial _____

1.2 Region _____ Woreda _____ sub city _____

1.3. Respondent Sex: _____M _____F

1.4. Respondent is owner

Yes ___ No_____ Unknown _____

1.5 Is the owner responsible of running the pharmacy on daily bases?

Yes ___ No_____ Unknown _____

1. 6 Educational level of service providers in the pharmacies

1.1.1 Primary education

1.1.2 Secondary education

1.1.3 Any staff working in certificate pharmacy

1.1.4 Any staff working in diploma pharmacy

1.1.5 Any staff working in BSC pharmacy

1.1.6 Any staff working in masters pharmacy

1.1.7 No staff with any health

1.7 how many days per week is the pharmacy open (In days) _____

1.8 number of year's pharmacy was established (in years) _____

1.9 Total Average customers per day _____

1.20 Are drugs stored in the pharmacy?

Yes_____ No_____

2. Pharmacy availability of medical abortion drugs

2.1 does the pharmacy provide medication abortion

Yes_____ No_____

2.2 Are the medication abortion kits stored in the pharmacy?

Yes_____ No_____

2.3. Which kind of medication abortion drugs do the pharmacies provide?

- A) Misoprostol only b) mifiprostol only
c) Combination of Misoprostol and mifiprostol d) any other drugs

2.4 Average customers seeking for medication abortion monthly? _____

2.5 How many combination kit of Misoprostol and mifiprostol are sold last year?

2.6 How many Misoprostol and mifiprostol are sold separately last year?

2.7 What's the price for one combination medical abortion kit? _____

2.8 How many abortion kit sold by the pharmacist trained with abortion safety kit provision in the last year? _____

2.9 Current stoke available on hand of combination of Misoprostol and mifiprostol?

- a) Available b) not Available

2.10 Current stoke available on hand of either Misoprostol or mifiprostol?

- a) Available b) not Available

3. Knowledge and practice of pharmacists on medication abortion

3.1 Is abortion legal in Ethiopia?

- A) Yes with preconditions _____ b) yes without preconditions (for all women)
c) No _____ d) don't know _____

3.2 How do you calculate gestational age?

3.3 According to the new Abortion technical guide line of 2014 medication abortion is permissible up to how many weeks? _____

3.4 How should combination pack medication abortion drugs be administered for the different gestational ages?

3.5 Do you have the new Abortion technical guide line of 2014 in the pharmacy for the purpose of reference? (Check if there is) _____

Annex 4

<i>Mystery Client Form on PRACTICE OF PHARMACISTS IN PROVISION OF MEDICATION ABORTION AT PRIVATE PHARMACIES, ADDIS ABABA ETHIOPIA</i>		
<i>Information to be completed immediately (within an hour) after each mystery client visit to pharmacy</i>		
<i>Mystery client should say she/his girlfriend is _____ weeks pregnant and has had a positive pregnancy test and needs an abortion pills.</i>		
Section 1. General information about the pharmacy and pharmacy worker		
1.1	Age of the health professional in the pharmacy	_____ (estimation)
1.2	Sex of the health professional in the pharmacy	1 Male 2 Female
1.3	What was the position of the health professional in the pharmacy?	1 Pharmacist 2 Druggist 3 Couldn't tell 4 Other (specify): _____
1.4	How many other customers were in the shop when you started the interview?	_____ Customers

Section 2. Did the pharmacist offer anything to help you?		
2.1	Did the pharmacist recommend any medication to complete the abortion?	0 No 1 Yes → Go to question 2.3
2.2	IF NO, why not? <i>(Circle all that apply)</i>	1 Said role was not to provide medical advice 2 Did not sell drugs to induce abortion 3 Did not know of any drugs to induce abortion 4 Was too busy and sent me away

		<p>5 Told I needed a prescription and sent me away</p> <p>6 Referred me to a health facility</p> <p>7 Referred me to another pharmacy</p> <p>8 Referred me to a traditional healer</p> <p>9 Referred me to a private doctor/midwife</p> <p>10 Told me he/she is opposed to abortion and asked me to leave</p> <p>11 Told me to come back later to get help</p> <p>12 Told to go somewhere else</p> <p>13 Other (specify) _____</p>
2.3	<p>Any additional relevant information about what they told you to do?</p> <hr/> <hr/> <hr/>	
2.4	<p>How did the pharmacist react when you asked for pills for abortion?</p> <p><i>(Circle the best answer)</i></p>	<p>1 Was interested in helping</p> <p>2 Completely refused any information</p> <p>3 Refused but gave some information/answered some questions</p> <p>4 Acted indifferent or unconcerned</p> <p>5 Other (specify) _____</p>
2.5	<p>Did the pharmacist seem afraid?</p>	<p>0 No</p> <p>1 Yes</p>

		2 Could not tell/unsure
2.6	Did the pharmacist tell you that abortion is illegal?	0 No 1 Yes
2.7	Did the pharmacist tell you that abortion is illegal if you do not have preconditions listed in the constitution?	0 No 1 Yes
2.8	Did the pharmacist tell you that abortion is illegal if you do not have a prescription?	0 No 1 Yes
2.9	Did the pharmacist offer to sell you/your girlfriend the Abortion pill?	0 No 1 Yes
2.10	Did the pharmacist suggest you/your girlfriend to use contraception/family planning after the induced abortion?	0 No 1 Yes
<p>If the pharmacist did not offer any information or sale of any medication, STOP HERE. If the pharmacist offered you any medication or advice, PLEASE FILL IN REMAINING FORM.</p>		
<p>Section 3. If the pharmacist offered you any abortion medication or advice</p>		
3.1	<p>What type of medication abortion did the pharmacist suggest?</p> <p><i>(Circle all that apply)</i></p>	<p>1 Misoprostol only</p> <p>2 Misoprostol and mifepristone</p> <p>3 Ampicillin</p> <p>4 Emergency contraception/Post pill/morning after pill/72 hour pill</p> <p>5 Oral contraceptives</p> <p>6 Other (specify): _____</p>
3.2	Were you asked for a prescription?	0 No → Go to question 3.4 1 Yes
3.3	If you were asked for a prescription, when you tried to persuade them that you don't have one did they agree to sell the medication to you?	0 No 1 Yes

3.4	Did pharmacist offer to sell you Ampicillin?	0 No 1 Yes
3.5	Did pharmacist offer to sell you Emergency contraception/Post pill/morning after pill/72 hour pill?	0 No 1 Yes
3.6	Did pharmacist offer to sell you Mifepristone and misoprostol (combination)?	0 No 1 Yes
3.7	Did pharmacist offer to sell you misoprostol only?	0 No 1 Yes
3.8	If the pharmacist offered you one of the medications listed above, what was the number of pills suggested?	_____ pills
3.9	What was the number of days the pharmacist suggested for taking the pills?	1 Take all at once 2 Take over 2 days 3 Take over 3 days 4 Take every day as needed 5 Take the first pill as soon as possible and the vaginal tablets after 48 hours after 6 Otherspecify_ — 7 The pharmacist did not say how many days to take the pills
3.10	How did the pharmacist tell you to take the pills?	1. only 2 tablets in the vagina 2. Only 4 tablets orally 3. 4 tablets Under the tongue 4. Up to 9 completed weeks since LNMP o Mifepristone PO 200 mg followed 48 hours later by o Misoprostol 800 µg vaginally, Insert misoprostol deep into the vagina or instruct the woman to do so by herself.

		<p>5. After 12 till 24 weeks completed weeks since LMP o Mifepristone PO 200 mg followed 48 hours later by o Misoprostol 400µg of oral misoprostol every 3 hours up to a maximum of 5 doses if abortion does not occur.</p> <p>6.. After 24 till 28 weeks completed weeks since LMP o Mifepristone PO 200 mg followed 48 hours later by o Misoprostol 100µg of oral misoprostol every 3 hours up to a maximum of 5 doses if abortion does not occur.</p> <p>7 Other (specify): _____</p> <p>8 The pharmacist did not say how to take the pills</p>
3.11	Did the pharmacist ask you when you/your girlfriend last had your/her menstrual period?	<p>0 No</p> <p>1 Yes</p>
3.12	Did the pharmacist calculate the gestational period to determine your/your girlfriend's eligibility for the medication?	<p>0 No</p> <p>1 Yes</p>
3.13	Did the pharmacist tell you that you/your girlfriend should have been pregnant no longer than 24-28 weeks?	<p>0 No</p> <p>1 Yes</p>
3.14	<p>Did the pharmacist tell you any of the following information about the medication?</p> <p><i>(Circle all that apply)</i></p>	<p>1 When to use it</p> <p>2 How to use it</p> <p>3 Side effects of it</p> <p>4 Effectiveness of it</p> <p>5 When to seek help</p> <p>6 When not to use the drug</p> <p>7 When you know it worked</p> <p>8 Other (specify): _____</p>

3.15	Did the pharmacist tell you that...? <i>(Circle all that apply)</i>	1 You/your girlfriend will bleed for a few days then it will stop 2 You/your girlfriend will have cramping for a few days then it will stop
3.16	Did the pharmacist tell you that you/your girlfriend may have...? <i>(Circle all that apply)</i>	1 Nausea/vomiting 2 diarrhoea 3 Fever/chills 4 Headache 5 Other (specify): _____
3.17	Did the pharmacist tell you/your girlfriend to seek help as soon as you/she start(s) bleeding?	0 No 1 Yes
3.18	Did the pharmacist tell you/your girlfriend that bleeding is normal and only to seek help if you/your girlfriend have/has a complication?	0 No 1 Yes
3.19	Did the pharmacist tell you to seek help if you/your girlfriend have/has...? <i>(Circle all that apply)</i>	1 Heavy bleeding 2 Severe pain 3 Bleeding lasting more than 2 weeks 4 Pain lasting more than 2 weeks 5 High fever 6 Other (Specify): _____
3.20	Did the pharmacist tell you about post abortion family planning service	0 No 1 Yes
3.21	What was the price for one combination medical abortion kit that you were asked to pay?	_____
3.22	Would you describe your interaction with the pharmacist as hostile or unfriendly?	0 No 1 Yes

አባሪ 3: የፋርማሲባለሙያዎች በግልፋርማሲዎች ውስጥ ጽንሰ-የማስወረድ ሕክምና መስጠትን የተመለከተ

አዲስ አበባ ኢትዮጵያ

መጠይቁ የተዘጋጀው አገልግሎቶቹ ላይ ተመስርቶ ነው።

1. የፋርማሲባለሙያዎች ባህሪ

- 1.1. የፋርማሲ መለያ _____
- 1.2. ክልል _____ ዞን/ወረዳ/ _____ ክፍለ ከተማ
- 1.3. ጾታ _____ ወ _____ ሴ _____
- 1.4. መልስ ሰጪው የፋርማሲ ወ.ባለቤት ነው
አዎን _____ አይደለም _____ አልታወቀም _____
- 1.5. ባለቤቱ ፋርማሲውን በየቁኑ የማስተዳደር ኃላፊ ነት አለበት
አዎን _____ የለም _____ አልታወቀም _____
- 1.6. በፋርማሲው ውስጥ ያሉት የአገልግሎት ሰጪዎች የትምህርት ደረጃ
 - 1.1.1. የመጀመሪያ ደረጃ
 - 1.1.2. ሁለተኛ ደረጃ
 - 1.1.3. በፋርማሲው ውስጥ ሰርተፊኬት ያለው ሰራተኛ
 - 1.1.4. በፋርማሲው ውስጥ ዲፕሎማ ያለው ሰራተኛ
 - 1.1.5. የቤሌስኢዲ ግሪያለው ሰራተኛ
 - 1.1.6. የማስተር ዲግሪ ያለው ሰራተኛ
 - 1.1.7. ምንም የምስክር ወረቀት የሌለው ሰራተኛ
- 1.7. ፋርማሲው በሳምንት ስንት ቀን ይከፈታል (በቀናት) _____
- 1.8. ፋርማሲው ከተቋቋመ ስንት አመት ይሆነዋል (በዓመት) _____
- 1.9. በየቀኑ የሚመጡት ደንበኞች በአማካይ ስንት ይሆናሉ _____
- 1.10. መድሐኒቶቹ በፋርማሲው ውስጥ ይቀመጣሉ
አዎን _____ የለም _____

2. ጽንሰ-የማስወረድ ድምፅ መድሐኒቶች በፋርማሲው ውስጥ መገኘት

- 2.1. ፋርማሲው ጽንሰ-የማስወረድ ሕክምና ይሰጣል
አዎን _____ የለም _____
- 2.2. በፋርማሲው ውስጥ ጽንሰ-የማስወረድ ጃኦቶች ይገኛሉ?
አዎን _____ የለም _____
- 2.3. ፋርማሲው ምን ዓይነት የጽንሰ-የማስወረድ ጃኦቶችን ይጠቀማል?

ሀ. ሚሲፕሮስቶልብቻ ለ. ሜፊፕሮስቶልብቻ

ሐ. የሚሲፕሮስቶልኦስየሜሬፕሮስቶልድብልቅ

መ. ሌሎችመድሐኒቶች

- 2.4. የጽንሰሕክምናየሚፈለጉደንበኞችቁጥርበየቀኑበአማካይስንትይሆናል? _____
- 2.5. ባለፈውአመትምንያህልየሚሲፕሮስቶልኦስየሜሬፕሮስቶልድብልቅመድሐኒትተሸጦነበር? _____
- 2.6. ምንያህልሚሲፕሮስቶልኦስየሜሬፕሮስቶልመድሐኒቶችበተናጠልያለፈውአመትተሸጡ? _____
- 2.7. ባለፈውአመትበፋርማሲስቴስንትየጽንሰማስወረጃእቃዎችተሸጡ? _____
- 2.8. በአሁኑጊዜየሚሲፕሮስቶልኦስየሜሬፕሮስቶልድብልቅመድሐኒትበመድሐኒትቤቱይገኛል?

ሀ. ይገኛል

ለ. አይገኝም

2.9. በአሁኑወቅትማይዙፕሮስቶልወይምማይፋይፕሮስቶልመድሐኒትይገኛል።

ሀ. የገኛል

ለ. አይገኝም

3. የፋርማሲባለሙያዎችጽንሰማስወረድሕክምናያላቸውእውቀትእናልምድ

3.1. ጽንሰማስወረድበኢትዮጵያውስጥሕጋዊነው?

ሀ. አዎን _____ የለም _____ አላውቅም

3.2. የጽንሰንእድሜእንዴትማስላትይቻላል?

3.3. በአዲሱየጽንሰማስወረድመምሪያመሰረትእስከስንትሳምንትድረስጽንሰማስወረድይቻላል? _____

3.4. የተደባለቁየጽንሰማስወረጃመድሐኒቶችእንዴትመያዝአለባቸው? _____

አባሪ 4

በአዲስአበባኢትዮጵያበግልፋርማሲዎችጽንሰማስወረድገዳክምናየሚሰጡየፋርማሲባለሙያዎችየሚሰጡርደንበኛቅጽ

የሚሰጥርደንበኛውመታወቂያ (አንዱንክብአድርግ) 1/2/3/4

የሚሰጥርደንበኛውጾታ (አንዱንክብአድርግ) ወንድ/ሴት

የፋርማሲውስም: _____

የፋርማሲውኮድ: _____

ይህፋርማሲየአካርጥናትጣልቃገብነትአካልነበር?

(አንዱንክብአድርግ) አዎ/የለም

ከዚህበታችያለውመረጃየሰለጠነእናበማስመሰልየተደረገደንበኛክትትልቅጽአካልነው::

በደንበከተመረመረበኋላሙላው (ሚስጥራዊዳታውከጥቅምላይየሚውለውለጥናትብቻነው)::

ሚስጥረኛውደንበኛማለትያለበትእርሷ/የእርሱየፍቅርጓደኛ 7

ሳምንትእርጉዝመሆኗንእናአዎንታዊየሆነየእርግዝናምርመራእንዳደረገችነው::

ክፍል 1 ስለፋርማሲውእናስፋርማሲሰራተኛውየተሰጠአጠቃላይመረጃ		
1.1.	የፋርማሲባለሙያውእድሜ	<ol style="list-style-type: none"> 1. ከ20 አመትበታች 2. ከ20 እስከ 30 3. ከ31 እስከ 40 4. ከ41 ወይምከዚያበላይ
1.2	የፋርማሲውባለሙያውጾታ	<ol style="list-style-type: none"> 1. ወንድ 2. ሴት
1.3	የፋርማሲውባለሙያውየስራምድብምንነበር?	<ol style="list-style-type: none"> 1. ፋርማሲስት 2. መድሐኒትሽያጭ 3. መናገርአልችልም 4. ሌሎችካሉ (ይገለጽ)
1.4	ቃለመጠይቁንሲያደርጉበፋርማሲውውስጥስንትደንበኞችነበሩ? ደንበኞች

ክፍል 2 - እርስዎንለማገዝየፋርማሲባለሙያውያደረገውነገርነበር?		
2.1	የጽንሰማስወረድንለማስፈጸምፋርማሲስተየሰጠውመድሐኒትአለ	<ol style="list-style-type: none"> 0. የለም 1. አዎንወደጥያቄ 2.3 ይውረዱ
2.2.	የለምካሉለምን (መልስየሆነውንበሙሉክብያድርጉ)	<ol style="list-style-type: none"> 1. እሱእንዳለውየርሱስራየሐክምናምክርመስጠትአይደለም

		<ol style="list-style-type: none"> 2. መድሐኒቶች አልሸጥኩም አለ 3. ስለማንኛውም መድሐኒቶች አላውቅም አለ 4. በጣም ስራ ስለበዛ በትኩረት አላስተናገደኝም 5. የሐኪም ትእዛዝ ያስፈልጋል ብሎ መለሰኝ 6. ወደ ጤና ተቋም ላከኝ 7. ወደ ሌላ ፋርማሲላክኝ 8. ወደ ባህላዊ ሐኪም ላከኝ 9. ወደ ግል ሐኪም አዋላጅ ላከኝ 10. ጽንሰ ማሰብ ወረድኔን እንደሚቃወም ነገረኝና እንደወጣ ጠየቀኝ 11. ተመልሰሽ ነይሩ እንደሚረዳኝ ለሁሉ አለኝ 12. ሌላ ቦታ እንድሄድ ነገረኝ 13. ሌላ ካለ (ግለጽ) 14. ሌላ ካለ (ይግለጽ)
2.3.	ምን ማድረግ እንዳለብህ የሰጡህ ተጨማሪ መረጃ ካለ?	
2.4	ለ ጽንሰ ማሰብ ወረድኔ ኪነ ንግድ ሰጠህት ሲጠይቁት ፋርማሲስቱ ምን አለ? (ምረጥ መልሱን ያክብቡ)	<ol style="list-style-type: none"> 1. ለመርዳት ደስተኛ ነበር 2. ምንም መረጃ ለመስጠት ፈቃደኛ አልነበረም 3. ተቃውሞ ነበር ግን መረጃ ስጠኝ/ጥያቄዎችን መልሱ 4. ቸል አለ/አልፈለገም 5. ሌላ ካለ (ይግለጽ)
2.5	ፋርማሲስቱ የፈራይ መስላል?	<ol style="list-style-type: none"> 0. የለም 1. አዎን 2. መናገር አልቻልኩም/እርግጠኛ አይደለሁም
2.6	ጽንሰ ማሰብ ወረድኔ ሕገ ጥንቅቅን ያሳያል ምን ነው ነገረሽ?	<ol style="list-style-type: none"> 0. የለም 1. አዎን
2.7	ያለ ሐኪም ማዘዣ ሆነ ጽንሰ ማሰብ ወረድኔ ሕገ ጥንቅቅን ያሳያል ምን ነው ነገረሽ?	<ol style="list-style-type: none"> 0. የለም 1. አዎን
2.8	ፋርማሲስቱ እርስዎ/እጮኛዎ የወሊድ መቆጣጠሪያ እንዲጠቀሙ ሐሳብ አቀረቡ?	<ol style="list-style-type: none"> 0. የለም 1. አዎ
2.9	የወሊድ መቆጣጠሪያ ለመሸጥ ሐሳብ አቀረቡ?	<ol style="list-style-type: none"> 0. የለም 1. አዎ
<p>ፋርማሲስቱ ምንም መረጃ ካልሰጠ ይምንም መድሐኒት ካልሸጠ ልዎት እዚህ ላይ ያቁሙ ፋርማሲስቱ መድሐኒት ከሰጠዎት ወይም ከሐኪም ሐሳብ ለመጠቀም ለትንፎርም ይሙሉት ክፍል 3 - ፋርማሲስቱ መድሐኒት ወይም ከሐኪም ሐሳብ</p>		
3.1	ምን እይነት ሕክምና ፋርማሲስቱ ሐሳብ አቀረቡ?	<ol style="list-style-type: none"> 1. ማይዲትሮስቶል 2. አምፒሲሊን 3. ዚዙቶሪን 4. ድንገተኛ የጽንሰ ማሰብ መከላከያ/ፖስት-ፓርቲ/ጠጋት 72 ሰዓት የሚሰራ ኪነን 5. ቦክሶን 6. ሌሎች (ይግለጽ)

3.2	የሕክምና ማዘገፍተጠይቅ ሽንብር	0. የለም ወይ 304 ሂድ 1. አዎን
3.3	የሐኪም ትእዛዝ ከተጠየቁ ለማሳመን ሲሞክሩ መድሐኒት ለመሸጥ ተስማሙ	1. የለም 2. አዎን
3.4	ሜደየን ለመሸጥ ፋርማሲስቱ ተስማማ	0. የለም 1. አዎን
3.5	ዚዙ የቻይና ኪኒን ለመሸጥ ፋርማሲስቱ ተስማማ	0. የለም 1. አዎ
3.6	ሳይቶቴክ ወይም ማይዘፕሮስቶል ለመሸጥ ፋርማሲስቱ ጠየቅዎት	0. የለም 1. አዎን
3.7	ከላይ ከተጠቀሱት አንዱን መድሀኒት ለመሸጥ ከተስማማም ንድፍ ህልቁ ጥርኪኒ ንሐሳብ አቀረብ ኪኒኖች
3.8	ኪኒኖችን ለመውሰድ ስንት ቀናት ያስፈልጋል አለ?	1. ሁሉንም በአንዴ 2. ለሁለት ቀን 3. ለሶስት ቀን 4. በየቀኑ ካስፈለገ 5. ሌሎች..... 6. ፋርማሲስቱ ስለቀናቱ አልተናገረም
3.9	እንዴት ኪኒን እንደሚወስዱ ፋርማሲስቱ ነገርዎት	1. ከምላስ ምስር 2. በብልት ም 3. በጉንጭ ም 4. መዋጥ 5. ሌሎች 6. እንዴት እንደሚወስድ አልተናገረም
3.10	መቼ ፔሬሬድ እንደታየች ጠየቁት	0. አዎን 1. የለም
3.11	ጄስተሽናል ዊልፋርማሲስቱ ተጠቀመ	0. አዎን 1. የለም
3.12	ከ9-10 ሳምንት በላይ ማርገዝ የለባት ምን አለዎት	0. አዎን 1. የለም
3.13	ስለህክምናው ከነዚህ ውስጥ ስለየትኛው ገለጸልዎት	1. መቼ መጠቀም እንዳለበት 2. እንዴት መጠቀም እንዳለባት 3. ጉዳቱን 4. ውጤቱን 5. እርዳታ መቼ እንደሚያስፈልገው 6. መቼ መድሐኒቱን መጠቀም 7. እንደሚሰራ 8. ሌሎች
3.14	ፋርማሲስቱ የነገሮት	1. ለጥቂት ቀናት ትደማለች

		2. ለጥቂት ጊዜ ያስቃይታል
3.15	ፋርማሲሲቲካንሎጂ	1. ያስታውቅታል 2. ያስቀምጣታል 3. ትኩሳት 4. ራስምታት 5. ሌሎች
3.16	ልክመድማት ሲጀምሩት እርዳታ ያስፈልጋታል	ሀ. የለም ለ. የለም
3.17	ፋርማሲሲቲካንሎጂ ስለሆነው ምንም ሆኖ ለሌሎች ማለፊያዎች ስለሌላው ጋር መሆኑን ነገር ያውቅ	1. የለም 2. አዎን
3.18	ርዳታ ስፈልግከ.....	1. ደምክፈሰሳት 3. ከፍተኛ ስቃይ ከተሰማት 4. ለሁለት ሳምንት ደምክፈሰሳት 5. ለሁለት ሳምንት ከደማች 6. ከፍተኛ ትኩሳት 7. ሌሎች ካለዎት
3.19	ፋርማሲሲቲካንሎጂን ለማስወረድ በኋላ የወሊድ መከላከያ ተጠቅሞ አልቃም?	ሀ. የለም ለ. አዎን
3.19	የእርስዎ የፋርማሲሲቲካንሎጂ ደረጃ በወደፊት ለመሰረተው ወይስ አለ መግባባት ነበረው?	ሀ. የለም ለ. አዎን

Annex 5 Consent Form to pharmacy manager

I want to thank you for taking the time to meet with me today. My name is _____ and I would like to talk to you about the possibility of having mystery clients visit your pharmacy as a means to improve medication abortion service. One or more clients will visit your pharmacy seeking for medication abortion service the mystery clients have been trained to examine key components of service provision during their visits.

I want to emphasize that mystery clients are not being trained to find mistakes or faults with the pharmacy, but as a key target audience of the pharmacy, can observe ways in which the clinic might improve to better serve them. Are there any questions about what I have just explained? Is your pharmacy willing to participate in the mystery client exercise?

Pharmacy Manager _____ Witness _____ Date _____

አባሪ 5

የፋርማሲውብኝት ስምምነት ቅጽ ስም

በዛሬው አለት ከእርስዎ ጋር እንድንገናኝ ጊዜዎን ስለሰጡኝ አመሰግናለሁ።

ሚስጢራዊ የሆኑ የደንበኞች ጉብኝት በእርስዎ ፋርማሲ የሚደረግ ስለመሆኑ ከእርስዎ ጋር ለመወያየት እፈልጋለሁ። ይህም የሚሰጠውን የውጭ ጃኦን ልግ ለውጥ ለማሻሻል ነው። በሚቀጥለው ወር ውስጥ አንድ ወይንም ሁለት ወጣቶች የእርስዎን ፋርማሲ ይጎበኛሉ። የዚህም አላማ ስለድብቅ የውጭ ጃኦን ልግ ለውጥ እንዲያገኙ የእርስዎን ፋርማሲ ለመጎብኘት ሲሆን እነርሱም በጉብኝታቸው ወቅት የፋርማሲውን ቅርጽ የሰራተኞቹን መግባባት እንዲሁም ስለውጭ ጃኦን ልግ ለውጥ የሚሰጠውን የህክምና ጥራት በተመለከተ የሚሰጡ አገልግሎቶችን ለመመርመር እንዲችሉ ሰልጥነዋል። ከፋርማሲው ጉብኝት በኋላ ሚስጢራዊ የደንበኞች የእነርሱን እይታ ለመመዘን በበተመራማሪ ቃለመጠይቅ ይደረግላቸዋል።

ሚስጢራዊ የደንበኞች ስህተት ለማግኘት ወይም ትኩረት ለማግኘት የሰለጠኑ አለመሆናቸው ላሰምርበት እፈልጋለሁ። ነገር ግን እነርሱ የፋርማሲ አይነተኛ ቁልፍ አዳማ ጮኞች ሲሆኑ ፋርማሲው ለእነርሱ የተሻለ አገልግሎት ለመስጠት እንዲቻል የሚያደርገውን መሻሻል የሚመለከቱ ብቻናቸው። እንደዚሁም ሚስጢራዊ የደንበኞች በፋርማሲው ጉብኝት ወቅት ምንም አይነት አገልግሎት እንዳያገኙ መረዳተን ቷቸዋል። ስለ ገለጽኩልዎት ጉዳይ ጥያቄ አለዎትን የእርስዎ ፋርማሲ በሚስጢራዊ የደንበኞች ስራ ላይ ለመሳተፍ ቃደኛ ነው?

የፋርማሲው ስራ አስኪያጅ _____

ምስክር _____

ቀን: _____

Annex 6Mystery Client Consent Form

I want to thank you for taking the time to meet with me today. My name is _____ and I would like to talk to you about serving as a mystery client for the study of Medication abortion service. The purpose of this work is to improve service of medication abortion provision in private pharmacies. Your participation would include the following: Training on how to conduct a mystery client visit a visit to one or more pharmacies as a mystery client Completion of an interview regarding the pharmacy and the visit. I want to note that you will not receive any services during the pharmacy visit (such as tests or Exams), but may receive information and counseling on medication abortion services. All interview responses will be kept confidential and the interview should take less than an hour.

Are there any questions about what I have just explained?

Are you willing to participate as a mystery client?

Interviewee _____

Witness _____

Date _____

አባሪ 6

የሚስጥራዊደንበኞች የስምምነት ቅጽ ስር

በዛሬው አለት ከእኔ ጋር ለመገናኘት ጊዜዎትን ስለሰጡኝ አመሰግንዎታለሁ።

ስሜ _____

_____ ነው። እናም እኔ ከእርስዎ ጋር ለመነጋገር የምፈልገው እንደሚሰጡራዊደንበኛ አገልግሎት ለማግኘት ሲሆን የዚህም አላማ በውርጃ አገልግሎት ስለሚሰጠው ህክምና ለማግኘት ነው። የዚህ ስራ አላማ በግል መድኃኒት ቤቶች ለውርጃ የሚሰጠውን አገልግሎት ለማሻሻል ነው። የእርስዎ ተሳትፎ ከዚህ የመሚከተሉትን ያካትታሉ ሚስጥራዊደንበኛ ጉዞችን እንደወትድ ርገው ለማካሄድ የሚደረግ ስልጠና እንደሚሰጡራዊደንበኛ አንድ ወይንም ከዚያ በላይ መጎብኘት በፋር ማሲው እና ጉብኝቱን በተመለከተ ቃለመጠይቁን ማጠናቀቅ በፋር ማሲው ጉብኝት በሚደረግ በትጊዜ ለሚሰጠው አገልግሎት ምንም አይነት አገልግሎት የማይሰጥ መሆኑን ለመግለጽ እወዳለሁ። ለምሳሌ ምርመራ፣ ነገር ግን ስለውርጃ አገልግሎት ህክምና መረጃ እና የምክር አገልግሎት ማግኘት ይችላሉ።

ስለ ገለጽኩት ጉዳይ ጥያቄ አለዎትን?

እንደሚሰጡራዊደንበኛ ለመሳተፍ ፍቃድ ኛኝነዎትን?

ቃለመጠይቅ ተደራጊው _____

ምስክር: _____

ቀን: _____

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the research publications office in effect at the time of grant is forwarded as the result of this application.

Name of the student: **Mahlet Tefera**

Date. _____ Signature _____

Approval of the primary Advisor

Name of the primary advisor: **Dr Assefa Seme**

Date. _____ Signature _____