Inability to Obtain Medication Abortion in Pharmacies and Drug Stores in Addis Ababa, Ethiopia: Findings from a Mystery Client Study

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Abstract

Background: Little is known about dispensation of Medication Abortion (MA) without a prescription in pharmaceutical outlets in Ethiopia. We explored factors associated with inability to access MA without a prescription in these settings.

Methods: Mystery clients (MCs) visited 600 outlets in Addis Ababa to request MA without a prescription. We ran tests for association to understand factors associated with inability to obtain MA. We descriptively analyzed the reasons MCs were unable to obtain MA, and compared MC and stock survey results to assess consistency between stock survey results and MC visit outcome.

Results: MCs were unable to obtain MA in three-quarters of visits (76.5%). In multivariable regression, MCs assisted by female staff or outlet employees had nearly twice the odds of being unable to obtain MA compared to male staff (aOR = 1.61; 95% CI = 1.02-2.54) and to managers/owners (aOR = 1.78; 95% CI = 1.06-2.99). MCs who disclosed their marital status and the reason for wanting an abortion had significantly lower odds of being unable to obtain MA compared to MCs who were not asked these details (aOR = 0.43; 95% CI = 0.25-0.73; and aOR = 0.49; 95% CI = 0.29-0.82, respectively). Not selling MA was the main reason MCs were unable to obtain MA.

Conclusions: The practice of selling MA without a prescription is already happening, though clients are unable to obtain MA for reasons other than needing a prescription. There is potential for involving pharmacists in the expansion of safe abortion services in Ethiopia.

Background

In Ethiopia, where a 2005 revision to the abortion law greatly expanded access to safe abortion services, most abortions are obtained through health facilities [1,2]. Nonetheless, many women in Ethiopia still terminate their pregnancies outside of facility settings [2]. Research from Ethiopia and elsewhere suggests that women may avoid seeking abortion-related care at health facilities due to fears of stigmatization and mistreatment, costs and privacy concerns, and inaccessibility [3–5].

Medication abortion (MA), which includes the use of misoprostol alone or in combination with mifepristone, is common in Ethiopia: an estimated 44.2% of women self-reporting induced abortion in the last year reported using MA [2]. The World Health Organization (WHO) endorses the use of MA as a proven safe and effective method of abortion [6]. Research also shows that MA can be safely and effectively administered by women themselves, who can self-assess their gestational age, obtain and administer pills, and assess completeness [7–10]. WHO's self-care guidelines underscore that, with the correct information, pharmacists, community health workers, traditional medicine professionals, and women themselves can safely use MA [6].

In Ethiopia, mifepristone and misoprostol are prescription-only products. Nevertheless, anecdotal evidence suggests MA medications can often be obtained *without* a prescription from pharmacies and drug stores, as has been observed in other African countries [11,12]. As such, pharmacies and drug stores (referred to collectively as "pharmaceutical outlets") can serve as critical points of service for women seeking to terminate pregnancies outside of clinic settings.

There is ample research that a person's inability to access safe abortion profoundly impacts health and wellbeing. Studies show that women who are denied a legal abortion will commonly seek care elsewhere or resort to clandestine procedures or home remedies, and the experience of denial can leave them feeling depressed, angry, or hopeless [13–16]. However, evidence that explores the reasons for denial of MA from pharmacists and drug sellers is less common. One study from Nepal found that women were most commonly refused MA due to higher gestational age [17]. Other studies, including one from Ethiopia, have found that unclear legislation, and fear of legal consequences dissuade pharmacists from dispensing misoprostol [18–20].

Despite the Ethiopian law requiring a prescription for dispensation of MA at pharmaceutical outlets, the provision of MA at these outlets is inconsistent, and the reasons for providing or withholding care unclear. To our knowledge, this study is the first to assess reasons for clients' inability to access MA from pharmaceutical outlets without a prescription, as reported by mystery clients. The mystery client design enables us to understand barriers to obtaining MA as reported by users, rather than outlet staff. This study lends important evidence about the factors that affect access to abortion care beyond the existing law.

Methods

Study Design & Setting

We conducted a two-phase cross-sectional study in pharmaceutical outlets in Addis Ababa, Ethiopia from July to September 2024. Phase 1 assessed MA medication stock using a stock survey, while Phase 2 assessed MA service provision using a mystery client (MC) design.

The Methods are described elsewhere in detail [under review; 21] but briefly, we collected MA stock data from all pharmacies and drug stores in Addis Ababa, identified via Ethiopia Federal Ministry of Health's Master Facility List. For Phase 2, our target sample was 600 pharmaceutical outlets, which included all that reported stocking MA in the stock survey and a random sample

of outlets without MA stock. Outlets selected for Phase 2 were visited one month after Phase 1. Further, we randomly selected 10% of sampled outlets with MA stock for MCs to report a second-trimester gestational age (14 weeks). In all other outlets, MCs reported a gestational age of 8 weeks. Gestational age was only provided if asked.

MCs were trained to enter pharmaceutical outlets and state the following: "I missed my period. Do you have any medication to help me?" If asked, MCs were instructed to say that they had a partner but were unmarried, had never been pregnant before, and wanted to terminate the pregnancy because it was unplanned and mistimed. MCs reported their real age if asked (all MCs were 19 to 25 years old). Data collectors met with MCs five minutes after their visit and gathered information about the interaction using a pre-programmed survey. If they were unable to purchase MA, MCs reported reasons for refusal as stated by outlet staff; MCs could provide multiple reasons, and "no reason given" was also a valid response option. MCs also reported on characteristics of the staff person, including their sex, estimated age, and position (owner/manager or employee). Position was only recorded if staff identified themselves; MCs were trained to estimate age as best they could.

Analysis

We first assessed MC's ability to obtain MA with chi-square bivariate analyses between inability to obtain MA and key variables we hypothesized to be related to this outcome. Variables included type of pharmaceutical outlet, questions asked by staff about the MC (gestational age, MC's age, marital status, and reason for abortion), sub-city, time of day of MC visit, and the sex, estimated age, and position of the staff person. Some questions about the MC's background were rarely asked, so were excluded due to small cell sizes. These included: number of children, health problems, IUD use, and accompaniment by a partner or parent. We then ran multivariable logistic regression models to assess relationships between inability to obtain MA and demographic variables and pharmaceutical outlet characteristics. We also calculated descriptive statistics to understand the reasons MCs were told they were unable to obtain MA, by outlet type. We divided reasons into four categories: structural reasons, legal considerations, clinical considerations, and personal objections. Finally, we compared MC and stock survey results among all outlets to assess consistency of reasons MCs were unable to obtain MA with stock status. Based on stock survey responses from Phase 1, we classified outlets as "do not sell" if they reported never stocking/selling MA medications, "out-of-stock" if they usually stock/sell MA medications but were out of stock the day of our visit, or "in-stock" if they sell MA medications and had them in-stock that day.

Patient and Public Involvement statement

No patients were involved in the design of this study. A Technical Advisory Group (TAG) consisting of reproductive health experts and advocates advised on study methodology, instruments, and dissemination informed by women's experiences and preferences.

Results

MCs visited 600 pharmaceutical outlets: 518 (86.3%) pharmacies, and 82 (13.7%) drug stores. During MC visits, 459 MCs (76.5%) were unable to obtain MA. Among those not sold MA, 15.3% were offered both referral and information about MA, 63.6% were referred only (no information), and 20.0% received no information or referral (data not shown).

In bivariate models, outlet type, outlet staff demographics, and MCs disclosing information about age, marital status, or reason for abortion were all statistically significantly associated with inability to obtain MA (Table 1). MCs were significantly less likely to obtain MA without a prescription in pharmacies (vs. drug stores) and when assisted by staff who were female (vs. male), younger than 30 years in age (vs. 30 years or older), and employees of the facility (vs. owners/managers). If MCs were asked about their age, marital status, or reason for abortion, they were significantly more likely to obtain MA without a prescription. The sub-city in which the facility was located, gestational age, and the time of day of the MC visit were not associated with our outcome.

Table 1. Bivariate relationships between obtaining MA and demographic and pharmaceutical outlet characteristics

	Unable to obtain MA		Obtained MA		
	n	%	n	%	p-value
Type of Facility					**0.03**
Pharmacy	404	88.0	114	80.9	
Drug Store	55	12.0	27	19.1	
Profile					0.19
First trimester	425	92.6	135	95.7	
Second Trimester	34	7.4	6	4.3	
Sub-city					0.54
Addis	30	6.5	10	7.1	
Akaki	33	7.2	11	7.8	
Arada	27	5.9	10	7.1	
Bole	63	13.7	25	17.7	
Gullele	33	7.2	10	7.1	
Kirkos	21	4.6	5	3.5	
Kolfe	84	18.3	13	9.2	
Lemikura	54	11.8	20	14.2	
Lideta	30	6.5	10	7.1	
Nifas	57	12.4	21	14.9	
Yeka	27	5.9	6	4.3	
Sex of Provider					**<0.001**
Male	144	31.4	70	49.6	
Female	315	68.6	71	50.4	
Estimated Age of Provider					**<0.001**

20-29	215	46.8	45	31.9	
30 or older	244	53.2	96	68.1	
Position of Provider					**<0.001**
Owner/in-charge/manager	172	39.7	77	57.9	
Employee/staff	261	60.3	56	42.1	
Time of day of MC visit					0.90
During main daytime hours (10am-5pm)	369	80.4	114	80.9	
Outside main daytime hours	90	19.6	27	19.1	
Pharmacist / Drug seller - solicited information					
Age	31	6.8	19	13.5	**0.01**
Marital status	67	14.6	48	34.0	**<0.001**
Reason for abortion	66	14.4	45	31.9	**<0.001**

In multivariable regression, some factors maintained significance (Table 2). Controlling for other factors, MCs assisted by female staff or outlet employees had nearly twice the odds of being unable to obtain MA when compared to male staff (aOR = 1.61; 95% CI = 1.02-2.54) and to managers/owners (aOR = 1.78; 95% CI = 1.06-2.99). MCs who disclosed their marital status and the reason for wanting an abortion had significantly lower odds of being unable to obtain MA when compared to MCs who were not asked these details (aOR = 0.43; 95% CI = 0.25-0.73; and aOR = 0.49; 95% CI = 0.29-0.82, respectively).

Table 2. Adjusted odds ratios for relationship between being unable to obtain MA and demographic and pharmaceutical outlet characteristics

	aOR	***CI, lower bound***	***CI, upper bound***	***p-value***
Drug store (ref = pharmacy)	0.66	0.35	1.22	0.18
Profile (ref = 1st trimester)	2.27	0.88	5.87	0.09
Sub-city (ref = Addis)	-	-	-	-
Akaki	1.00	0.32	3.10	1.00
Arada	0.67	0.22	2.06	0.48
Bole	0.65	0.24	1.72	0.38
Gullele	0.94	0.30	2.87	0.91
Kirkos	1.05	0.29	3.82	0.95
Kolfe	1.71	0.61	4.75	0.31
Lemikura	0.71	0.27	1.89	0.49
Lideta	0.61	0.19	1.95	0.40
Nifas	1.15	0.42	3.10	0.79
Yeka	1.01	0.29	3.47	0.99
Female (ref = male)	1.61	1.02	2.54	**0.04**
30+ Years Old (ref = 20-29)	0.91	0.53	1.56	0.73
Staff/employee (ref = manager/in-charge/owner)	1.78	1.06	2.99	**0.03**
Time of day of MC visit (ref = daytime hours)	0.94	0.55	1.61	0.82

Asked about age (ref = was not asked)	0.63	0.31	1.30	0.21
Asked about marital status (ref = was not asked)	0.43	0.25	0.73	**<0.001**
Asked about reason for abortion (ref = was not asked)	0.49	0.29	0.82	**0.01**

Table 3 displays the reasons MCs reported not being able to obtain MA. Overall, the main reasons included the staff person reporting that the pharmaceutical outlet does not sell MA (60.6%), requiring a prescription (28.8%), and concern over serious complications (14.4%). Few MCs were unable to obtain MA due to staff's personal objections, with the main personal reason cited being religious/moral beliefs (9.8%). There were no significant differences between pharmacies and drug stores in reasons for inability to obtain MA, with the exception of not selling MA, which was a significantly more common reason in drug stores (74.5% vs. 58.7% in pharmacies).

Table 3. Reasons MCs were unable to obtain MA (n=459)

		Total		Pharmacies		Drug stores		p val
	Reason for Refusal	**n**	**%**	**n**	**%**	**n**	**%**	
Structural (lack of knowledge/stock)	Does not sell MA	278	60.6	237	58.7	41	74.5	**0.02**
	MA out of stock	24	5.2	22	5.4	2	3.6	0.57
	Does not know of MA drugs	5	1.1	5	1.2	-	-	0.41
	No skilled providers	5	1.1	4	1.0	1	1.8	0.58
Legal considerations	No prescription	132	28.8	122	30.2	10	18.2	0.06
Clinical considerations	Serious complications	66	14.4	61	15.1	5	9.1	0.23
	Wanted to confirm pregnancy	36	7.8	32	7.9	4	7.3	0.87
	High gestational age	18	3.9	17	4.2	1	1.8	0.39
Personal objections	Religious/moral beliefs	45	9.8	40	9.9	5	9.1	0.85
	Wanted me to continue pregnancy	20	4.4	18	4.5	2	3.6	0.78
	Too young	7	1.5	6	1.5	1	1.8	0.85
	Don't have a valid reason for abortion	1	0.2	1	0.2	-	-	0.71
No reason	No reason provided	4	0.9	4	1.0	-	-	0.46

* Responses were select multiple. As such, responses will not sum to the total number of refusals

Table 4 compares MC's ability to obtain MA with stock survey results. Among pharmaceutical outlets that reported *not* selling MA in the stock survey, 14.4% actually sold MA to our MCs. Similarly, among outlets that reported MA being out-of-stock in the stock survey, one-quarter (25%) sold MA during the MC visit. Finally, among outlets that reported that they *did* stock, most MCs were unable to obtain MA, and in 32.7% of these visits stock reasons were given.

Table 4. Comparing stock survey results regarding MA stock and outcome of MC visit

	Total (n=600) %	Pharmacies (n=518) %	Drug Stores (n=82) %
Previously reported does not sell (n=167)	**27.8**	**24.7**	**47.6**
Unable to obtain MA: does not sell	70.7	70.3	71.8
Unable to obtain MA for other reasons	15.0	16.4	10.3
Able to obtain MA*	14.4	13.3	17.9
Previously reported out of stock (n=176)	**29.3**	**29.3**	**29.3**
Unable to obtain MA: out of stock	4.5	4.6	4.2
Unable to obtain MA for other reasons	70.5	75.7	37.5
Able to obtain MA	25.0	19.7	58.3
Previously reported in stock (n=257)	**42.8**	**45.9**	**23.2**
Unable to obtain MA: does not sell	28.0	27.3	36.8
Unable to obtain MA: out of stock	4.7	5.0	0.0
Unable to obtain MA for other reasons	38.9	39.5	31.6
Able to obtain MA	28.4	28.2	31.6

*Shading represents those responses that reflect misalignment between what was reported in the stock survey and the result of the MC visit.

Discussion

Even though women in Ethiopia still seek induced abortion outside of facilities, almost three-quarters of MCs in this study were unable to purchase MA without a prescription in pharmaceutical outlets in Addis Ababa. Given that a prescription is required to dispense MA, we hypothesized that MCs would be unable to purchase due to lack of prescription – however, this was *not* the most common reason. Rather, MCs most frequently reported being unable to obtain MA because they were told the outlet did not sell MA.

In multivariable analyses, MCs assisted by pharmaceutical outlet staff who were female (vs. male) and employees (vs. owners/managers) had significantly higher odds of being unable to obtain MA without a prescription. This echoes existing literature that female providers may be more likely to deny abortion services [22–24], perhaps due to increased judgement by same-sex peers. Managers and owners, meanwhile, may feel freer to sell MA without a prescription as they do not risk repercussions by a superior. Interestingly, visits where MCs were asked about their marital status and reason for abortion had lower odds of ending in a refusal. Since we did not vary marital status and reason for abortion among MCs (all who were asked reported being unmarried and their pregnancies mistimed), this highlights an important finding that these details may matter to outlet staff in weighing sales decisions and may encourage staff to sell MA without a prescription in situations they otherwise might not.

Our findings show that stock-outs of MA medications in pharmaceutical outlets may be a barrier to access. A recent study piloting MA provision in Ethiopian pharmacies similarly found stock to be a leading reason for non-provision [20]. However, our study found that MCs who visited

outlets that previously reported stocking MA medications were commonly told MA was not sold or out-of-stock, and turned away. Conversely, a substantial proportion of outlets that reported being out-of-stock or not selling MA medications in the stock survey ultimately sold them during the MC visit. There are several possible explanations for these discrepancies: for one, the stock survey was administered one month before MC visits, meaning stock status may have changed. Secondly, the stock survey respondent may not have been the same person assisting the MC, and certain employees may not have knowledge of MA stock. That some outlets previously reporting *having* stock told MCs they do not sell MA is interesting: we hypothesize that some outlet staff may be using this reason to mask other reasons for not wanting to sell and avoid conflict with the client. Being unable to obtain MA based on staff's personal objections to abortion were not commonly reported by MCs, but abortion remains a sensitive topic in Ethiopia and these opinions may simply have not been expressed. Our findings make clear that questions about MA provision, whether by an interviewer or a mystery client, may not always produce reliable responses.

While a mystery client study cannot assess the true impact of refusal on women seeking MA, literature indicates that women who are unable to obtain abortion will either attempt to access services elsewhere (sometimes using unsafe methods or clandestine providers), or will be forced to continue the pregnancy, leading to negative socio-economic and health impacts [13]. Encouragingly, most MCs who were unable to purchase MA were referred elsewhere for a safe abortion service, although one in five received neither information nor referral. Women have a recognized human right to safe abortion [25–27], and removing barriers to accessing MA from pharmaceutical outlets would greatly expand access to safe abortion in Ethiopia. Our results show that the practice of selling MA without a prescription is already happening, though clients are unable to obtain MA for reasons other than needing a prescription.

This study has some limitations. Reasons for being unable to obtain MA were reported by MCs, and may in some cases not reflect staff's true motivations. Staff age was estimated by MCs and not confirmed by pharmaceutical outlet staff; as such, associations between age and inability to obtain MA should be considered exploratory. The mystery client design limited our ability to explore other characteristics of outlet staff that may be associated with refusals, including their years in the profession, level of education, and opinions about abortion. Lastly, since MC characteristics did not vary (with the exception of the few second-trimester visits), we cannot comment on what characteristics of the clients themselves might have influenced ability to obtain MA; however, assessing relationships between obtaining MA and questions asked of the MC implies that specific client characteristics (marital status and reason for abortion) influence decisions to sell MA.

This study also assessed the quality of care provided to MCs who purchased MA (published elsewhere), which found that outlet staff who sell MA can provide high-quality care, with most (67.1%) correctly informing MCs on the dose, timing, and route for MA medications [under

review; 21]. Implementation studies also demonstrate the potential for involving pharmacists in the expansion of safe abortion services. One three-month pilot program in Ethiopia that trained pharmacists to provide counseling and MA medications without a prescription served over 1,400 women and had a complication rate of less than 0.5% [20]. Taken together, these results underscore the practicability of expanding regulatory guidelines to include pharmacists and drug sellers as providers of MA. Indeed, Ethiopia's own self-care guidelines recognize that women with accurate information and linkages to care are good candidates for self-managed abortion, and that such an intervention would reduce unsafe abortion [27]. Under current guidelines, leverage points for improving access to MA in Ethiopia include strengthening the supply system so outlets have MA in stock, training outlet staff to reduce refusals for clinical considerations or personal reasons, and ensuring linkages between outlets and health facilities to make sure women get the care they need and desire.

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