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Exploring the availability and accessibility of medication abortion pills without a prescription: a mystery client study of pharmacies in Mumbai, India

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Abstract

Background In India, mifepristone was introduced in 2002 for use with misoprostol as medication abortion and is currently approved for use up to nine weeks of gestation. Even though a prescription from a clinician is officially needed to obtain this regimen, many abortion seekers try to obtain medication abortion pills directly from pharmacies without one. The availability of medication abortion in pharmacies varies widely across states. We conducted a mystery client study in Mumbai, Maharashtra to assess the availability of, accessibility of, and pharmacy worker dispensing practices related to medication abortion pills.

Methods We developed two mystery client profiles: one of an unmarried woman and the other of her male partner. In October 2023, both mystery clients separately visited each pharmacy to purchase medication abortion pills without a prescription. The mystery clients asked for medications that could “bring back menstruation” after a positive urine pregnancy test and then let the interaction unfold organically. We documented each encounter and analyzed these interactions using descriptive statistics and for content and themes.

Results We visited 112 pharmacies for a total of 224 encounters. Medication abortion pills were in stock in only 12 pharmacies (11%) during at least one mystery client visit. In 79% ($n = 178$) of the visits, pharmacy workers asked mystery clients to see a clinician and in 23% ($n = 51$) of the visits pharmacy workers indicated that stocking or selling medication abortion pills was banned or illegal. A number of pharmacy workers mentioned that medication abortion pills are over-regulated and requirements for stocking and selling pills are cumbersome.

Conclusions Although mifepristone/misoprostol can be dispensed by pharmacies in India, medication abortion pills appear to be available, with or without a prescription, in very few pharmacies in Mumbai. Pharmacy dispensing could support affordable medication abortion care, but overregulation has led to a decrease in the availability of these pills, which may create barriers to timely access to care for abortion seekers. There is a need to engage with pharmacy workers about the legal and regulatory status of mifepristone/misoprostol and identifying ways to eliminate overregulation appears warranted.

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Keywords Abortion, India, Mifepristone, Misoprostol, Medication abortion, Mystery client survey, Pharmacy, South Asia

Background

In 1971, the Indian parliament passed the Medical Termination of Pregnancy Act, 1971, legalizing abortion care in the country [1]. In India, women can seek abortion on varied grounds, including contraceptive failure and if a pregnancy can potentially harm her physical and mental health [1]. India has broad gestational age eligibility, as abortions can even be provided beyond 24 weeks for reasons including cases of fetal abnormalities [1]. Under this framework, an allopathic clinician with experience or training in obstetrics and gynecology can provide abortion care [1–4]. In 2002, the Drugs Controller General of India approved mifepristone's license and permitted its use with misoprostol for medication abortion up to seven weeks of gestation; misoprostol was already in use for the prevention of gastric ulcers [5, 6]. In 2008, the Drugs Controller General approved a combination package (combipack) containing mifepristone and misoprostol for use up to nine weeks of gestation [7].

Under this regulatory framework, medication abortion pills can be obtained from a pharmacy with a prescription from a clinician [4, 8]. However, abortion seekers in India often try to obtain these medications from local pharmacies *without* a prescription [9, 10]. The convenience, affordability, and anonymity of obtaining medication abortion pills directly from pharmacies has become a preferred mode of care for many [11]. Researchers estimated that out of the 15.6 million abortions that occurred in India in 2015, 81% (12.7 million) of them were medication abortions and 73% (11.5 million) were medication abortions that occurred outside of the formal health care system, including via pharmacies [12].

The availability of medication abortion pills in Indian pharmacies varies widely. Recent studies have shown that in Assam and Uttar Pradesh, 70% and 66% of pharmacies, respectively, stocked medication abortion pills, whereas only about 1% of pharmacies in Maharashtra and Punjab stocked medication abortion pills and in Rajasthan no pharmacies stocked the pills [13, 14]. Overregulation of mifepristone/misoprostol in a number of Indian states is likely responsible for these disparities in availability [13, 14]. The excessive regulatory enforcement on pharmacies beyond the clinician's prescription requirement has potentially contributed to this disparity. Evidence shows that these overregulation practices, including drug authorities raiding pharmacies, created an environment of fear among pharmacy workers and consequently led to them not stocking medication abortion pills [14, 15]. These misplaced initiatives are purportedly centred around the objective of reducing selective abortions of

presumptively female fetuses, as “sex selective” abortion are deemed as the reason for the declining female sex ratio at birth [14, 15]. Further, proposals from a Maharashtra state government-appointed committee in 2011 and state drug regulators in Gujarat in 2012 and Haryana in 2019 to ban the sale of medication abortion pills in pharmacies could further threaten access to mifepristone/misoprostol [16–19].

In this context, we conducted a mystery client survey to explore the availability and accessibility of medication abortion pills without a prescription in Mumbai. This city is the state capital of Maharashtra and a highly populous metropolitan city in India with 12.4 million residents as per the most recent Census of 2011 [20]. To provide evidence on the availability and accessibility of medication abortion pills in pharmacies without a prescription, we assessed the stocking and dispensing practices in local pharmacies. Furthermore, we assessed the interactions with pharmacy workers including pharmacists, store clerks, and pharmacy trainees, with the unmarried male and female mystery clients seeking medication abortion pills.

Methods

Study setting

In October 2023, we identified and visited local pharmacies over a period of two weeks in four regions of Mumbai city- West, Central, East/Harbour and South - using convenience sampling (see Fig. 1) [21]. We selected these regions to capture the diversity of residential neighbourhoods and densely populated areas, including areas near train stations and local markets. Our sampling strategy aimed to include pharmacies serving populations from diverse socio-economic backgrounds, ranging from individuals living in large metropolitan slum dwellings such as Dharavi to those in high-income residential areas.

Data collection

We set out to visit 100–120 pharmacies, 25–30 pharmacies in each of the four regions. We included local pharmacies and chain pharmacy stores such as Apollo Pharmacy and Zeno Health. Before commencing data collection, we identified pharmacies in each of the regions using Google Maps®.

DS and AD served as the mystery clients for this study. DS is a doctoral candidate in the Population Health Program and AD is a postdoctoral fellow in the Faculty of Health Sciences at the University of Ottawa. Both are Indian and have lived in large cities—DS in Mumbai and AD in Delhi. We created mystery client profiles to

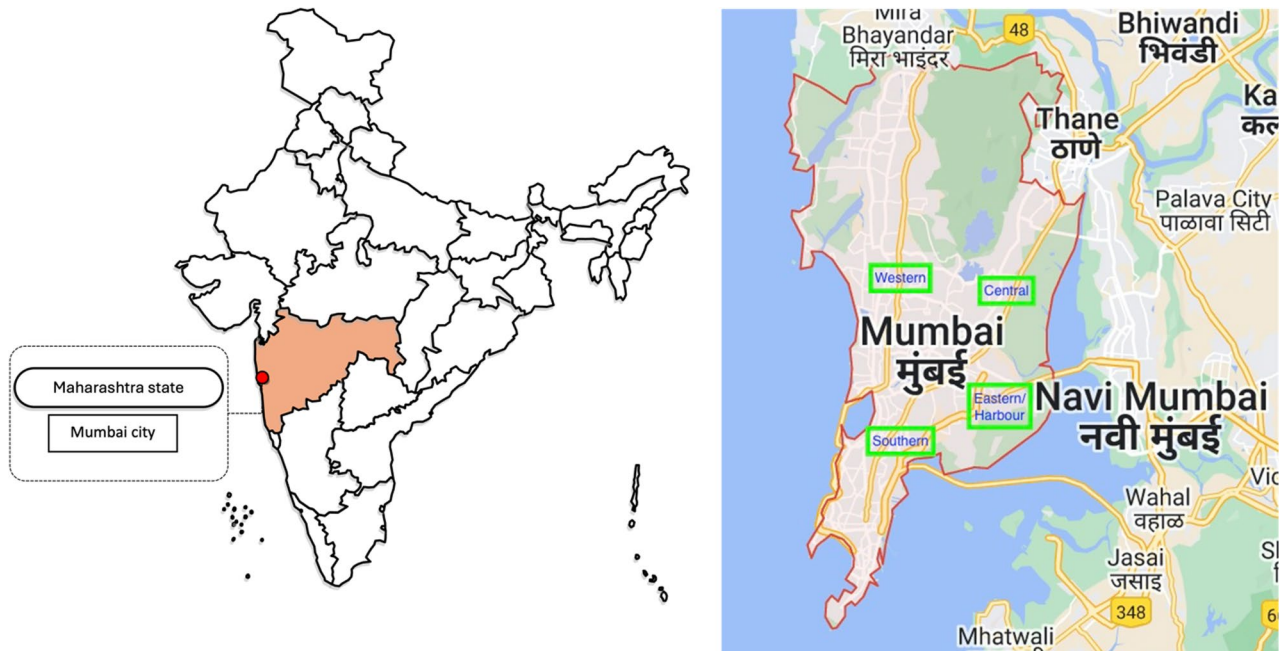


Fig. 1 Map of India with Mumbai and Maharashtra state highlighted and map of Mumbai depicting the four labelled regions of data collection: Western, Central, Eastern/Harbour and Southern. Sources: Map of India sourced from yourfreetemplates.com and map of Mumbai sourced from Google Maps®

Table 1 Mystery client profiles used in this study to purchase medication abortion pills without a prescription in Mumbai, India

AD	Anjali is 26 years old, holds a diploma in business management, and is seeking employment in Mumbai. She lives in shared housing with roommates. Anjali is in a relationship with her boyfriend, Rajesh. They frequently use external condoms and at times have unprotected sex. Anjali realized it has been eight weeks since her last period and recently had a positive urine pregnancy test. Her roommates told her that there is a medication that can bring back a period and thus she wouldn't need to see a clinician to have an abortion. This is her first pregnancy and she has no other medical conditions or drug allergies. Anjali knows very little about medication abortion but decided to visit a pharmacy to obtain more details about this medication and purchase it. She does not want information about contraception.
DS	Rajesh is 31 years old and works as a human resources manager in a private organization in Mumbai. He lives in shared housing with other roommates. He is in a relationship with Anjali. They frequently use external condoms and at times have unprotected sex. A few days ago, Anjali shared that her last period was about 8 weeks prior and she had a positive urine pregnancy test. Anjali explained that her roommates said there was a medication that she could get from a pharmacy to bring back her period and thus she wouldn't have to go to a clinic to have an abortion. She has no other information regarding this medication. This is Anjali's first pregnancy and she has no other medical conditions or drug allergies. Rajesh knows very little about medication abortion but decided to visit a pharmacy to obtain more details about this medication and purchase it. If offered, he would purchase external condoms.

maintain consistency when visiting different pharmacies and designed the profiles such that they would be perceived as authentic (see Table 1). DS presented as the unmarried man seeking pills for his girlfriend while AD presented as an unmarried women seeking pills for herself. We designed their profiles to explore the experiences of unmarried clients of different genders obtaining medication abortion pills without a prescription from pharmacies. The mystery clients undertook the visits simultaneously but visited the same pharmacies separately, with at least a one-day gap between visits. After the first visit, DS and AD shared the Google Maps locations of the pharmacies to facilitate the second visit.

The mystery clients entered the pharmacy and approached the pharmacy worker, typically at the pharmacy counter. They initiated the interaction by asking for pills that “bring back menstruation” after a positive urine pregnancy test but without a prescription. The mystery clients then allowed the conversation to unfold organically, sharing details according to their profiles as appropriate. They asked for information regarding the brand of the medications and the price and purchased the pills when offered. After the visit, they donated these medications to a local non-profit organization.

The mystery clients collected information about the pharmacy's location, the type of pharmacy (i.e. local or chain), availability of medication abortion pills (of any kind), the brands and prices of the available medications, and pharmacy workers' questions and the information they shared. They also made observations about the

pharmacy worker's perceived age and gender and made notes about the quality of the interaction and the pharmacy worker's attitude. Both DS and AD spoke in Hindi and English, as these languages are commonly used in Mumbai. The average interaction time with pharmacy workers was less than five minutes. Immediately after the interaction, but out of sight from the pharmacy workers, the mystery clients wrote up the details of the interactions as well as their observations and reflections on Google Forms®.

Data analysis

We analyzed the data with Microsoft Excel® using descriptive statistics. We reviewed the observational notes and applied both deductive and inductive techniques to analyze the data for content and themes [22]. DS and AD met periodically to review the results and discuss how to interpret the findings. TVS, a professor at the International Institute for Population Sciences, Mumbai supported data collection and all members of the team contributed to analysis and interpretation. AMF, a professor at the University of Ottawa and a global abortion researcher, provided input during all phases of the project.

The Office of Research Ethics and Integrity at the University of Ottawa determined that study did not need a Research Ethics Board review. In this manuscript we organize our findings around domains of inquiry. We have removed or masked any identifying information about individual pharmacies or pharmacy workers.

Results

Pharmacy and staff characteristics

We visited 112 pharmacies for a total of 224 encounters. This included 58 visits to 29 pharmacies in the West region, 58 visits to 29 pharmacies in the Central region, 56 visits to 28 pharmacies in the East/Harbour region, and 52 visits to 26 pharmacies in the South region. Of the 224 encounters, 193 (86%) were assumptively with men and 31 (14%) were assumptively with women. With respect to age, we perceived 152 (68%) pharmacy workers to be below 40 years old and 72 (32%) to be above 40 years old. Of the 112 pharmacies visited, 103 (92%) were independent local pharmacies and 9 (8%) were chain pharmacies, many of which also sold cosmetics and packaged food.

Availability of medication abortion pills

We found that 12 pharmacies (11%) had medication abortion pills in stock at one or more of the mystery client visits. In 178 visits (79%) the pharmacy worker asked the mystery client to see a clinician and in 80 visits (36%) the pharmacy worker mentioned that the clinician would provide the regimen. In 25 visits (11%) pharmacy workers

stated they could dispense the medications with a prescription either because the combipack was in stock or it could be procured quickly. In one encounter, a pharmacy worker dispensed a medicine based on Ayurveda, a traditional Indian system of medicine.

Some pharmacy workers offered reasons why they did not carry medication abortion drugs in the pharmacy. In 51 (23%) visits, pharmacy workers stated that stocking or selling the regimen was restricted using terms such as “banned”, “not allowed” or “illegal”. One pharmacy worker explained (incorrectly) that medication abortion is banned in the state (Maharashtra) and advised the mystery client to visit a gynecologist.

Several pharmacy workers expressed that financial dynamics shaped pharmacy availability of mifepristone/misoprostol. One pharmacy worker indicated that the mifepristone/misoprostol combipack used to be available in pharmacies in Mumbai and local gynecologists used to give prescriptions to patients who then purchased the medications from pharmacies. He highlighted that clinicians now dispense the medications themselves so they can charge the patient for both the consultation and the medications. Another pharmacy worker echoed that this was an important dynamic. She explained that the combipack costs around INR 300–400 (USD 3.6–4.8) but clinicians could fold this into an overarching fee and charge INR 3000–4000 (USD 36–48) for the same medications.

Several pharmacy workers also described regulatory issues that shaped availability. One pharmacy worker mentioned that in line with practices for dispensing narcotic drugs, he would require three sets of prescriptions for dispensing medication abortion pills, one copy each for the pharmacy worker, the clinician, and the client. Another pharmacy worker explained that regulatory compliance for stocking medication abortion pills is cumbersome, as records including client details must be preserved for 10 years. He highlighted the disrespectful behaviour of drug inspectors and emphasized that this kind of long-term record keeping was not feasible for smaller pharmacies operating on a small profit margin.

Provision and knowledge of medication abortion

Our mystery clients purchased medication abortion pills during two visits (0.9%) both from the same pharmacy. In both encounters, the pharmacy worker asked vague questions to determine pregnancy duration such as “How long has it been?” and “How much time passed?” and “Is it under two months?” The pharmacy worker asked the female mystery client if she knew how to use the pills.

Both mystery clients obtained a combipack containing mifepristone and misoprostol with the brand name “Contra kit”. During each of these two visits, the pharmacy worker led the mystery client to a secluded side alley next to the pharmacy, where they discreetly handed

over the pills and accepted payment. Both mystery clients were charged the same price INR 1000 (USD 12). During both interactions the pharmacy worker provided limited instructions but did explain that the mifepristone tablet should be taken first, followed by the four misoprostol tablets one day later. The male mystery client was informed that his partner should consume all tablets orally; the female mystery client did not receive any information pertaining to the route of administration.

In three visits, pharmacy workers offered to sell medication abortion pills to our mystery client without a prescription but later that day or the next day. This occurred at two different local pharmacies. One pharmacy offered this option to both male and female mystery clients, while the other only offered it to the male mystery client. The pharmacy workers requested the mystery clients' contact details or shared theirs to arrange the transaction. The male mystery client was asked to meet at alternative locations, such as a hotel or near a railway station, to collect the medication abortion pills. The regimen was priced at INR 3000 (USD 36) for both the male and the female client at the one pharmacy and INR 1000 (USD 12) for the male mystery client at the other pharmacy.

Attitude toward mystery clients

We characterized the interaction with pharmacy workers as positive or neutral in 164 visits (73%). Our study team described these encounters using terms like professional, non-judgmental, interactive, helpful, and unremarkable. In 60 visits (27%), the mystery clients characterized the interactions as negative, usually because the pharmacy worker was dismissive or judgmental. The male mystery client assessed more interactions to be positive/neutral compared to the female client. He characterized 91 (81%) visits as positive/neutral and 21 (19%) visits as negative; during three visits, the male mystery client was asked about his marital status, a question the female mystery client did not encounter. In contrast, the female mystery client characterized 73 (65%) visits as positive/neutral and 39 (35%) as negative.

Discussion

Research has documented that the overregulation of medication abortion pills in India, especially under the pretext of reducing abortions based on presumptive female sex, has adversely affected the regimen's availability in pharmacies [14, 15, 23]. A 2013 study noted that no pharmacy in Mumbai and only 10% of pharmacies in the state of Maharashtra stocked medication abortion pills [23]. Similarly, we observed that medication abortion pills were in stock in only 11% ($n = 12$) of the pharmacies in our Mumbai sample. The variation in availability in pharmacies is striking; a 2023 mystery client study conducted in a similar large metropolitan city of Delhi found

the regimen was in stock in 67% ($n = 58$ of 86 in the sample) of pharmacies [24].

As of September 2025, mifepristone and misoprostol were listed as Schedule H drugs meaning that pharmacists are permitted to dispense the medications with a prescription [8]. However, many pharmacy workers in our study were clearly confused about the regulatory status of mifepristone/misoprostol and the permissibility of stocking the medication and dispensing it with a prescription. Further, a number of pharmacy workers in our study highlighted issues such as excessive documentation and record keeping, the burden of compliance for minimal profit, and mistreatment by drug inspectors as additional barriers to keeping medication abortion pills in stock. These findings align with other research, which has highlighted the overregulation in Maharashtra [14, 23]. In certain instances, pharmacy workers self-impose these compliance requirements to avoid legal liability [15]. Research indicates that to avoid this legal risk, pharmacy workers in Mumbai also undertook the onerous tasks of authenticating the prescriptions by assessing the handwriting on the prescription [15]. As a consequence, pharmacy workers did not dispense the regimen to abortion seekers if the clinician or the health center was unfamiliar to them [15]. This practice could further restrict medication abortion access for clients approaching pharmacies with a valid prescription. Additionally, research highlights that enforcement interventions are abused and are a source of harassment as pharmacy workers experienced regular raids from drug authorities and faced intimidation against storing medication abortion pills [15, 23].

In Maharashtra, reportedly due to presumptive female sex selective abortions, state drug authorities intensified their regulatory enforcement on pharmacies selling medication abortion pills, incorrectly attributing their use as the reason for these abortions [14, 15, 25, 26]. In India, medication abortion can be used up to nine weeks of gestation and pre-natal sex determination is generally not feasible during this period [14]. These excessive enforcement initiatives have created an extra-legal requirement for clinicians to primarily dispense these pills instead of pharmacists [15, 27]. In line with these findings, we found that in 36% ($n = 80$) of the visits, pharmacy workers informed the clients that the clinicians would dispense medication abortion. This drive to shift the dispensing task from pharmacy workers to clinicians highlights the overmedicalization of abortion care. Additionally, some evidence suggests that medication abortion pills are being sold in unregulated markets including online platforms which have led to seizures and arrests [28, 29]. The limited availability of medication abortion pills in regulated spaces, such as pharmacies, could drive sale of these medications into unregulated spaces [14]. Our findings substantiate this; on occasions when

medications were offered without a prescription, pharmacy workers asked mystery clients to meet in a secluded alley or an unrelated location such as a hotel or train station to collect them.

Furthermore, as a policy response, state government-appointed committees in Maharashtra have called for reclassifying medication abortion pills so that they are treated like narcotic drugs and making them subject to more stringent monitoring [19, 30, 31]. Similar trends have also been in some other states; drug authorities in Haryana in 2019 and Gujarat in 2012 proposed barring pharmacists in retail pharmacies from dispensing the mifepristone/misoprostol combipack, permitting only clinicians to dispense medication abortion pills at registered health facilities [17, 18]. Observing these developments, state-specific interventions, such as the Drugs Controller General of India clarifying to state drug authorities the existing prescription-based pharmacy dispensing regulation, curtailing the overregulation of medication abortion, and stakeholder engagement, are warranted.

Evidence suggests that in India, self-managed abortions using medication abortion pills without a prescription increased from 19% in 2014 to 45% in 2021 [32]. Research documents that abortion seekers prefer accessing medication abortion pills without a prescription owing to its affordability; this is especially the case for abortion seekers from rural and lower economic and educational backgrounds [11, 32]. In pharmacies, the price of medication abortion ranges from INR 320–600 (USD 3.8–7), with numerous pharmaceutical companies such as Mankind Pharma and Aristo Pharmaceuticals manufacturing combipacks [24, 33]. Furthermore, abortion seekers experience significant access barriers while obtaining facility-based abortion care in both public and private facilities. Research indicates that public facilities have limited service availability and the high cost of care in private facilities is prohibitive for many [5, 34, 35]. Pharmacy workers in our study indicated that as clinicians dispense the regimen they charge more for the pills. Thus, shifting the dispensing task from pharmacy workers limits accessibility. Further research assessing the impact of task shifting on populations living in rural areas and on low incomes is warranted.

Furthermore, the limited availability of medication abortion in pharmacies and clinic dispensing requirements can hinder the effective implementation of telemedicine-based interventions. In response to the COVID-19 pandemic, in March 2020 the Board of Governors of the Medical Council of India released the telemedicine guidelines allowing clinicians to practice telemedicine [36]. Although these guidelines do not specifically address abortion care, there is potential to design interventions leveraging the guidelines to make abortion

care more accessible using this service delivery modality, especially during public health emergencies. The telemedicine guidelines provide that clinicians can directly send a prescription to a pharmacy of the patient's choice with their consent [36]. The limited availability of medication abortion pills in local pharmacies as observed in our study would restrict this option.

In 2019, after a Haryana state drug regulator requested a ban on medication abortion pill sales in local pharmacies, the Drugs Controller General of India mandated a warning label stating that the regimen must only be utilized under the monitoring of an abortion provider in a health care facility [17]. This also acts as a barrier to providing medication abortion care using telemedicine. On the international front, global telemedicine-based medication abortion providers such as Women Help Women and Women on Web provide safe abortion care to those in numerous countries [37, 38]. After completing an online medical questionnaire, a provider assesses the abortion seeker's eligibility and, based on this assessment, ships medication abortion pills through a mailing service [37, 38]. Evidence shows that women from countries such as Hungary, Ireland, and Chile who received care from these providers found it acceptable, of good quality, timely, and private [39–41]. Ironically, these virtual providers ship Indian manufactured pills to abortion seekers all over the world [42, 43] but domestic telemedicine abortion care remains restricted due to overregulation. Noting the potential of telemedicine to expand abortion access, strategies to strengthen telemedicine need to be explored in India, especially in the context of pandemic preparedness and in anticipation of mobility restrictions.

We purchased the regimen without a prescription in two visits—one by each mystery client at the same pharmacy. During both visits, the pharmacy worker provided limited information about the regimen to both the male and female mystery clients. Our findings align with prior studies, which have noted that pharmacy workers in India provide clients with limited, variable, and at times inaccurate information about how to use the pills and what to expect [10, 24, 44]. Similarly, these findings align with the observations from a systematic review assessing medication abortion provision by pharmacy workers in low- and middle-income countries such as India and Nepal [45]. This review found that pharmacy workers provided limited information about the regimen, including complication management [45]. These findings highlight the potential limitations of direct pharmacy dispensing and underscore the need to explore strategies to improve pharmacy workers' knowledge of the regimen to support clients in managing their abortions.

Interventions focused on improving knowledge have shown promise, but translation of this knowledge into practice is limited. Research has shown that providing

pharmacy workers in India with simple infographic tools improved their knowledge [46]. Similarly, an intervention implemented in Nepal demonstrated improvement in pharmacy workers' knowledge of the medication abortion regime through training [47]. Even though their knowledge improved, the infographic interventions study revealed that this knowledge largely did not translate into their interactions with clients. Indeed, interventions translating this knowledge into practice could improve the quality of abortion seekers' interaction at pharmacies [46] and potentially advance demedicalized strategies to increase abortion access. Structurally, the Medical Termination of Pregnancy Act, 1971 only allows clinicians to provide abortion care [1]. As a result, both pharmacy workers and women seeking medication abortion pills directly from pharmacies may be at risk criminal penalties for causing a "miscarriage" [15, 48]. Policy reform that recognizes pharmacy workers as part of the abortion care workforce is therefore warranted.

In our study, the female mystery client characterized more interactions as negative compared to the male mystery client (35% versus 19%). This finding contributes to the knowledge base on women's interactions with health-care workers while seeking abortion care. Further, this finding adds insights to prior research conducted in Uttar Pradesh in 2018 that found pharmacists provided more limited information about the regimen to female mystery clients compared to their male counterparts, especially if the female client was unmarried [49]. Research in India has found that unmarried women face considerable stigma was seeking abortion care and fear family disapproval [50]. Research also indicates that unmarried women are more likely to experience a delay in obtaining abortion care and/or needing a second-trimester abortion, especially if they had confidentiality concerns or experience limited decision-making autonomy [51]. Given these findings, we need further research that explores unmarried women's experiences obtaining medication abortion pills from pharmacies without a prescription to assess the associated stigma while obtaining care.

Limitations

Mumbai is a large and populous Indian metropolis and in that context our sample of 112 pharmacies is small. Hence, we do not claim that our results are generalizable. It is possible that pharmacy workers might be stocking medication abortion pills but stated they were unavailable because the mystery client did not have a prescription. The characterization of the mystery clients' interactions with the pharmacy worker (as positive and negative) was subjective. During data collection, both mystery clients could have interacted with the same pharmacy worker at each visit, hence, their interactions

may not have been independent. The mystery clients presented as young and unmarried heterosexual adults, limiting our ability to provide insights into the experiences of married individuals, adolescents, or queer, transgender, non-binary, and gender fluid individuals seeking medication abortion pills. Due to the mystery client survey study design, we were unable to ascertain the professional status of the pharmacy workers, such as whether they were pharmacists, store clerks, or trainees.

Conclusions

Our study underscores the limited access to medication abortion pills without a prescription in Mumbai, India. While medication abortion pills can be legally dispensed in pharmacies with a prescription, numerous pharmacy workers considered stocking them to be illegal and expressed concerns about overregulation. Engaging with stakeholders to address and eliminate the overregulation of medication abortion pills is critical for maintaining and expanding access to safe, high quality, medication abortion care. In the visits where the mystery clients were able to purchase medication abortion without a prescription, pharmacy workers provided limited details about the regimen. Interventions aimed at improving pharmacy workers' knowledge with the goal of improving their practices are warranted.

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Clinical trial number

Not applicable.

Authors' contributions

AMF conceptualized and supervised this project. DS and AD undertook data collection with input from TVS. DS analyzed the data and all members of the team contributed to the interpretation of the findings. DS drafted the manuscript. AD, TVS, RD, and AMF reviewed and edited the article.

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Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable. The Office of Research Ethics and Integrity at the University of Ottawa determined that this study did not need a Research Ethics Board review, per Article 2.1 of the Tri-Council Policy Statement, 2nd Edition [52]. The Sigma Institutional Review Board in India approved the overall PhD dissertation project of which this study is one component. We confirm that we conducted this study in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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References

1. Parliament of India. The Medical Termination of Pregnancy Act, 1971. 1971.
2. Jejeebhoy SJ, Kalyanwala S, Mundle S, Tank J, Zavier AJF, Kumar R, et al. Feasibility of expanding the medication abortion provider base in India to include Ayurvedic physicians and nurses. *IPSRH*. 2012;38(03):133–42.
3. Stillman M, Frost JJ, Singh S, Moore AM, Kalyanwala S. Abortion in India: a literature review. New York: Guttmacher Institute; 2014. p. 48. Available from: <https://www.guttmacher.org/pubs/Abortion-India-Lit-Review.pdf>.
4. Ministry of Health and Family Welfare. Comprehensive abortion care provider's manual. New Delhi: Ministry of Health and Family Welfare, Government of India; 2023. Available from: <https://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/CAC-Providers-Manual.pdf>
5. Boler T, Marston C, Corby N, Gardiner E. Medical abortion in India: a model for the rest of the world?. London: Marie Stopes International; 2009. Available from: <https://www.mschoices.org/wp-content/uploads/2023/10/medical-abortion-in-india.pdf>.
6. Ganatra B, Manning V, Pallipamulla SP. Availability of medical abortion pills and the role of chemists: a study from Bihar and Jharkhand, India. *Reprod Health Matters*. 2005;13(26):65–74.
7. Ministry of Health and Family Welfare. Handbook on medical methods of abortion to expand access to new technologies of safe abortion. New Delhi: Ministry of Health and Family Welfare, Government of India; 2016. Available from: http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/MMA_Handbook.pdf.
8. Ministry of Health and Family Welfare. The Drugs Rules, 1945. 2024.
9. Visaria L, Barua A, Mistry R. Medical abortion in India: role of chemists and providers. *Economic Political Wkly*. 2008;43(36):35–40.
10. Diamond-Smith N, Percher J, Saxena M, Dwivedi P, Srivastava A. Knowledge, provision of information and barriers to high quality medication abortion provision by pharmacists in Uttar Pradesh, India. *BMC Health Serv Res*. 2019;19(1):476.
11. Srivastava A, Saxena M, Percher J, Diamond-Smith N. Pathways to seeking medication abortion care: a qualitative research in Uttar Pradesh, India. *PLoS ONE*. 2019;14(5):e0216738.
12. Singh S, Shekhar C, Acharya R, Moore AM, Stillman M, Pradhan MR, et al. The incidence of abortion and unintended pregnancy in India, 2015. *Lancet Global Health*. 2018;6(1):e111–20.
13. Chandrashekar VS, Choudhuri D, Vajpeyi A, India FRHS. Availability of medical abortion drugs in the markets of six Indian states, 2020. New Delhi: Foundation for Reproductive Health Services India; 2020. Available from: <http://www.frhsi.org.in/pdf/FRHS%20India%20Study-Availability%20of%20MA%20drugs%20across%206%20Indian%20States.pdf>.
14. Chandrashekar VS, Vajpeyi A, Sharma K. Availability of medical abortion drugs in the markets of four Indian states, 2018. New Delhi: Pratigya Campaign for Gender Equality & Safe Abortion; 2019. Available from: <https://pratigyacampaign.org/research/availability-of-medical-abortion-drugs-in-the-markets-of-four-indian-states-2018-2/>.
15. Chandra A, Satish M, Shree S, Saxena M. Legal barriers to accessing safe abortion services in India: a fact finding study. Bengaluru, India: Centre for Reproductive Rights, National Law University Delhi, National Law School of India University, Bengaluru; 2021 Aug. Available from: <https://www.nls.ac.in/wp-content/uploads/2021/08/Legal-Barriers-to-Accessing-Safe-Abortion-Services-in-India.pdf>.
16. Mankikar SU. State wants to ban sale of abortion pills. *Hindustan Times*. 2011. Available from: <https://www.hindustantimes.com/mumbai/state-wants-to-ban-sale-of-abortion-pills/story-4D7xfQ9zFbG3Y0Enn0vtxl.html>. Cited 2024 July 31.
17. Drugs Controller General of India. Minutes of the 56th meeting of the drugs consultative committee. New Delhi, India: Central Drugs Standard Control Organisation; 2019. Available from: https://cdsco.gov.in/opencms/opencms/system/modules/CDS.CO.WEB/elements/common_download.jsp?num_id_p_k=OTE1.
18. Drugs Controller General of India. Report of the 44th meeting of the drugs consultative committee. New Delhi, India: Central Drugs Standard Control Organisation; 2012. Available from: https://cdsco.gov.in/opencms/opencms/system/modules/CDS.CO.WEB/elements/common_download.jsp?num_id_p_k=ODA2.
19. Oak S, Goyal P, Sharada AL, Mangal DK, Gulati A, Deostali P, et al. Recommendation for the control of unauthorised MTPs in the state of Maharashtra. Mumbai, India: Government of Maharashtra; 2011.
20. Mumbai Metropolitan Region Development Authority. About Mumbai Metropolitan Region. 2025. Available from: <https://mmrda.maharashtra.gov.in/about-us/about-mmr>.
21. Etikan I, Musa SA, Alkassim RS. Comparison of convenience sampling and purposive sampling. *Am J Theor Appl Stat*. 2015;5(1):1–4.
22. Denzin NK, Lincoln YS, editors. *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage; 2011.
23. IPAS Development Foundation. Disappearing medical abortion drugs: facts and reasons. India: IPAS Development Foundation; 2013. Available from: <https://www.ipasdevelopmentfoundation.org/archives/resources/disappearing-medical-abortion-drugs-facts-and-reasons-2013>.
24. Dixit A, Suvarna D, Deonandan R, Foster AM. Exploring the availability and accessibility of medication abortion pills in Delhi, India: mystery client study in community pharmacies. *Contraception*. 2025;143:110745.
25. Rajagopal D. Crackdown on female foeticide in Maharashtra creates shortage of abortion pills. *The Economic Times*. 2012. Available from: <https://economic-times.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/crackdown-on-female-foeticide-in-maharashtra-creates-shortage-of-abortion-pills/articleshow/16288315.cms?from=mdr>. Cited 2025 May 28.
26. Chakraborty R. Rampant illegal sale of abortion pills across Maharashtra. *Hindustan Times*. 2021. Available from: <https://www.hindustantimes.com/cities/mumbai-news/rampant-illegal-sale-of-abortion-pills-across-maharashtra-101629570130655.html>. Cited 2025 May 28.
27. Iyer M. State driving abortion pills out of market. *The Times of India*. 2013. Available from: <https://timesofindia.indiatimes.com/city/mumbai/state-driving-abortion-pills-out-of-market/articleshow/19718182.cms>. Cited 2025 May 27.
28. Sharma P. Illegal sale of abortion kits in Haryana: 9 FIRs registered, 6 arrested in crackdown. *Hindustan Times*. 2025. Available from: <https://www.hindustantimes.com/cities/chandigarh-news/illegal-sale-of-abortion-kits-in-haryana-9-firs-registered-6-arrested-in-crackdown-101740681608528.html>
29. Arora P. Abortion pills on the black market a major challenge for Health Dept. *The Tribune*. 2025. Available from: <https://www.tribuneindia.com/news/haryana/abortion-pills-on-the-black-market-a-major-challenge-for-health-dept/>. Cited 2025 May 28.
30. Vora P. A Maharashtra committee wants to restrict access to all abortions – even legal ones. 2017. Available from: <https://scroll.in/pulse/844023/a-maharashtra-committee-wants-to-restrict-access-to-even-all-abortions-even-legal-ones>. Cited 2024 Aug 13.
31. Dalvie S. Right to safe abortion. *Economic & Political Weekly*. 2017;52(32). Available from: <https://go.gale.com/ps/i.do?p=AONE&sw=w&issn=00129976&v=2.1&it=r&id=GALE%7CA501284173&sid=googleScholar&linkaccess=abs>. Cited 2024 Aug 13.
32. Banerjee SK, Gulati S, Pearson E. The transformative terrain: an in-depth analysis of trends in self-managed abortion in India using NFHS-5 National data. *Glob Public Health*. 2025;20(1):2467796.
33. World Health Organization. Landscape assessment of availability and quality of medical abortion commodities in India 2020–2021. New Delhi: World Health Organization; 2021. Available from: https://www.researchgate.net/profile/Rajalakhmi-Ramprakash/publication/355192023_Landscape_assessment_of_availability_and_quality_of_medical_abortion_commodities_in_India_2020-2021/links/61666e0d3851f95994f6468/Landscape-assessment-of-availability-and-quality-of-medical-abortion-commodities-in-India-2020-2021.pdf.
34. Pyne S, Ravindran TKS. Availability, utilization, and health providers' attitudes towards safe abortion services in public health facilities of a district in West Bengal, India. *Women's Health Rep*. 2020;1(1):80–8.
35. Duggal R. The political economy of abortion in India: cost and expenditure patterns. *Reprod Health Matters*. 2004;12(sup24):130–7.

36. Board of Governors, NITI Aayog. Telemedicine practice guidelines. New Delhi: Medical Council of India; 2020. Available from: <https://www.mohfw.gov.in/pdf/Telemedicine.pdf>.
37. Shochet T, Berro Pizzarossa L, Larrea S, Blum J, Jelinska K, Comendant R, et al. Self-managed abortion via the internet: analysis of one year of service delivery data from women help women. *Gates Open Res.* 2023;7:41.
38. Aiken ARA, Starling JE, Gomperts R, Scott JG, Aiken CE. Demand for self-managed online telemedicine abortion in eight European countries during the COVID-19 pandemic: a regression discontinuity analysis. *BMJ Sex Reprod Health.* 2021;47(4):238–45.
39. Larrea S, Hidalgo C, Jacques-Aviñó C, Borrell C, Palència L. No one should be alone in living this process: trajectories, experiences and user's perceptions about quality of abortion care in a telehealth service in Chile. *Sex Reprod Health Matters.* 2022;29(3):1948953.
40. Les K, Gomperts R, Gemzell-Danielsson K. Experiences of women living in Hungary seeking a medical abortion online. *Eur J Contracept Reproductive Health Care.* 2017;22(3):360–2.
41. Aiken ARA, Johnson DM, Broussard K, Padron E. Experiences of women in Ireland who accessed abortion by travelling abroad or by using abortion medication at home: a qualitative study. *BMJ Sex Reprod Health.* 2018;44(3):181.
42. Murtagh C, Wells E, Raymond EG, Coeytaux F, Winikoff B. Exploring the feasibility of obtaining mifepristone and Misoprostol from the internet. *Contraception.* 2018;97(4):287–91.
43. Jowit J, Pallavi A. From Nagpur to Northern Ireland: pill pipeline helping women get round abortion laws. *The Guardian.* 2016. Available from: <https://www.theguardian.com/world/2016/jan/06/nagpur-to-northern-ireland-pill-pipeline-helping-women-get-round-abortion-ban>. Cited 2024 Feb 11.
44. Powell-Jackson T, Acharya R, Filippi V, Ronsmans C. Delivering medical abortion at scale: a study of the retail market for medical abortion in Madhya Pradesh, India. *PLoS ONE.* 2015;10(3):e0120637.
45. Footman K, Keenan K, Reiss K, Reichwein B, Biswas P, Church K. Medical abortion provision by pharmacies and drug sellers in low- and middle-income countries: a systematic review. *Stud Fam Plann.* 2018;49(1):57–70.
46. Diamond-Smith N, Phillips B, Percher J, Saxena M, Dwivedi P, Srivastava A. An intervention to improve the quality of medication abortion knowledge among pharmacists in India. *Int J Gynecol Obstet.* 2019;147(3):356–62.
47. Tamang A, Puri M, Lama K, Shrestha P. Pharmacy workers in Nepal can provide the correct information about using mifepristone and Misoprostol to women seeking medication to induce abortion. *Reprod Health Matters.* 2014;22(sup44):104–15.
48. Jain D, Diwan A, Kartik K, Saraf J, Jindal Global Law School. Legal barriers to abortion access during the COVID-19 pandemic in India: One year at a glance. Sonapat,Haryana: Centre for Justice, Law and Society; 2021. Available from: https://www.researchgate.net/profile/Dipika-Jain/publication/358380586_Legal_Barriers_to_Abortion_Access_During_the_COVID_19_Pandemic/links/61feee25870587329e9451f3/Legal-Barriers-to-Abortion-Access-During-the-COVID-19-Pandemic.pdf?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19.
49. Percher J, Saxena M, Srivastava A, Diamond-Smith N. Differential treatment in the provision of medication abortion at pharmacies in Uttar Pradesh, India. *AJOG Global Rep.* 2021;1(4):100025.
50. Kalyanwala S, Jejeebhoy SJ, Francis Zavier AJ, Kumar R. Experiences of unmarried young abortion-seekers in Bihar and Jharkhand, India. *Cult Health Sex.* 2012;14(3):241–55.
51. Jejeebhoy S, Kalyanwala S, Zavier AJF, Kumar R, Jha N. Experience seeking abortion among unmarried young women in Bihar and Jharkhand, India: delays and disadvantages. *Reprod Health Matters.* 2010;18(35):163–74.
52. Government of Canada IAP on RE. Tri-Council policy statement: Ethical conduct for research involving humans – TCPS 2. (2018) – Chap. 2: Scope and approach. 2019. Available from: https://ethics.gc.ca/eng/tcps2-eptc2_2018_chapter2-chapitre2.html. Cited 2024 Aug 1.

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