What Role do Urban Pharmacies and Chemists Play in the Supply of Abortion Drugs? Preliminary Findings From Surveys and Mystery Client Data in Three Nigerian States

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Background

Despite its common occurrence, Nigerian law permits induced abortion only to save a woman's life, a contributory factor to its clandestine use and associated poor safety. As a result, unsafe abortion remains a leading cause of preventable maternal morbidity and deaths (Okonofua et al. 2009). The most recently available estimates indicate that of the 1.25 million abortions that occurred in Nigeria in 2012, approximately 212,000 women received treatment for associated complications, and an additional 285,000 women experienced serious health consequences that went untreated (Bankole et al. 2015).

Globally, abortion care has undergone significant advances over the past two decades with the evolution of simpler technologies for its provision. In particular, the use of medication abortion (MA) pills, namely mifepristone and misoprostol, or misoprostol alone when mifepristone is not available, has provided women with a non-invasive, effective alternative associated with low complication rates if used according to guidelines (Aiken et al. 2017). In countries with restrictive laws, as in the case of Nigeria, the use of MA outside the formal health system is gradually replacing the use of more dangerous and invasive methods (Ganatra et al. 2017), having the potential to reduce maternal morbidity and associated deaths (Harper et al. 2007).

Given its simplified requirements for infrastructure and skills, the World Health Organization (WHO) endorses the provision of MA by non-physician clinicians (WHO 2012). In considering the role of pharmacists, the guidelines recommend that pharmacists carry out subtasks associated with MA provision in the first trimester in the context of accompanying implementation research. These include (1) assessment of eligibility for MA, (2) administering the medications and managing side-effects, and (3) assessment of completion and need for clinical follow-up (WHO 2015). In low- and middle-income countries (LMIC), pharmacists and pharmacy workers are often first-line healthcare providers for certain health concerns, including abortion, and evidence from a number of contexts increasingly suggests that they play a vital role in enhancing access (Sneeringer et al. 2012). Their accessibility, short-waiting times, ability to provide medical information and advice along with prescription-free supplies, lower consult costs, and willingness to help, contribute to pharmacists' and chemists' success as informal healthcare providers.

A recent systematic review of medical abortion provision by pharmacies and drug sellers in 16 LMICs found that MA drugs were generally available, and that women commonly sought assistance from these sources for terminating an unwanted pregnancy (Footman et al. 2018). However, knowledge and/or counselling on effective regimens was poor across all studies, and ranged between 0 to 21 percent in Africa. Thus, while pharmacists and pharmacy workers bridge an important gap in abortion provision in varying legal environments, contributing to reduced abortion-related morbidity and mortality, the quality of care and associated implications on the safety and effectiveness of the prescribed regimens remain a serious area of concern (Footman et al. 2018). More research in this area is needed to inform guidelines, policies, and programmatic actions (Scott et al. 2018).

This study on pharmacy- and chemist-based access to MA drugs is one component of a larger project on the measurement of induced abortion in Nigeria to produce updated estimates for the country, along with information on levels of safety and access. The objectives of this current study are to (1) examine availability of mifepristone and/or misoprostol in private pharmacies and chemist shops in urban areas of three Nigerian states, (2) compare reported availability of these drugs with actual service provision to clients, and (3) assess the quality of care associated with dispensing of medication abortion drugs to clients.

Methods

Data

Data for this study are derived from survey interviews and mystery client interactions. Performance Monitoring and Accountability 2020 (PMA2020) conducts rapid cross-sectional surveys of households, women, and service delivery points (SDP) at regular intervals in Nigeria to collect and track data on reproductive health indictors, including family planning use and service availability (Zimmerman et al. 2017). Using a two-stage cluster design within a sample of seven Nigerian states, SDP surveys are conducted with public and private health facilities including pharmacies and chemist shops that are accessible to the female population living within sampled geographic areas, referred to as enumeration areas (302 EAs in PMA2020 Round 5 in Nigeria). Researchers added an abortion module to the SDP survey instrument in Round 5 with questions on post-abortion and abortion care and related service provision. SDP data collection occurred from April through June, 2018. In this analysis, we present survey data on mifepristone and/or misoprostol availability in the sample of private pharmacies and chemist shops located in urban areas of Anambra, Kaduna, and Rivers states in Nigeria.

Separately, and on completion of SDP survey data collection, we utilized a mystery client study design to collect additional data on the true extent of abortion drug distribution in urban private pharmacies and chemist shops that completed SDP interviews and that were located in the three states mentioned previously. Investigators chose a mystery client methodology to overcome the potential influence of social desirability on self-reported responses of mifepristone/misoprostol availability given that its use for abortion is illegal, and to determine the true nature and quality of interactions that staff have with clients. We restricted our sample to only urban locations to protect the anonymity and safety of the interviewers conducting the mystery client interactions. Trained male and female undercover data collectors presented individually as clients seeking to obtain information on abortifacient drugs either for themselves or on behalf of a girlfriend (if mystery client was male) for self-inducing a medical abortion to terminate a six-week pregnancy. If mifepristone and/or misoprostol were offered for purchase, the mystery client prompted for additional information on how the drugs should be taken, types of side effects to expect, danger signs, locations for emergency care, and the cost to purchase. The interaction was terminated without actually purchasing the drugs. After each encounter, the mystery client documented details of the interaction by entering responses to a self-administered, smartphone questionnaire. To determine whether there were differences in dispensing practices based on gender of the presenting clients, each sampled facility was visited twice, once by a male and once by a female client, within a short but acceptable time frame to prevent the arousal of suspicion. Data collection occurred from June through August, 2018. The institutional review board at the Johns Hopkins Bloomberg School of Public Health and local ethics committees in the three Nigerian states provided ethical approval for the mystery client work.

Analyses

We measured availability of MA drugs by (1) examining the proportion of pharmacies and chemists that self-reported availability in the SDP survey, (2) direct observation of current stock of these drugs, and (3) gender-disaggregated data of the proportion of the same facilities offering

mifepristone and/or misoprostol, either conditionally or unconditionally, to mystery clients. We also examined the details of mystery client interactions to determine the extent and quality of information provided by pharmacists and chemists when offering to dispense medication abortion drugs. Results of these preliminary analyses are presented here.

Results

Survey data were collected from 93 urban pharmacies and chemist shops in Anambra (n=35), Kaduna (n=29) and Rivers (n=29) states. The SDP survey data presented here are for 92 of these facilities as one chemist shop in Anambra had permanently closed at the time of the mystery client visits.

Approximately 27% of all facilities reported selling misoprostol, with one quarter having the medicine stocked at the time of the SDP interview (Table 1). A lower percentage (10%) of facilities reported selling mifepristone, with 9% having current stock. In the mystery client interactions, 61% of facilities offered some type of medicine (including non-recommended drugs) for self-inducing an abortion, with 45% offering misoprostol and 16% offering a combination of mifepristone and misoprostol. Among facilities offering misoprostol alone, we note differences in levels of provision by the client's gender (Table 1). Just over one in five (21%) facilities offered misoprostol to a male client, with a significantly higher percentage (34%, $p \leq 0.05$) offering the drug to a female client. Approximately 7% of facilities offered a combination of the two drugs to male mystery clients, compared to 12% that offered the combination to female clients. On average, the drugs cost 2,553 Naira (SE: 387 Naira) (7.0 USD; SE:1.1 USD) to purchase.

In evaluating the extent to which staff in facilities assessed eligibility for medical abortion drugs, we found that female mystery clients were asked about a pregnancy test in approximately half of their visits (51%) compared to 41% of visits by male mystery clients (Table 2). This difference was not statistically significant. A minority of facilities —44% and 38% approached by female and male clients respectively— asked for information on gestational age or last menstrual period. Female mystery clients were asked for a doctor's prescription in about 9% of interactions, compared to 14% of male mystery client interactions.

Investigating the types and extent of information provided when offering medical abortion drugs reveal some significant differences by client's gender (Table 3). While about 77% of staff offering mifepristone and/or misoprostol to female clients provided (either unprompted or upon mystery client prompting) information on danger signs, only 36% of facilities visited by male clients provided this information ($p<0.005$). Differences in whether information was provided on mode of administration (72% vs 80%), symptoms and side-effects (77% vs 56%), and locations for emergency care (74% vs 60%) were not significant. Further analyses will evaluate the accuracy of information provided on each of these, and additional measures, including dosage.

Discussion

Findings from both the SDP survey and mystery client interactions provide empirical support regarding the availability of medication abortion drugs, particularly misoprostol, in urban pharmacies and chemist shops and associated informal dispensing for self-induction of pregnancy terminations. Results indicate that approximately 45% and 16% of facilities offered misoprostol alone or the combined drugs respectively, which is likely indicative of a growing market for medication abortion drugs for self induction, at least in urban locations. Comparatively, in 2010, only 3% of surveyed pharmacies and patent medical shops in the cities of Abuja and Lagos reported having misoprostol in stock (Akiode et al. 2010).

Our findings also indicate differential dispensing of these drugs by the client's gender, suggesting that there are mechanisms at play in dispensing practices that go beyond availability alone. Further analyses on the relationship between the gender of the staff vis-a-vis that of the mystery client and reasons for non-provision will provide an additional level of detail.

As noted in recent studies conducted in India and Zambia, the amount of information asked or provided to clients was inadequate (Hendrickson et al. 2016; Powell-Jackson et al. 2015). We found only a minority of staff asked questions to assess eligibility for MA (such as asking about gestational age or pregnancy test information). Among facilities offering MA drugs, the accompanying information provided was variable and generally insufficient for safe self-induction. A more thorough analysis of the content of the information shared will provide better insight into the quality of care provided during these interactions.

Globally, there is limited data on the availability and quality of medical abortion services provided outside of the formal health sector. To our knowledge, this is the first study in Nigeria to determine whether and to what extent urban pharmacies and chemist shops are providing MA drugs for the purposes of self-induction, and the quality of care provided during client interactions. Our findings support a growing body of knowledge that future policies and interventions to improve abortion safety in low-resource settings must consider the involvement of pharmacy and chemist staff who, regardless of legality, play a central role in providing informal abortion care.

Table 1. Reported availability, current stock, and actual availability of medication abortion drugs in private pharmacies and chemist shops in urban areas of three Nigerian states

	%	N
Reported availability		
Sell misoprostol	27.2	25

Sell mifepristone	9.8	9
Stock		
Misoprostol	25.0	23
Mifepristone	8.7	8
Actual availability		
Misoprostol offered to female mystery client	34.1	31
Misoprostol offered to male mystery client	20.7	19
Mifepristone and misoprostol offered to female mystery client	12.1	11
Mifepristone and misoprostol offered to male mystery client	6.5	6
Total facilities	100.0	92

Table 2. Key details of mystery client interactions and type of drugs offered by gender of mystery client across urban pharmacies and chemist shops in three Nigerian states

	Female Mystery Client		Male Mystery Client	
	%	N	%	N
Among all pharmacies/chemists visited	**100.0**	**91**	**100.0**	**92**
Asked to take or confirm that a pregnancy test had been taken	50.5	46	40.7	37
Asked about gestational age or last menstrual period	44.0	40	38.0	35
Asked for doctor's prescription	8.8	8	14.1	13
Offered any drugs for abortion				
None offered	49.5	45	66.3	61
Yes, drugs offered but with condition(s)	13.2	12	12.0	11
Yes, drugs offered unconditionally	37.4	34	21.7	20
Types of drugs offered				
Misoprostol only	34.1	31	20.7	19
Mifepristone and misoprostol	12.1	11	6.5	6
Emergency contraception	4.4	4	6.5	6
Antibiotics/pills, type not specified	3.3	3	7.6	7
Traditional methods/other	2.2	2	1.1	1

Table 3. Information given by urban pharmacy/chemist shop staff offering to dispense mifepristone and/or misoprostol to mystery clients in three Nigerian states

	Female Mystery Client		Male Mystery Client	
	%	N	%	N
Among pharmacies/chemists offering misoprostol/mifepristone	100.0	39	100.0	25

Gave instructions on mode of administration*	71.8	28	80.0	20
Told about possible symptoms and side-effects*	76.9	30	56.0	14
Gave information on danger signs*	76.9	30	36.0	9
Told where to seek emergency medical care*	74.4	29	60.0	15
Gave information on post-abortion FP options*	7.7	3	12.0	3

*Denominator includes facilities that offered mystery clients mifepristone and misoprostol or misoprostol alone, both unconditionally and only after certain conditions were met

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