Do actions speak louder than words? Assessing how drug sellers sell and dispense misoprostol for abortion in Lagos State, Nigeria.

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Short abstract 150 words

Nigeria has restrictive abortion laws but high incidence of induced abortion (41.1 - 62.5/1,000 women of reproductive age). Misoprostol has become widely available and readily procured from informal drug vendors for medical abortion (MA); the practice of drug vendors, including information provided to clients, is however not well known.

Data were collected to assess the practice of drug vendors through interviewer-administered questionnaires and mystery clients (MCs) in 6 LGAs of Lagos.

About 59% of 207 drug sellers interviewed had post-secondary education and 46% had health-related qualifications. About 15% of drug sellers reported they offer misoprostol to women with abortion-related requests compared with 40% of MCs who were offered misoprostol. Slightly above half of the drug sellers ask women some important question related to - pregnancy test (56%) and last menstrual period (58%). About 65% of drug sellers provided information on dosage compared with 55% of MC. Information on any of the possible complications that may warrant visiting a hospital were provided to only less than 3% of MC. Information from the MC study showed poorer practices compared to self-report.

Extended abstract (2-4 pages)

Introduction

Although there is limited documented evidence of its spread, the use of medical abortion (MA), especially misoprostol, to terminate pregnancies is said to be expanding in Sub-Saharan Africa (SSA) and drug vendors are anticipated to be important providers of these pills (Footman et al. 2018). However, a 2018 systematic review by Footman et al, highlights that information provided by drug vendors was poor overall particularly in restrictive settings. Nigeria, with the largest population in the region, has a restrictive abortion law, but a high rate of induced abortion - estimated at between 41.1 and 62.5 per 1,000 women of reproductive age in 2017 (PMA 2020 2018). Whilst one study conducted in Nigeria in 2006 estimated that only 3% of drug sellers reported selling misoprostol (Akiode et al. 2010), a 2018 hospital-based study shows an increasing trend in women using MA, compared with other methods, amongst those admitted for post abortion care (Bello et al. 2018). This suggests that a growing number of women are able to access MA in Nigeria. However, there are no recent studies in Nigeria describing how women get MA and the quality of care they receive when they obtain it. Our study aims to fill this gap by comparing data collected from drug vendors and mystery clients in Lagos state to assess the level of provision of MA, drug sellers' qualifications and trainings, sellers' dispensing practices and the experiences women likely have when they try to obtain this medication.

Methods

This study was conducted in six LGAs (Local Government Areas) in Lagos State. The LGAs were purposively selected to include areas that were representative of more and less urban sections of Lagos, and to include areas that that each had at least one tertiary institution. Fieldwork was divided into two components – one that involved direct interviews with drug sellers to determine whether or not they sold misoprostol and, if so, their self-reported misoprostol-related practices; and another that utilized a mystery client approach to assess the actual practices of drug sellers regardless of whether or not they reported selling misoprostol.

To determine the sampling frame, a mapping exercise was conducted to enumerate the universe of pharmacies and proprietary patent medicine vendors (PPMVs), herein referred to collectively as drug sellers, in the selected study areas. Female mystery clients (MCs) visited each drug seller identified during the mapping exercise and posed as young women attempting to buy something to bring back a period. The MC profile was standardized to represent women that the team hypothesized would be likely to attempt to purchase MA from a drug store in the selected areas. MCs were between 18 and 24 years old and fluent in the local language of the area. If asked, MCs were instructed to say they were single, currently in school, nulliparous, had no previous abortions, had taken a pregnancy test and their last menstrual period was six weeks prior. MCs were also given 800 Naira (around $2USD) to purchase medications at each store. MCs relayed their experiences in a structured questionnaire administered by members of the study team immediately following their interactions with the drug sellers, in a private location. The questionnaire included: sections on characteristics of the store, demeanor of the drug seller, if they were offered or sold a

medication, questions they were asked by the drug seller, medications prescribed and information the drug sellers provided them with. MCs were trained on the questionnaire alongside interviewers, to ensure that they were aware of what information to mentally gather and retain during their interactions with the drug sellers.

After the mystery client visits were completed, fieldworkers conducted short screener interviews with all drug sellers identified during the mapping (and with any that had been inadvertently missed), to generate a list of all drug sellers that reported selling misoprostol-containing medications. Drug sellers that reported selling the medications were invited to participate in a longer interview about their knowledge and practices regarding misoprostol. The questions asked directly to drug sellers were similar to those asked in the mystery client debrief interview. The data collected from drug sellers was then compared with data collected from mystery clients, to assess the practices around the provision of misoprostol in this context.

All data were collected in person between April and October 2018 using the data collection software SurveyCTO on Android tablets. Descriptive analyses were conducted to summarize basic drug seller characteristics, drug sellers' experiences selling misoprostol for abortion, their knowledge of the medication, and what information they provide to women seeking to purchase it, from the perspectives of mystery clients and drug sellers themselves. All analyses were conducted using Stata15.1.

The National Health Research Ethics Committee in Nigeria and the Institutional Review Board of Guttmacher Institute approved the study.

Results

The mapping exercise identified 896 drug sellers across the six LGAs and an additional 72 drug stores were identified during the drug seller screener. A total of 968 drug stores were screened. In total, mystery clients visited 896 drug stores, successfully interacted with 889 drug sellers and completed face-to-face debrief interviews with the study team. A total of 324 drug sellers reported currently selling misoprostol during the screener, of which 231 drug sellers agreed to continue participating in additional study components. Only 207 (90%) of those drug sellers who agreed to continue in the study successfully participated in the full drug seller interview.

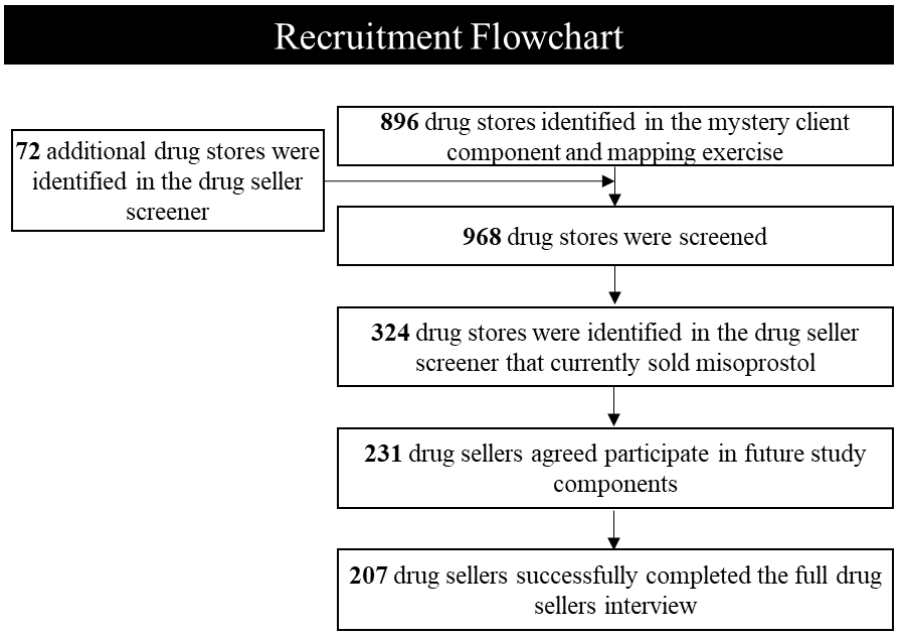

Table 1 presents the characteristics of the drug sellers and stores participating in the drug seller survey. Majority of the drug stores were in urban areas (86%) and most stores were registered with government agencies/trade association (93%). About 62% were registered with the Pharmacists council of Nigeria.

With a mean age of about 35 years, majority of the respondents to the drug sellers survey were males (60%), Christians (90%), with higher education (59%) who had been employed for 2 to 5 years at the drug store (48%). The largest proportions of the respondents were either the owners of the drug stores (42%) or Pharmacists who were also the front counter staff (30%). About a third of the staff with post-secondary school education had a pharmacy degree (32%). In over a third of the stores, staff had undergone family planning training (36%), whilst less than 10% of stores had staff trained in safe abortion or post abortion care.

Table 1: Characteristics of initial respondent to questionnaire

	N	%
Age group		
Mean age (SD)	34.6 (± 9.8)	
Sex		
Male	125	60.4
Female	82	39.6
Religion		
Christian	183	88.4
Muslim	20	9.7
Other	1	0.5
Highest level of education		
Some junior secondary school	3	1.4
Some senior secondary school	11	5.3
Completed secondary school	70	33.8
Higher education	123	59.4
Length of employment at drug store		
up to 1 year	59	28.4
over a year to 5 years	95	45.7
over 5 years to 10 years	33	15.9
greater than 10 years	21	10.1
Respondent's role at drugstore*		
Owner	86	41.5
Manager	46	22.2
Supervisor	19	9.2
Front counter staff: Pharmacist	61	29.5
Front counter staff: Non pharmacist	56	27.1
Area where store is located		
Urban	176	85.0
Periurban	31	15.0
Registration with government agencies		
Yes	192	92.8
No	13	6.3
Don't know	2	1.0
Agencies/Trade Association registered with certification shown		
Pharmacists council of Nigeria	128	61.8
NAPPMED	52	25.1
Lagos State Medicine Dealers Association	10	4.8
Ministry of Health	18	8.7
Local Government	18	8.7
Other	16	7.7
Don't Know	15	7.2
Proportion of staff with health-related qualifications		

Health technology degree	16	7.7
Pharmacy degree	67	32.4
Medical degree MBBS or MBChB	2	1.0
Nursing degree	5	2.4
Biochemistry or microbiology degree	6	2.9
Auxiliary nurse (on the job training)	4	1.9
Other	7	3.4
Proportion of stores where staff have undergone RH trainings		
Family planning trainings	74	35.7
Safe abortion trainings	18	8.7
Post-abortion care trainings	13	6.3

** Multiple responses allowed by respondents to this question*

Table 2 provides information on drug sellers' knowledge, attitudes and experiences related to MA. When sellers were asked about the information they should collect from their clients before selling MA to terminate a pregnancy, our results show that less than 60% of drug sellers reported that they should ask questions to date pregnancy: (gestational age (47%); pregnancy test (56%); and LMP (57%). Less than one in ten (7%) said they should ask about the current use of an IUD, which is an important contraindication to prescribing medical abortion pills. When asked questions to evaluate their knowledge about MA, majority (65%) of the drug sellers selected that information on dosage and route of administration should be provided to clients and about half thought it was necessary to provide information on side effects. However, only about a third (30%) thought it was important to provide information on warning signs that might suggest clients were experiencing complications after using the drugs and 7% thought it important to provide information on contraception after the abortion. Most drug sellers (68%) could correctly calculate gestational age. Majority of the respondents said that MA could be given to a woman who was less than 9 weeks into her pregnancy (44%), 20% said it could be given between 10-12 weeks whilst 6% said it could be prescribed from 13 weeks or more into her pregnancy. Only 37% and 11% of drug sellers knew the correct dosage of misoprostol alone for first and second trimester abortion respectively. When asked to describe some of the warning signs of MA-related complications, majority of drug sellers listed heavy bleeding (79%), about half reported severe abdominal pain (47%), and 24% reported high fever. Other symptoms were reported by less than 15% of sellers. 71% of drug sellers (n=147) reported that they could refer women who presented with post-MA complications for treatment. The majority said they would refer patients to a public hospital or clinic (72%) and 48% said they would refer to a private hospital or clinic. Among drug sellers who had either directly provided or knew colleagues who had provided MA to clients (67%, n=139), 52% reported that they provide information to all clients seeking medications to terminate a pregnancy, whilst 22% said they provided information only to some clients. 107 drug sellers reported that they had refused to sell medication to abortion clients at least once. The major reasons cited for this were that abortion is illegal (11%) or against their personal beliefs (10%). When asked if there were client characteristics that would make them less likely to prescribe MA, 42% reported they would not provide MA to younger clients whilst 38% said they treat all clients the similarly.

Table 2: Knowledge about MA

	n	%
Knowledge questions (N=207)		
Questions asked before selling women MA for termination		
Gestational age	98	47.3
LMP	119	57.5
Pregnancy test taken	116	56.0
Current use of IUD	15	7.2
Prescription	58	28.0
Woman's age	29	14.0
Number of children	9	4.3
Marital status	27	13.0
Religion	1	0.5
Other	43	20.8
Don't know	7	3.4
Seller doesn't need to ask anything	11	5.3
Refused to answer	10	4.8
Information provided when selling medication to terminate pregnancy		
Dosage	134	64.7
When to take tablets	112	54.1
How to take tablets	136	65.7
Side effects of tablets	103	49.8
To go to hospital as soon as she starts bleeding	25	12.1
Potential warning signs of complications	60	29.0
Advice on post abortion contraception	13	6.3
Advice on when to seek medical attention	25	12.1
Advice on where to seek medical attention	12	5.8
Advice on other ways to terminate pregnancy	3	1.4
Advice on how to avoid unintended pregnancy in future	21	10.1
Advise them to continue with the pregnancy	7	3.4
Other	14	6.8
Don't know	17	8.2
Seller does not need to give information	11	5.3
Refused to answer	11	5.3
How to calculate gestational age		
Correct answer	140	67.6
Incorrect answer	15	7.2
Don't know	46	22.2
Refuse to answer	6	2.9
Up to how many weeks of pregnancy can you give women MA		
<9weeks	92	44.4
10-12 weeks	41	19.8
13-28 weeks	11	5.3

>29weeks	2	1.0
Don't know	47	22.7
Refused to answer	14	6.8
Correct dosage of misoprostol for first trimester##	37	17.9
Correct dosage of misoprostol for second trimester##	11	14.3
Warning signs of complications from MA drugs#		
Heavy bleeding	164	79.2
Severe abdominal pain	97	46.9
Severe diarrhea or vomiting	29	14.0
High fever	50	24.2
Shivering	25	12.1
Continues pregnancy symptoms	27	13.0
Other	27	13.0
Don't know	22	10.6
Refused to answer	4	1.9
Can refer woman to health facility if they experience complications	110	79.1
Recommendation for referral when clients experience complications (N=147)		
Public hospital or clinic	106	72.1
Private hospital or clinic	70	47.6
Any doctor or midwife of her choice	12	8.2
Doctor or midwife you referred her to	2	1.4
Healthcare provider nearest her home	26	17.7
Another pharmacy or drug store	1	0.7
Tell her to come back to the same store	4	2.7
Other	1	0.7
Attitude Questions		
When medication for pregnancy termination is sold do you provide information on how to use them? * (N=139)		
No, I don't provide information at all	36	25.9
Yes, I provide information to all clients	72	51.8
Yes, I provide information to some clients	30	21.6
Missing	1	0.7
Factors considered when providing info# (N=8)**		
SES	1	12.5
Literacy	3	37.5
Age	4	50.0
Time available	1	12.5
If client is known to them (or not)	2	25.0
Other	4	50.0
Proportion of respondent/their colleagues who have ever refused to sell clients medication for TOP because: # (N=107)		
It is against their personal beliefs	11	10.3
It is against their religious beliefs	7	6.5

Abortion is illegal	12	11.2
Client did not inform her husband or partner	1	0.9
Client has come to purchase this drug more than once	4	3.7
Proportion of individuals with certain characteristics they would not see medicine to induce an abortion# (N=207)		
Male	14	6.8
Female	5	2.4
Older client	9	4.3
Younger client	86	41.5
Married client	6	2.9
Unmarried client	20	9.7
Client with children	3	1.4
Client with no children	11	5.3
Rich clients	3	1.4
Poor clients	3	1.4
Students	18	8.7
Professionals	3	1.4
I treat all clients the same	79	38.2

***** *Amongst those who have direct exp with women seeing MA for termination or colleagues who do*

****** *For those who say they have direct experience providing women with MA and that they don't provide all women the same info when they get MA for termination*

******* *Amongst those who have ever/always refused clients medication to terminate pregnancy*

*Multiple responses allowed by respondents to this question*

*Correct doses of MA pills were in line with WHO 2012 safe abortion guidelines which were in use when the study tools were designed. Dose information was collected from drug sellers in milligrams (mg) micrograms (mcg) or pills (number and each pill of misoprostol was assumed to contain 200mcg and mifepristone 200mg as this is the commonest formulation sold in Nigeria. Correct dose of misoprostol alone for first trimester was 800mcg-2400mcg (one to three doses), correct dose of misoprostol alone for second trimester was 400mcg to 2400mcg. Correct dose of the mifepristone/misoprostol combination for first trimester was mifepristone 200mg and misoprostol 800mcg-2400mcg whilst the correct dose of the mifepristone/misoprostol combination for second trimester was mifepristone 200mg and misoprostol 400mcg-2400mcg*

N.B ***All knowledge questions were asked of the full sample of drug sellers (N=207) regardless of whether they or their colleagues had experience providing care to women seeking termination or not***

Table 3 presents information on the drug sellers' reported practices compared with MC experiences. Amongst all drug sellers screened at the beginning of the study (970), only 17% reported providing misoprostol containing medication to clients while MCs were able to obtain a medication in 40% of interactions with the same drug sellers (and 27% of these were misoprostol containing medication). Drug sellers reports about the questions they ask clients seeking to purchase MA were similar to the experiences of mystery clients on the variables examined. For example, almost consistent with the 56% that said they would ask if women had taken a pregnancy test, MCs reported that they were offered a medication in 48% of interactions. Last menstrual period (57% vs 48%) and gestational age (47% vs 50%) in drug seller reports and MC experiences were also similar. However, drug sellers reporting seemed to be about 10% higher than MC experiences on questions to establish the duration of pregnancy. Additional results also show that only 55% of MC were provided with information about dosage compared with 65% in the direct interview with drug sellers. Almost similarly, 65% of drug sellers reported providing information on the route of administration compared with 40% in the MC interactions In a sharp contrast however, 79% of drug sellers had reported that they advised their clients to seek help at hospital facilities for heavy bleeding compared with only 2.2% of such cases from the MC debrief. The result was similar for severe pain (47% vs 0.6%) and continued pregnancy symptoms (13% vs. 0.3%), respectively.

Table 3: Self-reported drug seller practices compared with MC experiences

	Drug Seller Reported		MC Report	
	N=****	**%**	**N=889**	**%**
Offer misoprostol containing medication to women for abortion (N=970)				
No	159	16.4	532	59.8
Yes	165	17.0	357	40.2
Medications offered to women seeking termination*# (N=139)				
Misoprostol alone	94	68.6	223	25.1
Misoprostol mifepristone combination	2	1.5	15	1.7
*Other non-misoprostol containing***	6	4.4	112	12.6
Mifepristone and methotrexate	-	-	7	0.8
None	35	25.5	532	59.8
Ask the following questions women purchasing misoprostol# (N=207)				
Taken pregnancy test	116	56.0	170	47.6
Last menstrual period	119	57.5	172	48.2
Estimated duration of pregnancy (gestational age)	98	47.3	179	50.1
Ask for a prescription	58	28.0	33	9.2
Age	29	14.0	42	11.8
Current use of IUD	15	7.2	4	1.1
Number of children	9	4.3	6	1.7
Provide the following information to women taking misoprostol# (N=207)				
Dosage	134	64.7	197	55.2
Route of administration	136	65.7	144	40.3
Information on complications/signs that warrant visiting a hospital# (N=207)				
Heavy bleeding	164	79.2	8	2.2
Severe pain	97	46.9	2	0.6
Continued pregnancy symptoms	27	13.0	1	0.3

**# For MC's this variable is they were offered any medication to help terminate a pregnancy*

** Amongst those who have direct experience with women using MA for termination or colleagues who do*

*** Includes 57 cases where they did not specify the medication, so could contain misoprostol.*

 # Multiple responses allowed by respondents to this question

***** Drug seller sample numbers vary by question so the denominator (N) is included on the subject line for each variable*

Discussion

The study provides a unique opportunity in examining the discrepancies between the self-reported standard of practice and the actual practice (as reported by MC) in how drug sellers dispense/sell misoprostol in Lagos state. One important issue of concern is the difficulty in obtaining the consent of the drug sellers to participate in the study as reflected in the study: less than one-quarter of drug stores visited by MCs agreed to participate in the drug seller interview. This is partly due to the secrecy and covert nature associated with the dispense of abortion related drugs in restrictive countries as a result of fear of law enforcement agents (Omo-Aghoja, Omo-Aghoja, Feyi-Waboso, & Onowhakpor, 2010; Oye-Adeniran, Long, & Adewole, 2004). The study also showed underreporting of MA provision by the full sample of drug sellers who were screened for the study: only 17% reported providing MA at all, while 40% of MCs were offered a medication to terminate a pregnancy, and at least 27% received a misoprostol-containing drug. While the denial of drug sellers to offer medical abortion may have implication for patronage of other clandestine and unsafe abortifacients by women, their reluctance to admit that they offer women abortifacients and MA may be because of Nigeria's legally restrictive law and fear or repercussions by government and other national authorities. However, the MC study suggests that regardless of the law, a substantial number of women are likely to be offered something to help terminate a pregnancy by drug sellers in Lagos and may actually receive an affective abortifacient like misoprostol.

A very high proportion of drug sellers did not know to ask women seemingly important questions that are important for proper provision of medications for pregnancy termination, such as questions gestational age and pregnancy test. This knowledge should guide them in offering the best advice to the women. Also, more than 30% of drug sellers lacked basic skills in the calculation of gestational age and more than half of the drug sellers would give misoprostol for pregnancy termination after 10 weeks of pregnancy. The WHO guideline for management of medical abortion stipulates that medical abortion can be self-administered for pregnancy 10 weeks or less. However, for pregnancies 12 weeks or more, the guideline stipulates the presence of any of the following auxiliary nurses, auxiliary nurse midwives, nurses, midwives, associate/advanced associate clinicians, and non-specialist and specialist doctors. Our results also highlight that in Lagos state, drug sellers overreport better practices around MA provision compared to what MCs, and therefore abortion clients, experience. Despite reporting that they provide information about how to use the medications and about serious MA-related complications which warrant seeking additional care at hospital, drug sellers' actual practices appear to not reflect their knowledge: they provide less information about how to use the medications than they know they should; and they provide very little information to educate women about serious complications with the use of MA that might warrant seeking additional care at hospital. Although the risk of complications using misoprostol for pregnancy termination is much lower than for invasive methods administered by untrained persons (Irinyenikan et al., 2019), the very poor quality of information provided to women and the discrepancy between drug sellers knowledge and their practices is similar to what has been found in other studies and requires intervention to optimize women's reproductive health outcomes.

Program Implication

Drug sellers are important stakeholders in advancing safe medical abortion. The need for program intervention to strengthen drug sellers' provision of MA.

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