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CLINICAL ARTICLE

Availability and provision of misoprostol and other medicines for menstrual regulation among pharmacies in Bangladesh via mystery client survey

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ABSTRACT

Objective: To explore the availability and provision of misoprostol and other medicines for menstrual regulation (MR) among pharmacies in Bangladesh. *Methods:* Between March and November 2011, a cross-sectional study using mystery client visits was conducted among pharmacy workers in Dhaka and Gazipur Districts, Bangladesh. Mystery clients were trained to present 1 of 4 pre-developed situations to pharmacy workers to elicit information on the regimen, adverse effects, and complications of misoprostol use. *Results:* Mystery clients visited 331 pharmacies. Among the 331 pharmacy workers, 45.8% offered the mystery clients misoprostol and/or other medicines for MR; 25.7% referred them to private clinics or hospitals. Only 7% recommended an effective regimen of misoprostol for MR; 65% suggested administering vaginal and oral misoprostol together. Overall, 72.4% did not provide any advice on complications; the remainder suggested visiting trained providers for complications. Counseling on excessive bleeding as a danger sign was provided by 46% of pharmacy workers. Most (94%) did not provide or refer for post-MR family planning. *Conclusion:* Pharmacy workers in urban Bangladesh are providing ineffective drugs and regimens for MR. A training package is needed to strengthen service delivery by providing accurate information, high-quality products, and referral mechanisms for women seeking MR through pharmacies.

1. Introduction

Pharmacy workers often serve as preferred healthcare providers. With long service hours and ready access to medicines, pharmacies have an essential role in providing services for stigmatized health issues, including sexually transmitted infections, family planning, emergency contraception, and menstrual regulation (MR) [1–4].

In countries where legal and social restrictions present obstacles for women trying to access appropriate methods for terminating unwanted pregnancies, misoprostol has been found to be an appealing alternative to both women and providers. Women often use misoprostol and/or other medicines obtained from pharmacies to self-induce abortion with varying effects [5,6]. Using misoprostol for termination of pregnancy is considered by women to be more "natural" and private compared with surgical procedures [7]. Because pharmacies provide relative anonymity for clients [6,8–10], and there is an increasing awareness of misoprostol as an effective treatment for medical abortion, misoprostol and other abortifacients are being provided by pharmacy workers on demand [5].

Abortion is illegal in Bangladesh except when used to save a women's life. Since the 1970s, the country has maintained a program of menstrual regulation (MR)—an interim method of establishing non-pregnancy among women at risk of becoming pregnant [11]. Although MR services have become widespread and decentralized, approximately 231 000 women were treated for complications of induced abortion in 2010 [12]. In Bangladesh, misoprostol is registered for the treatment of peptic ulcer and prevention of postpartum hemorrhage, and is produced by 4 local pharmaceutical companies. Anecdotal evidence suggests that, owing to its availability, women may be using misoprostol and/or other medicines obtained from pharmacies to self-induce MR.

Documenting the provision and use of medications for MR via pharmacies is difficult owing to the estimated 30 000 unregistered drug retailers in Bangladesh (Directorate of Drug Administration, personal communication). Although pharmacy workers may serve as a first point of care at the community level, most of them lack formal training, leading to variability in the quality of service provision [13]. If prescribed and used correctly, misoprostol is an effective and safe method for MR in low-resource settings where mifepristone is not available [14]. Evidence from other settings has shown that misoprostol is often wrongly prescribed by untrained pharmacy workers [15,16]; therefore,

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understanding the knowledge and practices of pharmacy workers in prescribing misoprostol is important to better inform health service provision in Bangladesh [10].

The aim of the present study was to explore the knowledge and provision practices of pharmacy workers regarding the use of misoprostol and other medicines for induction of MR in Bangladesh. Three study areas were purposively selected to capture a range of sociodemographic characteristics in urban settings: the Mirpur and Badda areas of Dhaka have slums and are populated by 500 373 and 536 621 individuals, respectively [17]; the Sadar area of Gazipur has a population of 123 531, and represents an industrial area with significant garment factories employing mainly women [17].

2. Materials and methods

A cross-sectional study using mystery client visits was conducted among pharmacies in the Mirpur and Badda areas of Dhaka district, and in the Sadar area of Gazipur district, Bangladesh, between March 1 and November 30, 2011. The study was approved by the ethics review committee of the International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh.

The study was conducted in 4 steps. Step 1 involved physical identification of each study area. A central point on a detailed map of each of the study areas was purposively selected, and a concentric circle of 1 km in radius was drawn from this point. This circle represented the boundary of the study area.

Step 2 comprised mapping of pharmacies. Because there was no approved registry or logbook including all pharmacies in the study areas, 6 field workers visited each area and physically mapped all pharmacies within the 1-km radius. Only outlets that had a static physical space with medicines clearly displayed, had been established for at least 6 months, and had regular opening hours each day were mapped.

Step 3 involved a rapid assessment survey. The mapping exercise in step 2 identified 766 pharmacies (251 in Gazipur, 250 in Mirpur, and 265 in Badda). A random sample of the enumerated pharmacies was selected from this list, yielding a sample size of 111 pharmacies per study area. The rapid assessment survey was administered among pharmacy workers at the selected outlets to ascertain information on pharmacy workers' background, knowledge, and practice provision of misoprostol and/or other medicines for MR. The results of this assessment will be reported elsewhere.

Step 4 comprised mystery client visits. One month after starting the rapid assessment survey, mystery clients visited all 111 pharmacies per study area to assess the actual availability and provision of misoprostol and other medicines by pharmacy workers. This method has been widely used in pharmacy-based studies as an effective way of minimizing observer bias [15,18,19]. Individuals who served as mystery clients could not be a resident of the study area, but could possess characteristics of local persons (e.g. language skills, appearance) and had the ability to assume fictitious identities.

There were 4 mystery client situations: (1) a young (18–25 years) female seeking misoprostol because her friend recommended the drug for MR; (2) a young male seeking misoprostol for his female friend because another friend recommended the drug for MR; (3) a middle-aged female seeking a drug to induce menstruation because she believed that she was pregnant owing to a delayed period; and (4) a middle-aged male seeking a drug to induce his wife's menstruation in a situation similar to the third one.

Five mystery clients (3 males and 2 females) and 6 interviewers (3 males and 3 females) were trained to present the different situations. Training entailed the criteria used to evaluate outlets; the assignment of situations; extensive practice and/or role-playing to enact the assigned situations; tips for recalling details of the encounter during post-encounter interview; scheduling of area visits; and signature of consent form and confidentiality agreement. Each mystery client situation was pre-tested twice to assess its feasibility.

Each mystery client visited different pharmacies with a specific predeveloped situation. During their visit to pharmacies, mystery clients inquired about the availability, cost, dosages, route of administration, effectiveness, possible adverse effects, and complications of misoprostol and other medicines; family planning methods; and counseling. If the pharmacy workers asked whether or not the woman in the situation had taken a pregnancy test, mystery clients responded negatively. The same mystery client did not visit a particular outlet more than once.

Pharmacy workers who offered any medication to the mystery clients for MR were considered as "unprompted;" those who were asked directly for misoprostol for MR by the mystery clients were considered as "prompted." In some instances, the mystery clients purchased the drugs suggested by the pharmacy workers to avoid suspicion and to complete their visit. In other cases, the mystery clients completed their visit by stating that they would return to purchase the drug at later time because they did not have enough money. Immediately on completion of their visit, each mystery client was interviewed by a study interviewer using a standardized checklist to capture a detailed account of the mystery client's interaction with the pharmacy worker.

Data were analyzed via STATA version 11.1 (Stata, College Station, TX, USA). Differences in the outcomes by characteristics were assessed via χ^2 tests with a 95% level of significance for categorical variables.

3. Results

Among the 333 pharmacies selected, 331 mystery client visits were conducted (111 in Mirpur, 110 in Badda, and 110 in Gazipur). Two pharmacies were closed on repeated visits (1 in Gazipur, and 1 in Badda). On average, each mystery client visited 66 pharmacies and interacted with 1 pharmacy worker. All pharmacy workers were male. The mean number of customers at the pharmacy was 2 during a mystery client visit.

During the 331 visits, 38.6% of the mystery clients were offered only misoprostol, 45.8% were offered misoprostol and other medicines (e.g. combination of methylestrenolone and methylestradiol; emergency contraceptive pills; oral pill; herbal medicines; and hormonal preparations), and 15.5% were offered other medicines.

Among 138 unprompted situations, 41.7% of the mystery clients were offered and/or advised to take misoprostol or other medicines for MR. Among 113 prompted situations, 34.1% were offered misoprostol and other drugs by pharmacy workers.

Overall, 94% of the mystery clients were not taken to a separate counseling room by the pharmacy workers to discuss their inquiries. In total, 22.6% of the mystery clients were referred to other places (public and private hospitals, NGO clinics, doctors, traditional healers, and other pharmacies), and 85% of the referred mystery clients were asked to seek care at private clinics or hospitals (Table 1).

Only 7.1% of the pharmacy workers, either unprompted or prompted, advised an effective regimen of misoprostol for MR (4 pills of 200 μg a day for 2 days). By contrast, 65% suggested administration of misoprostol by vaginal and oral routes together (Table 1). Overall, 17% of the mystery clients were cautioned about the adverse effects of misoprostol such as nausea and vomiting, 46% were counseled on excessive bleeding, and 4.2% were advised about infection.

Approximately three-quarters (72.4%) of the mystery clients did not receive any advice regarding where to go in case of complications, whereas 27.6% were told to go to trained providers (i.e. doctors, nurses, and midwives) for complications (Table 1). Overall, 94% of the pharmacy workers did not provide post-MR family planning methods.

In Gazipur, a significantly higher proportion of male mystery clients were offered misoprostol and other medicines for MR compared with their female counterparts (75.2% vs 24.7%, $P \leq 0.001$). A similar distribution was observed when comparing Gazipur to the other 2 regions. The proportion of pharmacy workers who offered other medicines in addition to misoprostol was higher in Badda (58.1%) than in Mirpur (41.9%) or Gazipur (41.7%, $P = 0.03$). A higher percentage of pharmacy workers in Gazipur recommended both oral and vaginal routes together