

Author Version

# How commonly do U.S. abortion patients report attempts to self-induce?

Rachel K. Jones\*

*Research Division, Guttmacher Institute, New York, New York, 10038, USA*

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Rachel K. Jones  
Guttmacher Institute  
125 Maiden Lane, 7th Floor  
New York, NY 10038 USA  
Phone: 212-248-1111 x2262  
Fax: 212-248-1951  
Email: [rjones@guttmacher.org](mailto:rjones@guttmacher.org)

The study co-ordination site was the Guttmacher Institute's office in New York City. Data were collected from women at sites in 45 states and the District of Columbia. The only states in which information was not collected were Alaska, Kansas, Montana, New Mexico and Vermont.

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**Abstract**

**Objective:** This study measures the extent to which women who access clinical abortion services in the United States report having ever used misoprostol or other substances to self-induce.

**Study Design:** A random sample of 107 U.S. abortion providers was asked to distribute questionnaires to abortion patients.

**Results:** Information was gathered from 9493 patients at 95 facilities, and weights were constructed to make the data nationally representative of all U.S. abortion patients. Only 1.2% of women obtaining abortions report having ever used misoprostol on their own to “bring back” their period or end a pregnancy. A similarly small proportion of women, 1.4%, reported using other substances, such as vitamin C or herbs, to attempt to end a pregnancy.

**Conclusion:** Media reports of self-induced abortions using misoprostol may be exaggerated, but further research is needed to estimate the incidence of self-induced abortion among women who do not access clinical abortion services.

**Key Words:** abortion; misoprostol; self-induced abortion

## **Introduction**

Since 1973, abortion has been legally protected in the United States, and the need for “back alley” abortions, or abortions outside of clinical settings, has presumably disappeared. However, over the last decade several media stories have increased awareness of U.S. women using misoprostol to self-induce.<sup>1-3</sup>

Also known as Cytotec (Pfizer, New York, NY), misoprostol is only available by prescription in the United States, but can be obtained behind-the-counter at pharmacies in some countries, including Mexico, and has made its way to the black market in the United States. Clinical trials have shown that, while less effective than a combined regimen of mifepristone and misoprostol, misoprostol alone can achieve complete abortion between 70-94% of the time, depending on the gestation, dosage and route of administration.<sup>4-7</sup> But women who access the drug outside of a clinical setting may be unaware of the proper dosage and routes of administration and, in turn, experience more adverse events. Moreover, abortion without medical supervision is illegal in some states, and there have been several high-profile cases of women being prosecuted for inducing their own abortions.<sup>3,8</sup>

Anecdotal reports suggest that use of misoprostol is most common among Latina women, particularly those who live in border towns<sup>2</sup> or in areas with large immigrant populations,<sup>1,3,9</sup> and there have been reports that up to 40% of women accessing clinical abortion services in some areas are doing so after unsuccessfully attempting to self-induce.<sup>2</sup> In 2008, 25% of abortion patients were Hispanic, up from 20% in 2000, and 16% of all U.S. abortion patients were foreign born.<sup>10</sup> There were 1.21 million abortions performed in 2005,<sup>11</sup> so the population supposedly most likely to use misoprostol to self-induce is quite sizeable.

The purpose of this study is to assess the incidence of self-induced abortion using misoprostol and other substances among a nationally representative sample of women accessing clinical abortion services. Differences in incidence by subgroups are also examined.

## **Materials and Methods**

The current survey of abortion patients uses a design and questionnaire similar to those for 3 earlier studies, which were conducted in 1987, 1994 through 1995 and 2000 through 2001.<sup>12-14</sup> For this survey, conducted in 2008 through 2009, a 4-page questionnaire was developed, collecting information about demographic items contained on prior surveys, and assessing several new issues such as use of misoprostol to self-induce.

The facilities in the survey were sampled from all hospitals, clinics, and physician's offices where abortions were performed in 2005, according to information from a census of abortion providers conducted in 2006 through 2007.<sup>11</sup> The universe of all known abortion providers was stratified by provider type (hospital or nonhospital) and 2005 caseload rounded to the nearest 10 (30-390; 400-1990; 2000-4990; and  $\geq 5000$  abortions), and then listed by census region and state within each stratum. Facilities that reported  $<25$  abortions in 2005 were not included because of the high likelihood that they would perform few or no abortions during the survey period. Their exclusion could cause little bias regarding the representativeness of the sample because these facilities only accounted for 1% of all reported procedures in 2005.<sup>11</sup> Next, every Nth facility was sampled (N varied by stratum), and clinics with large caseloads were oversampled to obtain adequate representation.

Each facility was assigned a sampling period that was inversely proportional to its probability of being selected and, for example, facilities with the largest caseloads (which were

fewer in number) only administered the survey to all women obtaining abortions over a 2 week time period while facilities with the smallest caseloads administered the survey for 12 weeks. Our goal was to recruit 107 facilities. We employed a replacement sampling strategy, and, if a facility declined to participate or did not obtain usable questionnaires from at least half of the target women, it was replaced by the next facility listed in the same stratum, which in most cases was in the same state or a neighboring state in the same region.

The questionnaire, available in both English and Spanish (and, at one facility's request, Portuguese) was distributed to women by facility staff. Participating facilities decided when during the patient's visit to distribute the questionnaire; in most cases, women completed it along with other paperwork while they waited for their procedure. The questionnaire included an introduction explaining the purpose of the survey and informing women that participation was voluntary and anonymous. The questionnaire and procedures were approved by our organization's federally registered institutional review board.

Missing information on key demographic variables was imputed on the basis of the responses of other women with similar characteristics using a "hot-deck" procedure. Specifically, we used cross-tabulations to identify the variables most strongly associated with each item requiring imputation. Respondents were sorted according to these variables in the order of the strength of the item's association with the variable to be imputed, so that similar cases were adjacent to one another in the file. A missing value was then replaced by the value of the preceding case in the file.

The questionnaire included 2 questions relevant to this study: "Did you take any of the following to try to bring back your period or end the CURRENT pregnancy BEFORE you came here?" and "Have you EVER taken anything ON YOUR OWN to try to bring back your period

or end a pregnancy?” Response categories for both items were: (1) Yes, I have taken Cytotec, or misoprostol; (2) Yes, I have taken emergency contraception, also known as EC or the morning-after pill; (3) Yes, I have taken another drug (with a space for write-in responses); and (4) None of the above. Information from both items was combined to assess ever use of misoprostol.

Statistical analyses were performed with software (version 18.0; SPSS, Inc, Chicago, IL) using the complex sampling feature. Data were weighted to be representative of all US women obtaining abortions, and the weights took into account the complex sampling design. Descriptive statistics were used to generate estimates of self-induced abortions for all women and by subgroup. Differences between means for subgroups were assessed by *t* tests, using the general linear model command.

## **Results**

Of the initial 107 providers sampled, 48 participated in the study, 59 had to be replaced, and we were ultimately unable to recruit facilities for 12 of the slots. Of the 12 facilities that could not be replaced, 7 were in the smallest caseload category sampled (30-390 abortions in 2005). Our final sample consisted of information from women at 10 hospitals and 85 nonhospital facilities.

Participating facilities reported performing 12,866 abortions during the sampling period. Usable questionnaires were obtained from 9493 patients, for a response rate of 74%. Of these women, 73% obtained abortions during the second half of 2008 and the remaining 27% during the first half of 2009.

Nonresponse on most items was around 2% but was substantially higher for the items assessing self-induced abortions: 5% of respondents did not answer the item about recent use of misoprostol or other substances, and 6% did not answer the item about ever use.

More than one-third of women who reported taking misoprostol for the current pregnancy indicated “None of the above” on the subsequent item asking if they had ever taken the drug for this purpose. (Similar patterns were observed among women who reported recent and ever use of emergency contraception.) We expect that women who reported that they had used misoprostol in an attempt to end their current pregnancies had obviously “ever” used misoprostol and did not think they needed to answer the second item in the affirmative. Our measure of ever use of misoprostol was recoded to include women who reported that they had used the drug for the current pregnancy.

A very small proportion of women obtaining abortions, 1.2% (n=101) (Table), indicated that they had ever taken misoprostol in an attempt to end a pregnancy, and only 0.8% had done so for the current pregnancy (not shown). Ever use of misoprostol was reported by at least a small proportion of all the subgroups examined, although for no group did the proportion reach 3%. Reported ever use of misoprostol was highest for women aged 30-34 (2.0%), and this was a significantly higher level than reported by abortion patients under age 25 (1.0% and .9% for women aged <20 and 20-24 years, respectively;  $P<.05$ ). Similarly, women who reported  $\geq 2$  abortions were significantly more likely than those with no prior abortions to report having ever used misoprostol to self-induce (1.8% vs .8%;  $P<.01$ ). Finally, foreign-born women were twice as likely as those born in the United States to report having ever used misoprostol (2.1% vs 1.0%;  $P<.05$ ). While Hispanic women reported higher levels of ever use of misoprostol to self-induce of all the racial and ethnic groups examined, this difference was not statistically significant. Women who reported ever using misoprostol to self-terminate were obtaining abortions at 49 facilities and resided in 23 of the 45 states (and the District of Columbia) covered by the survey (not shown).

Some 1.4% of US abortion patients reported that they had ever ingested something other than misoprostol (or emergency contraception) in an attempt to end a pregnancy; 44 of the 122 women wrote in responses, most commonly vitamin C and unspecified herbs, as well as cohosh and pennyroyal (both herbs). There was little overlap between the other substance and misoprostol groups and only 6 women responded affirmatively that they had ever ingested both misoprostol and some other substance. Nonetheless, the 2 groups may share some similarities, as reported ever use of “other” substances was highest for women aged 30-34 years (2.2%), a significantly higher level than for teenagers (0.9%;  $P<.05$ ) and women aged 25-29 years (1.1;  $P<.05$ ). Similarly, foreign-born women were twice as likely as those born in the United States to report having ever ingested other substances to terminate a pregnancy (2.4% vs 1.2%;  $P<.05$ ). As with the misoprostol group, women who attempted to self-terminate using other substances were geographically distributed; they were obtaining abortions at 55 facilities and resided in 29 states (not shown).

### **Comment**

This study suggests that only a very small proportion of women accessing clinical abortion services in the United States have ever attempted to terminate a pregnancy without medical supervision. Notably, self-administration of misoprostol among women obtaining abortions in clinical settings in the United States may be higher than reported for 2 reasons. First, women may not have understood the question or known what the terms “misoprostol” or “Cytotec” meant even if they had used the drug. Underreporting is also possible because some states require that abortions be performed by a licensed physician<sup>15</sup> and women may have been reluctant to report what they perceived to be a crime. Nonresponse was higher for the items assessing attempts to self-induce than for other questions. The questions were near the end of the



survey, and we attribute some of this nonresponse to survey fatigue, but the sensitive nature of the items may also have led fewer women to respond. But even if under-reported, our findings suggest that ever use of misoprostol to self-induce is not common among women accessing clinical abortion services.

Reported use of misoprostol is not limited to Latinas or women born outside of the United States, but our study does corroborate anecdotal evidence<sup>1,2,9</sup> that levels of use are significantly higher among foreign-born women. Some, if not most, of these women born outside of the United States may have attempted to self-induce in their countries of origin, which may have had highly restrictive abortion laws and little or no access to clinical abortions services (eg, many Latin American countries including, until recently, Mexico). At the same time, 75% of abortion patients in 2008 were not Latina, and 84% were born in the United States,<sup>10</sup> meaning that the majority of attempts to self-induce reported among clinical abortion patients were to women in these groups. Similarly, this study suggests that the population of women who have ever attempted to use misoprostol to self-induce is geographically scattered.

The media and, to a lesser extent, medical professionals have focused on women's use of misoprostol to attempt to self-induce, but women were just as likely to report having used other substances to try to end a pregnancy. While this population seems to be somewhat different from women who use misoprostol, insofar as very few women reported using both methods to attempt to terminate a pregnancy, this practice may be more common among the same groups that self-administer misoprostol. In particular, that both groups of women who attempted to self-induce were significantly more likely to be born outside of the United States may be indicative of women's desperation to terminate a pregnancy even when access to abortion is highly restricted.

It is quite likely that a number of women who take misoprostol (and other substances) to self-induce, either successfully or unsuccessfully, never make it to a health care facility that provides abortions. If sizeable, these populations would need improved access to clinical abortion services or, at minimum, information about how to correctly self-administer misoprostol so as to decrease the chance of complications or adverse events. Subsequent research should attempt to determine whether there is substantial unmet need of clinical abortion services in the United States and, if so, where this need exists.

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**Table 1. Abortion patient reports of attempts to self-induce using misoprostol or other substances, by key characteristics, 2008 Abortion Patient Survey**

	Total sample (unweighted n)	Ever self- administered misoprostol %	Ever used other substance %
Unweighted n	9493	101	122
Total		1.2	1.4
<b>Age group</b>			
< 20	1669	1.0 *	0.9 **
20-24	3217	0.9 *	1.3
25-29	2297	1.2	1.1 *
30-34 (comparison)	1261	2.0	2.2
≥35	1049	1.3	2.0
<b>Race/ethnicity</b>			
Non-Hispanic white	3537	0.9	1.2
Non-Hispanic black	2824	0.7	1.3
Non-Hispanic other	883	1.6	1.9
Hispanic (comparison)	2249	2.0	1.6
<b>Education</b>			
<12th grade	1715	1.0	1.9
HS grad or GED	2776	1.0	1.3
Some college or associate degree (comparison)	3433	1.3	1.3
College graduate or above	1569	1.3	1.2
<b>Prior abortions</b>			
0	4830	0.8 **	1.2
1	2693	1.3	1.4
≥2 (comparison)	1970	1.8	1.6
<b>Poverty</b>			
<100% (comparison)	3998	1.4	1.6
100-199%	2525	0.7	1.3
>200%	2970	1.2	1.1
<b>Foreign-born status</b>			
Born in the United States	8009	1.0 *	1.2 *
Born outside the United States (comparison)	1484	2.1	2.4

\*P<.05, \*\*P<.01