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Exploring the Feasibility of Obtaining Mifepristone and Misoprostol from the Internet

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ABSTRACT

Objectives. We aimed to document the experience of buying abortion pills from online vendors that do not require a prescription and to evaluate the active ingredient content of the pills received.

Study Design. We searched the internet to identify a convenience sample of websites that sold mifepristone and misoprostol to purchasers in the United States and attempted to order these products. We documented price, shipping time and other aspects of ordering. We sent the samples received to a testing laboratory that measured the amount of active ingredient in individual tablets.

Results. We identified 20 websites and ordered 22 products: 20 mifepristone-misoprostol combination products and two that contained only misoprostol. We received 18 combination products and the two misoprostol products from 16 different sites. No site required a prescription or any relevant medical information. The time between order and receipt of the 20 products ranged from 3-21 business days (median 9.5 days). The price for the 18 combination products ranged from \$110 to \$360, including shipping and fees; the products without mifepristone cost less. Chemical assays found that the 18 tablets labeled 200 mg mifepristone contained between 184.3 mg and 204.1 mg mifepristone, while the 20 tablets labeled 200 mcg misoprostol contained between 34.1 mcg and 201.4 mcg of the active ingredient.

Conclusions. Obtaining abortion medications from online pharmaceutical websites is feasible in the US. The mifepristone tablets received contained within 8% of the labeled amount of active agent. The misoprostol tablets all contained that compound but usually less than labeled.

IMPLICATIONS STATEMENT

Given our findings, we expect that some people for whom clinic-based abortion is not easily available or acceptable may consider self-sourcing pills from the internet to be a rational option.

KEYWORDS. medical abortion, self-induction, counterfeit drugs, internet, online purchasing

1. Background

For over a decade, women in many countries have been able to obtain abortion pills online from Women on Web (www.womenonweb.org), and more recently from safe2choose (safe2choose.org), and Women Help Women (womenhelp.org). To date, however, none of these organizations have provided the service to people in the United States. Nonetheless, as abortion becomes more difficult to access through the formal health care system in this country due to restrictive laws, clinic closures, economic barriers and harassment, pregnant people in this country desiring abortion may seek alternative sources [1], including online pharmacies that offer abortion pills without a prescription. Moreover, some people may prefer the convenience, privacy, and self-agency that they perceive such sources to provide [2]. In this study, we investigated the process of buying abortion pills from online sources that offered to ship to customers in the United States, and we evaluated the quality of the pills received.

2. Methods

2.1 Procurement

We searched Google using terms such as “buy abortion pills online” and “abortion pills online” to identify a convenience sample of websites that claimed to sell and ship mifepristone and misoprostol by mail to people in the United States without a prescription. We also obtained website recommendations from colleagues who had interviewed people researching their options for abortion medications online. Many sites offered multiple products advertised as containing both mifepristone and misoprostol, and these products were usually offered for approximately the same price. If a site offered multiple similar products, we selected to buy one called “MTP Kit” if available; products with this designation were the most commonly offered across sites. If an MTP Kit was not available, we purchased “Mifegest Kits.” From two sites, we purchased products advertised as containing only misoprostol.

Five researchers in four states (TX, WA, CA, and NY) ordered pills and had them shipped to residential addresses in their state. Standard shipping was generally selected, except in four cases where express shipping was selected because the lower bound of the estimated standard shipping time was greater than 12 days. The researchers recorded information about the websites, price, payment, shipping, packaging, and communications with vendors.

2.2 Chemical Assay

Researchers in states other than NY forwarded all packages received to NY by mail for storage at room temperature until we were ready to send them to a laboratory for chemical assay. At that time, we

removed the tablets from each blister pack and placed the pills labeled mifepristone (if any) in one bag and all of the misoprostol pills in another, both labeled with their assigned ID letter. We did this separately for every product. The label did not reveal the identity of the website from which the pills were obtained. We mailed the bags to a testing laboratory that is registered and in good standing with the US Food and Drug Administration. The laboratory selected one tablet from each bag and assayed it for mifepristone or misoprostol chemical composition as labeled. The mifepristone assay used the reversed-phase high-performance liquid chromatography (HPLC) method used by this laboratory for testing of mifepristone tablets sold in the United States, adjusted for a single tablet. For the misoprostol assay, the laboratory developed a reversed-phase HPLC method and verified the linearity of analyte responses to confirm the suitability of the method for the single tablet assay purpose. We assessed the relationship between the misoprostol content of the pills and the interval between package receipt and assay using a Pearson correlation coefficient.

3. Results

Between December 2016 and March 2017, we ordered 22 products from 20 unique websites and received 20 products from 16 sites (Table 1). We ordered 20 products advertised as mifepristone-misoprostol combination packs and received 18. We ordered two products advertised as misoprostol alone, and received both. Two products that we paid for but did not arrive – according to package tracking records – were shipped but could not be delivered to the home address provided. Despite multiple requests, the vendors did not resend the products.

None of these sites required a prescription or any medical documents. Two required completion of an on-line medical history questionnaire; none of the questions asked about gestational age or any of the specific contraindications listed on the label for Mifeprex[®], the brand of mifepristone approved for abortion by the US Food and Drug Administration.

3.1 Price, Payment, and Shipping

The charge for the 18 mifepristone-misoprostol products received, inclusive of shipping and payment fees, ranged from \$110.00 to \$360.00 (median \$204.50; Table 2). The two misoprostol-alone products were less expensive. The median shipping cost for all 20 products received was \$25 with a range of \$19.95 to \$171.00; this included four express shipping charges and 18 standard shipping rates. Payment options included “E-Check” (a service that required the buyer to enter a bank account and routing number), wire transfer, PayPal, Visa, MasterCard, Western Union or Bitcoin, but sites rarely offered more than two or three of these options.

The interval between payment and package receipt ranged from 3 to 21 business days (median 9.5 business days; Table 2). Sixty-five percent of packages arrived within the advertised shipping time. Delivery of some packages may have been delayed because of winter weather at the buyer's location. One shipment was delayed by the vendor who believed the order had been erroneous because the researcher had at the same time unknowingly also purchased a product from another website apparently run by the same vendor. According to package tracking information, 15 of the products received were shipped from locations within the United States and five were shipped from locations in India. All sites provided a contact number or email address. We contacted most sites at least once between ordering and receiving the product to check on the status of the order or to confirm that the package had been shipped.

3.2 Packaging

All pills were packed in blister packs made of foil on both sides. All 20 products received contained tablets labeled with the active ingredients ordered, but very few matched the photo used to advertise the product on the website. Most blister packages appeared intact (Table 3). Eight mifepristone-misoprostol products, all from the same manufacturer, had pinprick-sized holes in each of the five blisters, and the foil blister was indented. One product, which contained only misoprostol pills, arrived damaged: 11 of the 20 blisters split open and some of the pills were broken. Only two of the blister packs came in boxes, both of which were printed with a brand name. None of the products came with instructions or any written communication. Each blister pack received had the brand name of the product, the amount of active ingredient per tablet (200 mg for the mifepristone pills and 200 mcg for the misoprostol pills), and expiration date stamped on the foil. None of the products were expired. All but one of the products had a suggested retail price (inclusive of taxes) stamped on the package, which ranged from 378.47 rupees to 690.00 rupees (\$5.88 to \$10.72 in US dollars). All of the products were labeled as having been manufactured in India. None of the shipping packages indicated that the contents were pharmaceutical products or related to abortion, and three came with other products in the envelope that were not ordered: two with cell phone charging cables and one with a necklace.

3.3 Websites

We found evidence that many of the sites were run by the same vendors. As noted above, one vendor admitted to having received two orders sent through different websites. Three purchases from different sites appeared on our credit card statement as having been paid to a single vendor. Wire transfers to pay for products from five unique sites were sent to bank accounts belonging to the same person. Order

confirmations from three sites were sent from the same email address. Eight products we received were pinpricked in the same way, with the blisters folded around the pill. Finally, two products – ordered by the same researcher from different URLs days apart – were shipped to the researcher in the same shipping envelope.

During the ordering process, one website disappeared and then reappeared several days later. As of May 2017, 14 of the 18 sites ordered from were accessible online and four were not.

3.4 Unexpected Communications

Two buyers received troubling communications from product vendors. One warned about the legality of purchasing online: “Please do not share this info with any other side because investigation team is searching the details for this type of medicine.” In the second case, the vendor complained that he was unable to get payment from the online payment platform and threatened to withhold shipment until the buyer paid another way. After some convincing, he finally sent the product. In addition, one buyer who paid with Western Union received two fraud alert calls—one from Western Union advising against purchasing pharmaceuticals online and another from her credit card company.

3.5 Assay Results

Assays for mifepristone were performed 8-84 days (median 40.5) after receipt of the pills from the vendor; the range for the misoprostol assays was 15-91 days (median 47). The analyses revealed that all mifepristone pills received contained mifepristone in amounts within 8% of 200mg, ranging from 184.3 mg to 204.1 mg/pill (Table 3). All misoprostol pills assayed contained some misoprostol, but the amount per tablet varied from 34.1 mcg to 201.4 mcg. The eight pills with the lowest misoprostol content were the eight Pregnot brand products, manufactured by Akums Drugs & Pharmaceuticals Ltd, and were also the only eight with pinpricked packages. Misoprostol content was not correlated with the interval between package receipt and assay ($p=0.88$). We ordered from four websites twice, and found that pairs of pills from the same website had similar amounts of active ingredient.

4. Discussion

Our data indicate that obtaining mifepristone and misoprostol pills from on-line pharmaceutical websites without a prescription is feasible in the United States. Numerous such sites exist and are easily found using straightforward search terms. Most of the sites we ordered from allowed standard mechanisms for payment, including credit cards, Western Union and PayPal. Nearly all of the pills we ordered arrived. Two-thirds of the products came within 15 days of ordering. The median price paid,

about \$200 with all fees and shipping costs included, is lower than the \$504 average cost for a medical abortion in the United States, not including travel or other secondary costs [3]. Moreover, all of the mifepristone pills contained the expected amount of mifepristone, and all of the misoprostol pills contained some misoprostol. Given our findings, we expect that some people for whom clinic-based abortion is not easily available or acceptable may consider self-sourcing pills from the internet to be a rational option.

Although 30% of misoprostol pills contained misoprostol in amounts within 10% of the labeled dose, the rest had lower amounts. Low misoprostol content correlated with both pinholes in the foil blisters containing the pills and with brand: the eight products with the lowest misoprostol amounts were also the eight that had pinholes in the blisters and the eight that were Pregnot brand. Our study did not determine whether the problem was caused by an initial manufacturing error or by subsequent degradation possibly augmented by the pinholes; however, misoprostol's vulnerability to degradation when not properly sealed is well documented [4]. We reached out to the six sites that sent these products to recommend that in future, they should ensure the integrity of their packaging. Regardless, however, a substandard misoprostol amount does not necessarily render a product ineffective for terminating pregnancy. Notably, abortifacient regimens containing 200 mg mifepristone and 400 mcg misoprostol are recommended by the World Health Organization for medical abortion through 49 days of gestation [5], and 72% of the mifepristone-misoprostol packages we received contained these amounts.

While online ordering may offer benefits in terms of convenience, low cost, and privacy, we found some aspects of the ordering process to be suboptimal. Nearly half of the products did not arrive until after the anticipated date. The products received rarely appeared to be the same brand as those ordered, and none came with instructions for use. Some websites disappeared shortly after the order was placed. The security of the information provided to vendors, including financial information, was questionable; indeed we received fraud alerts and a notification from a vendor suggesting that an active investigation was ongoing. This potential lack of security may be a concern to some buyers given that people in the United States have been prosecuted for using abortion pills they procured online. Nevertheless, to some people seeking abortion, these disconcerting experiences may seem tolerable given the numerous impediments that they may encounter in obtaining care at a clinic.

Our study has limitations. Our results represent only a snapshot of these particular sites, particularly relevant given the ephemeral nature of the sites. Although our buyers attempted to act as if they were

purchasing products for personal use, vendors may have recognized that they were under investigation and thus altered their behavior. Only one tablet was used in each chemical assay instead of the 20 standard for regulatory-quality testing, reducing the reliability of the results. Levels of impurities and other standard assay parameters were not assessed, and each tablet was not assessed for substances other than misoprostol and mifepristone. However, the consistency of our data collected by multiple researchers across numerous websites suggests that our conclusions are credible.

Although concerns about substandard and falsified medical products obtained from unregulated websites have been a focus of intense attention in recent years [6], the scope and scale of this market and its impact on health are poorly documented [7,8]. Our study found no evidence that, at the time of the study, mifepristone and misoprostol products sold online were dangerous or ineffective. We encourage reproductive health providers, advocates, and policy makers to think creatively about how the internet might be useful for enhancing access to safe and effective abortion in the United States and other similarly disadvantaged settings.

DISCLOSURE OF INTERESTS

Authors report no conflicts of interest.

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1 REFERENCES

- 2 1. Grossman D, Holt K, Pena M, et al. Self-induction of abortion among women in the United
3 States. *Reprod Health Matters* 2010;18:136-46.
- 4 2. Aiken A, Gomperts R, Trussell J. Experiences and characteristics of women seeking and
5 completing at-home medical termination of pregnancy through online telemedicine in Ireland
6 and Northern Ireland: a population-based analysis. *BJOG : an international journal of obstetrics
7 and gynaecology* 2016.
- 8 3. Jerman J, Jones RK. Secondary measures of access to abortion services in the United States,
9 2011 and 2012: gestational age limits, cost, and harassment. *Womens Health Issues*
10 2014;24:e419-24.
- 11 4. Berard V, Fiala C, Cameron S, Bombas T, Parachini M, Gemzell-Danielsson K. Instability of
12 misoprostol tablets stored outside the blister: a potential serious concern for clinical outcome in
13 medical abortion. *PLoS One* 2014;9:e112401.
- 14 5. World Health Organization. *Safe abortion: technical and policy guidance for health systems –*
15 *2nd ed.* 2012.
- 16 6. Strengthening global action against poor quality drugs. *Lancet* 2013;381:599.
- 17 7. SSFFC - Frequently asked questions. World Health Organization. (Accessed June 9, 2017, at
18 [http://www.who.int/medicines/regulation/ssffc/faq-ssffc_1-10/en/.](http://www.who.int/medicines/regulation/ssffc/faq-ssffc_1-10/en/))
- 19 8. Koczwara A, Dressman J. Poor Quality and Counterfeit Drugs: a systematic assessment of
20 prevalence and risks based on data published from 2007-2016. *J Pharm Sci* 2017.

Table 1. Products ordered and received

ID	Website	Brand	Manufacturer	Labeled content	
				Mifepristone 200 mg tablets	Misoprostol 200 mcg tablets
A	zeepharmacy.biz	Mifegest Kit	Zydus Healthcare	1	4
B	abortionrx.com	Mifegest Kit	Zydus Healthcare	1	4
C	onlineabortionpillrx.com	Mifegest Kit	Zydus Healthcare	1	4
D	nopregnancy.net	Mifegest Kit	Zydus Healthcare	1	4
E	daynighthealthcare.com	Mifegest Kit	Zydus Healthcare	1	4
F-1	drugpillsmart.com	Mifegest Kit	Zydus Healthcare	1	4
F-2	drugpillsmart.com	Mifegest Kit	Zydus Healthcare	1	4
G-1	abortionpillrx.co	Mifegest Kit	Zydus Healthcare	1	4
G-2	abortionpillrx.co	Mifegest Kit	Zydus Healthcare	1	4
H	abortionpillrx.com	Mifegest Kit	Zydus Healthcare	1	4
I	mtpkit24.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
J-1	birthcontrolpills247.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
J-2	birthcontrolpills247.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
K-1	buymeds247online.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
K-2	buymeds247online.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4

L	medihometown-usa.com	Pregout Kit	Akums Drug & Pharmaceuticals	1	4
M	uspharmacy24.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
N	buybirthcontrolpills.com	Pregnot Kit	Akums Drug & Pharmaceuticals	1	4
O	approvedonlinemeds.com	Misoprostol	Naman Pharma Drugs	0	20
P	macrobioticstoner.com/m y-secret-bodega/	Misoprost-200	Cipla	0	12
Q	buyabortionpills.net	No product received			
R	safeabortionpillrx.com	No product received			

Table 2. Cost and shipping

ID	Price including shipping (US\$)	Payment method used	Shipping mode	Business days from order to receipt	
				Advertised maximum	Actual
A	\$239.00	Visa	Standard	9	21
B	\$239.00	Visa	Standard	9	10
C	\$289.00	PayPal	Standard	9	17
D	\$239.00	Visa	Standard	9	12
E	\$235.00	Visa	Express	14	4
F-1	\$206.00	Western Union	Standard	12	12
F-2	\$203.00	Western Union	Standard	12	13
G-1	\$251.00	Western Union	Standard	14	3
G-2	\$230.00	Mastercard	Standard	25	12
H	\$360.00	Visa	Express	4	4
I	\$147.00	Wire transfer	Standard	12	9
J-1	\$155.00	Wire transfer	Standard	12	7
J-2	\$168.87	Bitcoin	Standard	12	6
K-1	\$163.00	Western Union	Standard	12	11
K-2	\$155.00	Wire transfer	Standard	12	4
L	\$110.00	PayPal	Standard	7	13
M	\$175.00	Wire transfer	Standard	12	7
N	\$150.00	Wire transfer	Standard	12	4
O	\$86.74	Mastercard	Express	8	10

P	\$35.00	PayPal	Standard	5	4
Q	\$331.00	Western Union	Standard	No product received	
R	\$351.00	Western Union	Express	No product received	

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Table 3. Package damage and active ingredient content of products received

ID	Package damage	Mifepristone (mg/pill)	Misoprostol (mcg/pill)
A	No	192.9	201.4
B	No	184.3	201.2
C	No	188.5	187.7
D	No	194.2	184.0
E	No	187.0	175.2
F-1	No	201.5	196.0
F-2	No	201.2	174.8
G-1	No	204.1	165.9
G-2	No	195.7	164.2
H	No	189.7	159.5
I	Pinprick in each blister	199.3	120.8
J-1	Pinprick in each blister	197.7	123.1
J-2	Pinprick in each blister	198.3	112.2
K-1	Pinprick in each blister	201.0	87.5
K-2	Pinprick in each blister	200.0	85.2
L	Pinprick in each blister	201.4	84.2
M	Pinprick in each blister	201.0	75.1
N	Pinprick in each blister	201.3	34.1
O	Extensive damage*	n/a	173.9
P	No	n/a	199.9

*Packed was smashed, 11 of the 20 blisters were open, 3 of the tablets were broken into multiple pieces

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