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Short communication

Using telemedicine for termination of pregnancy with mifepristone and misoprostol in settings where there is no access to safe services

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Women on Web is a service that uses telemedicine to help women access mifepristone and misoprostol in countries with no safe care for termination of pregnancy (TOP). This study reviews the telemedicine service. After an online consultation, women with an unwanted pregnancy of up to 9 weeks are referred to a doctor. If there are no contraindications, a medical TOP is conducted by mail. After maximising the follow up from 54.8 to 77.6%, 12.6% decided not to do the TOP and 6.8% of the women who did the medical TOP at home needed a vacuum aspiration. Telemedicine can provide an alternative to unsafe TOP. Outcomes of care are in the same range as TOP provided in outpatient settings.

Keywords Abortion, buccal misoprostol, e-health, home-use, mifepristone, self-administration, telemedicine.

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Introduction

It is well documented that without access to safe services, women risk their health and lives to obtain clandestine abortions from unqualified persons in unhygienic conditions. Each year, 19 million women experience an unsafe abortion and 68 000 women die from its complications. The death rate from unsafe termination of pregnancy (TOP) is 367 per 100 000.[1]

In Europe, more than 1.5 million women have terminated their pregnancies with mifepristone and misoprostol. Medical TOP is proven to be safe and effective, with few serious complications and success rates of 95–98%.[2] Mifepristone and misoprostol have been on the list of essential medicines of the World Health Organization since 2005, but in many countries, these medicines are still not available.[2]

Women on Web (WoW, www.womenonweb.org) help women to access medical TOP up to 9 weeks of pregnancy in countries where there are no safe TOP services. The WoW website is owned by Women on Web international, a non-profit foundation, whose goal is to support women's access to safe medical TOP, especially for those in need, and to provide related educational information, thus benefiting women's reproductive health.

The WoW website went online in April 2006 and is available in five languages (English, Spanish, Portuguese, French and Polish). One section called 'I had an abortion' invites people to upload their photograph and share their experiences. The goal is to break the taboo and stigma surrounding TOP and simultaneously support women facing the decision to have a TOP. Another section called 'I need an abortion' offers a medical consultation through an interactive web-based questionnaire. Women's responses to the online consultation are referred to a doctor. If there are no medical contraindications found, a woman can receive a package containing mifepristone, misoprostol, and a pregnancy test, which will be delivered by courier or by mail to her home address. WoW only refers women less than 9 weeks pregnant who live in countries without access to safe TOP. The users of the website are asked to make a minimum donation of 70 euro. At the end of the consultation, a woman can request sponsorship if she does not have the financial means to make a donation herself. All the requests are honoured, and approximately 10–15% of the women who cannot make the donation receive a medical TOP free of cost.

The aim of the study was to review women's reports of the telecommunication service and the consequences experienced

through self-administration of mifepristone and misoprostol for early TOP.

Methods

Data in this study are obtained from the interactive web-based questionnaire, follow-up forms, emails, and telephone calls. The interactive questionnaire contains 30 questions to determine the woman's situation and provides information about the medical TOP and possible alternatives. Contraindications and risk factors for potential complications are also identified. Women are advised to have an ultrasound to confirm the gestation and to exclude an ectopic pregnancy. During the online consultation and in subsequent emails, the women are informed about complications, circumstances when they should seek additional medical assistance, what to do in case of a continuing pregnancy, and future contraceptive options. Responses to the questionnaire are reviewed by a doctor. If necessary, additional questions or advice is given by email or telephone. A helpdesk in the five languages of the website answers emails 7 days a week.

A medical TOP is not provided if the woman:

- is being forced to end her pregnancy;
- is more than 9 weeks pregnant;
- has an allergy to mifepristone, misoprostol, or prostaglandins;
- has chronic adrenal failure, haemorrhagic or bleeding disorders, inherited porphyrias, severe anaemia, or severe untreatable asthma;
- has a proven ectopic pregnancy;
- has an intrauterine device *in situ*;
- cannot get to a hospital or first aid centre within an hour;
- has nobody to help her during the abortion process.

The medication consists of 200 mg oral mifepristone, followed by 800 micrograms of misoprostol bucally 24 hours later, and again 400 micrograms misoprostol bucally 4 hours later. Women are advised to have an ultrasound 10 days after the medical TOP or a pregnancy test after 3 weeks. In case of complications, women are advised to seek care from a doctor or a nearby hospital. WoW informs the women that they can present themselves as having a miscarriage if they live in a country where they might face prosecution if admitting to having a TOP. In cases of continuing pregnancy, a new package of medication is sent.

Five weeks after delivery of the package, an email is sent containing a follow-up form enquiring about the outcome of the procedure, any complications, method acceptability (how the woman feels about obtaining the TOP through internet and doing it at home), and contraceptive use.

Data are recorded using AWStats (advanced web-server statistics). The number of help requests, referrals, and completed follow-up forms are registered in a specially designed software program. All information on the web server is protected with passwords and a Secure Sockets Layer, a protocol developed for transmitting private information over the internet. All women consent to the anonymous evaluation of data is collected. In the online consultation, women agree with a 'terms of use' which states that follow-up communications will be made and that the information provided can be used (anonymously) for statistical analyses and for publication purposes. The online nature of the consultation does not allow written signatures to be provided.

All email consultations and follow-up forms from April to December 2006 were included in this study. To increase the amount of follow-up information, an additional survey was performed on all the women who received a medical TOP in the month of January 2007 only. For this month, women who did not return the follow-up form were actively contacted by phone. Statistical evaluation of the difference between groups was performed using the chi-square test.

Results

In the period April to December 2006, medical TOPs were delivered to the home addresses of 484 women from 33 different countries.

Of the 484 women, 387 (80.0%) were less than 7 weeks pregnant and 97 (20.0%) were between 7 and 9 weeks. In 382 women (78.9%), the gestational age was confirmed by ultrasound. The mean age was 27 years (range 15–46 years) and 39 (8.1%) of the women were teenagers. Two hundred and twenty-seven (46.9%) women were nulliparous and 6 (1.2%) women reported an unwanted pregnancy as a result of rape.

Two hundred and sixty-five (54.8%) of the 484 women provided follow-up information through the routine follow-up form or by email correspondence. Sixteen of these 265 (6.0%) women reported that they had decided not to use the medication. Of the remaining 249 women who did the medical TOP at home, 13.6% reported undergoing a curettage/vacuum aspiration for an incomplete miscarriage or for excessive bleeding. About 0.8% of women used antibiotics for an infection and 1.6% reported a continuing pregnancy (Table 1). Two of these women might have made a mistake while filling in the form online. Unlike the other women, these women did not contact the helpdesk again with a request for further support nor did they search for help from a doctor. One of them even indicated that she started using the contraceptive pill. The two others with continuing pregnancies successfully ended their pregnancy; one used misoprostol alone and the other used another package from WoW.

One hundred and ninety-four (77.9%) of the 249 women who used the medication answered questions about their subjective experience as part of the follow up. Of these, 113 (58.2%) were just grateful to be able to have the medical TOP, 60 (30.9%) felt stressed but found the experience acceptable, 19 (9.8%) had no specific feeling, and 2 (1.0%) answered that if they had known before how stressful it would

Table 1. Outcome of medical TOP by telemedicine

	April–December 2006	January 2007
Used the medication (*n*)	249	118
Curettage/vacuum aspiration for incomplete miscarriage, *n* (%)	29 (11.6)	8 (6.8)
Curettage/vacuum aspiration for severe bleeding, *n* (%)	5 (2.0)	0
Continuing pregnancy, *n* (%)	4 (1.6)	0
Antibiotic treatment, *n* (%)	2 (0.8)	3 (2.5)

be, they would never have performed it themselves. Some women posted their experience on the 'I had an abortion' section of the website.

A separate analysis was conducted on 174 women who received a package in January 2007 to see if more could be found out about women lost to follow up. Initially, 100 (57.5%) women returned a follow-up form or email and 35 women were contacted by telephone. In total, a follow-up rate of 77.6% was reached. Of the 135 women followed up, 12.6% decided not to use the medication, more than 6.0% in the group of 2006 ($P = 0.04$). Of the remaining 118 women who had a medical TOP, 6.8% had a curettage/vacuum aspiration for an incomplete miscarriage, not a significant difference from the 13.6% in the 2006 group ($P = 0.081$). About 2.5% of women received antibiotics. No excessive bleeding or continuing pregnancies were reported.

In January 2007, a total of 844 emails were answered by the helpdesk. No women from either group reported any serious complication.

Discussion

Like other safe TOP services, WoW provides information and support to the women who decide to undergo this procedure. Screening for contraindications on the internet is very similar to the screening process at a face-to-face visit. The doctor finds about the woman's circumstances by asking questions and relies on honest answers from women. It is acknowledged that this assumption of truthful responses can have important medical and social consequences, including issues of gestational age, coercion to end the pregnancy, distance to a hospital in the event of complications, and degree of social support. The specific medical conditions listed as contraindications to home-based medical TOP are generally known by the woman. Anaemia cannot be assessed in the internet consultation but is not considered an absolute contraindication. Haemoglobin testing is not considered mandatory.[3,4] Allergic reactions to mifepristone or prostaglandins occur very rarely and will be recognised by the woman.

The main difference in the WoW service lies in a doctor not confirming gestational age by physical examination and the risk that women will underreport their gestational age to access help. For this reason, the WoW website provides warnings about an increased risk of complications with longer gestation. During the online consultation, women are also advised to have an ultrasound to establish the duration of the pregnancy and to exclude the possibility of an ectopic pregnancy, although review of the evidence suggests that ultrasound scanning is not necessary for early medical abortion.[3]

Nine of ten women are able to estimate their gestation based on their last menstrual period accurately enough to use mifepristone and misoprostol on their own.[4] A women's own estimate of pregnancy duration has been shown to be approximately 19 days less than ultrasound estimates.[4] For this reason, women are instructed to estimate the duration of their pregnancy based on the first day of their last menstruation. If a woman mistakes her dates or if she chooses consciously to provide a shorter duration of amenorrhoea than her real one and has a pregnancy of more than 9 weeks, a medical TOP is still safe and effective through to the late first trimester. Medical TOP is also successfully used during the second trimester[2] and may even be the best option for women with a gestation of more than 9 weeks, who live in countries where no safe services are available.

The determination of blood group and Rhesus status are not considered prerequisites for early medical TOP.[2,3]

Home use of misoprostol is now standard in the USA. In several European countries like Sweden, Austria, France and the Netherlands, it is increasingly used. The regimens involve women taking mifepristone at the clinic and then misoprostol later at home. Mifepristone has very few adverse effects. Misoprostol is a prostaglandin E1 analogue that will induce uterine contractions and bleeding.[2] Studies have shown that the majority of women prefer home use. In a Swedish study, 99% of women stated that they would have preferred to take mifepristone at home.[5] Ninety-nine percent of the women who gave feedback to WoW found it acceptable to do a medical TOP at home.

When used vaginally, misoprostol can take 4 days to dissolve. If remains of the tablets are found, this can be used to prove that the TOP was purposefully induced, for which women can be prosecuted in some countries. When used buccally, no remaining tablets can be found in the event that a woman needs to go to a hospital. Buccal administration of misoprostol after mifepristone for medical TOP is shown to be effective and acceptable when compared with vaginal administration. Although more nausea is reported in women using misoprostol buccally, there are no differences in satisfaction with the overall procedure. Uterine tone and activity are similar for buccal and vaginal use.[2] The repeated dose of misoprostol increases efficacy.[2]

Some studies suggest that routine follow-up visits to a clinic after a medical TOP may be unnecessary. Women in both

developing and more developed countries can manage the effects of a TOP on their own, provided they have information and access to medical care in case of an emergency.[3,6]

In this study, 54.8% of the women spontaneously provided follow-up information. This is comparable with the 50% general follow-up rate reported in other studies.[6] Little is known about the women who decline follow up. A Canadian study found several factors associated with failure to attend the follow-up visit, including young age, smoking, previous induced abortion, and advanced gestational age at the time of the procedure.[5]

The low follow-up rate in the 2006 group presents the possibility that a number of complications went undetected or that women without complications did not respond to the follow up. Even after actively contacting women who had not filled in the evaluation form in the second part of the study, 22.4% of the women were lost to follow up. In another study performed in an outpatient setting, 21% of the women were lost to follow up.[7]

The 6.8% curettage/vacuum aspiration rate for incomplete TOP in the January 2007 group is comparable with the 6.2 and 8% curettage/vacuum aspiration rate reported by studies in France and Denmark in outpatient settings.[7,8] Ideally, medical TOP should have a vacuum aspiration rate of less than 5% and a continuing pregnancy rate of less than 1%.[3] Like ours, these studies in outpatient settings have a lower follow-up rate combined with higher vacuum aspiration rate. One explanation is that women who experience problems after the TOP come for follow-up visits or fill in follow-up forms, while women who had no problems or did not use the medication do not.

Women in our study group were advised to obtain an ultrasound scan after 10 days by indicating that they had experienced a miscarriage. Diagnosis of miscarriage in a lot of countries is still traditionally followed by surgical curettage, on the assumption that this decreases the risk of subsequent gynaecological infection. However, there is increasing awareness that surgical intervention is not needed for prolonged bleeding or small amounts of retained tissue in the uterus if the woman is well.[3] Another explanation for the higher vacuum aspiration rate is that some of these interventions might not have been needed had the women been treated in accordance with the latest scientific insights.

In total, 1.1% (4 in total of 367 women who used the medication) of the women reported a continuing pregnancy. This is comparable with the continuing pregnancy rates after use of mifepristone and vaginal misoprostol reported in the literature.[2,3]

The findings of this study are reliant on self-reporting and therefore prone to potential inaccuracies, such as incorrect pregnancy duration or the reason for a vacuum aspiration or curettage. Although the conclusions drawn are possibly limited in this way, as well as by a relatively low response rate, whether or not complications occur is a question that will not be influenced by the mode of reporting. The proportion of vacuum aspiration or curettage procedures performed did not increase with improved follow up and tended even to be lower, suggesting that no more complications occurred in the women lost to follow up. Finally, significantly more women not using the medical TOP were found in the group with the higher follow-up rate, suggesting that women who decided not to use the medicines are another group easily lost to follow up in this telemedicine service.

Legal situation

Customs regulations in most countries around the world allow small quantities of medicines for personal use to be sent. Mifepristone and misoprostol are not narcotics (like morphine or cocaine) or pleasure drugs (like ecstasy) nor are they contraband or controlled substances. Although mifepristone or misoprostol might not be registered in some countries, it is not illegal to import them for personal use. Misoprostol can be used to reduce the risk of ulcers induced by nonsteroidal anti-inflammatory drugs for induction of labour and to control postpartum haemorrhage. Mifepristone is also used as the 'morning-after' pill and has shown to be effective in the treatment of large, inoperable meningiomas, leiomyoma and Cushing's syndrome.

Conclusions

This study of TOP provided through telemedicine shows that outcomes of the procedure are comparable with the results reported in other studies on medical TOP in outpatient settings. The study relies on self-reporting and has an incomplete response rate, so there are limitations to interpretation of the results. However, women seem capable of self-administering mifepristone and misoprostol at home without a doctor physically visiting them, provided proper information and instructions are given. This can be performed through the internet, with standard information and with additional interactive online consultation and email correspondence.

As long as there are countries where there is no access to safe TOP, the provision of medical TOP and information through the internet allows women the option to self-administer mifepristone and misoprostol and is a good alternative to other traditional procedures. This type of service can contribute to diminishing maternal mortality and morbidity from unsafe TOP.

Conflict of interests and contribution to authorship

Authors are responsible for recognising and disclosing any duality of interest that could be perceived to bias their work, acknowledging all financial support, and any other personal connections. R.J.G. participated in the writing, data analysis

and research, and approved the final version. She is the chief executive of the Women on Waves Foundation, the organisation that initiated WoW and was paid a fee as a consultant for WoW. S.D. participated in processing the data and approved the final version of the manuscript. She is a translator for WoW. K.J. participated in processing the data and approved the final version of the manuscript. She is an employee of Women's Wallet, the nonprofit organisation that provides financial and administrative support to WoW and a translator for WoW. K.G.-D. participated in the editing, the statistical analyses and approved the final version of the manuscript. G.K. participated in the editing and research and approved the final version of the manuscript. She is an unpaid member of the board of the Women on Waves Foundation, the organisation that initiated WoW.

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Details of ethics approval

No formal ethical approval was sought because this is a quality control and description/evaluation of the services provided by WoW. In the online consultation, all women consent to the use of the data for publication purposes.

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Editor's Commentary

Health care *in absentia* has been documented since the time of Galen, the ancient Greek physician. In spite of this long history and over two decades of the internet, the use of telemedicine to provide health services is still viewed with reservations (Wootton, *BMJ* 2001;323:557–60). The use of chemical substances to terminate pregnancies dates back even further, to ancient Egyptian times. Misoprostol and mifepristone have been found to be safe and efficacious drugs which have revolutionised first trimester termination of pregnancy (TOP) (Kulier *et al.*, *Cochrane Database Syst Rev* 2004: CD002855). Home-based medical TOP, with one or more face-to-face clinical consultations, is today well documented and preferred by women in developed and developing country settings (Ngoc *et al.*, *BJOG* 2004;111:814–819; Fiala C *et al.*, *Contraception* 2004;70:387–392).

These advances in medical TOP and telemedicine are brought together, provokingly, in the article by Gomperts *et al.*, *BJOG* 2008;115:1171–8; They appraise the experience of an organisation involved in providing worldwide medical TOP services to women through telemedicine, targeting countries where there are no safe services. Success rates of over 80% are presented but follow-up rates are not high. The data are self-reported in two ways – responses are sourced from women using the service and the study is conducted by the service providers themselves. The evidence provided in the study relating to women's knowledge of pre-existing medical conditions, clinical safety or psychological coping mechanisms is not sufficient to come to any conclusions regarding quality or safety aspects. From a clinical perspective, the most contentious

aspect of this service is that it does not involve a physical examination of the woman to confirm gestational age by the TOP provider. Women are known to under-report their gestational age. The risks of incomplete miscarriage, untreated infection and even uterine rupture in the third trimester through inappropriate use of mifepristone and misoprostol. Availability of backup care is another important consideration and it is unknown if women's reports of access in the event of an emergency are reliable.

It is however less the scientific merit of this paper than the means by which the TOP is provided that makes it so controversial. Aside from ethical and legal considerations, the availability of medical TOP via telemedicine also raises questions of equity. Although the internet allows national and other boundaries or restrictions to be surmounted, illiteracy, lack of internet access and fear of incurring unaffordable expenditure (for the service itself or as a consequence of complications) make telemedicine inaccessible for the poor and disadvantaged.

These concerns have to be balanced with the possibility that telemedicine services could be one step towards giving women more autonomy over their health care, while also leading to fewer unsafe TOPs. Every year, 42 million pregnancies are voluntarily terminated, more than half of these in settings where TOP is not legal. In developing countries, 70 000 women die annually as a consequence of unsafe TOP. Case fatality rates are as high as 750 per 100 000 unsafe procedures in sub-Saharan Africa. The incidence of unsafe TOP may be increasing, especially in Africa and the Caribbean, and remains high in parts of Asia and Latin America (WHO 2007, Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003). TOP by telemedicine is likely already to be contributing to changing this situation, bringing with it new hazards but also new opportunities for women's health care. Existence of this service also draws attention to the intermingling of evidence, technology, ethics, rights, politics and law, none of which can be ignored in the practice of medicine today. Other commentaries in this series pick up on and describe some of the ethical, rights and legal issues raised by the availability of TOP by telemedicine. ■

J Hussein

Commentary on 'Using telemedicine for termination of pregnancy with mifepristone and misoprostol in settings where there is no access to safe services'. A legal viewpoint

In most countries the law criminalises termination of pregnancy (TOP) unless certain formalities are observed. It seems likely that most women who use the service provided by Women on Web will commit an offence in their own country and that this may have significant consequences for them if they are found out. Whether anyone else will be at similar risk must depend on the details of the law in the country where they are at the time.

As far as the prescriber is concerned, the position is complicated. I cannot comment on whether they would be at risk of an application for extradition from the country where the woman seeking the TOP lives: it will depend upon the extradition agreements between the countries in question. They might well be at risk if they ever again visited that country.

If the prescribers were in England or Wales, they would potentially fall foul of section 59 of the Offences against the Person Act 1861 which states:

> Whoever shall unlawfully supply or procure any poison or other noxious thing….knowing that the same is intended to be unlawfully used or employed with intent to procure the miscarriage of any woman, whether or not she be with child, shall be guilty of a misdemeanour and being convicted thereof shall be liable to be kept in penal servitude.

'Unlawfully' in this context is usually taken to mean that the specific requirements of the Abortion Act 1967 have not been observed. However, it will be noted that the word unlawfully appears twice and both references must be satisfied. The first unlawfulness relates to the supply and it seems clear that it will be unlawful to supply an agent to induce TOP to a woman anywhere, if the provisions of the Act are not observed. Generally speaking, the doctor will be deemed to have supplied the substance when he or she parts with possession, presumably when the medication is sent to the woman.

The doctor must also know that the drug is intended to be used unlawfully. Will that also be satisfied by the fact that the Abortion Act provisions have not been observed? Possibly not, because the Act does not seek to regulate events overseas. However, it might, since the Act is intended to regulate what the doctor the UK. It might well be found that the offence was complete when the doctor supplies the drugs to the woman, intending her to take them in circumstances that would be unlawful in this country.

An alternative interpretation might say that the second time the word unlawfully is used in section 59, it refers to the law of the country where the woman is to take the drug, but the distinction is probably academic. It seems likely that both interpretations would be satisfied in most cases. If the local law permits the supply of these agents for this purpose, it seems unlikely that the women would resort to this means of supply.

The fact that the drugs have alternative uses that do not involve TOP would not provide a defence if the elements of section 59 were satisfied, that is if the intention were to procure TOP.

If I were advising an English doctor who was tempted to get involved in this practice, I would also be concerned about their position in regulatory law. The oddity of the relationship between the criminal law and the General Medical Council (GMC) is well illustrated by the fact that in 1966 a doctor who performed a TOP would offend the criminal law and be liable to be struck off for having breached the Oath of Hippocrates. For no very obvious reason, the professional code was amended at a stroke by a change in the general criminal law. There was little or no debate within the profession to the effect that the GMC should continue to enforce the professional code, even in those parts of the country where influential doctors were able to delay the local implementation of a TOP service on the basis of their own religious objections. The logic was that the GMC should not seek to frustrate a duly enacted change in the law by preventing doctors from playing the role allotted to them.

However, it does not necessarily follow that the GMC would take a benign view of doctors who embarked on a programme of breaking the law in other countries. These things are normative, by which I mean that the fallacy that leads people to confuse that which is, with that which should be, makes the law that prevailed within living memory now seem wrong as well as anachronistic. If the procedure is regarded as relatively safe in the conditions in which it is undertaken, the GMC might be persuaded not to arraign the doctor, unless it were in the wake of a successful criminal prosecution. But the logic of that position is not beyond doubt, and when something does go disastrously wrong the GMC is capable of construing misfortune as misconduct. ■

B Leigh

Commentary on 'Using telemedicine for termination of pregnancy with mifepristone and misoprostol in settings where there is no access to safe services'. A perspective from reproductive rights advocates

Morbidity and mortality from unsafe termination of pregnancies (TOPs) in many developing countries is largely due to desperate women forced by their poverty and powerlessness to turn to the nearest, low-cost and most often, unsafe services. This is true irrespective of the legal status of TOP in a country. The very same factors that deny some women access to safe TOP services are likely to also prevent their access to internet services.

Internet penetration rates in 2007 varied from 15% in Latin America and the Caribbean, 10% in Asia and the Middle East to less than 3% in Africa. Accessing TOP from Women on Web (WOW) calls for prolonged use of internet services within a setting that assures privacy. This is likely to prevent access to a large majority of users of public internet services. In India, for example, 60% of internet users use a public terminal. Given the well-known differentials in access to and use of internet services by income, education and gender, a very small proportion of middle and high income, educated and employed urban women will be able to access WOW's telemedicine services (World Internet Usage Statistics and Population Statistics http://www.readwriteweb.com/archives/world_Internet_penetration_sept06.php).

Furthermore, the request for donation of 70 Euros for receiving mifepristone and misoprostol and the requirement that women undergo ultrasound screening to ascertain duration of pregnancy and rule out ectopic pregnancy makes WOW's services expensive for most women from developing countries.

Apart from issues of access, WOW's paper does not give sufficient information to assure the reader that self-administration of medical TOP with only web-based advice and guidance is safe and can be advocated for. It is not clear how many women are able to understand the terms used to indicate health conditions such as chronic adrenal failure or inherited porphyrias, and therefore answer the web-based questionnaire accurately. Also, certain health conditions that a clinician may be able to assess based on clinical examination may be missed because there is no contact with a physician. In WOW's study, more than 8% of users were teenagers. Studies have documented that adolescents' capacity for denial limits

their ability to recognize that they are pregnant (Senderowitz, *Law Med Health Care* 1992;20:209–214; Sowmini CV. Delay in seeking care and health outcomes for young abortion seekers. Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. Research report from the Small Grants Programme on Gender and Social Issues in Reproductive Health Research, 2005 www.sctimst.ac.in/amchss/publications/report/summary_small.html) making self-assessment of gestation unreliable in this group.

The other major concern is the absence of counselling. WOW's study showed that more than 30% of women were stressed. In contrast with a surgical procedure, medical TOP with mifepristone and misoprostol extends over several days and is experienced in a fully conscious state in which the woman needs to actively participate. Information on what the women were stressed about is missing from the paper and could have helped strengthen the service.

The terms of use of medical TOP services through telemedicine holds the user solely responsible for any violation of law and its consequences (Terms of use: General conditions for the use of the Women on Web website and service. www.womenonweb.org/article-953-en.html). Many women using telemedicine for medical TOP services may not be aware of whether or not the law of their country or state permits importation of the medication and/or the use of medical TOP. For example, in India, TOP services can be legally obtained from physicians who have been trained. However, a woman who self-induces TOP falls within the purview of a criminal law (Section 312 of the Indian Penal Code) and can be punished with imprisonment of 3–7 years, a fine, or both (Campaign Against Sex Selective Abortion. Review of medical termination of pregnancy act in the context of women's right to safe abortion and halting sex selective abortion. Paper circulated by during the State-level Workshop and State-level Round Table Discussion on "Review of MTP Act 1971 in the context of Women's Right to Safe Abortion and Halting Sex Selective Abortion, Chennai, 17–18 August 2007). Provision of medical TOP services to those who are legal minors poses another set of legal issues for providers.

It seems to us that in countries like India, WOW's telemedicine services may be best used by healthcare providers with limited experience or limited access to drugs. A study in Tamil Nadu, South India, showed that many physicians providing medical TOP services were using the wrong dosages, and also that they were not very sure about when to intervene if the expulsion process took longer than expected (Ramachandar and Pelto, Reproductive Health Matters 2005;13:54–64). Such providers could benefit a great deal from expert advice and the virtual hand-holding offered by WOW.

The imaginative use of cyberspace to break through legal and religious barriers is a step forward in women's struggle for reproductive autonomy. From the perspective of advocates for sexual and reproductive rights, however, we feel that more could be performed to document TOP experiences of women without easy access to such services. We also call for a more modest and judicious interpretation of WOWs results due to its limited data set. ■

TKS Ravindran and MR Nair

