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Commentary

Better than nothing or savvy risk-reduction practice? The importance of withdrawal

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Withdrawal is sometimes referred to as the contraceptive method that is "better than nothing" [1]. But, based on the evidence, it might more aptly be referred to as a method that is almost as effective as the male condom — at least when it comes to pregnancy prevention. If the male partner withdraws before ejaculation every time a couple has vaginal intercourse, about 4% of couples will become pregnant over the course of a year [2]. However, more realistic estimates of typical use indicate that about 18% of couples will become pregnant in a year using withdrawal [3]. These rates are only slightly less effective than male condoms, which have perfect- and typical-use failure rates of 2% and 17%[1], respectively [2,3].

In this commentary, we consider the causes and consequences of the family planning field's lack of enthusiasm for withdrawal use despite its comparative effectiveness. After reviewing new data on the prevalence and practice(s) of withdrawal, we outline possible ways to improve measurement and understanding of withdrawal use and how to discuss it with contraceptive clients.

1. What (little) we know about withdrawal

In their 1995 review of the literature on withdrawal, Rogow and Horowitz [4] suggested a 26-point agenda for future research on withdrawal while noting the dearth of research on this method. Despite its role in the European fertility decline and relatively high levels of use, acceptability and effectiveness, most studies of withdrawal since that time have been small in scale (e.g., married Turkish men [5]) or have focused on specific populations (e.g., Israeli Jews [6] or Chinese Canadians obtaining abortions [7]). Rogow and Horowitz attributed the lack of interest in withdrawal to a preference for modern methods (see also [8,9]) and the strongly held belief that preejaculate fluid contains sperm, despite the lack of supporting evidence [10–12]. A focus on both female-controlled methods and methods that prevent both pregnancy and HIV has also contributed to this paucity of research.

The lack of attention to withdrawal contributes to several measurement challenges. First, use of withdrawal may be underreported because respondents do not consider it a "method" [13]. One study found that only three of 62 Turkish factory workers reported on a questionnaire that they used withdrawal. However, in face-to-face interviews, an additional 17 reported current use of this method, either alone or in combination with other methods [14]. In large surveys such as the National Survey of Family Growth (NSFG), when respondents report use of both withdrawal and another more effective method during the same time period, researchers generally categorize the woman as using the more effective method [15], which can lead researchers to underestimate withdrawal use even when it is reported.

Withdrawal is especially likely to be used in combination with other coital-dependent methods. Gray et al. [16] compared reports of contraceptive method use within married couples in Bangladesh. Modern methods such as the pill usually resulted in concordant reporting within

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[1] Notably, the typical-use failure rate for withdrawal is more variable, ranging from 14% to 24%, compared to a confidence interval of 15–21% for condoms.

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couples, but discordant reports were common among couples who relied on coital-dependent methods (usually condoms, withdrawal, and rhythm). Closer examination revealed that the latter methods were often used in varying combinations, sometimes simultaneously and sometimes consecutively. The authors concluded that "these (coital-dependent) methods are so often used in combination, that combination is really the method being used" [16]. This "doubling up" or sequencing can be difficult to capture on survey instruments; as a result, use estimates for coital-dependent methods can be inconsistent and unreliable.

2. New qualitative and quantitative insights

Published reports from the NSFG, a nationally representative sample of women aged 15–44 years, show that ever use of withdrawal increased from 41% in 1995 to 56% in 2002 [15]. Our own review of the NSFG data on current method use revealed that a much smaller proportion of women at risk of pregnancy — only 5% — report *current* use of this method[2]. While a majority of women have relied on this method at least once in their life, it would appear that only a small subset are using it at a given point in time. However, the 5% figure is artificially low. The NSFG obtained information on current use by asking respondents to choose up to four methods (from a list of 20+) used in the month of interest, and survey administrators gave priority to the most effective method. We examined the more detailed contraceptive use data and found that including women who reported using withdrawal *and* another method more than doubled the proportion, from 5% to 11%. Thirty-one percent of women who reported current use of withdrawal also reported current condom use, 19% reported using withdrawal in conjunction with a hormonal method, and 5% with rhythm or natural family planning.

A more informal study of US women also provides some evidence that withdrawal use may be even more common among some populations. The Women's Well-being and Sexuality Study (WWSS) is a relatively small, online survey conducted by researchers at the Kinsey Institute for Research in Sex, Gender, and Reproduction [17]. The online format attracted a sample of relatively young (mean age, 25 years), well-educated women.

We restricted our analysis to women in the WWSS sample who had engaged in sexual activity with a man in the last 4 weeks, were not infertile and who reported they were not trying to get pregnant (N=361). Unlike the NSFG current use items, the WWSS sample was asked about each contraceptive method individually, as in, "Did you use *x method* in the last 4 weeks? Yes or no?" More than one (21%) in five women reported withdrawal use in the past 4 weeks. Very few women reported use of either withdrawal or condoms alone. The majority of withdrawal users (68%) reported using male condoms in the last month, and 42% of condom users also reported using withdrawal.

Our analysis suggests not only that withdrawal use was relatively common among this group of younger US women but also that condoms and withdrawal were often used together. Indeed, very few women from WWSS (6%) used male condoms and no other method in the last month. In line with the findings of Gray et al. [16], we believe the combination of condom use, withdrawal use and other methods (e.g., rhythm) may be a strategy adopted by a number of couples who use coitus-dependent contraception.

Qualitative data from two studies, conducted independently by two of the authors of this commentary, help illustrate some of the contextual issues related to withdrawal use. Neither of the studies specifically sought information on withdrawal; respondents mentioned it spontaneously, often in response to probes about "unprotected sex" during in-depth interviews. Some respondents reported relying on withdrawal as their primary method of birth control, but most men and women described using withdrawal as a backup method, used simultaneously with condoms or hormonal methods. In one study, 30 heterosexual couples (60 individuals) in married, cohabiting, and dating relationships residing on the East Coast of the United States were interviewed separately about their experiences with contraception and contraceptive decision making. Couples were eligible to participate if the woman was between 18 and 30 years old, and respondents were primarily white and well educated. Most respondents did not mention withdrawal when asked what they thought of when they heard the terms *birth control* and *contraception*, and their discussions of withdrawal generally suggested that they did not think of it as a contraceptive. Yet, one third of the respondents (21/60) spontaneously mentioned use of withdrawal with their current or previous partner. For example, when asked what form of birth control she and her partner were using, one woman said, "We're not." She went on to explain that, "sometimes we use condoms. But for the most part, just the withdrawal method. Which I know is, like, the worst thing." Another respondent indicated that he and other people may understand withdrawal as a "practice" rather than a method of birth control or contraception, explaining that while he did not always use a "physical form of birth control," he would always at least engage in "you know, a practice" (i.e., withdrawal). This interviewee, and other individuals like him, might not report withdrawal use on surveys in response to questions about their current or past *contraceptive* use.

Over half of these respondents reported problems with condoms including reduced sexual pleasure, inconvenience, and difficulty using them. Withdrawal, on the other hand, was viewed as accessible and easy to use. As one woman explained, "Withdrawal is a great form of birth control. You can still keep going, you can still have sex, it doesn't smell bad, [and] it doesn't have chemicals in it."

[2] We define women at risk of pregnancy as those who are fertile and who had had vaginal intercourse in the 3 months prior to the survey.

Participants shared similar sentiments in a second qualitative study, which involved in-depth sexual history interviews with 24 women and 12 men, aged 18–50, in Atlanta, GA [18–20]. As in the study above, respondents were reluctant to consider withdrawal a contraceptive method. One respondent recalled her first experience of vaginal sex as a teenager: "No, we didn't use anything. No, wait a minute. He pulled out. I was so scared about pregnancy that I made him pull out. I can't believe we didn't use anything, but I guess withdrawal was better than nothing." One woman, who often exchanged sex for drugs or money, said she hated condoms, rarely used them, but sometimes asked her partners to pull out "just for some small amount of protection." A male participant who described several periods of inconsistent contraceptive use, said, "I like pulling out in some ways—I see the yield. At least it's *some* half-assed effort."

Other respondents reported using withdrawal in addition to other methods to increase protection. These respondents tended to eroticize safety, or *de*-eroticize risk; they were unable to fully enjoy sex unless protected against pregnancy and/or HIV/sexually transmitted infection (STI) risk, sometimes with two or even three methods. For example, one woman pill user sometimes asked her partner to pull out before ejaculating, especially during what she perceived to be the more fertile time of her cycle (i.e., around the time she might ovulate if not on the pill). "[Withdrawal] gives me an additional sense of safety," she reported. "There are no little sperms inside me."

The qualitative information reported above would often not appear in quantitative surveys such as the NSFG. Some women and men who practice *only* withdrawal do not consider it a contraceptive method and may not report it on surveys. Individuals using withdrawal as backup to a hormonal method or condoms are less likely to report their withdrawal use, as they may perceive their other method as their "real" one.

3. Implications

Based on the research described above, we expect that results from some studies underestimate the use of withdrawal. It is unclear what impact, if any, the likely mismeasurement of withdrawal might have on estimates of typical-use failure rates for withdrawal and, perhaps, condoms. This depends in part on the frequency and type of measurement error—for example, whether it is more common to mismeasure use of withdrawal as a primary or as a "backup" method.

In order to better understand the role of withdrawal as a contraceptive method and to accurately estimate failure rates, we need better information about how it is used. Clearer questions on surveys such as the NSFG would ensure more accurate data. For instance, rather than asking respondents to choose from a list of contraceptive methods, researchers could probe about use of withdrawal (and, perhaps, other coitally dependent methods) for each time period under investigation (e.g., "And did you use withdrawal during that month?" or "And can you tell me which months in that year you used withdrawal?"). It is likely that many couples use withdrawal inconsistently, or in combination with other methods, and asking questions such as, "When you and your partner have vaginal intercourse, about how often does/do he/you "pull out" or "withdraw" before ejaculating?" would help further clarify people's practices with this method. We expect that some couples rely on condoms during the woman's perceived fertile period and withdrawal during her perceived "safe" period, suggesting a sort of "triple" method use over the course of a month — condoms, withdrawal and some variant of calendar/rhythm. A more detailed understanding of how women and men combine methods could be garnered through in-depth interviews and creative sexual and method use histories.

Withdrawal may be an effective backup method for couples who have difficulties using other contraceptives, including women who have trouble taking pills regularly and couples who irregularly use condoms. It is unfortunate that some couples do not realize they are substantially reducing their risk of pregnancy when using withdrawal, as these misperceptions may cause unnecessary levels of anxiety. More speculatively, if more people realized that correct and consistent use of withdrawal substantially reduced the risk of pregnancy, they might use it more effectively.

Both couples and clinicians could be well served in approaching withdrawal as part of a larger risk reduction strategy in which couples intermittently employ a variety of pregnancy prevention techniques. Parallel HIV risk reduction approaches have been controversial but successful among some populations of men who have sex with men. Encouraging sexually active women and men to reduce their risk through a number of different mechanisms could be a much more realistic and effective approach than insisting upon correct and consistent condom use during every sexual encounter.

To some extent, our insights and recommendations about withdrawal simply restate and update the work of Rogow and Horowitz [4]. At a minimum, we encourage readers to review their 26-point research agenda, which includes several clinical research questions. The failure of withdrawal to provide adequate protection against STIs is one important reason clinicians may be reluctant to promote it, and reliance on withdrawal alone is inappropriate for certain high-risk populations. However, we would also encourage research that examines whether consistent use of withdrawal is associated with reduced transmission of certain STIs and HIV — for example, by examining the rate of transmission among HIV-discordant couples who (retrospectively) already rely on this method. Similarly, while research suggests that preejaculate fluid does not typically contain sperm [10–12], confirmatory studies are needed.

Acknowledging the importance of withdrawal is crucial not only for data collection but also for counseling women

and men about pregnancy prevention and choice of contraceptive method. Practitioners should recognize that some of their patients may be relying on this method even if they do not report it. Although withdrawal may not be as effective as some contraceptive methods, it is substantially more effective than nothing. It is also convenient, it requires no prior planning and there is no cost involved. Consistent dual use of withdrawal in conjunction with hormonal, barrier or other methods could constitute an effective contraceptive strategy. Health care providers and health educators should discuss withdrawal as a legitimate, if slightly less effective, contraceptive method in the same way they do condoms and diaphragms. Dismissing withdrawal as a legitimate contraceptive method is counterproductive for the prevention of pregnancy and also discourages academic inquiry into this frequently used and reasonably effective method.

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