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

Withdrawal is sometimes referred to as the contraceptive method that is "better than nothing." However, it would be more appropriate to refer to withdrawal as the 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, it is estimated that only 4% of couples will become pregnant over the course of a year (Hatcher et al. 2008). However, more realistic estimates of typical use indicate that about 18% of couples will become pregnant in a year using withdrawal (Kost et al. 2007). Withdrawal is often portrayed as an undesirable or ineffective method (see Jones, Purcell, Finer and Singh, 2006; Santelli, Morrow, Anderson and Lindberg, 2006; http://www.contracept.org/withdrawal.php; http://www.goaskalice.columbia.edu/1186.html; http://menshealth.about.com/od/contraception/a/coitus.htm). Yet withdrawal is only slightly less effective than male condoms, which have perfect- and typical-use failure rates of 2% and 17%[1], respectively (Kost et al. 2007).

In this commentary, we consider the causes and consequences of the family planning field's discouragement of withdrawal use—despite its comparative effectiveness. Then, after reviewing new data on the prevalence and practice(s) of withdrawal, we outline the next steps in an agenda for better researching withdrawal and addressing it with contraceptive clients.

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

What (little) we know about withdrawal

In their 1995 review of the literature on withdrawal, Rogow and Horowitz (1995) noted a scarcity of research on this method, despite its vital role in the European fertility decline, and relatively high modern levels of use, acceptability, and effectiveness . The authors attributed this lack of interest among family planning professionals to a preference for modern methods (see also Santow 1993) and the strongly held belief that pre-ejaculate fluid contains sperm, despite the lack of evidence supporting this widely held belief (Zukerman, Weiss and Orvieta 2003; Pudney et al 1992; Ilaria 1992). Increased interest in female-controlled methods, as well as in those that prevent both pregnancy and HIV, has also contributed to this paucity of research.

This anti-withdrawal bias, both in academic and public discourse, contributes to several potential methodological shortcomings. First, use of withdrawal may be underreported because respondents do not consider it a method. For instance, 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 tandem with other methods (usually coital dependent) (Ortayli et al. 2005). In large surveys such as the National Survey of Family Growth, when respondents report use of both withdrawal use and another more effective method during the same time period, withdrawal is usually "coded up" (Hatcher et al. 2008; Frost and Darroch 2008). When withdrawal is subsumed under methods in this way, use is underestimated and models used to predict contraceptive use can become distorted. For example, using logistic regression, Frost and Darroch (2008) reported that inconsistent condom use increased by a factor of more than 77 for dual method

"switchers," even after controlling for a range of sociodemographic characteristics. It appears as if "dual use" in this context captured alternating use of condoms and "less effective" methods such as withdrawal and rhythm.

Withdrawal is especially likely to be used in combination with other coital-dependent methods. For example, when Gray et al. (1999) compared contraceptive use as reported among matched samples of married couples in Bangladesh, they found that most couples using modern methods had consistent reports between partners, but the majority of couples using coital-dependent methods (usually condoms, withdrawal and rhythm) did not have consistent reports. Closer examination revealed that these methods were often used in varying combinations, sometimes simultaneously, and sometimes consecutively. The authors concluded that "these [non-coital] methods are so often used in combination, that combination is really the method being used" (Gray et al. 1999:51). This "doubling up" or sequencing can be difficult to capture on survey instruments; as a result, estimates for coital-dependent methods are likely to be inconsistent and unreliable.

In their formative review, Rogow and Horowitz provided a 26-point agenda for future research on withdrawal. However, more than a decade later, only a few studies have addressed any of these agenda items. Further, several of these studies have been small in scale (e.g., married Turkish men (Kulczycki 2004), or have surveyed very specific populations (e.g., Israeli Jews (Okun 1997) or Chinese Canadians obtaining abortions (Wiebe, Janssen, Henderson and Fung 2004).

Yet the few withdrawal studies that do exist have produced some interesting, if inconsistent, findings and suggestions for future research. For example, researchers have found that those women and men who most strongly rely on or support withdrawal often

report a distrust of modern methods, and hormonal methods in particular (Ortayli et al. 2005; Wiebe, 2004). These women and men reportedly regard withdrawal as natural and preferable to consuming potentially harmful chemicals. Authors have also asserted that withdrawal may be more widely practiced within male-dominant relationships across cultures (Chinese, Turkish and Jewish) in which men allegedly prefer to control pregnancy prevention (Kulczycki 2004; Okun 1997; Wiebe, 2004). However, at least some Turkish men also report using withdrawal out of respect for their wives and as a way of taking responsibility for something that is typically left to women (Ortayli et al. 2005).

New Qualitative and Quantitative Insights

Qualitative data from two studies relying on in-depth interviews, conducted independently by two of the authors, help illustrate some of the contextual issues related to withdrawal use. Neither of the studies specifically sought information on the practice of withdrawal. Instead, respondents mentioned it spontaneously, often in response to probes about "unprotected sex." Their responses indicate that the context of withdrawal use can take a range of forms. While some relied on withdrawal as their primary method of birth control, other (most?) men and women described using withdrawal-as-backup, used simultaneously with condoms or hormonal methods. In practice, many withdrawal users frequently alternated withdrawal with condoms. Below, we use examples from each of the two studies to illustrate these themes.

In the first study, 30 heterosexual couples (60 individuals) in married, cohabiting, and dating relationships residing on the East Coast of the U.S. were interviewed

separately about their experiences with contraception and contraceptive decision-making (Fennell 2009). Only couples in which the woman was between the ages of 18 and 30 were eligible to participate, 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 of 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, Vanessa 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, Nathan, indicated that he and other people may understand withdrawal as a "practice" rather than a method of birth control or contraception:

> Nat: If it wasn't actually a physical form of birth control, it was just, you know, a practice.
>
> Interviewer: What do you mean 'a practice'?
>
> Nat: Well... where you go about ejaculating...
>
> Interviewer: Withdrawal.
>
> Nat: Yes.

Nat, and other individuals like him, might not report withdrawal use on surveys in response to questions about their current or past *contraceptive* use.

Part of the reason that respondents like Nat occasionally resorted to withdrawal as their primary method of contraception was that they often experienced difficulties with condoms, which over half of respondents described negatively in terms of sexual pleasure, convenience, and ease of use. Withdrawal, on the other hand, was viewed as accessible and easy-to-use. Hallie explained that, "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." Though most people were skeptical about withdrawal's efficacy, many users perceived it as superior to the alternatives and preferable to nothing.

Participants shared similar sentiments in the second qualitative study, which involved in-depth sexual history interviews with 24 women and 12 men, aged 18 to 50, in Atlanta, Georgia (Higgins and Browne, 2008; Higgins and Hirsch, 2008; Higgins, Hirsch, and Trussell, 2008). As in the study above, respondents were reluctant to consider withdrawal a contraceptive method. One respondent, Christine, 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."

For those who did not use contraception of any sort, withdrawal was indeed "better than nothing". Sally, 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." Max, 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 that fell into to the "withdrawal-as-backup" category tended to eroticize safety, or *de*-eroticize risk; they were unable to fully enjoy sex unless protected against pregnancy and/or HIV/STI risk, sometimes with two or even three methods. For example, Adair, a consistent 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."

We can imagine how the above individuals might appear, or fail to appear, on quantitative surveys about contraceptive use. Some women and men who practice *only* withdrawal do not consider it a method and may not report it on surveys, or only if asked directly. 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. Additionally, among those who do report withdrawal in conjunction with other methods, they are sometimes "coded up" to the more effective method.

Published reports from the National Survey of Family Growth (NSFG), a nationally representative sample of women aged 15-44, show that ever use of withdrawal increased from 41% in 1995 to 56% in 2002[2] (Mosher et al., 2004). In our own analyses of the NSFG data, initial review of current method use revealed that a much smaller proportion of women at risk of pregnancy—only 5%—report *current* use of this method[3].

[2] There may also have been a substantial increase in the proportion of sexually active women who had ever used withdrawal (and condoms) between 1988 and 1995, from 21% to 41%. However, it is unclear if this increase is due to an actual increase in use of withdrawal or a change in measurement since the items used to measure "ever use" changed between the two surveys.

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

Thus, 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, when women report using more than one method, the NSFG survey administrators gave priority to the most effective method. Because the NSFG collected detailed information on simultaneous method use, it is possible to determine how many women were using withdrawal and another method in the same month. We examined these data and found that including women who only used withdrawal and women who used withdrawal and another method more than doubled the number of withdrawal users, from 5% to 11%. Some 31% of women who reported current use of withdrawal also reported current condom use; 19% reported using it in conjunction with a hormonal method, and 5% with rhythm or natural family planning. The remaining 45% reported using only withdrawal.

A more informal study of U.S. women also provides some evidence that withdrawal use may be more common than previously believed. 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 at Indiana University (Higgins, Hoffman, Graham, & Sanders, 2008 (forthcoming)). The online format and lack of compensation attracted a sample of relatively young (the mean age was 25), well educated women and possibly more likely to be using contraceptives than the general population.

We restricted the WWSS sample to those respondents who had engaged in sexual activity with a man in the last four 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-in-five women (21%) reported withdrawal use in the past four weeks. Further, very few women reported singular use of either withdrawal or condoms; these methods were most likely to be used in conjunction with each other and sometimes with other methods such as fertility awareness. The majority (68%) of withdrawal users had also used male condoms in the last month, and 42% of condom users had also used withdrawal.

This modest analysis suggests not only that withdrawal use was relatively common among this group of younger U.S. women, but also that condoms and withdrawal were often used in conjunction. 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. (1999), we believe this combination of condom use, withdrawal use and other methods (e.g., rhythm) represents a more accurate depiction of how some couples use coitus-dependent contraception over several acts of intercourse.

Implications

Based on the research described above, we expect that use of withdrawal is underestimated on most surveys; it is possible, in turn, that rates of unprotected sex are overestimated. It is unclear what impact, if any, the likely mis-measure of withdrawal might have on estimates of typical-use failure rates for withdrawal and, perhaps, condoms. To some extent this would depend on the level of measurement error present and which type of error is most common: mis-measure of withdrawal as a "back up" or dual method, or failure to measure withdrawal when it is actually being used.

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 common surveys, such as the NSFG and others, would ensure more accurate data. For example, rather than asking respondents to choose from a list of methods, they could be probed about use of withdrawal (and, perhaps, other popular coital-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 alternation with other methods; directing a question towards people who have a regular sexual partner 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 the way that people use 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 methods, including women who have trouble taking their 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 a variety of pregnancy prevention techniques are intermittently employed (e.g., pulling out, using condoms, occasional abstinence, and vaginal sex during a woman's menstrual period). Risk reduction approaches have been controversial but successful among some populations of men-who-have-sex-with-men at risk for HIV. 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 are a simpler restatement, and slight elaboration on, the work of Rogow and Horowitz. 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 reason that it is not given consideration, and we acknowledge that reliance on withdrawal alone is inappropriate for certain populations at high risk of STIs. 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 report reliance on this method. Similarly, while research suggests that pre-ejaculate fluid does not typically contain sperm (Zukerman, Weiss and Orvieta 2003; Pudney et al 1992; Ilaria 1992), confirmatory studies are needed.

Taking withdrawal more seriously is important 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, and is significantly less effective than long-acting reversible methods like the IUD/IUS or Implanon, it is more effective than nothing. Consistent dual use of withdrawal in conjunction with hormonal, barrier or other methods could further reduce the risk of pregnancy. Health care providers and health educators should discuss withdrawal as a legitimate, if slightly less effective, 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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