Prevalence of and Characteristics Associated with Use Of Withdrawal Among Women in Victoria, Australia

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CONTEXT: *Popularly regarded as "ineffective," withdrawal is a form of contraception largely ignored by health professionals. Thus, little is known of the prevalence and correlates of its use.*

METHODS: *A survey of 1,006 sexually active women aged 16–50 and not intending to conceive was conducted in three Family Planning Victoria clinics in 2011. The questionnaire asked about contraceptive behavior and characteristics associated with contraceptive use. Univariate and multivariate analyses were conducted to assess prevalence of withdrawal use and characteristics associated with reliance solely on this method.*

RESULTS: *Ninety-six percent of women reported having used some form of contraception in the last three months, most commonly male condoms (67%), the pill (49%) and withdrawal (32%); use of withdrawal was especially common among the youngest women. Of women reporting withdrawal use, 40% relied solely on this method. Eighty percent of sole users of withdrawal were also inconsistent users. Women who used only withdrawal had elevated odds of saying that they were dissatisfied with their current method (odds ratio, 1.6), had had more than one partner in the last three months (1.7), had no access to contraceptives when needed (2.4) and found it too inconvenient to use contraceptives (2.1).*

CONCLUSION: *Withdrawal use is common, but there is a need for better education on proper use. Health professionals should discuss the risks and benefits of withdrawal, along with those of other methods, when discussing contraception with their patients. Further research is needed into why women choose withdrawal.*

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Withdrawal (also known as coitus interruptus or pulling out) is possibly the world's oldest birth control method. It has existed as a form of birth control since biblical times and is believed to have been practiced by ancient Greeks and Romans.[1] Use became widespread in the 18th century and is thought to have been common in many countries until the development of modern contraceptives.[1] An estimated 38 million couples worldwide still use withdrawal as their primary contraceptive.[2]

According to two large surveys in Australia, 7% of women aged 15–49 who are using a method rely on withdrawal.[3,4] However, underreporting is a potential problem in surveys on such a sensitive issue. Furthermore, withdrawal may not always be regarded as a contraceptive method, and thus may not be included by women reporting on their contraceptive use.[5] Additionally, users of coitus-dependent methods may not report them if they are using them in combination with other contraceptives.[6]

Withdrawal use is an important but neglected area of research in Australia. Current and potential users there have no reliable source of information about withdrawal from health professional bodies, and the method is largely ignored by service providers, as it is popularly regarded as ineffective. In typical use, it has a first-year failure rate of 22%, considerably higher than failure rates of other methods of contraception;[7] for example, the implant has a failure rate of 0.05% per year.[8] Nevertheless, evidence suggests that couples are attracted to using withdrawal because it has no side effects, costs nothing, does not require extra health care visits, is easy to learn, is user-controlled, is often self-taught and has a good level of satisfaction as a contraceptive.[9,10] In the absence of health information from professionals, knowledge about this method generally comes from nonprofessional sources, including peers.[11]

The prevalence of withdrawal use and whether it poses a problem for Australian women require research attention. In the study presented here, part of a larger study on unintended pregnancy,[11] we assessed the prevalence and correlates of withdrawal use in a sample of women attending Family Planning Victoria clinics. Our study was designed to address the potential underreporting of reliance on withdrawal by using a survey that specifically asked respondents about their experiences with the method in the past three months.

METHODS

Sample

Family Planning Victoria is an independent, not-for-profit organization that is partially funded by the Victorian state government and provides clinical care in sexual and reproductive health. Its two "action centres" are drop-in clinics in

Melbourne's central business district and Hoppers Crossing (an outer metropolitan area), specifically catering to people younger than 25. Its Box Hill clinic (in a suburban area) caters to all age-groups with both an appointment system and drop-in services. Clients pay a small annual administration fee, which gives them unlimited access to the clinics, where consultations are low-cost or free.*

Women aged 16–50 attending Family Planning Victoria's three sites between April and July 2011 were recruited for the study if they had been sexually active with at least one male partner in the last three months but were not trying to conceive. Eligible women were identified by the triage nurse and were invited to complete an anonymous questionnaire before seeing the doctor. Women were asked to place their survey in a secure box, regardless of whether they had completed it. This, along with a numerical identifier on each questionnaire, permitted us to determine the response rate. Of the 1,109 women approached, 85 returned blank questionnaires, yielding a response rate of 92%. Eighteen surveys were excluded because more than 50% of questions were unanswered or the women did not meet the age requirement for eligibility. Thus, 1,006 surveys were analyzed.

Ethical approval for the study was obtained from the University of Melbourne Human Ethics Advisory Group and the Family Planning Victoria Human Research Ethics Committee.

Measures

The questionnaire comprised 34 items covering frequency and type of contraceptive use, as well as characteristics that may be related to use, which we classified as demographic, attitudinal or behavioral.[12] The survey took 5–7 minutes to complete.

The primary outcome measures were any withdrawal use in the last three months, whether withdrawal was the sole contraceptive method used and the consistency of withdrawal use. Clients were asked to indicate which of the following methods they had used in the last three months (they could provide multiple responses): the pill, male condoms, the ring, the diaphragm, withdrawal (also described as "pulling out"), rhythm, female condoms, an IUD, the implant, the injectable, and male and female sterilization. Women who ticked only withdrawal were classified as sole users of that method. Another question asked, "In the last three months, have you used more than one contraception at the same time? If so, which ones?" Responses to this item helped to exclude those who may had used withdrawal plus another method. Consistency of use was determined by whether women said they had "never," "not usually," "sometimes," "most of the time" or "always" used their method in the last three months.

Analysis

Data were entered into the statistical package MINITAB, version 16.1.0. A chi-square test for linear trend was performed for analysis of withdrawal use by age. The statistical modeling focused on the use of withdrawal as the major outcome of interest. Univariate logistic regression analyses were performed to assess relationships between sole withdrawal use and a range of explanatory variables, and to assess characteristics related to inconsistent use of withdrawal, as opposed to other methods, in the last three months. Backward elimination was used to remove variables that were not significant at p<.10. The remaining explanatory variables were then used in an overall multivariate logistic regression model assessing correlates of sole withdrawal use. Statistical significance was set at p<.05. The Hosmer-Lemeshow test was performed to assess goodness of fit for logistic regression models.

TABLE 1. Percentage of sexually active women aged 16–50 who used withdrawal in the past three months and who used it as their sole method, by age, Family Planning Victoria, 2011

Age	N	Any use	Sole use
16–19	326	37.1	15.0
20–24	366	36.6	13.4
25–29	123	26.0	13.0
30–34	56	19.6	8.9
35–39	57	12.3	1.8
≥40	78	15.4	10.3
χ^2 for trend		*25.73***	*5.66**

*p<.05. **p<.01.

RESULTS

Women averaged 24.3 years of age (standard deviation, 8.0), and 69% of them were younger than 25; 73% were born in Australia, and 90% spoke English at home. (By comparison, in the Victorian population overall, 13% of women in 2006 were younger than 25, 70% were Australian-born and 75% spoke English at home.[13]) Eighty-nine percent of women reported confidence in their knowledge of how to prevent pregnancy, and 87% stated it was important or very important to avoid pregnancy at this stage in their life.

Nearly all of the women (96%) reported having used some form of contraception in the last three months. Withdrawal was the third most commonly used method (reported by 32%), after male condoms (67%) and the pill (49%). Of those reporting use of withdrawal, 40% relied solely on this method. All sole users stated that it was important or very important to prevent pregnancy at this stage in their life, yet 80% used the method inconsistently.

The proportion of women reporting any use of withdrawal declined from 37% among 16–19-year-olds to 12% of those aged 35–39, and then rose to 15% among older women (Table 1). Similarly, the proportion who used only withdrawal fell from 15% in the youngest age-group to 2% among women in their late 30s, before increasing to 10% among women aged 40 and older. Among women who

*The fee is waived for individuals younger than 18 and is 10–35 Australian dollars for others. (At the time of the study, one Australian dollar equaled US$0.9.) Public insurance covers lab tests and some contraceptive methods for eligible individuals.

TABLE 2. Odds ratios (and 95% confidence intervals) from univariate analysis assessing characteristics associated with sole withdrawal use

Characteristic	Odds ratio
Demographic	
Suburban clinic	1.25 (0.86–1.84)
<25 years old	1.56 (1.01–2.41)*
Born in Australia	1.41 (0.90–2.21)
<5 years in Australia	0.87 (0.48–1.56)
English speaker	1.52 (0.75–3.10)
Has health care card‡	1.47 (1.01–2.14)*
Private health insurance	0.87 (0.60–1.27)
≥college	0.69 (0.46–1.05)
Household income >$60,000§	1.13 (0.89–1.43)
Attitudes	
Feels vulnerable to pregnancy	1.19 (0.81–1.76)
Is dissatisfied with current contraceptive	2.38 (1.61–3.45)**
Considers it important to prevent pregnancy	1.23 (0.65–2.31)
Is confident in knowledge about how to prevent pregnancy	0.61 (0.34–1.09)†
Is comfortable discussing contraception	
With doctor	0.56 (0.29–1.06)†
With parents††	1.06 (0.68–1.65)
With partner	0.74 (0.47–1.16)
With friends	0.87 (0.57–1.34)
Feels supported in using contraceptives	
By parents††	1.13 (0.70–1.84)
By partner	0.63 (0.39–1.02)†
By friends	0.96 (0.57–1.61)
Behavioral	
Doctor discussed contraception in last 12 months	0.63 (0.43–0.93)*
>1 partner in last 3 months	2.07 (1.41–3.06)**
Ever been pregnant	0.97 (0.80–1.17)
Ever had an unintended pregnancy	1.35 (0.86–2.13)
Ever had an abortion	1.55 (0.93–2.59)
Plans ahead to have contraceptives available	0.86 (0.44–1.68)
Can interrupt sex to use contraceptive when highly aroused	0.61 (0.41–0.90)*
Can resist sex if partner does not want to use contraceptive	0.56 (0.39–0.82)**
Has sex ≥twice/week	0.80 (0.55–1.16)

*p<.05. **p<.01. †p<.10. ‡Health care cards are given to low-income Australian residents and enable them to access low-cost medicines and medical services. §Income is in Australian dollars; at the time of the study, one Australian dollar was equivalent to US$0.9. ††Asked only of women younger than 25.

used withdrawal, however, the proportion who used it as their sole method did not differ by age.

According to findings from our univariate analyses (Table 2), sole users of withdrawal were more likely than other women to be younger than 25 (odds ratio, 1.6); to have a health care card, which gives low-income Australians access to low-cost services and medicines (1.5); to be dissatisfied with their method (2.4); and to have had more than one partner in the past three months (2.1). They had reduced odds of saying that they had discussed contraception with a doctor in the past 12 months, can interrupt sex to use contraceptives when they are highly aroused and can resist having sex if a partner does not want to use contraceptives (0.4–0.6). Compared with inconsistent users of other methods, inconsistent sole users of withdrawal were more likely to report that their partner refused to use another method, they lacked access to contraceptives, they had experienced side effects of other methods, they were concerned about hormones in contraceptives and contraceptive use was too inconvenient (2.3–3.4; Table 3).

In our adjusted model, four characteristics remained associated with sole use of withdrawal (Table 4). Women reporting this behavior had elevated odds of being dissatisfied with their method (odds ratio, 1.6), of having had more than one partner in the last three months (1.7), of reporting difficulty accessing contraceptives (2.4) and of considering contraceptive use inconvenient (2.1).

DISCUSSION

One in three women attending Family Planning Victoria had used withdrawal in the last three months. Our finding is consistent with those of studies indicating that withdrawal use is not rare: More than half of sexually experienced women aged 15–24 in the United States have ever used withdrawal,[14] and in a relatively high-risk, largely black U.S. adolescent population, the prevalence of use was 24%.[15] This evidence highlights the need for health professionals to include the discussion of withdrawal when speaking to women about contraception.

Multiple studies have concurred that women who find contraceptives an inconvenience, "too hard" to use or difficult to access are less likely than others to use a method.[16–19] However in Australia, one would expect these attitudes to be negligible, as barrier contraceptives may be obtained without a doctor's prescription. Indeed, in a nationwide study of women aged 16–59, none cited lack of access as a barrier.[3] However "access" may refer to more than the ease of obtaining contraceptives. Given that our study population was already accessing family planning services, the reported lack of access may reflect other obstacles—embarrassment about purchasing or discussing contraceptives; fear that carrying condoms is seen as a sign of expectation to have sex; inability to anticipate sex, especially in the context of alcohol use;[20] fear of lack of confidentiality;[21] or logistical problems.[22]

Satisfaction is also an important characteristic in whether a woman uses contraceptives consistently.[23,24] Our finding that sole withdrawal users had greater odds of dissatisfaction with their method than did other women is therefore cause for concern, especially given that these women reported that it was important to prevent pregnancy at this stage in their life. That these women also had elevated odds of reporting multiple partners in the last three months is of concern, as well, because with no barrier protection, they put themselves at increased risk for both unintended pregnancy and STDs.

TABLE 3. Odds ratios (and 95% confidence intervals) from univariate analysis assessing characteristics associated with inconsistent use among sole withdrawal users

Characteristic	Odds ratio
Partner has refused to use other contraceptive	2.73 (1.37–5.46)**
Lacks access	3.44 (2.27–5.20)**
Has experienced contraceptive side effects	2.71 (1.48–4.96)**
Has concern about hormones	2.32 (1.11–4.85)*
Finds other methods too expensive	1.07 (0.41–2.81)
Is embarrassed talking to doctor	1.06 (0.24–4.74)
Is embarrassed buying contraceptives	1.99 (0.65–6.14)
Finds contraceptives too inconvenient	3.23 (1.82–5.72)**

*p<.05. **p<.01.

TABLE 4. Odds ratios (and 95% confidence intervals) from multivariate analysis assessing characteristics associated with sole withdrawal use

Characteristic	Odds ratio
Is dissatisfied with current contraceptive	1.64 (1.04–2.56)**
>1 partner in last 3 months	1.67 (1.11–2.53)**
Lacks access	2.38 (1.47–3.84)**
Finds contraceptives too inconvenient	2.05 (1.06–3.96)**
Hosmer Lemeshow test $\chi^2(8) = 5.274, p = 0.7$	

**p<.01. *Note:* Analysis adjusted for characteristics that were significant at p<.10 in Tables 2 and 3.

Limitations

Women attending Family Planning Victoria are not representative of the Australian population. Thus, our findings cannot be generalized beyond the population of women obtaining reproductive health services through this organization. Further studies, employing accurate measures of withdrawal use among women obtaining care at general practice or hospital outpatient settings, as well as in community settings, are needed to provide a broader understanding of how women are using this method.

As the survey was based on self-reported withdrawal use, it is subject to potential recall and reporting bias. Single-item measures for evaluating some complex variables (e.g., attitudes of partner, parents, friends) may not be sufficiently sensitive or reliable to measure the intended variable. The survey assessed reported consistency of withdrawal use, but not how well the method was used. Additionally, as the survey was a cross-sectional design, the findings must not be used to forecast use of withdrawal in this population. Longitudinal studies are needed to test these characteristics as true markers for identifying women with elevated odds of withdrawal use.

Conclusion

Withdrawal use should not be considered "rare," especially among younger women. Practitioners should explore whether their patients are using, or would like to use, withdrawal as a contraceptive method, and should discuss its use, risks and benefits along with those of other contraceptive options. Findings from this study may help them identify sole users. If people are using withdrawal properly and are making an informed choice, it may be inappropriate to dissuade them. For those who do not want to consider other contraceptive options but are using withdrawal ineffectively, it is important for health professionals to provide support and accurate information about the method's failure rate, proper use and inability to protect against STDs.

More research is needed to determine why and how women use withdrawal. The question of what reduced access to other contraceptives means, and whether it leads to withdrawal use, also needs further exploration.

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