

Original research article

Withdrawal as pregnancy prevention and associated risk factors among US high school students: findings from the 2011 National Youth Risk Behavior Survey

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Abstract

Purpose: Withdrawal is less effective for preventing pregnancy than other contraceptive methods and offers no protection against sexually transmitted infections including HIV. Little is known from a national perspective about adolescents who primarily use withdrawal. This study describes the prevalence of withdrawal as their primary method of pregnancy prevention at last sexual intercourse among sexually active US high school students and associations with sexual risk and substance use.

Methods: Data from the 2011 National Youth Risk Behavior Survey were used to estimate sexually active students' most recent contraceptive method. Logistic regressions examined sexual behaviors and substance use, comparing students who used withdrawal to those who used no method, a condom and a highly effective method.

Results: Among 4793 currently sexually active students, 10.2% used withdrawal only, 12.4% used no method, 53.6% used a condom and 23.8% used a more effective method as their primary form of pregnancy prevention during last sexual intercourse. Students who used withdrawal were less likely than those who used no method to have had sexual intercourse before age 13 years (Adjusted Prevalence Ratio (APR) =.56) and currently use cocaine (APR=.36). Among females, students who used withdrawal were more likely to engage in risky behaviors than those who used a condom and those who used a highly effective method of pregnancy prevention in a number of ways (e.g., having multiple sex partners during the past 3 months, current alcohol use, binge drinking, current marijuana use, drank alcohol or used drugs before last sexual intercourse).

Conclusions: Approximately 1 in 10 sexually active students used withdrawal only, about the same percentage as those who used no method. Health care providers and others who serve adolescents may want to discuss its pros and cons with their clients and help ensure that they have information about and access to other contraceptive methods that are more effective at preventing pregnancy and sexually transmitted infections. Health care professionals should not consider young people who use withdrawal similar in risk to those that use no method. Published by Elsevier Inc.

Keywords: Withdrawal; Adolescent sexual health; Contraception; Sexual risk

1. Introduction

Rates of adolescent pregnancy and sexually transmitted infections (STIs) are explained in part by contraceptive use. Contraceptive withdrawal has existed as a form of birth

control since ancient times and remains a relatively common form of contraception [1]. Recent studies have noted the absence of withdrawal in the contraception literature and called for the need to acknowledge it as a pregnancy prevention risk reduction strategy employed by a relatively substantial minority of young people [1,2]. Similar to other methods including condoms, perfect use of withdrawal has a failure rate of 4%, but typical use failure rates are much higher at 18%–27%, especially among young people who may be less sexually experienced [3–5]. In addition, withdrawal does not prevent HIV or other STI infection.

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Reported prevalence of adolescent use of withdrawal varies widely, partly due to differences in measurement. A nationally representative study found that 13% of sexually active 15–17 year olds in 2002 reported using withdrawal regularly [6]. Another nationally representative study showed that 31% of 15–24-year-old females surveyed in 2006–2008 reported using withdrawal during the previous 3 years [7]. Lifetime practice of withdrawal is even higher with more than half (57%) of 15–19-year-old US females reporting ever using it [8], although this measurement may be less meaningful in terms of current risk of STIs and pregnancy. Assessing adolescents' use of withdrawal at last sexual intercourse may help gauge their current risk of STIs and unintended pregnancy. Nationally representative data show the use of withdrawal during last sexual intercourse among high school students dropped from 18% to 13% throughout the 1990s [9,10]. Recent data from the National Survey of Family Growth reports that 14% of 15–24-year-old females and 17% of similarly aged males report any use of withdrawal, including in conjunction with other forms of contraception, at last sex. Of those that use any withdrawal, the authors usefully distinguish that 7% of females and 6% of males reported using withdrawal alone at last sex [2].

Our research aims to support current literature by producing additional national estimates of adolescent withdrawal use that is measured in a way to reflect those who rely predominantly on withdrawal as contraception. In addition, while researchers have examined associations between using condoms and other birth control and sexual behaviors [11,12], little is known specifically about whether withdrawal is associated with other sexual behaviors.

The purposes of this study are to (a) describe the prevalence of use of withdrawal as the primary form of pregnancy prevention during last sexual intercourse among sexually active US high school students and the demographic characteristics of those who report using it and (b) analyze the extent to which students who used withdrawal at last sex engage in sexual risk or recent substance use behaviors compared to those students who used no method at last sex, those who used a condom and those who used a highly effective method of birth control at last sex.

2. Methods

The national Youth Risk Behavior Survey (YRBS) has been implemented biennially since 1991 by Centers for Disease Control and Prevention (CDC) to monitor priority health risk behaviors among youth. The 2011 National YRBS was conducted in spring of 2011 and used a three-stage cluster-sample design to obtain a nationally representative sample of 9th–12th grade students. The 2011 data were used for these analyses because it is the most recent YRBS data that allow for distinguishing withdrawal users from all other methods; later waves of these data do not. The target population consisted of all public and private

high school students in Grades 9–12 in the 50 states and the District of Columbia. Details of the sample design have been described previously [13,14]. Participation in the survey was anonymous, and voluntary and local parental permission procedures were used. Students recorded their responses to a 97-item questionnaire directly on a self-administered computer-scannable questionnaire or answer sheet. The institutional review board at CDC approved the national YRBS.

2.1. Measures

For this analysis, contraceptive method was categorized four ways: withdrawal, condom, a highly effective method and no method. The national YRBS assessed contraceptive method with two consecutive questions. First, “the last time you had sexual intercourse, did you or your partner use a condom?” with response options, “I have never had sexual intercourse”, “Yes” and “No.” Second, “the last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Select only one response.)” with response options, “I have never had sexual intercourse,” “no method was used to prevent pregnancy,” “birth control pills,” “condoms,” “Depo-Provera (or any injectable birth control), Nuva Ring (or any birth control ring), Implanon (or any implant), or any IUD,” “withdrawal,” “some other method” and “not sure.” No skip patterns were used.

Students who responded “I did not have sexual intercourse” to either of the two questions ($n=7011$) were excluded from this analysis. Students who answered “yes” to the condom question were categorized as “condom” for this analysis, except for students who selected “birth control pills,” or the “Depo-Provera, Nuva Ring, Implanon, or IUD” response options to the pregnancy prevention question; these students were categorized as highly effective method for this analysis. Among students who answered “no” to or were missing from the condom question, those who selected “withdrawal” to the pregnancy prevention method question were categorized as withdrawal method for the purpose of this analysis; those who selected “birth control pills” or the “Depo-Provera, Nuva Ring, Implanon, or IUD” response options, were categorized as “highly effective method;” those who selected “no method” were categorized as no method. Students who selected “some other method” or “not sure” were set to missing for this analysis ($n=222$). Finally, current sexual activity was assessed with the question, “during the past 3 months, with how many people did you have sexual intercourse?” with response options, “I have never had sexual intercourse,” “I have had sexual intercourse, but not during the past 3 months,” “1 person,” “2 people,” “3 people,” “4 people,” “5 people” and “6 or more people.” Current sexual activity was defined as having had sexual intercourse with one or more people during the past 3 months.

We analyzed the association of withdrawal with other behaviors. The additional sexual behaviors included in this

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