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Examining the influence of mental health on dual contraceptive method use among college women in the United States

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ABSTRACT

Objectives: To examine mental health influences on dual contraceptive method use (i.e., the use of a hormonal contraceptive or intrauterine device with a condom barrier) among college women.
Study design: Data from N = 307 sexually active women who completed the 2014 National College Health Assessment at a large mid-Atlantic university were analyzed. Following chi-square tests of associations, multivariate logistic regressions examined the relation between mental health and sociodemographic factors and dual contraceptive method use.
Results: Among all women, 27% utilized a dual contraceptive method during last vaginal intercourse. A prior depressive disorder diagnosis was significantly associated with lower odds of dual method use compared to use of other contraceptive methods combined (aOR, 0.39; 95% CI: 0.19–0.79), use of no method (aOR, 0.12; 95% CI: 0.03–0.55), or use of hormonal contraceptives only (aOR, 0.39; 95% CI: 0.18–0.85).
Conclusions: Mental health is an important contributor to contraceptive method use. Health care providers should consider the role of mental health when counseling women about contraceptive options during routine gynecological visits. Results suggest that mental health screenings may be helpful in identifying those most at risk for not using dual contraceptive methods.

Introduction

High incidence rates of sexually transmitted infections (STIs) and unintended pregnancy remain significant public health concerns among young women in the United States. Women aged 20–24 have the highest risk and incidence rates of STIs such as chlamydia, gonorrhea, and syphilis, compared to women of other age groups [1]. Undiagnosed/untreated STIs can have serious reproductive health consequences for women, such as the occurrence of pelvic inflammatory disease or ectopic pregnancy—both of which can reduce fertility [2]. Untreated STIs result in infertility for approximately 20,000 women each year [3]. In addition to high STI rates, young women aged 18–24 represent the majority of unintended pregnancies—pregnancies defined as being unwanted or mistimed—among women of all age groups [4]. From 2001–2006, rates of unintended pregnancy increased among women aged 20–24 from 59% to 64% [4].

One strategic approach to simultaneously reducing high rates of STIs and unintended pregnancy among young women is the promotion of dual contraceptive method use. Dual contraceptive method use involves the concurrent use of both a hormonal contraceptive (e.g., intrauterine device, oral contraceptive pills) *and* a condom barrier (male or female) during vaginal sex, and is the most effective method in preventing both STI transmission and unintended pregnancy [5]. Despite the known effectiveness of dual contraceptive methods, most sexually active young women use condoms or hormonal contraceptives alone [6] and little is known about factors that impact dual method use among young women. The purpose of this study was to explore the relation between mental health variables and dual contraceptive use among college women. While poor mental health has been linked to inconsistent contraception use and contraception non-use [7,8], the influence of mental health on dual contraceptive method use has been largely unexamined.

It is estimated that psychiatric disorders impact upwards of 30% of women of reproductive age each year [9]. Previous work has indicated that mental health status can adequately predict contraception use in women aged 18–20 years [7,8]. Specifically, evidence suggests that psychological stress symptoms are linked to contraception non-use or use of less effective contraceptive methods [7,8]. Indeed, across populations and settings, it appears that women suffering from depression, anxiety, and related stress, have consistently higher levels of contraceptive non-use, misuse, and

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discontinuation when compared to women without these symptoms [10].

As such, research has begun to focus on the ways in which mental health status can impact decisions regarding reproductive health including contraception, pregnancy, infertility, and menopause [11]. A variety of explanations for this relationship have been proposed; some researchers posit that associated mental health deficits in risk assessment, planning, social learning, and motivation as well as excessive worry and decreased concern about susceptibility to pregnancy may explain suboptimal decision-making regarding contraceptive methods [10]. However, the ways in which mental health symptoms influence contraceptive method use remain unclear. Given the role of depression and mental health in preventive care decision-making, examining the influence of mental health on dual contraceptive method use and non-use is an important next step. Research urging providers to consider the role of psychological symptoms in contraception adherence as a way of optimizing the efficacy of their contraceptive counseling [12], further supports the need for this work.

The purpose of the current study was to examine the relation between mental health and dual contraceptive method use among sexually active college women at risk for STI and unintended pregnancy. In 2010, The Healthy People 2020 initiative (US Department of Health and Human Services. Healthy People 2020, 2010) endorsed dual contraceptive method use as a needed area of focus among young adults [13]. In the recent years following this initiative, studies investigating the prevalence of dual contraceptive method and associated factors noted that dual method use among young women has increased [14–17]; however, many of these studies have focused exclusively on sociodemographic and sexual behavior associations of dual method use. Few studies have examined the role of mental health in dual method use in college-aged women [7,8]. This study aims to add to a limited body of knowledge by investigating the relations between mental health concerns and contraceptive use.

Materials and methods

Data

The American College Health Association-National College Health Assessment II (ACHA-NCHA II) is a national research assessment administered throughout the United States [18]. Data from the 2014 ACHA-NCHA II were collected from a convenience sample online at a large mid-atlantic university by the student wellness center. A subset of items from this questionnaire relating to contraceptive use, sexual behavior, reproductive health, and sociodemographic information were included in secondary data analysis for the current study. Prior to data collection, the institutional review board (IRB) gave permission to collect study data. Students completed informed consent online and were informed prior to beginning study questionnaires that all responses were confidential and that questions causing discomfort could be skipped. Additional information about the ACHA-NCHA II is available at the organization's website (http://www.acha-ncha.org).

Analytic sample

The initial sample consisted of 686 total women. To meet the study's aims, inclusion criteria in the current sample included females ages 18–25, who reported a single marital status. Marital status and age were included as inclusion criteria because unmarried young adult women have the highest rates of STIs and unintended pregnancies [1,4]. In addition, the sample was restricted to sexually active women (i.e., reporting having had vaginal intercourse in the last 30 days). Sample restrictions resulted in a final analytic sample of $N = 307$ women for the present study.

Outcome variables

The primary outcome variable of interest was a two-part item on dual contraceptive method use during the last act of vaginal intercourse, and was measured on a categorical scale (0 = No; 1 = Yes). Women were first asked if they used a method of birth control during the last time they had sex; those who responded yes were asked about the type of birth control method they used. Methods of birth control were assessed by the following question: "Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy the last time you had vaginal intercourse." Students had the option of selecting from 15 items which included: (1) hormonal contraceptives (birth control pills, birth control shots, birth control implants, birth control patch, and vaginal ring); (2) intrauterine device (IUD); (3) condom barriers (male or female condom), and (4) additional methods (diaphragm or cervical cap, contraceptive sponge, spermicide, fertility awareness, withdrawal, sterilization, or other). Students could select more than one method if applicable.

In the current study, a new dichotomous contraceptive use variable to reflect dual contraceptive use was created over two steps. In the first step, women were separated into the following groups: (1) condom barrier use (use of male or female condom in absence of a hormonal contraceptive or IUD); (2) hormonal contraceptive or IUD (in absence of a condom barrier method); (3) dual method (use of male or female condom barrier in addition to an IUD or hormonal contraceptive); (4) other method (in absence of a condom barrier and/or IUD or hormonal contraceptive); or (5) no method used. In the second step, women were further categorized into the following two groups for the purposes of analyzing our primary outcome: (0) single method, other method, and no method (1) used both a hormonal contraceptive and a condom barrier during last sex.

Independent variables

Lifetime history of depression

Participants were asked the following question: Have you ever been diagnosed with depression? Response options were "no" (coded as 0) and "yes" (coded as 1). This single item measure has been used to assess lifetime history of depression in previous literature conducted among college women [18,19].

Stress

Participants were asked the following question: "Within the last 12 months, how would you rate the overall level of stress you have experienced?" Response options were no stress, less than average stress, average stress, more than average stress, and tremendous stress. Response options were then dichotomized for analyses as follows: no stress, less than average stress, or average stress (coded as 0), and more than average stress and tremendous stress (coded as 1).

Sociodemographic variables

Sociodemographic variables of interest were: age (18–25), race, and relationship status (e.g., not in a relationship or in a relationship). Age was categorized into two groups (18–19 and 20–25), to determine if there were differences in contraceptive use among teenagers compared to older young adults given previous research indicating differences in contraceptive use by age [20]. Based on previous literature suggesting that racial minority women were