Journal of Adolescent Health 49 (2011) 505–510

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original article

Reproductive Health Screening Disparities and Sexual Orientation in a Cohort Study of U.S. Adolescent and Young Adult Females

Brittany M. Charlton [a,*], Heather L. Corliss, Ph.D.[b,c], Stacey A. Missmer, Sc.D.[a,d,e], A. Lindsay Frazier, M.D.[a,d,f], Margaret Rosario, Ph.D.[g], Jessica A. Kahn, Ph.D.[h,i], and S. Bryn Austin, Sc.D.[b,c,d,j]

[a] *Department of Epidemiology, Harvard School of Public Health, Boston, Massachusetts*
[b] *Division of Adolescent and Young Adult Medicine, Children's Hospital, Boston, Massachusetts*
[c] *Department of Pediatrics, Harvard Medical School, Boston, Massachusetts*
[d] *Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts*
[e] *Department of Obstetrics, Gynecology, and Reproductive Biology, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts*
[f] *Department of Pediatric Oncology, Dana-Farber Cancer Institute, Boston, Massachusetts*
[g] *Department of Psychology, City University of New York, City College and Graduate Center, New York, New York*
[h] *Division of Adolescent Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio*
[i] *Department of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, Ohio*
[j] *Department of Society, Human Development, and Health, Harvard School of Public Health, Boston, Massachusetts*

Article history: Received December 8, 2010; Accepted March 29, 2011
Keywords: Homosexuality; Female; Bisexuality; Heterosexuality; Sexuality; Sexual behavior; Healthcare disparities; Papanicolaou test; Sexually transmitted diseases; Papillomavirus infections

A B S T R A C T

Purpose: To examine sexual orientation group disparities in the Papanicolaou (Pap) and sexually transmitted infection (STI)/human papillomavirus (HPV) tests among adolescents and young adult females.
Methods: Survey data from 4,224 adolescents and young adults aged 17–25 years who responded to the 2005 wave questionnaire of the Growing Up Today Study were cross-sectionally examined with multivariate generalized estimating equations regression. We examined associations between sexual orientation and reproductive healthcare utilization as well as abnormal results with completely heterosexual as the referent group, controlling for age, race/ethnicity, geographic region, and sexual history.
Results: After accounting for sociodemographics and sexual history, mostly heterosexual/bisexual females had 30% lower odds of having a Pap test within the last year and almost 40% higher odds of being diagnosed with an STI, as compared with the completely heterosexual group. Additionally, lesbians had very low odds of having a Pap test in their lifetime (odds ratio = .13, $p \leq .0001$) and having a Pap test within the last year (odds ratio = .25, $p = .0002$), as compared with completely heterosexuals.
Conclusions: Our study demonstrates that sexual minority adolescent and young adult women underutilize routine reproductive health screenings, including Pap smears and STI tests. Providers and health educators should be aware of these disparities so that they can provide appropriate care to young women and their families and ensure that all young women receive reproductive health screening. Further research is needed to explore reasons sexual minority females are not accessing care as recommended because this may suggest opportunities to improve reproductive health screenings as well as broader healthcare access issues.

* Address correspondence to: Brittany M. Charlton, Department of Epidemiology, Harvard School of Public Health, 677 Huntington Avenue, 9th Floor, Boston, MA 02115.
E-mail address: bcharlto@hsph.harvard.edu (B.M. Charlton).

1054-139X/$ - see front matter © 2011 Society for Adolescent Health and Medicine. All rights reserved.
doi:10.1016/j.jadohealth.2011.03.013

Reproductive health care during adolescence and young adulthood helps prevent physical and psychological morbidity and improves health quality throughout life [1]. Acquiring a sexually transmitted infection (STI) is associated with increased risk for numerous adverse health outcomes, including other STIs [2], infertility [3], cancer [4], and premature death [5]. The human papillomavirus (HPV) is the most common STI in the United States [2], with 80% lifetime incidence [6]; it most often afflicts adolescents, with 74% of new infections occurring in 15–24-year-olds [2]. HPV also acts as the primary cause of cervical cancer [7] by leading to cervical precancers. These can be screened with tools such as the Papanicolaou (Pap) test [8], but this test is underutilized and misunderstood, particularly by young adults [9] and sexual minorities (i.e., individuals who identify as lesbian, gay, or bisexual or who report same-sex sexual contact or attractions) [10].

Owing to several increased risk factors, it is important to study reproductive health behaviors of adolescents and young adults as well as sexual minorities. The primary risk factor for HPV infection is contact with male partners, so it is noteworthy that females of all sexual orientations often report a history of male sexual contact. Studies show that among sexually active adolescents, 76% of lesbian, 96% of bisexual, and 98% of heterosexual females report male sexual contact [11]. Even for women who have had sexual contact only with other women, HPV transmission is possible because it requires only skin-to-skin contact [12,13]. Additionally, adolescent girls have higher HPV rates as compared with adult women because they tend to have more sexual partners than adults [2]. As compared with heterosexuals, sexual minority youth and adults are screened with Pap tests less frequently, possibly increasing their risk for cervical cancer [14]. Sexual minorities also have higher cigarette smoking rates in adolescence and adulthood [15], which increase the risk that an HPV infection will progress to a cervical abnormality [16–18].

The Institute of Medicine reports that more data on STIs, Pap tests, and cervical dysplasia among sexual minorities are needed to guide medical, governmental, and educational policies [19]. Therefore, we examined Pap, STI, and HPV screening use and abnormal results in adolescent and young adult females of varying sexual orientations using descriptive epidemiologic research. This kind of analysis has rarely been conducted in a national sample. We hypothesized that sexual minority adolescent and young adult females underutilize Pap and HPV tests and have higher lifetime prevalence of abnormal results as compared cross-sectionally with heterosexual peers. Additionally, we hypothesized that reproductive health risk factors (sex of sexual partners, initiation of sexual intercourse, age of coitarche, and number of sexual intercourse partners) would differ by sexual orientation and partially explain sexual orientation group disparities in Pap test utilization, abnormal Pap test results, and STI/HPV risk in adolescent and young adult females.

Methods

Study sample

The Growing Up Today Study is an ongoing longitudinal cohort study of U.S. adolescents and young adults established in 1996 to assess an array of health topics. Women from the Nurses' Health Study II [20] who indicated they had at least one child aged 9–14 years provided consent and contact information for more than 25,000 of their children. Mothers who provided such information marginally varied from those who did not with regard to smoking (8% vs. 10%), age (37.7 vs. 37.8), and body mass index (25.3 kg/m^2 vs. 25.7 kg/m^2). Questionnaires were mailed to the children, and 9,039 girls (68%) and 7,843 (58%) boys returned completed questionnaires, indicating their consent. Questionnaires are now mailed annually or biennially, and more detailed information on the initial recruitment is available elsewhere [21]. Detailed reproductive health and sexual risk behavior questions were included in the 2005 Growing Up Today Study questionnaire, thus our sample was restricted to female participants responding in that survey year. Owing to the fact that these data were collected in 2005, we included only participants who reported sexual orientation and met the 2005 Pap test eligibility guidelines of ≥3 years since coitarche or being of age ≥21 years (N = 4,224). Additionally, we conducted sensitivity analyses including those participants who would be considered eligible by the current Pap eligibility guidelines. Because of the small number of cases, analyses did not include participants who were unsure (N = 6) or missing (N = 14) the sexual orientation response. Because clinical guidelines now recommend that screening should begin at the age of 21, regardless of sexual history [22], we ran additional analyses restricted to participants who met current Pap testing eligibility guidelines of being of age ≥21 years, regardless of sexual history (N = 3,426). This study was approved by the Brigham and Women's Hospital institutional review board.

Measures

Sexual orientation

Sexual orientation was assessed with an item adapted from the Minnesota Adolescent Health Survey [22,23] asking about feelings of attractions: "Which of the following best describes your feelings? (1) completely heterosexual (attracted to persons of the opposite sex), (2) mostly heterosexual, (3) bisexual (equally attracted to men and women), (4) mostly homosexual, (5) completely homosexual (gay/lesbian, attracted to persons of the same sex), (6) not sure." The "mostly homosexual" and "completely homosexual" responses were combined to form a lesbian category to increase statistical power. Participants who did not respond after two initial mailings received a short-form version of the 2005 questionnaire, which included the sexual orientation item. Encouraging participants to respond through multiple mailings and questionnaire forms resulted in more complete data.

Sexual history

Sex of sexual contacts was assessed with an item reading: "During your life, the person(s) with whom you have had sexual contact is (are)..." Responses included "I have not had sexual contact with anyone," "Females," "Males," or "Female(s) and Male(s)." An indicator variable was used for missing data on sex of sexual contacts (N = 26). The next question read: "Have you ever had sexual intercourse? (By sexual intercourse we mean vaginal or anal sex)." It is important to note that this question uses a definition of sexual intercourse that excludes oral sex and other types of vaginal or anal sexual contact if a participant does not define it as intercourse. Responses included "yes," "no," and "not sure" and if a participant indicated "yes" or "not sure," they were prompted to answer: "During your life, with how many people have you had sexual intercourse?" and "How old were you when you had sexual intercourse for the first time?" The