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Initial Engagement in Oral Sex and Sexual Intercourse among Adolescent Girls With and Without Childhood Attention-Deficit/Hyperactivity Disorder

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Abstract

We investigated initial engagement in oral sex and sexual intercourse, as well as number of sexual partners, among a prospectively followed sample of adolescent girls with and without a thorough childhood diagnosis of attention-deficit hyperactivity disorder (ADHD). Participants were adolescent girls (ages 12–19) followed longitudinally as part of a study of ADHD in females. A diverse sample of 140 girls with clinician-diagnosed ADHD (47 Inattentive, 93 Combined) and 88 age- and ethnicity-matched comparison girls were initially recruited and invited to partake in research summer programs. We utilized data on initial engagement in oral sex, sexual intercourse, and number of sexual partners, collected during follow-up interviews conducted 5 and 10 years after baseline participation. Girls with a childhood diagnosis of ADHD engaged in oral sex at a significantly younger age and reported nearly twice as many oral sex partners than their typically developing peers. Post-hoc tests revealed that group differences were driven largely by girls with the combined presentation of ADHD (i.e., those with childhood histories of both inattention and hyperactivity/impulsivity). No significant differences emerged with respect to age of initial sexual intercourse or number of male sexual intercourse partners. In sum, adolescent girls with ADHD, particularly those with the combined presentation, were more likely to engage in oral sexual activity at a young age and with a greater number of both male and female partners. Findings highlight the need for longitudinal research that quantifies and distinguishes between various forms of sexual behavior and later reproductive and mental health outcomes.

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Conflict of interest: The authors declare that they have no conflicts of interest.

COMPLIANCE WITH ETHICAL STANDARDS

Ethical standards of research with human subjects: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all participants included in the study. Both assent from participants and consent from the parent/guardian were collected at baseline when all participants were minors.

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Keywords

ADHD; sexual behavior; gender; impulsivity; DSM-5

INTRODUCTION

Adolescent sexual behavior exerts a disproportionate impact on public health in the U.S. Nearly 50% of the estimated 19.7 million sexually transmitted infection (STI) cases reported in 2008 were acquired by adolescents and young adults (ages 15–24), despite their accounting for only a quarter of the sexually active population (Satterwhite et al., 2013; Scott-Sheldon & Chan, 2020). Yet empirical research on oral sex (defined as oral-genital contact, including fellatio and cunnilingus) is extremely limited (Halpern-Felsher, Cornell, Kropp, & Tschann, 2005). Investigations of oral sex have emerged primarily over the past two decades, even as research suggests that rates of oral sex have been increasing since the 1970s, predominantly among younger generations (Herbenick et al., 2010; Lindberg, Jones, & Santelli, 2008). Given the prevalence of oral sex among adolescents (Holway & Hernandez, 2018), further investigation of this topic is required. Particular needs include understanding (1) distinct patterns of adolescent engagement in oral sex versus sexual intercourse (typically defined as vaginal intercourse), and (2) high-risk subgroups within the population of adolescents with respect to sexual activity.

Oral sex is at least as common as sexual intercourse among adolescents, if not more so. In fact, multiple surveys of high school and college students report higher reported rates of oral sex (either given or received) compared to sexual intercourse (Halpern-Felsher et al., 2005; Lefkowitz, Vasilenko, & Leavitt, 2016; Prinstein, Meade, & Cohen, 2003). Recent data from the U.S. Centers for Disease Control and Prevention (CDC) indicate that approximately 40% of high school students (ages 14–18) have ever had sexual intercourse (Kann et al., 2018). Although the CDC does not collect information on oral sexual activity, another nationally representative survey found that 55% of 15–19-year-olds have ever given or received oral sex (Lindberg et al., 2008). Adolescents may be more likely to engage in oral sex if they perceive it as a “risk-free” or less momentous alternative to sexual intercourse that also sidesteps the possibility of unintended pregnancy (Lindberg et al., 2008). Indeed, evidence suggests that adolescents engage in oral sex at a younger age than they engage in sexual intercourse, particularly in communities where abstinence is promoted (Remez, 2000). Furthermore, adolescent girls appear to be especially susceptible to peer pressure regarding oral sex, perhaps because of the absence of similar ceremony and meaning attached to the act of oral sex as opposed to losing one’s virginity (Goldstein & Halpern-Felsher, 2018; Lefkowitz et al., 2016; Prinstein et al., 2003).

A particular area in need of attention is the number of oral sex partners that adolescents typically report. The vast majority of research focuses on characterizing adolescents who report any engagement in oral sex without classifying the number (or gender) of unique partners with whom they engage. Holway and Hernandez (2018) compared adolescents and young adults (aged 15–24) who reported 0, 1, or 2+ opposite-gender oral sex partners, but did not provide mean numbers for any participants. Prinstein et al. (2003) observed the

prevalence of 1, 2, 3–4, or 5+ oral sex and sexual intercourse partners among adolescents, finding that sexually active teens reported significantly more oral sex partners relative to intercourse partners. However, partner gender was not specified. To our knowledge, no studies have investigated both the number and gender of oral sex partners reported by a sample of adolescents.

Research has begun to identify subgroups of adolescents and young adults who engage in any sexual activity at an “early” age, the definition of which is inherently problematic and somewhat subjective. Nonetheless, much of the literature defines “early” sexual intercourse as occurring before the age of 16 years (Gambadauro et al., 2018; Heywood, Patrick, Smith, & Pitts, 2015). One such group may be youth diagnosed with attention-deficit hyperactivity disorder (ADHD), a neurodevelopmental condition characterized by developmentally extreme and impairing levels of inattention (categorically, the inattentive presentation of ADHD: ADHD-I), hyperactivity/impulsivity (the HI presentation: ADHD-HI), or both (the combined presentation: ADHD-C). Prevalence data from the U.S. suggest that approximately 5% of girls (ages 2–17) and 12% of boys have a diagnosis of any type of ADHD (Danielson et al., 2018). ADHD incurs strong likelihood of academic, social, and neuropsychological impairment over time (Hinshaw, 2018). Furthermore, a large body of research reveals that youth with clinically significant symptoms of ADHD—particularly the dimension of hyperactivity/impulsivity—are highly likely to engage in myriad behaviors that put their health at risk, including alcohol and drug abuse, self-harm, suicide attempts, and unsafe driving (Graziano et al., 2015; Hinshaw et al., 2012; Molina et al., 2013; for reviews, see Barkley, 2014; Nigg, 2013). Although fewer studies have examined the independent effect of inattention on risky behavior, findings suggest a detrimental impact as well (see Molina & Pelham, 2003; Woodward, Fergusson, & Horwood, 2000). Yet only in the last two decades have researchers begun to investigate the prevalence of high-risk sexual behavior, including early engagement in sexual activity, among youth with ADHD and its constituent behavior patterns.

Whereas findings vary depending on outcome measure(s) and sample characteristics, overall research suggests a tendency toward riskier sexual behavior among youth with higher levels of ADHD symptoms. A number of possible mechanisms may underlie this association. In one cross-sectional study of adolescents (84% male) involved in the juvenile justice system, problematic substance use and conduct problems accounted for the link between ADHD symptoms and a composite measure of sexual risk behaviors (Sarver, McCart, Sheidow, & Letourneau, 2014). Similar results were obtained in the Multimodal Treatment Study of ADHD, a longitudinal study of children diagnosed with ADHD-C (80% male) who were followed into young adulthood. Meinzer et al. (2017) examined delinquency/substance use, academic performance, parenting, and persistent ADHD symptoms as potential mediators of the association between childhood ADHD and involvement in a pregnancy before the age of 18. When all variables were included in the model, only greater delinquency/substance use remained significant (Meinzer et al., 2017). With respect to initial engagement in sexual intercourse, conduct problems have been found to moderate the link between ADHD symptoms and an earlier age of first sexual intercourse, such that youth with high levels of ADHD symptoms and conduct problems report the youngest age of first intercourse (Galéra et al., 2010). It seems plausible to suggest that distinct mechanisms may be differentially

related to inattentive and hyperactive/impulsive symptoms: one cross-sectional study of Russian students (ages 12–17) found that only symptoms of inattention, and not those of hyperactivity/impulsivity, predicted riskier sexual behavior (Isaksson, Stickley, Kuposov, & Ruchkin, 2017). However, this composite measure of behavior did not include age of initial engagement in sexual activity.

In the limited research to date on ADHD and timing of sexual behavior, two studies have found that young adults with ADHD report a younger mean age of first sexual intercourse than those without the disorder (Flory, Molina, Pelham, Gnagy, & Smith, 2006; Hechtman et al., 2016). Although Flory et al. also found earlier initiation of “sexual relations” (defined as more than kissing but not intercourse) among participants with ADHD, neither study included any specific measures of oral sex. In addition, both samples were composed almost entirely of men (Flory et al.: 89% male; Hechtman et al.: 80% male) and included only participants with ADHD-C, limiting generalizability of results both with respect to both women and young adults with ADHD-I. Another study of adolescents (ages 13–18) found that only boys with ADHD (presentation unspecified) engaged in sexual intercourse at a younger age than their typically-developing counterparts, with no difference in age among girls (Rokeach & Wiener, 2018). We note, however, that this study was underpowered, with an extremely small subsample of girls ($n = 12$).

The traditional omission of girls and women from ADHD-related research is problematic in this regard, given that girls with ADHD may experience more negative social consequences than boys with the disorder (Elkins, Malone, Keyes, Iacono, & McGue, 2011). Distinct mechanisms may also be important for understanding sexual activity among young women versus men. Indeed, one meta-analysis of primarily non-clinical samples found that impulsivity was a much stronger predictor of risky sexual behaviors for women compared to men (Dir, Coskunpinar, & Cyders, 2014). Moreover, high-risk sexual behavior may well incur more harmful or lasting consequences for females compared to males, as women are more susceptible to certain STIs, more likely to be asymptomatic (and therefore untreated), and further face a greater range of physical health risks and complications—associated with pregnancy and giving birth (Hillis, Anda, Felitti, & Marchbanks, 2001). In sum, relevant research points to an ongoing need for longitudinal studies that measure both oral sex and sexual intercourse in relation to ADHD, particularly among the understudied population of adolescent girls.

Herein, we examine data on initial engagement in oral sex (either given or received) and sexual intercourse, from a prospective, longitudinal investigation of the developmental trajectories and outcomes of girls with a childhood diagnosis of ADHD, including both ADHD-I and ADHD-C (Hinshaw, 2002; Hinshaw, Owens, Sami, & Fargeon, 2006; Hinshaw et al., 2012; Owens, Zalecki, Gillette, & Hinshaw, 2017). To our knowledge, ours is the first study to investigate the age of initial oral sex, sexual intercourse, and number of sexual partners (both male and female) among a sample of adolescent girls with and without childhood-diagnosed ADHD. Given sufficiently large subsamples of girls with ADHD-I and ADHD-C, we also explore potential differences in outcomes between these presentations.

METHOD

Participants and Procedure

Recruitment procedures for the overarching longitudinal investigation, along with participant information, have been described in detail elsewhere (Hinshaw, 2002; Hinshaw et al., 2006). Briefly, girls aged 6–12 years were recruited from schools, mental health centers, pediatric practices, and through direct advertisements regarding participation in research summer programs in 1997, 1998, and 1999. Programs were free of charge and designed to provide enrichment rather than therapeutic intervention, with the objective of collecting ecologically valid participant data. A total of 140 girls with ADHD (47 Inattentive, 93 Combined) and 88 age- and ethnicity-matched comparison girls were selected to participate after extensive diagnostic assessment conducted via multiple informants and methods. Girls meeting criteria for ADHD-HI were excluded a priori in order to maximize statistical power for inattentive-versus combined-type contrasts (in addition, the HI presentation is rarely seen in children beyond the preschool years). Common psychiatric comorbidities (e.g., oppositional defiant disorder [ODD], conduct disorder [CD], anxiety disorders, depression, learning disorders) were allowed to promote the generalizability of the ADHD sample. The comparison group was allowed to have internalizing disorders and ODD in order to prevent creating a supernormal comparison sample. Exclusion criteria for both groups were intellectual disability, pervasive developmental disorders, psychosis or overt neurological disorder, lack of English spoken in the home, and medical problems prohibiting summer camp participation. For full details regarding recruitment procedures, see Hinshaw (2002).

During the Wave 1 (W1) summer programs, ADHD and comparison girls were intermixed and grouped by age prior to participating in each day's events, which included a variety of classroom and outdoor activities as well as one-on-one testing. Multi-source data were collected from parents, teachers, behavioral observers, and program counselors (the latter two types of informants were unaware of diagnostic group status) on psychological, social, behavioral, cognitive, and familial functioning. The sample was ethnically diverse (53% White, 27% African-American, 11% Latina, 9% Asian-American), and socioeconomic backgrounds ranged from professional parents to receipt of public assistance. Participants and their families were invited to engage in follow-up interviews that took place in three waves (W2, W3, W4), approximately 5, 10, and 16 years after baseline participation. Extensive efforts were made to track all participants, including the use of social media in some cases. Follow-up assessments were conducted by trained post-baccalaureate and graduate students in clinical psychology at our clinical/research site or at participants' homes when they were unable to travel. Participants were compensated between \$300 and \$400 for each of the three follow-up interviews. Retention rates ranged from 92–95% at all follow-up points. Extensive statistical analyses revealed few significant differences between the retained and the small groups of non-retained participants at each follow-up wave, although non-retained participants did show evidence of lower socioeconomic status and IQ scores as well as greater levels of baseline ADHD symptoms (for details, see Hinshaw et al., 2006; Owens, Zalecki, Gillette, & Hinshaw, 2017). For the present investigation we utilized Wave 1 ADHD diagnostic status, plus sexual activity data collected at W2 (age 11–18 years) and W3 (age 17–24 years).

There was an approximately 7-year age range among participants at each wave (i.e., girls were recruited and ascertained for baseline participation between the ages of 6 and 12). For the present research, we wished to focus on initial engagement in sexual activity specifically during adolescence, defined broadly as ages 12 through 19. Thus, we created a dataset of responses collected from each participant between the ages of 12 through 19, whether her data emerged at W2 or W3. For example, for a participant who was age 14 at W2 and age 20 at W3, data from W2 were used; but for a participant who was age 11 at W2 and age 17 at W3, data from W3 were used. This strategy allowed us to examine sexual activity taking place within the unique developmental window of adolescence. In a number of cases ($n = 63$) for whom a participant's age fell within the 12–19 range at both W2 and W3, data from W3 were utilized in order to maximize the amount of data available from participants on sexual activity (i.e., we would expect more sexual activity data to be reported by a given participant at age 19 compared to her sexual activity at age 12).

The final, culled dataset included W2 and/or W3 responses from 200 adolescent participants. The sample age range was 12.6 to 19.3 years ($M = 16.4$, $SD = 1.62$). There was no significant difference between the average age of participants in the Comparison group ($M = 16.5$, $SD = 1.63$) and those in the ADHD group ($M = 16.4$, $SD = 1.62$); thus, we did not include age as a covariate in subsequent analyses. We note, however, that key findings were entirely equivalent when we reconducted analyses including age as a covariate (see Table 1).

Measures

Sexual Behavior—The Social Relationships Interview (SRI) (Hinshaw et al., 2006) is a project-derived, self-report questionnaire/semi-structured interview administered to participants at all three follow-up waves. The SRI contains a number of items related to social functioning, close relationships, and sexual behavior, informed by the current literature for these domains, with questions based on conceptual models of friendship and romantic relationships (Owens et al., 2017). Herein, we utilized the following variables: age at first oral sex; number of oral sex partners (male and female); age at first sexual intercourse; and number of male sexual intercourse partners. An initial version of the SRI for the first year of W2 data collection did not distinguish between male and female oral sex partners in terms of question wording, resulting in a small number of participants ($n = 10$) for whom partner gender was not specified; therefore, we present data on reported number of oral sex partners both across and separately for partner gender.

ADHD Diagnostic Status—ADHD diagnostic status, present vs. absent, was ascertained from the Diagnostic Interview Schedule for Children (4th ed., DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) and the Swanson, Nolan, and Pelham Rating Scale (4th ed., SNAP-IV; Swanson, Nolan, & Pelham, Jr., 1992). The DISC-IV is a well-validated, structured diagnostic interview that was administered by highly trained graduate students to parents at W1; the DISC-IV also yields a designation of ADHD subtype for participants with ADHD (i.e., ADHD-I or ADHD-C). SNAP-IV data were collected from parents and teachers prior to final study enrollment. Participants were designated as having ADHD if they met full criteria for either ADHD-I or ADHD-C based on both the DISC-IV and parent SNAP-IV ratings. Those in the comparison group required a negative with respect to the

DISC-IV diagnosis of ADHD, although ODD and internalizing disorders (e.g., depression, anxiety) were allowed to reduce the possibility of creating a supernormal comparison sample. See Hinshaw (2002) for full details.

ADHD Presentation Status—Following the guidelines of the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, the version in place during participant recruitment; American Psychiatric Association, 1994), if a participant's DISC-IV inattentive symptom count was six or more and the SNAP-IV parent HI symptom count was six or more, the girl was designated as Combined; otherwise, she was designated as Inattentive (i.e., at least six inattentive symptoms but fewer than six HI symptoms). In a number of cases ($n = 28$) where girls' HI symptom count could be considered in the borderline range (that is, a DISC-IV HI count of four, five, or six and a SNAP-IV parent HI count of four, five, or six), clinical consensus from four senior staff was used to make a final designation. Again, see Hinshaw (2002) for further details regarding diagnostic procedures.

Data Analytic Plan

For each continuous dependent measure (age of initial engagement in oral sex, age of initial engagement in sexual intercourse, number of oral sex partners [male, female, and total], number of male sexual intercourse partners), we initially conducted independent-sample t -tests to ascertain significant differences between participants with vs. without childhood diagnoses of ADHD. Chi-square analyses were conducted to examine the dichotomous measures of any engagement in oral sex/any engagement in sexual intercourse by baseline diagnostic group. To test for ADHD-C vs. ADHD-I presentation differences, we then conducted one-way ANOVAs, followed (if significant) by Tukey tests for the specific presentation contrasts. We include effect sizes for all significant contrasts. Means, SD, and inferential statistics for continuous outcome measures are shown in Table 1.

RESULTS

Sample Characteristics

Participants in the ADHD and comparison groups did not differ significantly at baseline (W1) with respect to age, racial/ethnic background, household income, maternal education, maternal depression, single-parent status, or low birth weight. As expected, relative to comparison girls, those with ADHD had significantly higher SNAP-IV scores, lower full-scale IQ scores, and lower math and reading achievement scores (for further details regarding participant characteristics, see Hinshaw et al., 2012). Because research suggests a complex relation between educational background and engagement in oral sex (see Holway & Hernandez, 2018), we had no a priori expectations about the potential influence of intelligence or academic performance on our dependent measures. Moreover, adjusting for IQ in studies of ADHD may well incur “overcontrol” (see Dennis et al., 2009). We therefore present findings without statistical adjustment for IQ. Including it as a covariate did not alter the key results that follow.

Engagement in Oral Sex

Across all participants, 34.5% (69/200) reported having engaged in oral sex at least once. Rates were not significantly different for girls with either presentation of ADHD (38/119; 31.9%) relative to comparison girls (31/81; 38.3%). On average, girls with childhood ADHD reported being significantly younger than comparison girls at age of first oral sexual activity (14.8 vs. 15.9, $t = 2.77$, $df = 64$, $p = .007$, Cohen's $d = 0.65$). A one-way ANOVA revealed that group differences were also significant when ADHD girls were separated by presentation type ($F[2, 65] = 6.97$, $p = .002$, $adj R^2 = .151$). Tukey post-hoc tests indicated that girls with ADHD-C were significantly younger relative to comparison girls (14.3 vs. 15.9, $p = .002$, $d = 0.95$) as well as to girls with ADHD-I (14.3 vs. 15.6, $p = .037$, $d = 0.77$) regarding age of first oral sexual activity. There was no significant difference in age of first oral activity between comparison girls and those with ADHD-I.

Oral Sex Partners

All partner analyses were restricted to sexually active participants—i.e., those who had engaged in either oral sex or sexual intercourse. Across all participants, adolescents reported a mean of 3.29 total oral sex partners ($SD = 3.26$). Among participants for whom partner gender was noted in the dataset ($n = 60$), the mean number of male partners was 3.07 ($SD = 3.15$) and the mean number of female partners was 0.43 ($SD = 0.93$).

Girls with either presentation of ADHD reported a significantly greater number of total oral sex partners than did comparison girls (4.13 vs. 2.23, $t = 2.72$, $df = 47$, $p = .009$, $d = 0.66$). Results were similar when oral sex partners were examined separately by gender. Relative to comparison girls, participants with either type of ADHD reported greater numbers of male oral sex partners (3.91 vs. 2.11, $t = 2.41$, $df = 39$, $p = .021$, $d = 0.62$) and female oral sex partners (0.69 vs. 0.14, $t = 2.49$, $df = 37$, $p = .017$, $d = 0.64$).

We conducted one-way ANOVAs to examine potential differences between participants with ADHD-I and ADHD-C. The overall model was significant ($F[2, 65] = 3.29$, $p = .043$, $adj R^2 = 0.064$). Tukey post-hoc tests indicated that only girls with ADHD-C reported a significantly greater number of total oral sex partners relative to comparison girls (4.42 vs. 2.23, $p = .037$, $d = 0.69$). Results were parallel when oral sex partners were examined separately by gender. Only girls with ADHD-C reported a significantly greater number of female oral sex partners relative to comparison girls (0.90 vs. 0.14, $p = .013$, $d = 0.95$); girls with ADHD-I did not differ significantly from either comparison girls or girls with ADHD-C. With only childhood W1 diagnostic group as a predictor of female oral sex partners, the overall model fit was 0.104 ($adj R^2$). No significant diagnostic presentation differences were found with respect to number of male oral sex partners.

Given that the numbers of oral sex partners were not normally distributed, we additionally conducted hurdle models (Cragg, 1971) predicting the number of (1) male oral sex partners and (2) female oral sex partners, to ascertain whether findings would differ using a non-parametric test. Hurdle models are particularly useful for analyzing count data with excess zeros (Rose et al., 2006). Results from the hurdle models indicated that both a diagnosis of ADHD-I and a diagnosis of ADHD-C predicted a significantly greater number of male oral

sex partners (truncated Poisson with log link; ADHD-I $p = .005$, ADHD-C $p < .001$). With respect to female oral sex partners, only a diagnosis of ADHD-C predicted having at least one versus zero female oral sex partners (binomial with logit link, $p = .026$).

Engagement in Sexual Intercourse

Across all participants, 35% (70/200) reported having engaged in sexual intercourse at least once. Rates were not significantly different for girls with either type of ADHD (45/119; 37.8%) relative to comparison girls (25/81; 30.9%). There was no significant difference in mean age of first sexual intercourse by diagnostic presentation (Comparison = 15.6, ADHD-I = 15.3, ADHD-C = 15.0).

Male Sexual Intercourse Partners

Across all participants, adolescents reported a mean of 3.84 male sexual intercourse partners (SD = 3.39). No significant group differences were found with respect to the total number of male sexual intercourse partners, both across and within diagnostic presentations (Comparison = 4.22, ADHD-I = 4.31, ADHD-C = 3.27). Results obtained with a hurdle model were equivalent, such that neither diagnosis predicted a greater number of male sexual intercourse partners relative to comparison girls.

DISCUSSION

We examined initial engagement in oral sexual activity and sexual intercourse among a prospectively followed sample of adolescent girls with and without rigorously-diagnosed ADHD in childhood. On average, girls with a history of either the Inattentive or Combined presentation of ADHD reported earlier engagement in oral sex and a greater number of oral sex partners relative to typically developing girls. Post-hoc tests revealed that these differences were driven largely by girls with ADHD-C, although further non-parametric testing indicated that girls with ADHD-I also reported a greater number of male oral sex partners relative to comparison girls. Effect sizes ranged from medium to large. No significant group differences emerged with respect to initial age of engagement in sexual intercourse or number of male sexual intercourse partners.

Overall, these findings strongly suggest that girls with the Combined presentation of ADHD—that is, those with noteworthy symptoms of hyperactivity/impulsivity and inattention during childhood—may be prone to engage in oral sexual activity at a young age (around 14 years), whereas girls with either presentation of ADHD report greater numbers of male oral sex partners than do typically-developing comparison girls. The definition of an “early” sexual debut varies considerably by investigation, but most research suggests that having sexual intercourse before the age of 16 is associated with subsequent health risks, including substance use, depression, STIs, and unwanted pregnancy (Heywood et al., 2015; Olesen et al., 2012; Vasilenko, Kugler, & Rice, 2016). Adolescent girls who engage in sexual intercourse at a younger age are also at risk of being pressured or coerced by older partners, leading to low rates of protection and/or contraceptive use (Ompad et al., 2006).

To our knowledge, there is little or no research on the potential long-term health outcomes associated with early engagement in oral sex. This gap in the literature is particularly

concerning given the growing prevalence of oral sex as well as widespread ignorance among young people regarding its risks (Holway & Hernandez, 2018). Indeed, one survey revealed that over 20% of college students, including both those who had had sexual intercourse and those who had not, were unaware that chlamydia and gonorrhea can be transmitted via oral sex (Chambers, 2007). Furthermore, additional evidence suggests that increasing rates of oral sex are linked to a higher incidence of oral human papillomavirus (HPV) and, in turn, increasing rates of oropharyngeal cancer in several countries (Chaturvedi et al., 2013). Longitudinal research on the antecedents and consequences of early engagement in oral sex will be crucial to better inform reproductive health efforts and improve adolescents' education around this specific form of sexual activity.

An unexpected finding was the greater number of female oral sex partners reported by adolescent girls with ADHD-C. A Swedish twin study was the first to find heightened ADHD symptoms (measured via self-report) among men and women with any same-sex partner experience (Frisell, Lichtenstein, Rahman, & Langstrom, 2010). However, to our knowledge, no research has examined sexual orientation and partner preference among adolescent girls and young women with childhood-diagnosed ADHD. Intriguingly, there appears to be a possible link between same-sex partner interest and prenatal exposure to nicotine, a risk factor strongly associated with ADHD (Knopik et al., 2016; Thapar et al., 2009)—which may be specific to women (Ellis & Cole-Harding, 2001). Such data must be interpreted with caution, however, as this finding has yet to be replicated. The present data suggest that, at the very least, sexual orientation is another dimension worth exploring with respect to ADHD.

In the present sample, adolescent girls with a history of ADHD-I more closely resembled the comparison group, at least with respect to age of sexual activity and number of female partners. Very few studies have investigated the unique developmental course and sequelae of ADHD-I in adolescence (Barkley, 2006), even though this presentation has been found to be significantly more prevalent, and perhaps impairing, in girls than in boys (Elkins et al., 2011). One cross-sectional study of Russian students (ages 12–17) found that symptoms of inattention, rather than impulsivity, predicted “risky sexual behavior,” including a greater number of sexual intercourse partners (Isaksson et al., 2017). In that report, however, ADHD symptoms were based solely on teacher ratings and assessed concurrently with sexual behavior, leading to concerns with respect to validity. Additionally, some longitudinal research indicates that adolescents with high self-reported attention difficulties are at increased risk for later peer victimization and poor relationships (Connors, Connolly, & Toplak, 2012), factors that have been found to contribute to risky sexual behavior (Hong, Voisin, Kim, Allen-Meares, & Espelage, 2019; Lansford, Dodge, Fontaine, Bates, & Pettit, 2014). It may be that social vulnerabilities among youth with ADHD-I are not reflected in their oral sexual activity in adolescence but exert more subtle effects on sexual behavior or romantic relationships over time. Regardless, such findings suggest that early symptoms of inattention may contribute to poor psychosocial outcomes years later, meriting further investigation.

Regarding age of initial sexual intercourse and male sexual intercourse partners, we found no significant differences between adolescent girls with and without childhood-diagnosed

ADHD in the present sample. In fact, comparison girls reported a slightly (but non-significantly) greater number of male intercourse partners relative to girls with ADHD. This finding is surprising given the vastly (over four times) higher rate of unplanned pregnancies found in our sample followed through our fourth wave of data collection (Owens et al., 2017). Note that these latter data were collected when participants were young adults (mean age of 26 years) rather than as teenagers. It may be that sexual intercourse in adolescence tends to follow a more prolonged period of involvement and intimacy relative to oral sex; teenage girls with ADHD have well-documented difficulties in establishing the kinds of close relationships that may set the stage for sexual intercourse at a young age (Babinski et al., 2011; Barkley, 2006). If so, we would expect to see higher rates of engagement in sexual behaviors that specifically occur outside the context of intimacy, such as sexual activity with casual, newly-met partners or multiple partners over a short period of time. Overall, adolescent girls appear to approach oral sex and sexual intercourse in at least partially distinct ways, necessitating further research that distinguishes between these two forms of sexual behavior and their perceived consequences.

Our study had several important limitations. First, as detailed in Hinshaw (2002), our sample of girls with ADHD and their counterparts are not representative of the entire population, given that the original aim was to recruit a large, ethnically and socioeconomically diverse sample from our region of the country. The data presented herein may reflect sexual behavior patterns specific to adolescent girls living in a relatively urban area of the Western U.S. Second, although the overall rate of retention was high across our prospective longitudinal waves, those few participants lost to follow-up were poorer, less intelligent, and more symptomatic than the retained sample (Hinshaw et al., 2012; Owens et al., 2017). The SRI measure was also modified slightly over time, such that certain pieces of information (e.g., gender of partners) were not collected for a small number of participants. Third, in our age-based dataset (see Method), we were able to consider only those items that were kept consistent across waves, limiting the scope of variables in our analyses. In particular, puberty data were collected only at W2, when many girls had not yet gone through puberty, and we were therefore unable to consider the role of pubertal timing in the current study. Finally, it is possible that adolescent participants were not entirely truthful in their self-report of sexual activity to researchers. Still, the methodology reported herein is typical for the assessment of sexual behavior given that few measurement alternatives are viable (Prinstein et al., 2003).

Conclusions and Future Directions

We found that teenage girls with a childhood history of ADHD-C engaged in oral sex approximately 1.5 years earlier than their peers. Although girls with either presentation of ADHD reported a greater number of male oral sex partners, only girls with childhood ADHD-C were more likely to report female oral sex partners than comparison participants, underscoring the importance of considering sexual orientation and partner preference among adolescence. No significant diagnostic group differences were found with respect to age of first sexual intercourse or number of male intercourse partners, highlighting the need to differentiate between oral sex and sexual intercourse, and their sequelae, in future studies.

The present findings extend previous research on youth with ADHD, particularly girls, by investigating a subsample of participants with inattentive symptoms only and by including data on different forms of sexual activity. At least with respect to oral sex, it appears that adolescent girls with ADHD-I may not demonstrate some of the riskier behaviors (e.g., early engagement) that characterize girls with ADHD-C. One parsimonious explanation is that elevated levels of impulsivity or sensation-seeking among girls with ADHD-C are driving the differences in age of initial oral sex engagement, a suggestion that aligns with previous research (Dir et al., 2014). Yet this contention raises the question of why girls with ADHD-C also reported the fewest number of male sexual intercourse partners. Especially given the complexity of sexual behavior, symptoms alone may not be a sufficient explanation for the observed differences, and other factors may be at play. For example, girls with ADHD-C experience more rejection from their peers than those with ADHD-I (Hinshaw, 2002), which in turn is linked to later sexual risk-taking (Lansford et al., 2014). Future studies should investigate adolescent sexual activity as a function of symptom severity and persistence, in addition to exploring the potential roles of peer rejection and child maltreatment (see Guendelman, Owens, Gard, Galan, & Hinshaw, 2016). Given the immense public health impact of adolescent sexual behavior, as well as our limited understanding of ADHD in girls (Elkins et al., 2011), continued research in this area is sorely needed.

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REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Babinski DE, Pelham WE, Molina BSG, Gnagy EM, Waschbusch DA, Yu J, ... Karch KM (2011). Late adolescent and young adult outcomes of girls diagnosed with ADHD in childhood: An exploratory investigation. *Journal of Attention Disorders*, 15, 204–214. 10.1177/10870547110361586 [PubMed: 20562386]
- Barkley RA (2006). ADHD in adults: Developmental course and outcome of children with ADHD, and ADHD in clinic-referred adults. *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*, 248–296.
- Barkley RA (2014). ADHD and injuries: Accidental and self-inflicted. *The ADHD Report*, 22, 1–8. 10.1521/adhd.2014.22.2.1
- Chambers WC (2007). Oral sex: Varied behaviors and perceptions in a college population. *Journal of Sex Research*, 44, 28–42. 10.1080/00224490709336790 [PubMed: 17599262]
- Chaturvedi AK, Anderson WF, Lortet-Tieulent J, Curado MP, Ferlay J, Franceschi S, ... Gillison ML (2013). Worldwide trends in incidence rates for oral cavity and oropharyngeal cancers. *Journal of Clinical Oncology*, 31, 4550–4559. 10.1200/JCO.2013.50.3870 [PubMed: 24248688]
- Connors LL, Connolly J, & Toplak ME (2012). Self-reported inattention in early adolescence in a community sample. *Journal of Attention Disorders*, 16, 60–70. 10.1177/1087054710379734 [PubMed: 20837982]
- Cragg JG (1971). Some statistical models for limited dependent variables with application to the demand for durable goods. *Econometrica*, 39, 829–844. 10.2307/1909582
- Danielson ML, Bitsko RH, Ghandour RM, Holbrook JR, Kogan MD, & Blumberg SJ (2018). Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *Journal of Clinical Child and Adolescent Psychology*, 47, 199–212. 10.1080/15374416.2017.1417860 [PubMed: 29363986]

- Dennis M, Francis DJ, Cirino PT, Schachar R, Barnes MA, & Fletcher JM (2009). Why IQ is not a covariate in cognitive studies of neurodevelopmental disorders. *Journal of the International Neuropsychological Society*, 15, 331–343. 10.1017/S1355617709090481 [PubMed: 19402919]
- Dir AL, Coskunpinar A, & Cyders MA (2014). A meta-analytic review of the relationship between adolescent risky sexual behavior and impulsivity across gender, age, and race. *Clinical Psychology Review*, 34, 551–562. 10.1016/j.cpr.2014.08.004 [PubMed: 25261740]
- Elkins IJ, Malone S, Keyes M, Iacono WG, & McGue M (2011). The impact of Attention-Deficit/Hyperactivity Disorder on preadolescent adjustment may be greater for girls than for boys. *Journal of Clinical Child and Adolescent Psychology*, 40, 532–545. 10.1080/15374416.2011.581621 [PubMed: 21722026]
- Ellis L, & Cole-Harding S (2001). The effects of prenatal stress, and of prenatal alcohol and nicotine exposure, on human sexual orientation. *Physiology & Behavior*, 74, 213–226. [PubMed: 11564471]
- Flory K, Molina BSG, Pelham WE Jr, Gnagy E, & Smith B. (2006). Childhood ADHD predicts risky sexual behavior in young adulthood. *Journal of Clinical Child and Adolescent Psychology*, 35, 571–577. 10.1207/s15374424jccp3504_8 [PubMed: 17007602]
- Frisell T, Lichtenstein P, Rahman Q, & Långström N (2010). Psychiatric morbidity associated with same-sex sexual behaviour: Influence of minority stress and familial factors. *Psychological Medicine*, 40, 315–324. 10.1017/S0033291709005996 [PubMed: 19460186]
- Galéra C, Messiah A, Melchior M, Chastang J-F, Encrenaz G, Lagarde E, ... Fombonne E (2010). Disruptive behaviors and early sexual intercourse: The GAZEL Youth Study. *Psychiatry Research*, 177, 361–363. 10.1016/j.psychres.2010.03.009 [PubMed: 20381166]
- Gambadauro P, Carli V, Hadlaczky G, Sarchiapone M, Apter A, Balazs J, ... Wasserman D (2018). Correlates of sexual initiation among European adolescents. *PLoS ONE*, 13 10.1371/journal.pone.0191451
- Goldstein R, & Halpern-Felsher B (2018). Adolescent oral sex and condom use: How much should we worry and what can we do? *Journal of Adolescent Health*, 62, 363–364. 10.1016/j.jadohealth.2018.01.002
- Graziano PA, Reid A, Slavec J, Paneto A, McNamara JP, & Geffken GR (2015). ADHD symptomatology and risky health, driving, and financial behaviors in college: The mediating role of sensation seeking and effortful control. *Journal of Attention Disorders*, 19, 179–190. [PubMed: 24743978]
- Guendelman MD, Owens EB, Galán C, Gard A, & Hinshaw SP (2016). Early-adult correlates of maltreatment in girls with attention-deficit/hyperactivity disorder: Increased risk for internalizing symptoms and suicidality. *Development and Psychopathology*, 28, 1–14. 10.1017/S0954579414001485 [PubMed: 25723055]
- Halpern-Felsher BL, Cornell JL, Kropp RY, & Tschann JM (2005). Oral versus vaginal sex among adolescents: Perceptions, attitudes, and behavior. *Pediatrics*, 115, 845–851. 10.1542/peds.2004-2108 [PubMed: 15805354]
- Hechtman L, Swanson JM, Sibley MH, Stehli A, Owens EB, Mitchell JT, ... Stern K (2016). Functional adult outcomes 16 years after childhood diagnosis of Attention-Deficit/Hyperactivity Disorder: MTA results. *Journal of the American Academy of Child and Adolescent Psychiatry*, 55, 945–952. 10.1016/j.jaac.2016.07.774 [PubMed: 27806862]
- Herbenick D, Reece M, Schick V, Sanders SA, Dodge B, & Fortenberry JD (2010). Sexual behavior in the United States: Results from a national probability sample of men and women ages 14–94. *Journal of Sexual Medicine*, 7, 255–265. 10.1111/j.1743-6109.2010.02012.x
- Heywood W, Patrick K, Smith AMA, & Pitts MK (2015). Associations between early first sexual intercourse and later sexual and reproductive outcomes: A systematic review of population-based data. *Archives of Sexual Behavior*, 44, 531–569. 10.1007/s10508-014-0374-3 [PubMed: 25425161]
- Hillis SD, Anda RF, Felitti VJ, & Marchbanks PA (2001). Adverse childhood experiences and sexual risk behaviors in women: A retrospective cohort study. *Family Planning Perspectives*, 33, 206–211. [PubMed: 11589541]

- Hinshaw SP (2002). Preadolescent girls with attention-deficit/hyperactivity disorder: I. Background characteristics, comorbidity, cognitive and social functioning, and parenting practices. *Journal of Consulting and Clinical Psychology*, 70, 1086–1098. 10.1037//0022-006X.70.5.1086 [PubMed: 12362959]
- Hinshaw SP (2018). Attention Deficit Hyperactivity Disorder (ADHD): Controversy, developmental mechanisms, and multiple levels of analysis. *Annual Review of Clinical Psychology*, 14, 291–316. 10.1146/annurev-clinpsy-050817-084917
- Hinshaw SP, Owens EB, Sami N, & Fargeon S (2006). Prospective follow-up of girls with attention-deficit/hyperactivity disorder into adolescence: Evidence for continuing cross-domain impairment. *Journal of Consulting and Clinical Psychology*, 74, 489–499. 10.1037/0022-006X.74.3.489 [PubMed: 16822106]
- Hinshaw SP, Owens EB, Zalecki C, Huggins SP, Montenegro-Nevado AJ, Schrodek E, & Swanson EN (2012). Prospective follow-up of girls with Attention-deficit/Hyperactivity Disorder into early adulthood: Continuing impairment includes elevated risk for suicide attempts and self-injury. *Journal of Consulting and Clinical Psychology*, 80, 1041–1051. 10.1037/a0029451 [PubMed: 22889337]
- Holway GV, & Hernandez SM (2018). Oral sex and condom use in a U.S. national sample of adolescents and young adults. *Journal of Adolescent Health*, 62, 402–410. 10.1016/j.jadohealth.2017.08.022
- Hong JS, Voisin DR, Kim JW, Allen-Meares P, & Espelage DL (2019). Pathways from peer victimization to sexual risk-taking behavior among African American adolescents in Chicago's southside. *Psychology of Violence*, 9, 88–97. 10.1037/vio0000164
- Isaksson J, Stickley A, Kuposov R, & Ruchkin V (2017). The danger of being inattentive—ADHD symptoms and risky sexual behaviour in Russian adolescents. *European Psychiatry*, 47, 42–48. 10.1016/j.eurpsy.2017.09.004 [PubMed: 29100171]
- Kann L, McManus T, Harris WA, Shanklin SL, Flint KH, Queen B, ... Ethier KA (2018). Youth Risk Behavior Surveillance—United States, 2017 (SS-8; Morbidity and Mortality Weekly Report Surveillance Summaries, p. 479). U.S. Department of Health and Human Services.
- Knopik VS, Marceau K, Bidwell LC, Palmer RHC, Smith TF, Todorov A, ... Heath AC (2016). Smoking during pregnancy and ADHD risk: A genetically informed, multiple-rater approach. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 171, 971–981. 10.1002/ajmg.b.32421 [PubMed: 26799787]
- Lansford JE, Dodge KA, Fontaine RG, Bates JE, & Pettit GS (2014). Peer rejection, affiliation with deviant peers, delinquency, and risky sexual behavior. *Journal of Youth and Adolescence*, 43, 1742–1751. 10.1007/s10964-014-0175-y [PubMed: 25150986]
- Lefkowitz ES, Vasilenko SA, & Leavitt CE (2016). Oral vs. vaginal sex experiences and consequences among first-year college students. *Archives of Sexual Behavior*, 45, 329–337. 10.1007/s10508-015-0654-6 [PubMed: 26597646]
- Lindberg LD, Jones R, & Santelli JS (2008). Noncoital sexual activities among adolescents. *Journal of Adolescent Health*, 43, 231–238. 10.1016/j.jadohealth.2007.12.010
- Meinzer MC, LeMoine KA, Howard AL, Stehli A, Arnold LE, Hechtman L, ... Chronis-Tuscano A (2017). Childhood ADHD and involvement in early pregnancy: Mechanisms of risk. *Journal of Attention Disorders*, 1087054717730610 10.1177/1087054717730610
- Molina BSG, Hinshaw SP, Eugene Arnold L, Swanson JM, Pelham WE, Hechtman, ... Marcus S. (2013). Adolescent substance use in the Multimodal Treatment Study of Attention-Deficit/Hyperactivity Disorder (ADHD) (MTA) as a function of childhood ADHD, random assignment to childhood treatments, and subsequent medication. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52, 250–263. 10.1016/j.jaac.2012.12.014 [PubMed: 23452682]
- Molina BSG, & Pelham WE (2003). Childhood predictors of adolescent substance use in a longitudinal study of children with ADHD. *Journal of Abnormal Psychology*, 112, 497–507. 10.1037/0021-843X.112.3.497 [PubMed: 12943028]
- Nigg J (2013). Attention-deficit/hyperactivity disorder and adverse health outcomes. *Clinical Psychology Review*, 33, 215–228. 10.1016/j.cpr.2012.11.005 [PubMed: 23298633]

- Olesen TB, Jensen KE, Nygård M, Tryggvadottir L, Sparén P, Hansen BT, Liaw K-L, & Kjær SK (2012). Young age at first intercourse and risk-taking behaviours—A study of nearly 65 000 women in four Nordic countries. *European Journal of Public Health*, 22, 220–224. 10.1093/eurpub/ckr055 [PubMed: 21596800]
- Ompad DC, Strathdee SA, Celentano DD, Latkin C, Poduska JM, Kellam SG, & Ialongo NS (2006). Predictors of early initiation of vaginal and oral sex among urban young adults in Baltimore, Maryland. *Archives of Sexual Behavior*, 35, 53–65. 10.1007/s10508-006-8994-x [PubMed: 16502153]
- Owens EB, Zalecki C, Gillette P, & Hinshaw SP (2017). Girls with childhood ADHD as adults: Cross-domain outcomes by diagnostic persistence. *Journal of Consulting and Clinical Psychology*, 85, 723–736. 10.1037/ccp0000217 [PubMed: 28414486]
- Prinstein MJ, Meade CS, & Cohen GL (2003). Adolescent oral sex, peer popularity, and perceptions of best friends' sexual behavior. *Journal of Pediatric Psychology*, 28, 243–249. 10.1093/jpepsy/jsg012 [PubMed: 12730281]
- Remez L (2000). Oral sex among adolescents: Is it sex or is it abstinence? *Family Planning Perspectives*, 32, 298–304. 10.2307/2648199 [PubMed: 11138867]
- Rokeach A, & Wiener J (2018). The romantic relationships of adolescents with ADHD. *Journal of Attention Disorders*, 22, 35–45. 10.1177/1087054714538660 [PubMed: 24972794]
- Rose CE, Martin SW, Wannemuehler KA, & Plikaytis BD (2006). On the use of zero-inflated and hurdle models for modeling vaccine adverse event count data. *Journal of Biopharmaceutical Statistics*, 16, 463–481. 10.1080/10543400600719384 [PubMed: 16892908]
- Sarver DE, McCart MR, Sheidow AJ, & Letourneau EJ (2014). ADHD and risky sexual behavior in adolescents: Conduct problems and substance use as mediators of risk. *Journal of Child Psychology and Psychiatry*, 55, 1345–1353. 10.1111/jcpp.12249 [PubMed: 24813803]
- Satterwhite CL, Torrone E, Meites E, Dunne EF, Mahajan R, Ocfemia MCB, ... Weinstock H (2013). Sexually transmitted infections among U.S. women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases*, 40, 187–193. 10.1097/OLQ.0b013e318286bb53 [PubMed: 23403598]
- Scott-Sheldon LAJ, & Chan PA (2020). Increasing sexually transmitted infections in the U.S.: A call for action for research, clinical, and public health practice. *Archives of Sexual Behavior*, 49, 13–17. 10.1007/s10508-019-01584-y [PubMed: 31724094]
- Shaffer D, Fisher P, Lucas CP, Dulcan MK, & Schwab-stone ME (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39, 28–38. 10.1097/00004583-200001000-00014 [PubMed: 10638065]
- Swanson JM, Nolan W, & Pelham WE Jr. (1992). The SNAP-IV rating scale. Retrieved from <http://www.adhd.net>.
- Thapar A, Rice F, Hay D, Boivin J, Langley K, van den Bree M, Rutter M, & Harold G (2009). Prenatal smoking might not cause attention-deficit/hyperactivity disorder: Evidence from a novel design. *Biological Psychiatry*, 66, 722–727. 10.1016/j.biopsych.2009.05.032 [PubMed: 19596120]
- Vasilenko SA, Kugler KC, & Rice CE (2016). Timing of first sexual intercourse and young adult health outcomes. *Journal of Adolescent Health*, 59, 291–297. 10.1016/j.jadohealth.2016.04.019
- Woodward LJ, Fergusson DM, & Horwood LJ (2000). Driving outcomes of young people with attentional difficulties in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 627–634. 10.1097/00004583-200005000-00017 [PubMed: 10802981]

Table 1

Includes no covariates		Baseline diagnostic group					
Sexual outcome	Comparison	ADHD-Inattentive	ADHD-Combined	Range	<i>F</i>	<i>p</i> value (overall)	<i>p</i> value (ADHD-C)
Age of initial oral sex (in years)	15.9 (1.3)	15.6 (1.6)	14.3 (2.0)	7 – 18	6.97	.002	.002
Male oral sex partners	2.1 (1.4)	3.6 (2.9)	4.1 (4.6)	0 – 20	2.68	.077	.076
Female oral sex partners	0.14 (.36)	0.33 (1.2)	.90 (1.2)	0 – 4	4.44	.016	.013
Total oral sex partners	2.2 (1.3)	3.6 (3.1)	4.4 (4.5)	1 – 20	3.29	.043	.037
Age of initial sexual intercourse	15.6 (1.2)	15.3 (1.5)	15.0 (1.2)	12 – 18	1.80	.174	.152
Male sexual intercourse partners	4.2 (3.4)	4.3 (4.9)	3.3 (3.4)	0 – 17	0.52	.597	.652
Includes age as covariate		Baseline diagnostic group					
Sexual outcome	Comparison	ADHD-Inattentive	ADHD-Combined	Range	<i>F</i>	<i>p</i> value (overall)	<i>p</i> value (ADHD-C)
Age of initial oral sex (in years)	15.9 (1.3)	15.4 (1.6)	14.4 (2.0)	7 – 18	10.7	<.001	.001
Male oral sex partners	2.1 (1.4)	3.7 (2.9)	4.1 (4.6)	0 – 20	1.93	.135	.083
Female oral sex partners	0.15 (.36)	0.32 (1.2)	0.90 (1.2)	0 – 4	2.92	.042	.016
Total oral sex partners	2.2 (1.3)	3.6 (3.1)	4.4 (4.5)	1 – 20	2.25	.091	.040
Age of initial sexual intercourse	15.6 (1.2)	15.3 (1.5)	15.0 (1.2)	12 – 18	2.96	.039	.243
Male sexual intercourse partners	4.2 (3.4)	4.2 (4.9)	3.3 (3.4)	0 – 17	0.68	.569	.813

Means (SD) from one-way ANOVA models for sexual outcomes by baseline diagnostic group