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Multi-person Sex among a Sample of Adolescent Female Urban Health Clinic Patients

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ABSTRACT *Adolescent sexual activity involving three or more people is an emerging public health concern. The goal of this exploratory, cross-sectional study was to describe the prevalence, correlates, and context of multiple-person sex among a sample of adolescent females seeking health care from an urban clinic. Because sex involving multiple people may either be consensual (i.e., "three-ways" or "group sex") or forced (i.e., "gang rape"), we use the term "multi-person sex" (MPS) to encompass these experiences. Subjects were 328 females, ages 14–20 years old, who utilized a Boston-area community- or school-based health clinic between April and December of 2006, and completed an anonymous survey using computer-assisted self-interview software. Overall, 7.3% reported ever having had a MPS experience. Of these, 52% reported ever being pressured to engage in MPS and 43% reported ever being threatened or forced. Condom nonuse by at least one male participant in the most recent MPS was reported by 45%. Controlling for potential demographic confounders, MPS was associated with cigarette smoking (adjusted prevalence ratio [APR], 3.83; 95% confidence interval [CI], 1.56–9.44), sexual initiation prior to age 15 (APR, 2.50; 95% CI, 1.04–5.98), ever being diagnosed with an STI (APR, 2.55; 95% CI, 1.08–6.03), dating violence victimization (APR, 4.43; 95% CI, 1.68–11.69), childhood sexual abuse victimization (APR, 4.30; 95% CI, 1.83–10.07) and past-month pornography exposure (APR, 4.79; 95% CI, 1.91–11.98). Additional study of the perpetration and prevention of adolescent MPS is urgently needed.*

KEYWORDS *Adolescent, Group sex, Sexual behavior, Rape, Sexually transmitted diseases, Sexual assault*

INTRODUCTION

Adolescent sex involving multiple simultaneous partners is an emerging public health concern. "Multi-person sex" (MPS), a term we use here to describe

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sexual activity involving multiple people simultaneously, may be either consensual (e.i., group sex) or forced (e.i., gang rape). Whether consensual or coercive, MPS may amplify the health risks associated with sexual activity.[1–3]

A recent study of high-school-attending girls in the Northeast found that "sex parties" are currently an "accepted activity of a certain subset of teens,"[4] and a survey of high school seniors in a medium-sized Swedish city found that 11% of sexually active boys and 7% of sexually active girls reported ever having had group sex.[5] A national survey of Serbian youth ages 13–25 years old similarly found that 11.2% of boys and 1.5% of girls had group sex experience.[6] While data on group sex among US adolescents are rare, one study of a high-risk Brooklyn-based sample, of which 43% were injection drug users, found that 38% of 18- to 24-year-old study participants had attended a group sex event in the past year.[1] Moreover, 10% of those who had attended a group sex event reported engaging in unsafe sex there, suggesting that MPS may be a component of STI/HIV risk for a subset of adolescents.[1]

While the potential epidemiologic significance of group sex to HIV transmission among men who have sex with men has been a public health concern for decades,[1,7,8] relatively little attention has been given to adolescent MPS. To our knowledge, national studies that include sexual experiences questionnaires such as the National Longitudinal Study of Adolescent Health, the Youth Risk Behavior Survey, and National Survey of Family Growth do not collect data about MPS. The research on adult MPS indicates that it facilitates HIV transmission[1,7–10] and is associated with other STIs.[2,3] Gang rape can result in substantial mental health trauma for victims,[11] and coerced or forced MPS may exacerbate risk for pregnancy, STI infection, genital injury, somatic pain, and trauma.[12–16] Urban disadvantage—a term used to describe the interrelated effects of poverty, income inequality, a concentration of single-parent families, elevated school dropout and unemployment rates, and racial residential segregation[17,18]—can confer unique risks for young women's sexual development and health, such as pressure for early sexual initiation, persistent harassment, coercion, and violence,[19] underscoring the critical need for investigation into the prevalence, context, and health correlates of MPS among urban, female youth. Therefore, it is particularly important to understand MPS activity patterns, and the context in which MPS occurs, among adolescents.

Because little is known about MPS among adolescent girls, it is unclear whether and how providers should discuss the topic with patients, and how MPS or "sex parties" should be addressed by prevention experts. Therefore, the present exploratory study was designed to estimate the prevalence and health correlates of MPS among a sample of female adolescents utilizing community-based health clinics in an urban environment, and to describe the context of participants' most recent MPS events.

METHODS

Sample and Procedures

This study collected cross-sectional survey data from 495 females ages 14–20 years old who utilized adolescent-specific, community- or school-based clinics in the urban neighborhoods of Greater Boston between April and December of 2006. A total of 1,224 adolescent females seeking services at five clinics were screened for age eligibility by a trained researcher prior to their appointment. Of those, 747 were eligible and 495 (66%) were interested in participating in the study. Survey data

were collected anonymously, in English and Spanish, via a self-administered laptop computer program (audio computer-assisted self-interview [ACASI]). After completing the 35-minute survey, participants were given a list of local support services as well as a $20 pre-paid debit card as remuneration. All procedures were approved by human subjects research committees at the authors' institutions.

Measures

Single items assessed demographic characteristics. The primary outcome of interest, MPS, was assessed via a single item developed by the investigative team based on our prior qualitative research.[20] The item was: "Have you ever had sex (vaginal, oral, or anal) with more than one person at the same time or with more than one person at the same place? (This might be called group sex, a threesome, an orgy, or pulling a train)." Participants endorsing this item were asked a series of follow-up questions, including history of force to engage in MPS. Single items adapted from the Youth Risk Behavior Survey were used to assess past-month cigarette use, binge drinking, marijuana use, past-year physical fighting, and lifetime history of HIV testing and STD diagnosis. Single original items were used to assess pregnancy history, gang involvement, and past-year suicidal thoughts or attempts.

Exposure to pornography was assessed via an original question that asked: "Many people come into contact with pornographic, x rated, or other sexually explicit material. How many times in the past 30 days have you viewed pornographic, x rated, or other sexually explicit material?" Any response other than "no times" was coded as past-month exposure to pornography. In addition, two subsequent questions asked participants whether anyone had ever insisted, or used force or threats to compel the participant, to do sexual things that they had seen in pornographic materials. For example, participants were asked: "Has anyone ever insisted (without using force or threats) that you do sexual things they saw in pornographic or x-rated magazines, websites, or movies when you did not want to?" Participants who reported that someone had used threats or force to make them do sexual things that they did not want to do were classified as having been forced to do sexual things that the perpetrator saw in pornography.

Lifetime exposure to dating violence was assessed via a modified version of the Conflict Tactics Scales-2.[21] The six-item Kessler Psychological Distress Scale assessed past-month psychological distress symptoms.[22] Participants who reported that they had ever had a parent or other adult touch or fondle them in a sexual way, attempt to have sex with them, or were made to touch a parent or other adult in a sexual way, were classified as having experienced child sexual abuse.

Statistical Analyses

All analyses were conducted using SAS Version 9. We restricted the present analysis to only those patients who reported ever having had sex and who completed the questions about MPS ($n=328$). We calculated the prevalence of MPS for the total sample and by demographic characteristic and assessed differences in MPS by demographic characteristics using chi-square analyses. Next, we calculated the prevalence of health outcomes for the sample and among those with and without MPS and computed prevalence ratios with 95% confidence intervals (CIs). Prevalence ratios were adjusted for age, race/ethnicity, nativity, and recruitment location.[23] Finally, we computed descriptive statistics to characterize the nature and context of MPS.

RESULTS

Among this sample, 7.3% reported ever having had a MPS (Table 1). In adjusted analyses, MPS was associated with several of the most common health concerns observed in the sample, including cigarette smoking (APR, 3.83; 95% CI, 1.56–9.44), sexual initiation prior to age 15 (APR, 2.35; 95% CI, 1.01–5.48), ever being diagnosed with an STI (APR, 2.55; 95% CI, 1.08–6.03), dating violence victimization (APR, 4.43; 95% CI, 1.68–11.69), childhood sexual abuse victimization (APR, 4.30; 95% CI, 1.83–10.07), past-month pornography exposure (APR, 4.79; 95% CI, 1.91–11.98), and ever being forced or threatened to participate in sexual behaviors that the perpetrator saw in pornography (APR, 8.63; 95% CI, 3.93–18.93) (Table 2). In addition, while the associations did not reach statistical significance, MPS was borderline associated with suicidal ideation or suicidal behavior (Table 2).

The average age of first MPS was 15.6 years old. The majority of those with MPS had a sole experience; 21% had multiple experiences. One third (33%) reported using alcohol or drugs prior to their most recent MPS experience, and of these, 50% reported that their alcohol or drug use was voluntary. Over half (52%) of participants reported that they had ever been pressured to engage in MPS, and 43% reported being ever threatened or forced to engage in MPS. Approximately one quarter (26%) reported that a current or former boyfriend participated in at least one of their MPS experiences. In total, 34.8% of participants experiencing MPS reported that they had never been forced to engage in MPS, had never engaged in MPS as the result of pressure or threats, and had never engaged in MPS subsequent to non-voluntary alcohol or drug consumption. With regard to their most recent MPS, over half (54.6%) of respondents reported that all of the male participants used condoms.

DISCUSSION

Using retrospective data from a sample of adolescent females who utilized urban health clinics, this article describes the prevalence, correlates, and context of MPS experiences. We found that approximately one in 13 (7.3%) respondents had

TABLE 1 Sample demographics ($N = 328$)

	Total sample (%)	Respondents with multi-partner sex experience (% (95% CI))	Chi-square (p value)
Total	100.0	7.3 (4.5, 10.2)	
Age			1.163 (0.559)
14–15	14.0 (10.2, 17.8)	10.9 (1.7, 20.0)	
16–17	45.7 (40.3, 51.2)	7.3 (3.1, 11.5)	
18–20	40.2 (34.9, 45.6)	6.1 (2.0, 10.2)	
Race/ethnicity			1.371 (0.712)
White	39.3 (34.0, 44.6)	9.3 (4.3, 14.4)	
Black	22.0 (17.4, 26.5)	6.9 (1.0, 12.9)	
Hispanic	33.2 (28.1, 38.4)	5.5 (1.2, 9.8)	
Other	5.5 (3.0, 8.0)	5.6 (<0.1, 16.4)	
Nativity			1.990 (0.158)
US	86.3 (82.5, 90.0)	8.1 (4.9, 11.3)	
Foreign born	13.7 (10.0, 17.5)	2.2 (<0.1, 6.6)	

TABLE 2 Correlates of multi-person sex (MPS) experience ($N=328$)

	Total sample (%)	Among respondents with MPS experience (%)	Adjusted prevalence ratios[a] (95% CI)	*p* value
Substance use				
Smoked cigarettes in past month	36.5	70.8	3.83 (1.56, 9.44)	0.003
Heavy drinking in past month	32.3	41.7	1.30 (0.56, 3.02)	0.539
Marijuana use in past month	40.4	60.9	2.05 (0.90, 4.65)	0.086
Sexual and reproductive health				
Ever diagnosed with STI	19.4	36.4	2.55 (1.08, 6.03)	0.033
Ever been pregnant	22.2	22.7	1.28 (0.48, 3.44)	0.611
Very early sexual initiation (≤14 years)	38.4	60.9	2.35 (1.01, 5.48)	0.047
Mental health				
Psychological distress	23.8	39.1	2.17 (0.95, 4.96)	0.065
Suicidal ideation or attempt in past year	17.4	33.3	2.23 (1.00, 5.00)	0.051
Violence				
Physical fighting in past year	36.8	38.1	0.95 (0.40, 2.28)	0.909
Ever gang member	9.6	19.0	2.21 (0.79, 6.23)	0.132
Ever experienced physical or sexual violence from a dating partner	44.5	78.3	4.43 (1.68, 11.69)	0.003
Ever experienced childhood sexual abuse	9.4	28.6	4.30 (1.83, 10.07)	0.001
Pornography related				
Exposed to pornography in past month	34.1	71.4	4.79 (1.91, 11.98)	0.001
Ever forced or threatened to participate in sexual behaviors that the perpetrator saw in pornography	10.8	52.4	8.63 (3.93, 18.93)	<0.001

[a]Adjusted for age, race/ethnicity, nativity, and recruitment site

participated in MPS, and that the majority of participants reported that MPS occurred in the context of pressure, coercion, threats, or force. As compared with their sexually active counterparts without MPS experience, adolescent girls reporting MPS were also more likely to report tobacco use, STI diagnosis, suicidal ideation or behavior, and dating violence victimization. MPS appeared to pose a potential risk to sexual and reproductive health, as only 55% of participants reported that condoms were used consistently during their most recent MPS. Strengths of this study include the use of MPS survey questions developed from prior qualitative research, the use of ACASI software for data collection, and consideration of a broad array of contextual data and health outcomes.

The majority of MPS-experienced girls in this sample reported being pressured, threatened, coerced, or forced to participate in MPS at least once. In addition, over half (54%) were younger than 16 years old when they had MPS, which in the state where the study was conducted would mean that their sexual partners could be convicted of rape and abuse of a child (i.e., statutory rape). Given the substantial proportion of girls who reported that their MPS was nonconsensual, additional

research to understand more about the perpetrators, and how to prevent this particular form of sexual violence, is warranted. Researchers and clinicians should pay particular attention to younger adolescents engaging in MPS. Given heightened concerns about potential consequences,[1–3] information about how to address MPS with this subgroup is urgently needed.

Approximately 35% of the adolescent girls in this sample reported consensual MPS; that is, they reported that they had never been pressured, forced, threatened, or given alcohol or drugs to coerce their participation in MPS. While there may be a subset of girls who initiate or make self-actualized decisions about MPS participation during adolescence, it is important to consider whether social norms that encourage hypersexuality may contribute to expectations about sexual activity that make it very challenging for adolescents to resist engaging in MPS, even though they would not perceive their MPS participation as nonconsensual. The strong association between exposure to pornography, having been forced to do things that their sex partner saw in pornography, and MPS suggests that pornography may have influenced directly the sexual experiences of the girls in this sample, as has been found elsewhere.[5] Importantly, even if participation in MPS is voluntary for some adolescents, it is crucial to know how this early experience shapes their sexual behavior trajectory and affects their lifetime risk for negative sexual, reproductive, and other health risk behaviors. Future studies of MPS using larger samples should include analyses stratified by the nature of the MPS (coerced/forced vs. consensual) in order to determine if the risks of nonconsensual MPS are heightened.

Condom nonuse in the context of MPS was pervasive; approximately 45% of participants reported that during their most recent MPS, one or more male participants had not used a condom. This is higher than the approximately 30% of US males ages 15–19 years old who report past-month inconsistent condom use and estimated 30% of non-condom use during heterosexual anal sex between adolescents.[24,25] Therefore, MPS may present health risks to adolescent females who are being coerced for several reasons, such as (1) unwanted sex, and intercourse with multiple partners in a row, may result in lack of physiologic preparation for intercourse which can increase the risk of vaginal lacerations,[26] facilitating STI transmission; (2) condom use may be less common during MPS encounters than other high-risk adolescent sexual behaviors (such as anal sex); (3) intercourse with multiple people at the same time likely carries at least the same level of elevated STI transmission risk as engaging in multiple concurrent sexual partnerships;[27,28] and (4) MPS may be more likely than other adolescent sexual encounters to be unplanned, which is a concern because unplanned intercourse is associated with inconsistent contraceptive use.[29,30] Moreover, the very nature of MPS creates anonymity for those who would knowingly infect another, and this may increase the likelihood that adolescents with STIs will engage in unprotected sex.

Several limitations must be acknowledged. First, the sample was a convenience sample drawn from urban health clinics. As a result, our findings are not representative of adolescent females in the USA. Moreover, the number who reported MPS was small (n=24), so our findings should be considered exploratory. Second, while our survey questions about MPS derived from prior research with adolescents who had MPS experience, it is possible that the question was misinterpreted by some respondents. To reduce this possibility, we conducted cognitive interviews with a pilot group of adolescent females during survey development, and participants were informed that they could ask the research assistant for clarification of any of the questions that they did not understand.

During survey administration, there were several instances when such clarification was requested, but never with regard to the MPS survey question. This gives us some measure of confidence that the number of respondents who misunderstood this item was minimal. Third, it is possible that some respondents who had been gang raped, and labeled the experience as gang rape (as opposed to group sex), would not have responded in the affirmative to the survey question about sex involving multiple people. Because the subsequent survey question about whether the MPS was forced or coerced was only asked of those who indicated they had MPS experience, it is possible that some survivors of gang rape were misclassified as not-MPS experienced. This may have resulted in an under-estimate of the prevalence of MPS in our sample. Finally, the associations that we observed between MPS and other health risk behaviors and conditions are based on cross-sectional data; causality cannot be inferred.

Longitudinal research on MPS is needed. Predictors of early sexual initiation, such as having an older age partner or early alcohol initiation, may also predict MPS, which would strengthen the case for focusing on these factors for prevention programming.[31,32] The strong association identified through this study between partners' coercive reenactment of pornography and MPS would be particularly useful to reexamine using longitudinal data, as adolescents' exposure to internet pornography has been increasing as home and school internet access has grown.[33] Finally, large national surveys that collect data about adolescent sexual experiences, such as the National Longitudinal Study of Adolescent Health, the Youth Risk Behavior Survey, and National Survey of Family Growth, should consider whether it would be worthwhile to add a question about MPS. Given that our estimate of the prevalence of MPS among this sample of adolescent females (7%) is not substantially lower than estimates of dating abuse (10%) or rape (11%) among high-school-attending youth,[34,35] or anal sex among males (11%),[36] and has the potential to be identified as a risk factor for unwanted pregnancy or STIs, it could be a valuable addition to these datasets. The results of this study, albeit based on a small convenience sample, indicate that MPS is an issue to be explored in the general population of youth.

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