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Ding, Y
He, N
Detels, R

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Adolescent Sexual Debut and Initiation into New-Type Drug Use among a Sample of Young Adults

Yingying Ding, Ph.D.^a, Na He, Ph.D.^b, and Roger Detels, M.D.^c

^aLecturer, Department of Epidemiology, School of Public Health, and The Key Laboratory of Public Health Safety of Ministry of Education, Fudan University, Shanghai, China

^bProfessor, Department of Epidemiology, School of Public Health, and The Key Laboratory of Public Health Safety of Ministry of Education, Fudan University, Shanghai, China

^cProfessor, Department of Epidemiology, School of Public Health, University of California, Los Angeles, CA

Abstract

We examined the association between adolescent sexual debut and age at new-type drug initiation among a sample of young adult new-type drug users. A total of 276 participants were recruited using respondent-driven sampling (RDS) in Shanghai, China. The analyses were restricted to a total of 201 participants aged between 18 and 30 years. The average age at sexual debut and age at first new-type drug use were 18.8 and 20.9 years, respectively. About 94% of participants reported having sexual experience ($n = 188$); of those, 137 (72.9%) had sexual debut before they first used new-type drugs, while 32 (17.0%) initiated both events at the same age. After adjustment for age, income, education, and sexual orientation, adolescent sexual debut was independently associated with younger age at new-type drug initiation. Adolescent sexual debut is associated with early onset of new-type drug use. Our findings underscore the importance of implementing sex-education programs for adolescents in schools in China.

Keywords

adolescent; China; initiation; new-type drugs; sexual debut

INTRODUCTION

Recent reports indicate a significant increase in the use of new-type drugs in China (UNODC 2011), which refers to a category of recreational drugs emerging in recent years, as distinguished from opium and heroin (Yang & Xia 2010). In Western countries, these drugs are often called “club drugs,” because their initial popularity was in “raves” (Koesters et al. 2002). By the end of 2012, the number of registered drug users in China was almost 2.1 million. The number of registered drug users for new-type drugs, which are

Please address correspondence to Na He, Ph.D., Professor, Department of Epidemiology, School of Public Health, and The Key Laboratory of Public Health Safety of Ministry of Education, Fudan University, P. O. Box 228, 138 Yi Xue Yuan Road, Shanghai 200032, China; phone/fax: +86-21-5423-7519; nhe@shmu.edu.cn.

predominantly methamphetamine, ecstasy, and ketamine, has increased dramatically in recent years, from 1.7% in 2004 to 19% in 2008 and 38% in 2012 (UNODC 2009; 2011; CNNCC 2013). New-type drugs are especially popular among youth and young adults. Of all newly identified methamphetamine users in 2011, about 68% were below 35 years old (UNODC 2012).

Earlier age of drug initiation is a well-documented risk factor for subsequently developing drug abuse, dependence, and drug-induced psychosis (Sintov et al. 2009; Trape et al. 2014; Trenz et al. 2012). Sexual debut in adolescence has been shown to be a strong predictor of illicit drug use in later life (Novoa et al. 2005; Pechansky et al. 2011). To date, there have been few attempts to investigate the relationship between age at sexual debut and age at drug initiation. One exception is a study that examined the association between age at sexual debut and age at illicit drug initiation among a sample of young adults in United States, and indicated that early age at illicit drug initiation was positively associated with early sexual debut and more than half of participants initiated drugs prior to sexual debut (Rosenbaum & Kandel 1990). Illicit drugs are less accessible to adolescents in China than in some Western countries, but early sexual debut and premarital sex are very common among Chinese youth (Guo et al. 2012; Parish et al. 2007; Zhao et al. 2012). Given this, we hypothesized that sexual debut occurs prior to drug initiation among Chinese youth.

The present study explored the association between adolescent sexual debut and age at new-type drug initiation and its temporal order in a sample of young adult new-type drug users. Such information is important to better understand the early onset of new-type drug initiation, which will help us develop effective prevention strategies to prevent or delay new-type drug use among youth.

METHODS

Participants and Procedures

Data were derived from a study of 276 adult new-type drug users recruited in Shanghai, China, as described elsewhere (Ding et al. 2013; Ding, He & Detels 2013). Eligibility criteria included being age 18 years or older; residing in Shanghai; not in any formal drug treatment program within the past 30 days; reporting the use of methamphetamine, ecstasy, and/or ketamine at least once in the past three months and three times or more in the past 12 months. As the recreational use of new-type drugs is a recent trend in China, our analysis was restricted to participants aged 30 years and younger. A total of 201 participants were included in the analysis. Participants older than 30 years ($n = 75$) were excluded from this analysis.

Participants were recruited via respondent-driven sampling (RDS) (Heckathorn et al. 2002). A total of nine seed respondents were recruited. Two were recruited by non-government organization (NGO) personnel who knew them, three were approached by social workers who were knowledgeable about the drug-using community in Shanghai, and four were approached by outreach workers. After the seed respondents completed the interview, they were asked to refer people “like themselves” who had recently used new-type drugs. Usually, three coupons with contact information and a unique number were given to each

participant to pass on to anyone they knew who were drug users, but sometimes additional coupons were given to try to reach difficult-to-access subpopulations (e.g., female drug users) or when the recruitment process slowed. Sixteen participants requested additional coupons. Recipients of coupons who were interested in participating in the study called the research members or came to the interview office directly; they were asked a series of questions that allowed research members to make eligibility determinations.

This study was reviewed and approved by the Institutional Review Board of University of California, Los Angeles, and the Institutional Review Board of Fudan University. All participants had the option of completing a self-administered, paper-and-pencil survey either in a private room at Fudan University or in another place they preferred. The survey lasted 30–45 min. Participants received \$US 15 for completing the study questionnaire and \$6 per successful referral.

Measurements

Participants' sociodemographic information, such as gender, age, income, education, marital status, and sexual orientation, was collected. Age at sexual debut was measured by asking participants "have you ever had sexual intercourse" and "at what age did you have your first intercourse." We defined adolescent sexual debut as aged 17 years and younger. This cutoff was chosen because age 18 or above is considered an adult in China. Age at first new-type drug initiation was measured by asking "which of the following new-type drugs (i.e., methamphetamine, ecstasy, ketamine, LSD, marijuana, cocaine, magu, happy water, magic mushroom, and cough mixture for non-medical use) have you used first?" and "at what age did you first use the above-mentioned drug?" Participants were also asked to report their lifetime use of each of the 10 new-type drugs.

Data Analysis

All statistical analyses were performed using SAS 9.2 (SAS Institute Inc., Cary, NC). Univariate and multivariate linear regression models were conducted to examine the association between adolescent sexual debut and age at new-type drug initiation. Socio-demographic variables included in regression models were age, gender, marital status, education, monthly income, and sexual orientation, which have been shown to have potential influence on onset of drug initiation in prior literature (Ompad et al. 2005; Whitesell et al. 2007). To avoid excluding potential confounders, variables that had a p-value less than 0.1 in univariate analysis were entered into multivariate analyses. The level of significance was set at p-value <0.05.

RESULTS

Of 201 participants, the mean age was 24.8 years (Standard Deviation [SD] = 3.1; range: 18–30). Most were male (76.6%), never married (89.5%), had at least a high school education (70.7%), and had a monthly income of 3,000 yuan (approximately \$US 500) or more (67.7%). A total of 21.9% of participants self-identified as homosexual or bisexual.

In terms of new-type drug use in a lifetime, methamphetamine (65.7%) was most commonly used, followed by ecstasy (64.7%), ketamine (61.2%), marijuana (20.9%), magu (9.0%),

happy water (4.5%), magic mushrooms (1.0%), cocaine (3.5%), and cough mixtures for non-medical use (8.0%). None reported ever taking LSD.

Almost 93.5% of participants reported having sexual experience ($n = 188$). Among them, 46 (24.5%) reported sexual debut before aged 18 years, 85 (45.2%) at between 18 and 19 years, and 57 (30.3%) at 20 years or later. The mean age at sexual debut was 18.8 years ($SD = 2.2$). The mean age at new-type drug initiation was 20.9 years ($SD = 2.9$). Among 188 participants who reported sexual experience, 137 (72.9%) reported having had sexual debut before they initiated new-type drug use, 32 (17.0%) reported that it occurred at the same age, and 19 (10.1%) after they initiated new-type drug use. Of 137 who initiated new-type drug use after sexual debut, 59 (43.1%) initiated one to two years later, 61 (44.5%) initiated three to five years later, and 17 (12.4%) initiated six or more years later.

Univariate analysis (Table 1) demonstrated that a younger age at new-type drug initiation was significantly associated with younger age, reporting a monthly income 3,000 yuan or more, and adolescent sexual debut. Multivariate analysis (Table 1) indicated that, compared to those had sexual debut of less than age 18, those who had sexual debut of age 18 or older ($b = 1.28$; $p < .001$) were more likely to initiate new-type drug use at an older age. Older participants were more likely to initiate new-type drug use at an older age ($b = 0.55$; $p < .001$).

DISCUSSION

The average age at sexual debut in this study was comparable with the other study done among illicit drug users in China (18 years) (Luo et al. 2012), but lower than the average age at which most Chinese have their first sexual debut (21.2 years) (Durex 2012). This suggests a link between earlier sexual initiation and illicit drug use behaviors, which is supported by the existing literature (Rosenbaum & Kandel 1990; Pechansky et al. 2011). In addition, we noted that the age at sexual debut in our sample was higher than in studies among illicit drug users in other countries (Abdala et al. 2012; Pechansky et al. 2011), which was consistent with the fact that Chinese youth have a later onset of sexual activity in comparison to Western societies (Guo et al. 2012)

We found that sexual initiation in adolescence was associated with earlier new-type drug initiation when age and other potential confounding factors were controlled. This was consistent with the findings from a prior study that the earlier the reported onset into drugs, the greater the probability of early sex (Rosenbaum & Kandel 1990). One possible explanation is that early sexual debut and new-type drug use may share a common set of psychosocial root causes (Jessor & Jessor 1977; Madkour et al. 2010). Another possible explanation is that early sexual debut may create a risk environment for initiating new-type drug use. This is supported by the finding that the majority of participants initiated new-type drug use shortly after sexual debut or initiated both events in the same year. It is possible that those who had a sexual debut in adolescence are more likely to engage in casual sex, commercial sex, and multiple sex partnerships (Madkour et al. 2010); therefore, the likelihood that some persons in their sexual network are drug users is increased; or they are more likely to have a sexual partner who is a drug user. Future research is needed to

investigate the mechanism underlying the association between sexual debut in adolescence and initiation of new-type drugs among Chinese youth.

In contrast to findings in Western society (Rosenbaum & Kandel 1990), most of the participants initiated illicit drug use after sexual debut. This may be due to the difference in social environment between Chinese and Western societies. Youth in China have less chance of exposing themselves to drugs prior to sexual debut than those in Western societies. Given this, whether or not the relationship between adolescent sexual debut and age at initiation of new-type drug use is causal, adolescent sexual debut can be considered as a marker for development of risk behaviors among young adults.

Furthermore, the positive associations between new-type drug use and risky sexual behaviors have been widely reported (Colfax & Guzman 2006; Ding et al. 2012). The common explanation is that use of these drugs causes risky sexual behaviors through intoxication by impairing judgment, enhancing libido, and/or heightening sexual desire (Colfax & Guzman 2005; Jerome, Halkitis & Siconolfi 2005). However, our finding suggests that risky sexual behaviors and new-type drug use may have common risk factors, such as adolescent sexual debut. More research is needed to examine their relationship from this perspective.

There are several limitations to this study. Due to the illegal status of drug use in China, eligible subjects might refuse to participate due to social stigma and criminal prosecution. This might lead to selection bias. Second, the sample was not random, and RDS is prone to some biases, such as homophily and different sizes of personal networks (Heckathorn et al. 2002). Third, the cross-sectional design precludes the ability to make causal inferences due to temporal ambiguity. Last, the information regarding the contextual factors related to sexual debut was not collected. This may be an area of interest for future research. In addition, the sample size was small and all participants were recruited from a metropolitan city, which limits the generalizability of the findings.

Our findings suggest that there is a relationship between adolescent sexual debut and new-type drug initiation. Although this relationship is complex and requires additional investigation, our findings have useful implications for preventing or delaying new-type drug use among youth at risk. Our results showed that, in contrast with Western countries, most of the participants initiated new-type drug use after their sexual debut, suggesting that adolescent sexual debut may create a risk environment for new-type drug initiation and that delaying the age of sexual debut is important to reduce drug use among Chinese youth. Given the growing acceptance of premarital sex, casual sex, and multiple sex partners among Chinese youth (Xiao et al., 2011), sex-education programs for adolescents should be implemented in schools. Moreover, information about the possible sexual and health consequences of early sexual debut, including its link to other problem behaviors, should be included in these education programs.

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TABLE 1

Multiple Linear Regression Model Predicting Age at New-Type Drug Initiation with Socio-Demographic and Sexual Debut Variables

Variable	Unadjusted		Adjusted	
	Parameter estimate (95% CI)	P value	Parameter estimate (95% CI)	P value
Age	0.61 (0.51, 0.71)	<.001	0.55 (0.44, 0.66)	<.001
Male	-0.43 (-1.38, 0.53)	0.381		
Ever married	0.85 (-0.47, 2.17)	0.205		
Monthly individual income (≥ 3000 yuan)	1.77 (0.94, 2.60)	<.001	0.32 (-0.39, 1.03)	0.376
Education (high school or above)	0.84 (-0.04, 1.73)	0.062	-0.06 (-0.76, 0.63)	0.856
Self-identified as gay/lesbian or bisexual	0.94 (-0.04, 1.91)	0.059	0.59 (-0.14, 1.34)	0.117
Age at sexual debut (year)				
No sexual experience	0.62 (-1.09, 2.32)	0.475	1.24 (-0.11, 2.60)	0.073
< 18	1		1	
≥ 18	2.27 (1.35, 3.19)	<.001	1.28 (0.51, 2.06)	0.001