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Sexual Health Behaviors, Preferences for Care, and Use of Health Services Among Adolescents in Pediatric Emergency Departments

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Abstract

Objectives—To describe sexual health behaviors, as well as prior use of and preferences for sexual health services among adolescents in the pediatric Emergency Department (ED).

Methods—In this cross-sectional study, subjects aged 14–19 years who presented to an urban or suburban ED from a single Midwestern area completed a written survey. The survey included questions on previous sexual activity (PSA), high-risk behaviors (1st sex before age 15, no condom at last sex, substance use at last sex, >3 partners in past 3 months, and >4 lifetime partners) and sexual health service use and preferences. Comparisons of responses between subgroups were analyzed using Chi-square test. Multiple logistic regression was used to identify factors associated with high-risk behaviors. Care preferences were scored using a four-point Likert scale; mean scores were ranked.

Results—Subjects included 306 adolescents (85% of approached). The mean age was 15.5 years. Almost half (45%) reported PSA and, of those, 63% reported 1 high-risk behavior (most commonly 1st sex before age 15 [43%] and no condom at last sex [29%]). Almost all wanted to prevent pregnancy, but only one-third received birth control counseling before sexual debut and 14% reported no contraception at last sex. Younger age was associated with 1 high-risk behavior (odds ratio = 3.7; confidence interval = 1.39–9.84). Preferences for care included caring, knowledgeable providers and low/no cost.

Conclusions—Due to high prevalence of high-risk behaviors among adolescents presenting in the ED, strategies should be developed to link these patients to comprehensive sexual health care.

Keywords

adolescent sexual health; health risk behaviors; emergency department

Introduction

Adolescents in the U.S. face many barriers to sexual health care such as lack of access, transportation, insurance, and provider comfort with and knowledge of the issue, as well as

concerns about privacy.^{1,2} These barriers contribute to the sexual health challenges facing adolescents, including high rates of sexually transmitted infections (STIs) and unintended pregnancy.^{3,4}

Adolescents, including those with risky health behaviors, frequently seek care in the emergency department (ED) for non-urgent complaints and have sexual healthcare needs that are not addressed.⁵⁻⁸ Fine *et al* recently surveyed sexually active females aged 14-19 in a Philadelphia pediatric ED and found 14% reported unprotected sexual intercourse in the preceding five days.⁹ Among male and female adolescents seeking care in urban EDs, rates of chlamydial and/or gonorrheal infection of 8-25% have been reported.¹⁰⁻¹²

Given the frequent use of acute care by adolescents and the prevalence of risk behaviors, the ED may represent a prime location for interventions aimed at improving adolescent sexual health. We undertook this study to obtain a better understanding of the specific sexual health behaviors of adolescents presenting in pediatric EDs in a single Midwestern region, as well as the adolescents' preferences for sexual health care services. We hypothesized that 25% of adolescents would report 1 high-risk sexual behavior.

Methods

We conducted a cross-sectional survey of adolescents in either of two EDs (one urban, one suburban) from a single Midwestern children's hospital system. The urban ED is a level one trauma center and has approximately 70,000 annual visits. The patients are primarily non-White (67%) with government-issued insurance (71%). The suburban ED has about 50,000 annual visits. The majority of patients are White (58%) and insurance is divided among government (48%) and commercial (45%) types. The EDs, along with a hospital-associated adolescent clinic, shared a single electronic health record (EHR). The Children's Mercy Hospitals and Clinics Institutional Review Board approved this study and waived the requirements for parental and written informed consent.

Subject Enrollment

We included patients if they were seeking care for any reason and were aged 14-19 years. Subjects were excluded if they did not speak English, had significant impairment that would impede participation (severe illness, developmental delay, or intoxication), had complaints involving sexual assault or psychiatric issues, or were wards of the state. A convenience sample was obtained across a wide range of hours, based upon research assistant (RA) availability.

Trained RAs identified potential subjects through computerized tracking boards, which log visit information in real time. Once identified, the RA determined whether the patient met inclusion criteria, then asked the treating ED provider about suitability for recruitment. For minors seeking care for non-reproductive complaints, the RAs provided a brief information sheet describing the study to parents and potential subjects. The RAs obtained verbal parental permission to obtain verbal assent from the adolescent in private. Then the RA administered a written survey to subjects. During assent/consent and survey administration for all subjects, the adolescent and RA were alone in a private room.

Survey Tool

A multidisciplinary team developed the survey, based in large part on national surveys as well as review of the pertinent literature.¹³⁻¹⁵ Specifically, a large study of low-income adolescents identified preferences for health care services and served as the basis for that portion of our survey development.¹⁶ Our survey was iteratively pilot tested for ease of use; no significant issues were identified with the final version, which took about 10 minutes to complete. The Flesch Kincaid grade level score was 5.27. The survey included questions on previous sexual activity (PSA) and high-risk behaviors (defined as sexual debut before age 15, no condom at last sexual encounter, substance use before last sex, >3 partners in the past 3 months, and >4 lifetime partners), health care utilization, preferences for sexual health services, and demographics. Subjects were asked “Have you ever had any type of sex with a male or female—that is vaginal sex or anal sex or oral sex?” and those who answered ‘yes’ were considered to have PSA. A 4-point Likert scale (1= not at all important, 4 = very important) was used to determine the subjects' perception of various factors influencing use of sexual health care services.

Health Care Utilization

In addition to asking subject about health care utilization, we assessed subjects' prior use of the ED and hospital-based adolescent clinic by checking the health care system electronic health record.

Analysis

Demographic characteristics were summarized by standard descriptive means. The primary measurement of interest was the proportion of subjects who reported 1 high-risk behavior. Age at first sex was dichotomized into “<15” and “≥15,” which is consistent with the Healthy People 2020 goal of increasing the proportion of adolescents who abstain from sex until at least age 15 years.¹⁷ Bivariate comparisons of responses between subgroups (e.g., ED location, age) were analyzed using Chi-square test. We performed multiple logistic regression to identify factors associated with presence of high-risk behaviors. For our analysis, we included variables found to have a p-value <0.1 on bivariate analysis as well as variables that were *a priori* felt to be associated with high-risk behaviors. For health services preferences, results are presented as mean followed by SD, with the means ordered from highest to lowest. The responses to, “What is the main reason for the visit today?” were written down verbatim and then dichotomized as potentially reproductive (genital-urinary complaints, abdominal pain, vomiting, pregnancy, STI concern) or non-reproductive. Data entry and analysis were done with SPSS for Windows (SPSS Inc, Chicago, IL, USA).¹⁸

Results

Subjects were enrolled from July through November, 2011. Of the 359 patients approached, 306 participated (85%): 220 (83%) in the urban ED and 86 (91%) in the suburban ED. Lack of desire to participate and acute illness were the most common reasons for refusal. Compared with study participants, no race or age differences were observed among patients who refused to participate. Subject characteristics are described in Table 1. The age distribution was similar at both locations with about 1/4 of subjects each reporting age 14,

15, or 16 years. Most visits (77%) were for non-reproductive reasons and more females than males had a reproductive complaint (28% vs. 14%, $p=0.01$). Compared to the urban ED study participants, suburban ED study participants were more likely to be white ($p=0.001$) and to have a private insurance ($p=0.001$).

Health behaviors among adolescents with PSA

Almost half of participants (45%) reported PSA, which did not differ by ED location. Two characteristics were associated with a greater likelihood of reporting PSA: non-white race compared to white race (64% vs. 36%, $p=0.003$) and government/no insurance compared to private insurance (71% vs. 29%, $p=0.01$) (Table 2). A few subjects reported homosexual (1 male) or bisexual (7 females) activity. While nearly all adolescents (93%) felt it was “very important” to avoid pregnancy right now, 14% reported no method was used to prevent pregnancy at last sex and 6% (all at urban ED) reported unprotected vaginal intercourse within the previous 5 days.

Among participants with PSA, 63% reported ≥ 1 high-risk behavior, most commonly sexual debut before age 15 years and no condom at last sex (Table 3). Among participants with a high-risk behavior, most (61%) had one high-risk behavior, 26% had two, 8% had three, and 5% reported four risk behaviors. In bivariate analysis, two characteristics were associated with a greater likelihood of reporting ≥ 1 high-risk behavior: use of urban rather than suburban ED (69% vs. 50%, $p=0.032$) and being younger (14-15 yr) rather than older (16-19 yr) (83% vs. 56%, $p=0.004$). By definition, adolescents who were 14 years of age and reported PSA had at least one high-risk behavior. No difference was seen in the proportion with ≥ 1 high-risk behavior based on insurance (private vs. other; any vs. none), race (white vs. non-white), or gender. The logistic regression model demonstrated that only younger age remained significant for reporting ≥ 1 high-risk behavior (odds ratio = 3.7; confidence interval = 1.39-9.84).

Health care utilization

Among all urban subjects, 34% had ≥ 1 previous urban ED visit and 28% had visited a hospital-associated primary care clinic (PCC) in the previous year, most commonly the adolescent clinic (97% of clinic visits). Compared to urban subjects without PSA, those with PSA were more likely to have had ≥ 1 previous ED visits (51% vs. 33%, $p=0.007$) and ≥ 1 previous adolescent clinic visits (36% vs. 20%, $p=0.009$).

Among all suburban subjects, 38% had ≥ 1 previous suburban ED visit and 9% had visited a hospital-associated PCC in the previous year, most commonly adolescent clinic (80% of clinic visits). Compared to suburban subjects without PSA, those with PSA were more likely to have had ≥ 1 previous ED visits (50% vs. 27%, $p=0.03$), but not adolescent clinic visits (7% vs. 11%, $p=0.5$).

About 1/4 of all subjects (27%) reported prior counseling on birth control or condoms. Among those with PSA, only 1/3 received counseling about birth control before sexual debut. Characteristics associated with a greater likelihood of any prior counseling included: reporting PSA rather than no PSA (43% vs. 14%, $p=0.001$), use of urban rather than suburban ED (31% vs. 17%, $p=0.02$), being younger (14-15 yr) rather than older (16-19 yr)

(34% vs. 21%, $p=0.01$), and being female rather than male (34% vs. 8%, $p=0.001$). Non-white race approached significant association (32% vs. 22%, $p=0.06$).

Teens with PSA more commonly reported prior STI evaluation (17% vs. 2%, $p=0.001$) and STI treatment (8% vs. 1%, $p=0.001$) when compared to those without PSA. Sexually active teens with ≥ 1 high-risk behavior were more likely to report previous STI evaluation (30% vs. 9%, $p=0.007$) and STI treatment (15% vs. 2%, $p=0.006$) when compared to those without high-risk behavior.

Preferences for sexual health services

When choosing desirable characteristics of a place for sexual health care, items that scored highest in importance were “The nurses and doctors know a lot about sexual health care”; “The nurses and doctors are caring”; and “The care is free or covered by insurance” (Table 4). The item that scored lowest was “The nurses and doctors are the same race/ethnicity as me.” These factors were highest and lowest ranked irrespective of gender, ED location, history of PSA, or presence of ≥ 1 high-risk behavior. When asked about locations for sexual health care provision, more adolescents preferred the hospital-associated teen clinic (78%), hospital ED (74%), and personal physician (73%) than the health department (47%), family planning clinic (44%), or school-based clinic (22%).

Discussion

Among adolescents 14-19 years of age presenting in two Midwestern pediatric EDs in 2011, almost half in both urban and suburban locations reported PSA. While the majority of sexually active adolescents engaged in high-risk behaviors, only half had obtained sexual health care. Although almost all of the adolescents wanted to prevent pregnancy, among sexually active adolescents only one-third received birth control counseling before sexual debut and 14% reported no method used to prevent pregnancy at last sex.

The most common high-risk behavior was sexual debut before age 15. This was reported among 43% of those with PSA and 20% of all subjects in this ED-based study, which is higher than national studies (13% of youth).¹⁹ Early initiation of sexual intercourse is associated with having a greater number of lifetime sexual partners, higher odds of STI, less contraceptive use, and increased pregnancy risk.²⁰⁻²³ Due to these public health implications, reducing early initiation is an objective targeted by Healthy People 2020, and our data indicate the ED may be a place to reach these youth.

Overall, sexually active teens were more likely than those with no PSA to have visited an ED in the previous year. This is supported in the literature by previous studies that have shown high rates of risky sexual health behaviors among adolescents using the ED.^{6,9,24} In addition to increased risk behaviors, adolescents who use the ED as their usual source of care are more likely to report missing needed care and less likely to have had a recent checkup.²⁴ These findings support the development of interventions to create ED programs for sexual risk reduction as well referrals to comprehensive care for this population.

The existing literature on factors influencing adolescent health care utilization suggests that certain provider characteristics are very important. Provider factors associated with adolescent preventive care seeking behavior included technical competence, compassion, protection of adolescent privacy, ability to communicate easily, and good infection control practices.¹⁵ A study of low-income, minority adolescents living in large cities identified these factors with the ideal health experience: friendly and knowledgeable staff, 24 hour availability, and easily accessible site.¹⁶ Similarly, our study participants, discussing sexual health care, identified caring and knowledgeable staff as the most important characteristic. However, our participants placed more importance on affordability and less importance on confidentiality and access. Interestingly, our suburban and urban subjects had similar preferences for sexual health services.

Use of the urban rather than the suburban ED was associated with a greater likelihood of prior contraceptive counseling. Many of the urban ED participants, but very few suburban ED participants, had visited the hospital-affiliated Teen Clinic. Adolescent health specialists staff this Title X clinic, located in the urban core of the metropolitan area. While the location may not be convenient for suburban teens, increasing awareness about the available services may improve access for this group. This may be quite important given that, although we found most suburban respondents preferred to access sexual health care from their PCP, the literature demonstrates that many general pediatricians are uncomfortable providing sexual health care.²⁵

Limitations

Our study has several limitations. About 15% of eligible adolescents declined participation and it is possible that non-participants or those presenting during non-recruitment times may have been different than participants. Responses about adolescent sexual history were provided by self-report, which could be influenced by social desirability effects or concerns about confidentiality. Regarding prior ED utilization, in addition to using self-report we reviewed the visit record for the ED where the subject was enrolled in the study. It is possible that a subject may have withheld information about having visited a different ED previously and this would not have been apparent in the ED records.

Conclusions

Among adolescents aged 14-19 years presenting in a suburban or urban pediatric ED, almost half were sexually active. Almost all wanted to prevent pregnancy, but many engaged in high risk sexual behaviors and few had obtained sexual health care or pregnancy prevention counseling. While suburban and urban teens have similar preferences for sexual health services, risk behaviors may vary. Due to high prevalence of risk behaviors, practitioners caring for adolescents in the ED should obtain a thorough sexual history and consider referring patients for comprehensive sexual health care. These study findings may inform strategies to increase ED provider awareness and develop ED interventions to improve care.

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Table 1
Participant characteristics by ED location

	Urban ED	Suburban ED	Total	Significance
Total	N=220	N=86	N=306	
Age in years - mean (SD)	15.5±1.2	15.5±1.2	15.5±1.2	NS
	n (%)	n (%)	n (%)	
Female	132 (60)	48 (56)	180 (59)	NS
Hispanic Ethnicity	34 (11)	10 (3)	44 (14)	NS
Race *				p 0.001
White	83 (40)	55 (64)	138 (46)	
Black	96 (46)	20 (23)	116 (40)	
Mixed Race	18 (9)	5 (6)	23 (8)	
Other	11 (5)	6 (7)	17 (6)	
Insurance **				p 0.001
Private	64 (29)	47 (55)	111 (36)	
Government	128 (58)	28 (33)	156 (51)	
Self pay	22 (10)	10 (12)	32 (11)	
Combination	6 (3)	0 (0)	6 (2)	
Reproductive ED visit	53 (24)	16 (18)	69 (23)	NS

* N=294;

** N=305

Table 2
Characteristics of subjects by history of previous sexual activity (PSA)

	PSA	No PSA	Significance
Total	N=139	N=167	
Age in years - mean (SD)	16.1±1.1	15.0±1.1	NS
	n (%)	n (%)	
Female	86 (62)	94 (56)	NS
Hispanic Ethnicity	20 (14)	24 (14)	NS
Age			p 0.001
14-15	36 (23)	118 (77)	
16-17	92 (68)	44 (32)	
18-19	11 (69)	5 (31)	
Race *			p = 0.003
White	50 (36)	88 (55)	
Black	66 (48)	50 (31)	
Mixed Race	10 (7)	13 (8)	
Other	7 (6)	10 (6)	
Insurance **			p = 0.01
Private	40 (29)	71 (43)	
Government	77 (55)	79 (48)	
Self pay	17 (12)	15 (9)	
Combination	5 (4)	1 (1)	
Reproductive visit	32 (23)	37 (22)	NS

* N=294;

** N=305

Table 3
High risk behaviors among adolescents with prior sexual activity

	Urban N (%)	Suburban N (%)	Total N (%)	Significance
Sexual debut <15 years	47 (49)	13 (31)	60 (43)	NS, p=0.06
> 4 lifetime partners	19 (20)	4 (10)	23 (17)	NS
> 3 partners in past 3 months	2 (2)	0 (0)	2 (1)	NS
Alcohol/drug use within 4 hrs	10 (10)	3 (7)	13 (9)	NS
No condom during last sex	29 (30)	10 (24)	39 (28)	NS
Unprotected sex in past 5 days	8 (8)	0 (0)	8 (6)	NS

Table 4
Preferences for sexual health services among participants by location (mean scores and ranking) (4= very important, 1= not at all important)

Provider or Clinic Trait	Urban mean±SD	Rank	Suburban mean±SD	Rank
Doctors and nurses know a lot about sexual health	3.84±0.40	1	3.88±0.36	1
Doctors and nurses are caring	3.74±0.51	2	3.81±0.39	3
Care is free/insurance	3.58±0.73	3	3.73±0.60	2
Easy to get an appointment	3.56±0.70	4	3.67±0.66	4
Fast service	3.53±0.80	5	3.60±0.64	5
Walk-ins available	3.50±0.74	6	3.37±0.72	7
The place looks inviting	3.38±0.81	7	3.33±0.80	8
Easy to get to	3.35±0.82	8	3.44±0.76	6
Open 24 hours	3.35±0.89	9	3.27±0.80	9
Doctors and nurses from all races/ethnicity	3.10±1.16	10	3.09±1.06	11
Doctors and nurses encourage parental involvement	3.00±0.97	11	3.06±0.89	12
Visits are confidential	2.85±1.07	12	3.10±0.93	10
Doctors and nurses are same race/ethnicity as me	1.78±1.06	13	1.85±1.06	13