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Norms, Attitudes, and Preferences: Responses to a Survey of Teens about Sexually Transmitted Infection and Pregnancy Prevention

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Abstract

Study Objective—To assess the values and beliefs regarding sexual behavior, sexual decision-making, and reproductive health learning preferences among teens in Hawaii.

Design—Survey regarding teens' knowledge, attitudes, and beliefs about sexual behaviors and preferences for learning about reproductive health.

Setting—University of Hawaii Department of Obstetrics and Gynecology clinics in Honolulu, Hawaii.

Participants—Female patients and their male or female companions ages 14–19 years.

Interventions—A 30-question anonymous survey.

Main Outcome Measures—The main outcome was to describe the norms, attitudes, beliefs, and preferences of teens in this setting with regard to sexual health and sexual health education. For this, we provide a description of response frequencies and a comparison of mean scores across demographic characteristics.

Results—We analyzed a total of 100 surveys. Teens endorsed more values and norms protective against sexually transmitted infection than those protective against pregnancy. Younger teens expressed more protective values as a result of the influence of perceived parental values, whereas older teens expressed less protective values on the basis of the influence of peers. Respondents expressed comfort talking with their clinician about sexual health, and also expressed a slight preference that their clinicians initiate these conversations.

Conclusion—The influence of parental values and peer norms on sexual behavior must be taken into consideration when designing interventions to address adolescent sexual health. Additionally, teens' greater concern about the consequences of sexually transmitted infection could be leveraged by clinicians to initiate broader conversations about sexual health, and a variety of modalities,

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including online resources and in-person conversations, should be used to meet the diversity of preferences expressed by teens across demographic groups.

Keywords

Adolescents; Pregnancy; Sexually transmitted infections; Surveys; Norms; Attitudes; Behaviors; Prevention

Introduction

Hawaii has the 15th highest rate of chlamydia in the United States, with higher than average infection rates among adolescents and young adults.¹ Hawaii also has the 12th highest incidence of teen pregnancy in the United States.²

The low rate of condom and contraceptive use among Hawaii's teens is likely to be responsible for high sexually transmitted infection (STI) and unintended pregnancy rates. Among the 37% of teens in Hawaii who are sexually active, 54.1% reported not using a condom at the time of their last intercourse. This percentage is the lowest reported in the nation.³ Additionally, only 20.9% of teens surveyed in Hawaii reported use of any contraceptive method (besides condoms) at the time of their last intercourse, which is the sixth lowest proportion in the nation.⁴

When untreated, chlamydia infection can have devastating long-term health consequences including infertility, urethral disease, chronic pelvic pain, pelvic inflammatory disease, and ectopic pregnancy.⁵ Teen pregnancy is associated with poorer outcomes for mothers and their offspring, including later initiation of prenatal care, lower educational attainment, and increased risk for substance abuse and depression in teen mothers, and greater risk of developmental and behavioral issues in their children.⁶

To support improved uptake of safer sex behaviors among adolescents, clinicians and public health professionals must understand the factors that contribute to adolescent reproductive health knowledge, attitudes, and behaviors. A review of more than 400 studies on risk and protective factors associated with adolescent sexual behavior, STI transmission, and teen pregnancy identified consistent environmental, familial, peer, and individual factors that are related to teen sexual behavior.⁷ These include community cohesiveness and neighborhood safety, family structure and parental values and modeling of attitudes around sex, perceived peer values, and attitudes regarding sexual behavior, the individual's connectedness to school and community, and personal attitudes about sex. In Kirby's assessment,⁷ some of these factors are more fixed (community safety) and others are more malleable (peer and individual attitudes about sexual behavior). Individual-level factors are the most well suited to intervention in the context of clinical care.

To address these personal-level factors, the Theory of Planned Behavior, which suggests that attitudes, normative beliefs, and perceived control are strong predictors of behavior, serves as a helpful framework.⁸ To effectively support teens' safer sex practices, clinicians must understand not only the attitudes, norms, and perceived self-efficacy of patients but also recognize unique learning styles and preferences of their target population. A survey of teens

in 3 urban-area outpatient obstetrics and gynecology clinics was conducted with the aim of quantifying these factors.

Materials and Methods

An anonymous survey with 33 Likert scale questions was offered to teens aged 14–19 years seeking care at the University of Hawaii Department of Obstetrics and Gynecology (UH OBGYN) practice sites and their male or female teenaged companions. The survey was adapted from previously validated questionnaires compiled by Kirby et al that were shown to effectively measure attitudes and values about sex, STI, and contraception, and to measure self-efficacy in teen populations.⁷ Also included in the survey were questions (not previously validated) rating preferences for learning about sexual health. The Hawaii Pacific Health Research Institute granted this study institutional review board exempt status.

The paper-based survey included an introductory paragraph explaining that the survey was anonymous, confidential, and optional. To protect the anonymity of responses, teens were instructed to leave completed surveys in a marked, closed receptacle when completed. Staff and clinicians did not see the completed surveys, which study personnel collected from the receptacle weekly. For this descriptive study, we did not conduct a power calculation and instead aimed to collect only as many surveys as was feasible in a 2-month window (August–September 2014). Data collection was limited to 2 months to reduce demands on the staff of these busy clinics.

Front desk staff included the survey with all standard forms and materials typically provided to patients upon check-in and offered it separately to any teen companions. Most patients were seen only once during our study window, reducing the risk of multiple responses from the same subject.

Sample

The survey was offered to patients and their male or female companions ages 14–19 years in the UH OBGYN practices. The UH OBGYN practice has a diverse demographic make-up, similar to the racial and ethnic composition of the state. The payor mix in these clinical settings is also diverse. Teen patients who are uninsured or underinsured have access to a limited set of services free of charge in a dedicated teen-only clinic each week.

Statistical Analyses

All variables were reviewed for abnormal or missing values. Simple frequencies were calculated for our categorical demographic information, including age range, gender, race/ethnicity, and pregnancy and childbearing history.

Using the scoring rubric provided by Kirby et al,⁹ responses were grouped and scored according to the themes as outlined in Table 1. Responses to questions regarding preferences for health education methods were averaged and compared using Student *t* tests. All statistical analyses were completed using IBM SPSS Statistics version 23 (IBM Corp, Armonk, NY). We determined an α of 0.05 to be significant when comparing average scores

for each value. Study data were managed using REDCap electronic data capture tools hosted by the University of Hawaii.¹⁰

Grouping responses according to demographic variables of age range (14–15, 16–17, and 18–19 years), gender, and history of pregnancy (themselves or their partner) we compared average scores for questions according to themes. We had insufficient responses per race category to analyze responses according to race.

Results

Surveys were included in the analysis if they were missing fewer than 5 responses. Eighty-three surveys were missing no data and 17 were missing fewer than 5 responses, resulting in a total of 100 surveys. The demographic characteristics of our study population are presented in Table 2. Most respondents were between 16 and 17 years of age and had no history of pregnancy themselves or with a partner. Respondents were primarily female, although 38% of surveys were completed by male participants. Responses were ranked according to a scale of –2.0 (least protective score) to 2.0 (most protective score), with 0 representing a neutral response. Table 3 reflects some of the results described in the following sections.

Perceived Consequences of Pregnancy and STI

Overall, respondents expressed a higher perceived severity of consequences associated with STI (mean score, 1.61) than they did with pregnancy (mean score, 0.61). Across demographic groups, teens were neutral about the severity of consequences of pregnancy, although the youngest and the oldest teens' scores did vary significantly, with younger teens expressing higher perceived severity (14- to 15-year-old mean score, 0.84; 18- to 19-year-old mean score, 0.39; $P = .03$). Teens who had previously experienced a pregnancy expressed significantly higher perception of consequences than teens who had not (previous pregnancy mean score, 0.70; no previous pregnancy mean score, 0.08; $P = .002$).

Perceived Parental and Peer Values as Motivators to Avoid Pregnancy and STI

Teens in the youngest age range had higher scores in the theme of parental influence as protective factors for avoiding pregnancy and STI but this influence decreased significantly toward more neutral responses with each age range and inverted toward stronger endorsement of nonprotective values among the oldest teen group (14- to 15-year-old mean score, 1.28; 16- to 17-year-old mean score, 0.69; and 18- to 19-year-old mean score, –0.40; $P = .00$). The influence of perceived peer norms followed a similar pattern, with more protective, although still close to neutral, values expressed in the youngest age group and less protective values endorsed among the middle-range and oldest teens (14- to 15-year-old mean score, 0.09; 16- to 17-year-old mean score, –0.59; 18- to 19-year-old mean score, –0.75; $P = .001$).

Attitudes Favoring Abstinence

Respondents across demographic groups averaged slightly positive attitudes in the theme of abstinence (overall mean, 0.60). Female respondents endorsed more protective values than

male respondents (female 0.78 vs male 0.30; $P = .008$), although both averages were close to neutral. Teens aged 14–15 endorsed these values significantly more strongly than their middle age range peers (14-to 15-year-old mean score, 0.93; 16- to 17-year-old mean score, 0.41; $P = .01$), however, no significant differences were found when the 14- to 15-year-old or 16- to 17-year-old teen groups were compared with the oldest teen group.

Teen Preferences for Health Education

Results for these questions are shown in Table 4 and followed a ranking scale of 1, strongly not preferred, to 5, strongly preferred, with 3 representing a neutral value. In our study population, teens expressed neutral to slight agreement with questions about their comfort initiating conversations about sexual health with their clinician (overall mean, 3.78), with the oldest teens expressing the most comfort. Although teens expressed comfort initiating these conversations, they also expressed neutral to slightly positive preferences that the clinician initiate these conversations (overall mean, 3.52). This preference was expressed most strongly by the oldest teens (mean score, 3.76).

Teens expressed neutral to positive preferences for consulting a Web site about sexual health information (overall mean, 3.11), and were slightly more likely to consult a Web site recommended by a clinician than a Web site recommended by a friend for sexual health-related information (Web site recommended by clinician overall mean, 3.54; Web site recommended by a friend overall mean, 3.31). Younger respondents and male respondents had slightly higher average preference scores for consulting a Web site confidentially for sexual health information than older-age and female respondents (14- to 15-year-old mean score, 3.54; 18- to 19-year-old mean score, 3.25; male mean score, 3.58; female mean score, 3.25), although these differences were not statistically significant.

Discussion

Using this survey we found that teens perceive the consequences of STI to be greater than those associated with pregnancy, and that attitudes about pregnancy and STI differ across age groups, with younger teens endorsing more protective values across survey themes. Further study is needed to understand the reasons for these unequal risk perceptions, but this knowledge can help clinicians tailor messaging to engage teens' interest in STI prevention and leverage that interest into discussion of overall safer sex behaviors.

Additionally, younger adolescents felt the protective effects of parental values more strongly than their older peers. Encouraging parents to engage in conversations about safer sex and risk reduction with their younger adolescents could potentially help delay sexual debut and promote adoption of safer sex behaviors upon initiating sexual relationships. Likewise, the influence of peer norms toward neutral and less protective values increased in a linear fashion with age, indicating that health promotion efforts among middle- and older-age teens should focus on influencing social norms to promote knowledge and attitudes supportive of safer sex behaviors.

Finally, it is encouraging that teens across demographic groupings expressed neutral to positive agreement with statements regarding the benefits of abstinence. Although there are

meaningful limitations to sexual health education modalities that focus exclusively on abstinence, encouraging adolescents to abstain from sex until they feel empowered to do so safely is an important tool for reducing teen STI and pregnancy.

Regarding teen preferences for receiving health education, older teens expressed the greatest comfort with initiating conversations with their clinician regarding their sexual health, but even the youngest respondents had neutral to positive preferences when responding to these questions. Teens did not express positive preferences for speaking to a health educator instead of a clinician (results not shown), but “health educator” was not defined in the survey and might not have been clear to all respondents. Although not significantly different, male respondents and the youngest group of teens expressed the greatest preference for consulting a Web site for information about sexual health.

The findings in our teenage population converge with finding from previous research. An integrative review of adolescent sexual health decision-making reported that across studies, teens in younger age groups identified their parents' values as strong influences on their sexual decision-making, and also reported that peers' attitudes toward age at sexual debut, contraceptive use, and perceived sexual activity of peers were strong predictors of attitudes about sex.¹¹ Our survey reflects these same indicators. Additionally, the integrative review reported that female gender was more strongly associated with experiencing peer encouragement for abstinence whereas male gender was associated with encouragement for sexual activity, which is consistent with our findings.¹¹

Although it is encouraging to note that our participants indicated at least some comfort with the idea of initiating a conversation with their providers about their sexual health questions, a recent assessment of pediatric and family medicine physicians' visits with nonpregnant adolescent patients reported that adolescents never initiated such conversations with their provider.¹² In appointments during which the topic was brought up by the provider, it was more likely to occur during a longer overall office visit and when an explicit conversation about confidentiality also occurred. This finding aligns with American College of Obstetricians and Gynecologists Committee Opinions on adolescent reproductive health care, which stress the importance of emphasizing confidentiality with adolescents as a means of improving rapport and building trust.^{13,14}

Interpreting our findings in the context of the Theory of Planned Behavior, these responses from the adolescent and young adult population in our clinics help us to recognize opportunities for improving health by supporting attitudes and normative values that promote safer sexual behaviors, while also identifying social and family support structures that can encourage these practices. Equally important is recognizing and working to reduce the influence of less protective norms and attitudes because these can be significant barriers to adolescent and young adults' capacity and interest in engaging in more protective behaviors.

Limitations

Our sample was one of convenience, derived from a 2-month study period among a population of patients and companions who were already engaged with the health care

system. Teens who are seeking services might be substantially different than their peers who are not connected with health services. Additionally, our sample was pulled from 3 urban-area clinics. Although these clinics have a large catchment area and are a referral center for adolescents throughout the state, our study sample cannot be said to be representative of all teens in Hawaii. Finally, we did not attempt to meet a predetermined recruitment level to ensure adequate power for our analysis. It is likely that we were insufficiently powered to observe some between-group differences.

Implications for Practice

These findings support earlier research that teens would most prefer for their clinicians to initiate discussions about healthy sexuality. To capitalize on these preferences and maximize the effect of services provided by clinicians, providers can implement teen-friendly measures, such as longer appointment times to accommodate rapport-building, initiate sexual health discussions in a frank and age-appropriate manner with all adolescent and young adult patients, make clear to parents and patients the confidentiality policies of the clinic, and create a setting wherein open dialogue is encouraged. Additionally, providers might consider using group counseling as an opportunity to address common questions and myths and also to support and reinforce peer-normative values that promote healthy and safe sexuality.

Our findings also point to the influence that parental values have on younger adolescents, and suggest that programs that support parental engagement could help teens to delay sexual debut and to adopt safer sexual practices when they do become sexually active. Findings from this study will be used to develop further research of clinical tools and social marketing campaigns aimed at promoting safer sex among teens in our population.

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Table 1

Themes Identified and Scoring Used in the Study

Theme	Question examples and more protective (+) or less protective (–) value
Perceived parental values about sex	My parents would be very upset if they believed I was having sex. (+) My parents wouldn't care if they found out I was having sex if I used condoms and birth control. (–)
Perceived peer norms about sex	Most people my age are not having sex. (+) Most of my friends think having sex while you're in high school is normal. (–)
Attitudes favoring abstinence	I would not have sex now because it is against my beliefs. (+) It is OK for people my age to have sex if they are in love. (–)
Perceived susceptibility to pregnancy and STIs	If I have sex without using birth control, I will probably get pregnant/or get my partner pregnant. (+) If I have sex without using a condom, I will probably get an STD. (+)
Perceived consequences of pregnancy and STI	Being a teen parent would make it more difficult to finish high school. (+) Getting an STD is not a big deal. (–)
Perceived peer norms about contraception and condom use	Most of my friends believe condoms should always be used if a person my age has sex. (+) Most young people use birth control when they have sex. (+)
Preferences for learning about sexual health	I would like it if my doctor or nurse started a conversation with me about getting birth control. If a doctor, nurse, or teacher recommended I visit a Web site for more information about pregnancy and STDs, I would look at it.

STD, sexually transmitted disease; STI, sexually transmitted infection.

Table 2

Respondent Demographic Characteristics (N = 100)

Characteristic	n	%
Age		
14–15	29	29
16–17	46	46
18–19	25	25
Gender		
Female	60	60
Male	38	38
Prefer not to answer	2	2
Race		
Native Hawaiian	29	29
Multiple races	28	28
Asian	21	21
White	11	11
American Indian	2	2
Prefer not to answer	9	9
History of pregnancy (have you ever been pregnant/gotten someone pregnant?)		
No	85	85
Yes	13	13
Prefer not to answer	1	1.0
Unsure	1	1.0
Currently pregnant (self or partner)		
No	92	92
Yes	8	8
Have Children		
No	92	92
Yes	8	8

Table 3

Perceived Severity of Consequences of Pregnancy and STI; Perceived Parental Values about Sex, Perceived Peer Norms about Sex, Contraception, and Condom Use; and Attitudes Favoring Abstinence

Variable	n	Mean (SD)	P
Perceived severity of consequences of pregnancy (overall mean: 0.61)			
Gender			
Female	55	0.51 (0.74)	.082
Male	34	0.77 (0.65)	
Age, years			
14–15	27	0.84 (0.56)	.11
16–17	40	0.59 (0.70)	
16–17	40	0.59 (0.70)	.30
18–19	24	0.38 (0.81)	
14–15	27	0.84 (0.56)	.03
18–19	24	0.39 (0.81)	
History of pregnancy			
Yes	12	0.70 (0.70)	.002
No	77	0.08 (0.54)	
Perceived severity of consequences of STI (overall mean: 1.61)			
Gender			
Female	57	1.65 (0.63)	.54
Male	33	1.54 (0.84)	
Age			
14–15	27	1.72 (0.45)	.27
16–17	41	1.52 (0.84)	
16–17	41	1.52 (0.84)	.53
18–19	24	1.64 (0.68)	
14–15	27	1.72 (0.45)	.64
18–19	24	1.65 (0.68)	
History of pregnancy			
Yes	12	1.50 (0.88)	.58
No	78	1.65 (0.66)	
Perceived parental values about sex (overall mean: 0.59)			
Gender			
Female	60	0.68 (1.39)	.36
Male	36	0.43 (1.23)	
Age			
14–15	29	1.28 (0.86)	.02
16–17	44	0.69 (1.26)	
16–17	44	0.69 (1.26)	.001
18–19	25	−0.40 (1.31)	
14–15	29	1.28 (0.86)	.000

Variable	n	Mean (SD)	P
18–19	25	–0.40 (1.31)	
History of pregnancy			
Yes	13	–0.58 (1.19)	.002
No	83	0.78 (1.26)	
Perceived peer norms about sex, contraception, and condom use (overall mean: –0.44)			
Gender			
Female	58	–0.30 (0.95)	.03
Male	37	–0.67 (0.71)	
Age			
14–15	27	0.09 (0.86)	.002
16–17	45	–0.59 (0.81)	
16–17	45	–0.59 (0.81)	.41
18–19	25	–0.75 (0.75)	
14–15	27	0.09 (0.87)	.001
18–19	25	–0.75 (0.75)	
History of pregnancy			
Yes	13	–0.74 (0.70)	.12
No	82	–0.39 (0.88)	
Attitudes favoring abstinence (overall mean: 0.60)			
Gender			
Female	55	0.78 (0.80)	.008
Male	34	0.30 (0.81)	
Age			
14–15	27	0.93 (0.81)	.01
16–17	41	0.41 (0.80)	
16–17	41	0.41 (0.80)	.45
18–19	23	0.57 (0.81)	
14–15	27	0.93 (0.81)	.12
18–19	23	0.57 (0.81)	
History of pregnancy			
Yes	11	0.48 (0.86)	.42
No	78	0.64 (0.52)	

Scores were on the basis of a scale of –2.0 (least protective score), 0.0 (neutral value), and 2.0 (most protective score).

Table 4

Teen's Preference for Clinician Interaction and Learning about Sexual Health

Variable	n	Mean (SD)	P
Teen's comfort initiating conversation regarding sexual health with clinician (overall mean: 3.78)			
Gender			
Female	58	3.77 (1.17)	.86
Male	33	3.82 (1.01)	
Age			
14–15	28	3.46 (1.45)	.32
16–17	41	3.75 (0.94)	
16–17	41	3.75 (0.94)	.05
18–19	24	4.20 (0.83)	
14–15	28	3.46 (1.45)	.03
18–19	24	4.20 (0.83)	
History of pregnancy			
Yes	13	3.73 (1.15)	.10
No	78	4.23 (0.93)	
Teen's preference that clinician initiate conversation about sexual health (overall mean: 3.52)			
Gender			
Female	57	3.59 (0.87)	.29
Male	34	3.41 (0.71)	
Age			
14–15	27	3.32 (0.98)	.40
16–17	42	3.51 (0.74)	
16–17	42	3.51 (0.74)	.15
18–19	24	3.76 (0.65)	
14–15	27	3.32 (0.98)	.07
18–19	24	3.76 (0.65)	
History of pregnancy			
Yes	13	3.59 (0.80)	.76
No	78	3.52 (0.88)	
Prefer to reference Web site confidentially for sexual health information (overall mean: 3.11)			
Gender			
Female	56	3.25 (0.92)	.09
Male	33	3.58 (0.82)	
Age			
14–15	26	3.54 (0.88)	.32
16–17	41	3.32 (0.86)	
16–17	41	3.32 (0.86)	.78
18–19	24	3.25 (0.96)	
14–15	26	3.54 (0.88)	.27
18–19	24	3.25 (0.96)	

Variable	n	Mean (SD)	P
History of pregnancy			
Yes	12	2.96 (0.75)	.65
No	77	3.44 (0.91)	
Likelihood of referencing Web site recommended by friend (overall mean: 3.31)			
Gender			
Female	55	3.27 (1.11)	.45
Male	35	3.46 (1.12)	
Age			
14–15	25	3.16 (1.11)	.25
16–17	42	3.48 (1.02)	
16–17	42	3.48 (1.02)	.37
18–19	25	3.20 (1.29)	
14–15	28	3.16 (1.11)	.91
18–19	24	3.20 (1.29)	
History of pregnancy			
Yes	12	2.92 (1.31)	.27
No	78	3.37 (1.09)	
Likelihood of referencing Web site recommended by clinician (overall mean: 3.54)			
Gender			
Female	58	3.50 (0.98)	.58
Male	34	3.62 (1.02)	
Age			
14–15	28	3.32 (1.09)	.18
16–17	42	3.67 (0.95)	
16–17	42	3.67 (0.96)	.73
18–19	24	3.58 (0.88)	
14–15	28	3.32 (1.09)	.34
18–19	24	3.58 (0.88)	
History of pregnancy			
Yes	13	3.38 (1.19)	.60
No	79	3.57 (0.96)	

Scale ranged from 1 (strongly not preferred) to 5 (strongly preferred).