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Adolescents' Views Regarding Uses of Social Networking Websites and Text Messaging for Adolescent Sexual Health Education

Ellen M. Selkie,

University of Minnesota, Dept of Pediatrics

Meghan Benson, and

Director of Community Education at Planned Parenthood of Wisconsin

Megan Moreno

UW-Madison, School of Medicine & Public Health, Dept of Pediatrics

Abstract

Background—Adolescents frequently report barriers to obtaining sexual health education.

Purpose—The purpose of this study was to determine adolescents' views regarding how new technologies could be used for sexual health education.

Methods—Focus groups were conducted with a purposeful sample of adolescents between 14 and 19 years old. Facilitators asked participants for their views regarding use of social networking web sites (SNSs) and text messaging for sexual health education. Tape-recorded data was transcribed; transcripts were manually evaluated then discussed to determine thematic consensus.

Results—A total of 29 adolescents participated in 5 focus groups. Participants were 65.5% female. Three themes emerged from our data. First, adolescents preferred sexual health education resources that are accessible. Second, adolescents preferred online resources that are trustworthy. Third, adolescents discussed preference for “safe” resources.

Discussion—Adolescents were enthusiastic and insightful regarding technology for enhancing sexual health education. The themes that influence adolescents' preferences in sexual health education using technology are similar to barriers that exist in other aspects of adolescent health communication.

Translation to Health Education Practice—Findings suggest ways in which health organizations can understand adolescents' views and concerns about how their interactions with professionals take place regarding sexual health.

BACKGROUND

Sexual behavior among adolescents presents major public health concerns. In 2007, 47.8% of adolescents reported ever being sexually active,¹ with 35% reporting sexual activity in the last three months.² The adolescent birth rate rose 5% from 2005 to 2007 after 14 years of decline and dropped only 2% the following year;³ rates of sexually transmitted infections (STIs) have also been steadily increasing in adolescents.⁴

Many comprehensive sex education programs have been shown to increase adolescents' knowledge and use of contraception, and some have reduced pregnancy and STI transmission.^{5–7} Despite successes in decreasing sexual activity and increasing condom use among adolescents,^{1,8} the continued high prevalence of adolescent pregnancy and STIs indicate that further educational efforts are necessary. Many interventions to educate

adolescents about pregnancy and STI prevention have been set in the school classroom. The explosion of electronic technology may present new opportunities to provide sexual health education to adolescents. These technologies are particularly compelling given adolescents' access to them; adolescents report almost universal access to the Internet either at home or school.^{9,10} Two popular technologies among adolescents are social networking sites (SNSs) and text messaging.

A social networking site (SNS) is defined as "an online place where a user can create a profile and build a personal network that connects him or her to other users."¹¹ SNSs such as MySpace and Facebook are extremely popular among American adolescents, approximately 73% of adolescents report use of at least one SNS.¹²

Text messaging is another commonly used form of technology among adolescents. At present, 75% of adolescents own a mobile phone and 88% of those adolescents use the text messaging function.¹³ Adolescents who use text messaging send and receive an average of 1,500 texts per month, though about 14% of texting teens send and receive over 6,000 texts monthly.¹³

The use of these forms of technology for patient communication has been studied in several aspects of health care. Social support sites for patients with chronic disease are increasingly the object of research,^{14,15} while text messaging has been shown to be promising when communicating with patients about chronic illnesses such as asthma¹⁶ and diabetes,^{17,18} or providing online applications such as appointment reminders.¹⁹ Private adult clinics have begun creating their own social networking sites to enhance patient care and to provide a source for local referrals.^{20,21} However, to date, published material on the use of the internet and text messaging for sexual health purposes is only beginning to emerge.^{22,23} Furthermore, while the internet is a key sexual health resource for college students,²⁴ no studies have examined SNSs or text messaging use for adolescent sexual health education.

PURPOSE

Understanding how adolescents currently use and would like to use technology to obtain sexual health education could inform the design of education programs using SNSs and text messaging. The purpose of this study was to investigate adolescents' views regarding how these two technologies could be used toward providing sexual health education. These two technologies were chosen based on their widespread use among adolescents, and potential for interactive communication compared with traditional static websites that provide sexual health information. The researchers were interested in underlying themes that would assist providers and educators who may be interested in providing electronic sexual health education to adolescents.

METHODS

Setting

In this mixed-methods study, focus groups and surveys were conducted in Dane County, Wisconsin between March 10 and May 29, 2009. The University of Wisconsin IRB approved this project. Given past evidence showing requirement of parental consent as a barrier to conducting adolescent sexual health research,^{25,26} a waiver of parental consent was approved by the IRB. Some of the recruited organizations chose to send a general notification letter of participation in research home with participants. After data collection was completed, exemption for analysis of existing data was approved by the University of Minnesota IRB.

Participants and Recruitment

A total of five focus groups were conducted with male and female participants, and group size varied from four to seven participants. Participants were recruited from recreational centers and schools from urban and suburban areas of Dane County using purposeful sampling. The goal in site selection was to identify centers in which the researchers could recruit participants from a variety of genders, ages, socioeconomic backgrounds, sexual preferences and sexual experiences in order to identify a spectrum of needs for adolescent sexual health. A secondary goal was to recruit small groups of adolescents who had comfortable relationships beyond just acquaintances. The researchers hypothesized that focus groups conducted with small groups of adolescents who were comfortable with each other would yield the most valid and reliable responses. The researchers identified several community and school-based organizations to recruit participants from with these goals in mind.

The education coordinator at the study's community partner, Planned Parenthood of Wisconsin, identified a list of potential sites based on our recruitment goals. Sites included community groups and school-based extracurricular and after-school programs. The principal investigator contacted each center leader and detailed him or her on the objectives of the research. If the selected leader agreed to let his or her group participate, the principal investigator attended a regularly scheduled group meeting to briefly explain the study and invite eligible and potentially interested adolescents to the focus group. A signup form was sent around on which group members could express interest. These potential participants were reminded by group leaders of the focus group time and location, but expressing interest did not commit the group members to participation. Focus groups were held at the site of regular group meetings and occurred between two and seven days after the regular group meeting.

All participating adolescents were provided with written information for the study and consent was obtained. Separate consent forms were developed for adolescents (age 14–17) and adults (age 18–19) with developmentally appropriate language in each form as modeled in the Toronto Teen Survey.²⁷ All participants also signed a confidentiality agreement. To minimize participant discomfort, the researchers started each focus group with instructions to be respectful, and to refrain from asking each other about personal sexual behaviors and experiences. There were no professional-client relationships between the investigators and the participants prior to the study. Participants were provided with a small meal during the focus group.

Survey

Surveys were distributed prior to beginning the focus group. Participants were given the option to complete them and were instructed to keep them anonymous. Survey questions were developed by the authors with the purposes of 1) obtaining demographic data about participants, to demonstrate the applicability of the results to the general population; 2) determining the representation of diverse sexual experiences, again to demonstrate applicability to subpopulations of adolescents; and 3) determining the use of SNSs and texting in this particular sample group. Survey design was based on the Youth Risk Behavior Survey (questions about age and gender),²⁸ the National Health and Nutrition Examination Survey (questions about sexual experience),²⁹ and several other studied models (questions about sexual orientation).³⁰ Survey responses were analyzed in aggregate for demographics of the sample and were not linked to individual focus group participants.

Focus Groups

Focus groups were designed to explore ways adolescents use SNSs and text messaging and adolescents' views regarding using this technology for sexual health information. Focus groups are an optimal method to investigate this topic as they allow for participant interaction and encourage participants to build on other's comments, which leads to greater insight into why certain opinions or views are held.³¹

Each focus group was led by two trained facilitators. A total of four facilitators (one white male and three white females between the ages of 26 and 37) participated in constructing the focus group questions. All facilitators attended a classroom component and reviewed relevant focus group methodology literature; facilitators practiced questions with each other to ensure clarity and comfort with the topics.

Focus groups lasted between 40 and 50 minutes. Participants completed the anonymous paper survey prior to participation. All focus group discussions were audio recorded with supplemental notes taken by a research assistant. During the focus groups participants were encouraged to discuss their thoughts and interpretations of uses of technology for sexual health education. While focus groups were semi-structured with stem and follow-up questions provided to facilitators, the objective was not to ask leading questions or to elicit specific preconceived themes from participants. Please see Figure 1 for a listing of stem questions asked in the focus groups.

Analysis

All data were transcribed and analyzed manually. All transcripts were read separately by the three authors and analyzed for common themes and concepts using the constant comparative method.³² Grounded theory was used as a basis for creating a merged document of themes and corresponding text.³³⁻³⁵ The authors discussed and reached consensus among major themes in the data and determined illustrative quotations. Both themes and illustrative quotations had to be agreed upon by all three authors to be included in the final results. It became clear that data saturation had been reached due to the commonality of themes that emerged.

Based on the concepts of validity as "credibility" or "transferability," and reliability as "dependability,"³⁶ the researchers employed the following strategies to ensure each: In order to establish reliability, data were analyzed by three different investigators; the themes that were recognized by all three investigators were considered reliable. The discussion of the thematic coding scheme amongst the coders increased both the reliability and the validity of the codes. To establish external validity, data were taken at each of five focus groups, which were comprised of a diverse sample of participants as delineated above. Once theoretical data saturation had been reached, themes that consistently emerged from all five groups were considered valid.

RESULTS

Participants

A total of 29 adolescents participated; all participants completed the survey and contributed to discussions. Participants' ages ranged from 14 to 19 years, which is consistent with the definition of adolescence given by the American Academy of Pediatrics.³⁷ Most of our participants were female (65.5%), and over half of our respondents described themselves as heterosexual (62.1%). Approximately one quarter of participants lived within zip codes correlating to low-income neighborhoods (24.1%). Sexual experience, defined as having had either oral, vaginal, and/or anal sex, was reported by 58.6% of participants. Of this group,

88.2% reported having vaginal sex, 64.7% reported having oral sex, and 29.4% reported having anal sex. Table 1 provides a summary of these data.

Technology use

The vast majority of adolescents reported maintaining a personal SNS profile (96.6%). Of those, most maintained a profile on Facebook (93.1%) or MySpace (89.7%), with 41.4% using other SNSs such as MyYearbook, Tagged, and Bebo, among others. Many adolescents maintained profiles on more than one of these sites. Most adolescents reported owning a cell phone (93.1%) and over half of them sent greater than 25 texts per day.

Focus Group

The researchers identified three themes common to the resources adolescents currently use for sexual health information as well as to what adolescents would like to use regarding electronic resources for sexual health. These themes included: 1) accessibility; 2) trustworthiness, credibility, and confidentiality; and 3) personal comfort.

Theme 1: Adolescents want sexual health education to be easily accessible—

A major theme expressed by respondents is that sexual health information needs to be readily accessible. Adolescents mentioned that often, when a personal sexual health question arises, they want an answer immediately. Adolescents overwhelmingly responded that they use Internet search engines to find answers to sexual health questions; specifically, Google (www.google.com) was mentioned in every focus group.

Both male and female participants commented that using the Internet is an easy way to obtain information as most have Internet access at school, if not at home. Participants also noted that the Internet is available at all hours, making it easy to find information on weekends or after clinic or school hours when no other support is available.

“Usually there’s a lot of stuff [on Google] and you can just click on one of the first two links and it will take you to whatever website. Usually [the sites] are pretty legit.” - Female

Despite the excellent accessibility of the Internet, accessibility to appropriate sexual health information on the Internet was considered poor. One issue raised by multiple participants was the difficulty with accessing understandable sources for information. Many participants stated that sifting through hundreds of search engine results is time consuming and is not user-friendly.

“It’s hard to look up questions like that without coming across porn so it doesn’t work very well.” – Female

“You have to type it in right. Like if you just type in “the pill,” it’s not gonna show a birth control pill, it’s gonna show a whole bunch of pills. You just have to type the right thing.”-Female

Considering the design of an ideal technology source for sexual health information that is accessible, participants stated that electronic sexual health resources will be more accessible if they have plain language that adolescents can understand.

“If you gotta, like, read between the lines[...], it just makes it more complicated when it should just have, like, simple terms.” – Male

“I was thinking....if there’s a word we don’t understand, maybe it could be highlighted, and then you scroll over it and something would pop up with a definition.” – Female

“I mean, okay, we’re not illiterate either, we can read, but.... I’m not going to understand [a long scientific] word. And that could be a major point.... that [word] could be the whole cure thingie right there and the answer to your question.” – Male

Theme 2: Adolescents want sexual health resources to be trustworthy—both credible and confidential—Trust was a major issue discussed by adolescents in every focus group. Two aspects of “trust” emerged: credibility and confidentiality. Many participants emphasized that when searching the Internet for sexuality information, they ultimately trust websites that appear credible by being related to health, a frequently cited “trusted” web site was WebMD. However, some participants acknowledged that there was often no way to tell whether information on some websites was accurate.

“I mean if you have a question and say you go to Google and you find something that might not be correct. You really go to Google because it’s fast and easy, but if there is a fast and easy way to do it [somewhere else], which there probably are in many ways, it would be a lot easier and a lot more reliable.” – Female

Several participants stated that if they were to ask questions about sexual health using SNSs or text messaging, they would need to feel that the person answering the question is knowledgeable on the topic. Most participants agreed that having a notice somewhere on the website or SNS stating the credentials of the person answering questions (i.e. physician, nurse, social worker) would be sufficient. Some adolescents expressed interest in a sexual health education program run by other adolescents as they would be considered trustworthy. If an education program were run by other adolescents, participants stated they would want some assurance that the adolescents had been trained to answer questions.

“Maybe knowing how they know that information, like [a] nurse or something like that. Knowing there is a technical position or something like that might help to know they are qualified to answer these questions.” – Male

“If you just want to ask peers I think it would be comforting to know they’ve had training and not some random kid off the street that you’re telling your secrets to.” – Female

“I think it would be cool to actually verify who’s actually answering these questions, but they could still be anonymous when you’re asking. I don’t have a need to know exactly who it is I’m talking to.” - Female

Participants stated that trust in an information resource also depends on preservation of privacy when using it. Participants indicated that an advantage of using the Internet to find answers to questions about sex is that it offers anonymity, which is an issue they face when approaching adults or even friends for such information.

“You go to the doc, sometimes you don’t want the doctor, like, to know, you don’t want nobody to know, so it’s easier to do it [online] like that, sometimes.” – Male

Preservation of anonymity was one specific concern participants expressed with using SNSs as sexual health education outlets, since interactions on these sites are usually accompanied by a profile picture and links to personal identifiers. Suggestions to address this concern included using private messaging, having a “frequently asked questions” section based on submitted questions, and using text messaging instead of SNS interaction.

“Just don’t let [someone asking a question] post no comment about it. Cuz then it’s gonna be out in the open.” – Female

“I think it’s more comfortable to have anonymous postings, because if they don’t know who you are then you’re a little bit more comfortable saying something.” - Female

“If [a person sends a text message and] it’s a smaller screen less people are likely to see what you’re texting if it’s a personal question.” – Female

“I wouldn’t want to tell some random lady, you know, when I call her and tell her that my condom broke. I think that’s really, you know, it’s confidential and I’d rather text that.” - Male

Theme 3: Adolescents choose resources that offer information in a nonthreatening way—Participants indicated that any source of information about sex, which is an especially private and potentially embarrassing matter to them, should be available in a way that is safe and nonthreatening. Participants further described that they often feel that they cannot ask adults about sexual health because they are afraid of being met with disapproval.

“I know I don’t tell my mom some stuff because I’m afraid of what she’ll do.” - Female

“Whenever you go to your doctor you always get a lecture.” - Male

“Some people don’t feel safe talking to their doctor [...] I’d go straight to my doctor and talk to him, but [some people are] scared to talk about stuff. It’s just like those commercials about HIV, like ‘Don’t be scared to get tested’ or whatever. People are scared to ask their doctor stuff like that. That’s reality.” - Male

“I know my first doctor, I just went to discuss birth control and everything, and I was so scared. I don’t know what I’m going to do when I go back...but it’s scary the first time. My doctor is just intimidating.” Female

Participants discussed the need for different sources of information depending on the health topic. Resources that provided feedback from other adolescents was frequently mentioned, participants frequently reported that they would feel comfortable with having other adolescents answer questions about relationships online. However, for more medical topics such as pregnancy and STI prevention participants stated they would rather get answers from an adult professional online. Participants emphasized that any online provider should be accepting of the adolescent who is requesting information.

“[I would want] someone who is not going to give information that they are not entitled to be sharing. Someone who will be open to ideas and not being like “that’s wrong” ...unless it really is wrong (laughs).” - Female

“[Having adolescents answering questions] would give other teens a feeling of... like a safe feeling that other kids know about this and they can help.” – Female

Topics—The specific sexual health topics in which participants consistently expressed the most interest were: pregnancy prevention, sexually transmitted infection and relationships. Participants further suggested that websites or text messaging programs should provide additional information about clinics or other in-person resources to make adolescents more aware of places they can physically go for sexual health care.

“[excerpt] Female: Probably most girls would want to know about pregnancy.

Female: How to avoid it.

Female: Maybe how to get help if you are pregnant.”

“Well I guess general health information and the stuff we’re more interested in is like sexual health information, such as if you have questions about sex and relationships, birth control, STDs, all that kind of stuff.” - Female

DISCUSSION

This study found that participants were genuinely interested and enthusiastic about the ways that technology could be used to enhance sexual health education. Participants were vocal and specific regarding issues they currently face in trying to find sexual health information as well as what they would like to see with sexual health education programs. In designing any kind of technological educational program or intervention geared toward adolescents, it is imperative to include adolescents in the planning process.

Adolescents identified the potential of technology to provide sexual health education in an interactive format. Adolescents were not seeking websites that present textbook-like information, which is how sexual health information is often presented online. Adolescents expressed that they used resources such as Google to find information because they felt this was the only method available to them. However, adolescents discussed that they would rather get answers in a way that involves personal communication; they want to know that there is someone “on the other end of the line.” Paradoxically, they do not want the person on the other end of the line to know who *they* are. Providing a “safe” setting to interact with real people via technology is something that SNSs and text messaging can readily offer.

These expressed communication preferences are consistent with adolescent peer communication styles. The phenomenon is exemplified by the massive numbers of text messages sent by adolescents in comparison with adults.¹³ In addition, as technology advances to allow SNS access (in addition to the text message function) on smart phones such as Blackberry and iPhone, adolescents are able to engage in even more information seeking in private; currently 27% of adolescents use their phones to access the Internet, and 23% use their phones to access SNSs.¹³ Technology allows adolescents to express themselves and interact with each other without having to do so in person. The researchers found that adolescents also want to use similar communication channels when seeking sexual health information.

The themes of confidentiality and clarity of information that emerged in our data are consistent with previous findings regarding adolescents’ use of the Internet to seek general health information.^{38,39} The researchers also found that perceptions of safety, threat, and comfort influence adolescents when they are using technology specifically to find sexual health information, similar to previous findings that elaborate on adolescents’ preferences in seeking confidential health care.⁴⁰⁻⁴³

Concerns regarding accessibility, perceived threat to self, and navigating personal interaction have historically been barriers to accessing sexual health education for adolescents. Our participants discussed concerns with discussing sex with adults in their lives, and previous work has shown that parents are often reluctant to talk about sexual health with adolescents.^{44,45} Similarly, adolescents want their physicians to be nonjudgmental, confidential, and competent; but failure to meet these conditions results in loss of trust and decreased likelihood to seek care.^{40,41}

Limitations of the study include the small sample size and thus limited generalizability of our findings. However, the researchers selected this sample of adolescents to achieve the highest possible *variety* in sexual preference and sexual experience and as indicated by the survey results. Thus our results represent a good starting point for further research. In

addition, the researchers did not have a reliable method of determining socioeconomic status; thus results may not be applicable to adolescents from families of all income levels.

Given the sensitive nature of the conversation, having both genders in each group may have inhibited communication, especially since privacy and anonymity when seeking information about sex was a dominant theme in the focus group comments. However, the researchers felt that holding groups with participants who knew each other from multiple previous group settings would minimize this concern. Although it was possible that having a sensitive discussion with peers could be potentially embarrassing, the researchers found that the participants' established relationships led to a rapid emergence of enthusiastic discussion in our groups.

Further research should examine translation of the above themes into practice. Given the trends found here and elsewhere^{38,39} regarding the popularity of online sources of health information, examination of search engine results on sexual health topics for validity, clarity, and professionalism is warranted. Finally, the impact of technological interventions on adolescent sexual health outcomes should be assessed. Given the rapid pace of current technology, it is possible that some technologies such as texting may become obsolete in coming years. However, the themes found in this study remain applicable when designing future technology resources for adolescents.

TRANSLATION TO HEATH EDUCATION PRACTICE

First, our findings illustrate that teens may be open to interacting with sexual health educators on SNSs and text messaging programs. Thus, organizations that are considering or are already putting together profiles on SNSs or developing texting programs should know that adolescents may be open to communication but have concerns about how their interactions with professionals take place. For example, the SNS Facebook provides opportunities for private communication and live chat, as well as publicly displayed communication. If a sexual health program or organization were to use this web site, they could choose to incorporate some, or all of these communication venues. When considering what communication channels to incorporate into a sexual health campaign, the results of this study can help guide educators to ensure that these programs are accessible, trustworthy and protect privacy.

Second, organizations that are considering how to develop an education program incorporating technology could use similar methods as in this study to inform program development. Using focus groups may help organizations obtain information about the views and concerns of adolescents in their own communities. Further, as technologies continue to develop, performing a local assessment prior to launching a program using new technology may ensure that the technology platform is still relevant to the target audience.

Last, organizations who are considering incorporating new technology into adolescent education or outreach programs may also wish to investigate other adolescent organizations that are currently using these methods. Many health education organizations are using the Internet to promote adolescent and young adult sexual health, including Columbia University (<http://www.goaskalice.columbia.edu>), the National Campaign to Prevent Teen and Unplanned Pregnancy (<http://www.sexreally.com>, <http://www.stayteen.org>), and Planned Parenthood (<http://www.plannedparenthood.org/teen-talk>). In addition, some private clinics have begun to create their own social networking sites. It is worth noting that adolescents in our study noted that new technology should augment, but not replace, existing resources such as sexual health clinics.

Further research must be done to determine specifics of effective campaign design, such as audiovisual aspects and messaging options. In addition, using SNSs and text messaging for any personal health interventions requires careful ethical consideration to protect patient privacy.⁴⁶ Given the vast potential of e-health options and increasing access to electronic resources for health educators⁴⁷ as well as the growing use of smart phones for accessing SNSs,^{13,48} recognition of underlying themes such as those found in this study may guide clinicians and health educators to consider using these novel technologies.

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1. How and when do you use sites like Facebook, MySpace, or MyYearbook? What websites do you use for health information?
2. If you had questions or problems that have to do with sex or puberty, where would you go to get answers?
3. If there were information about sex or puberty on the websites we talked about, what questions would you like answered? How would you like to read this information on the sites?
4. We are thinking of looking at text message programs where people could text in to get answers to questions about sex and puberty. What do you think of this program? What questions would you like answered by text?

Figure 1.
Focus group stem questions.

Table 1

Demographic characteristics of focus group participants

N=29	Number (%)
Gender	
Male	10 (34.5)
Female	19 (65.5)
Age	
14–16	15 (51.7)
17–19	14 (48.3)
Sexual orientation*	
Heterosexual	18 (62.1)
Homosexual	6 (20.7)
Bisexual	5 (17.2)
Unsure	0 (0)
Sexual experience	
Vaginal intercourse	15 (51.7)
Oral sex	11 (37.9)
Anal sex	5 (17.2)
No Answer	2 (6.8)
Total: Any sexual experience	17 (58.6)

* Sexual orientation determined based on answers to survey item “I am attracted to:” with survey answers “guys,” “girls,” “both,” or “not sure.”