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The more things change…: The relative importance of the internet as a source of contraceptive information for teens

* Rachel K. Jones [1], Ann E. Biddlecom [2]

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[1] R. K. Jones (*)
Guttmacher Institute,
125 Maiden Lane,
New York City, NY 10038, USA
e-mail: rjones@guttmacher.org

[2] A. E. Biddlecom
Population Policy Section, Nations Population Division,
2 UN Plaza, Room DC2-1934, United Nations,
New York, NY 10017, USA
e-mail: biddlecom@un.org

Abstract: Most teens have regular access to the internet, and there is some expectation that the internet is helping to fill the sexual health information gap. We conducted in-depth interviews with a racially and ethnically diverse sample of 58 high school students to find out where they obtained information about contraception. A substantial minority had been exposed to online contraceptive information, but most did not consider it a main source. A majority had been exposed to this information from school, family, friends, and traditional media. Most teens were wary, or even distrustful, of online sexual health information, whereas school, family and, to a lesser extent, friends, were generally trusted. Our findings suggest that the internet is not filling the sexual health information gap for a number of teens, but we identify strategies that could increase teens awareness of, and trust in, information from this source.

Key words: adolescents; birth control; World Wide Web; sexuality education; United States

Introduction

For many people, the term *sex education* brings to mind the presentation of sexual health information in school classrooms. But adolescents acquire information about sexuality and sexual health issues from a variety of sources. A comprehensive examination of sexuality education is one that incorporates knowledge acquired at school, as well as from family members, peers, romantic partners, health care professionals, religious groups, youth-serving agencies, the internet, and more "traditional" media sources such as television and magazines.

Most studies examining where adolescents obtain information about contraception and other sexual health issues focus on one or two sources, most commonly what kids learn from parents or from school sex education classes (Guilamo-Ramos et al. 2006; Jaccard et al. 2000; Lindberg et al. 2006; Martinez et al. 2010; Miller et al. 1998). Few quantitative studies have examined a more comprehensive list. One national survey found that three quarters of 15–17-year-olds had learned "a lot" or "some" information about "relationships and sexual health issues" from sex education classes (77%), friends (76%), and from parents (75%) (Henry J. Kaiser Family Foundation, 2003). Other common sources were media (70%, including TV shows, movies, magazines, and the internet), romantic partners (50%), and healthcare providers (51%). One third (34%) indicated that siblings were also a source of sexual health information. This pattern suggests that the focus on parents and school are warranted, insofar as most teens acquire sexual health information from these sources, but that research should examine multiple information sources in order to gain a more complete understanding of how teens learn about contraception and sexuality.

Potential venues for finding sexual health information have been expanding. The overwhelming majority of teens (93%) use the internet, and approximately three quarters have a

high speed connection at home (Zhao 2009). One longstanding concern of parents, educators, and policy makers has been that children and adolescents can easily access sexually explicit material on the internet (see Braun-Courville and Rojas 2009). There is some research to validate that concern; 42% of internet users aged 10–17 have been exposed to online pornography in the last year, with 66% of these indicating that the exposure was unwanted (Wolak et al. 2007).

But in addition to sexually explicit material, there are a number of sites that provide factual information about sex. Websites such as iwannaknow.org, scarleteen.com, and teenwire.com, among others, are intended to provide information about a range of contraceptive and other sexual health issues, and many also allow adolescents to (anonymously) submit questions and participate in discussions. The internet may be a particularly appropriate venue for this type of information; users can limit their searches to issues and topics that are most relevant to their lives, and the anonymity allows them to ask questions that they might not feel comfortable broaching in class or with friends and family members (Gilbert et al. 2005; Suzuki and Calzo, 2004). Two studies conducted in 2001 found that approximately one in four young adults had used the internet to find information about sex (Borzekowski and Rickert 2001; Rideout 2001) and a more recent study found that 41% of teens in Washington, DC had ever searched for sexual health information online (Bess et al. 2009). At least one study found adolescents to indicate that the internet was their most common source of information about birth control and sex, though friends and parents were identified as more valuable sources (Borzekowski and Rickert 2001).

Teen sexual health websites are purported to get tens of thousands of unique visitors a day and are presumably helping to fill the sexual health information gap. But at least one study suggests that this interpretation may be a bit optimistic and, for example, among visitors to the

iwannaknow.org website, which targets 13–17-year-olds, a majority of respondents to a popup survey were adults (Gilbert et al. 2005). The authors surmised that college students, health care providers, parents, teachers, or other professionals were accessing the site on behalf of teens or for purposes such as research. Similarly, while the previously cited studies suggest that substantial minorities of teens have ever searched for sexual health information on the internet, it is unknown how commonly they did so. If searches of this type are infrequent, or if this information is not trusted, this would suggest that the internet is not necessarily filling the gap.

Despite the rapid growth in teens' use of the internet and increased efforts to make it a forum for sex education, there is little information about the ways that teens use, view, and trust this venue as a source of contraceptive and other sexual health information. To help address this shortcoming, we conducted an exploratory, qualitative study with 58 high school students to find out the types of contraceptive information they were exposed to across a range of sources, including the internet, and the extent to which they trusted information from different sources. Sexual health is a broad topic and our analysis focuses on information about contraception as this knowledge is a cornerstone of comprehensive sexual health education and necessary to help sexually active teens reduce the risk of unintended pregnancy and sexually transmitted infections. During the interviews, teens revealed strategies they used to evaluate the trustworthiness, or not, of online information about contraception and other sexual health issues. Our findings suggest tactics for improving teens' awareness of and access to accurate and age-appropriate sexual health information on the internet.

Data and methods

Our analysis is based on interviews conducted April–June 2008 with 58 high school juniors and seniors recruited from three sites: a large public high school in a mid-sized city in

Indiana, and two public high schools—one small and one large—located in two different boroughs of New York City. We limited the study to older teens because we wanted to maximize the amount of time for exposure to sexual health information across a range of sources.

Recruitment of schools and school context

Our goal was to interview adolescents attending two different public schools with different types of sexuality education curricula in order to contextualize the contraceptive information they had received from this key source. An additional goal was to interview teens in two geographic areas of the country to allow for potential regional differences in sex education policies and to avoid homogeneity in cultural outlooks according to sex, race, and ethnicity (key characteristics of our analysis). We also imposed the limitation that schools be racially diverse and not stand out academically as either extremely low or high-performing.

Researchers wishing to access public school students face many administrative barriers, and these are even more pronounced when the goal is to conduct in-depth interviews about sexual health issues. Thus, we relied on formal and informal contacts that were directly and indirectly affiliated with public schools across the United States. We made direct contact with a total of 11 high schools (though tentatively approached several more) and ultimately gained permission to conduct interviews at three. While our original goal was to limit the study to two schools, it was necessary to include a third in order to obtain enough interviews among different racial groups to allow for meaningful analysis.

School sex education curricula were variable across the three schools due, in part, to different school environments. The Indiana school spent approximately 2 weeks of health class on sex education along with other risk reduction strategies (e.g., drugs). At the small public school in New York City, there was no formal sex education class, though group discussions of

these issues sometimes occurred during an advisory period that met once a week. Relationships between students and teachers were purposely less formal; teachers knew the names of all the students, and groups of students and teachers often met on weekends for organized, extracurricular activities. Condoms were also available at the school and a few contraceptive posters were displayed in the halls. The large New York City school had a full semester dedicated to comprehensive sex education, including condom demonstrations (for students whose parents did not opt them out), two health resource rooms where condoms were available, and posters in the halls providing information about contraception, abstinence, and other sexual health issues. The school environment allowed for some student independence and, for example, students were allowed to congregate and study in the hallways during their free periods.

Recruitment of students

The environments and logistics of each school required that we be flexible in our recruitment activities, and we worked with a key contact at each school to develop appropriate recruitment strategies. At the Indiana school, a short description of the study was read during the morning announcements for 3 weeks, a brief video clip about the study aired each morning during the schools' in-house television programming for 1 week and each health teacher introduced the study in health classes. Once we had obtained study approval from the New York City Board of Education, we worked with the Vice Principal of Health Education at the large public school in New York City. Several days before the interviews began, we went to junior and senior gym classes and briefly explained the study. This strategy allowed students the opportunity to ask questions and have at least a passing familiarity with the interviewers. At the small public school, the Director of Special Programs briefed teachers on the project. Teachers

then explained the study to all junior and senior classes using a short study description 3 to 4 weeks before the interviews took place.

We attempted to recruit as many students as possible. At each school, a uniform set of documents was made available to all interested students and included: a short study description (stating that we were interviewing teens to find out where they obtained sexual health information), parental consent forms (available in Spanish and English, as well as Chinese and Korean at the large NYC school), a student information sheet (where students provided their age, sex, grade, and race/ethnicity), and an envelope for returning the forms in a confidential manner. Students were under no obligation to participate in the study and only those interested in being interviewed picked up the interview packets. All forms were returned to designated staff members at each school, and all students had to submit signed parental consent forms in order to be eligible for selection. We also obtained signed and verbal assent forms from all students before starting the interviews.

Students were selected for interviews at each site based on our goal of racial and ethnic diversity (see below) as well as students' availability during the school day. In Indiana, we interviewed 29 of the 38 students that returned signed parental consent forms. We did not analyze three interviews with white females because that group was, in the end, already sufficiently represented. At the small public school, we interviewed nine of the ten students that returned signed parental consent forms. At the larger New York school, we interviewed 23 of the 35 students that returned signed parental consent forms.

In order to ensure a diversity of perspectives as well explore potential gender, racial, and ethnic variations in the ways that adolescents acquire information about contraception, our goal was to interview seven students in each sex race/ethnicity category of Table 1. We fell short of

that goal by one interview for Asian males and two interviews each for Black and Hispanic males. The two co-authors who conducted all the interviews were White, non-Hispanic, women in their early 40s, which may have presented a barrier to participation for some adolescents. Overall, the interviews were comprised of slightly more females (*n*=33) than males (*n*=25), students from New York (*n*=32) than Indiana (*n*=26) and from the junior class (*n*=34) than the senior class (*n*=24). Notably, all of the Asian females were attending the large public school in New York City.

Interview strategy

Confidentiality and privacy were of the utmost importance and required flexibility on the part of the authors. Interviews took place in empty classrooms and offices, or, in a few instances, outside on the bleachers of the school athletic field. All interviews were digitally recorded and were 40 min long on average. Every participant received a $25 gift certificate as a token of appreciation. The project was reviewed and approved by the Guttmacher Institute's Institutional Review Board.

The overall goal of the study was to explore where teens acquired sexual health information, with a specific focus on contraception and abstinence, and the extent to which they trusted various sources. The interview guidelines were open-ended questions organized around the following information sources: school-based sex education classes or talks, friends, boyfriends/girlfriends, family, the internet, mass media, doctors/nurses, and religious groups. We asked similar questions about each source, namely what the teenager had learned (probing about abstinence and contraception) and how much they trusted the source for this information. The internet can also be a source of sexually explicit material for teens (Wolak et al. 2007; Ybarra and Mitchell 2005). We attempted to increase respondents' willingness to share these

experiences with the following statement, read before the series of questions about online sexual health information: “I know that there's a lot of information out there on this topic, some of it sexually explicit. My questions refer to all the different types of information.” (A copy of the interview guide can be found in Jones and Biddlecom 2011.)

We pre-tested our original guidelines using a snowball sample of six teens from three high schools in the New York City area.

Analytic strategy

We developed a scheme of about 20 codes based on the guidelines to capture the main issues discussed and coded the 58 transcripts using QSR NVivo (version 8.0) qualitative software. Each co-author read through text searches for specific codes and prepared a matrix of the substantive themes on the topic for each study participant. We did not set out to test hypotheses regarding differences by race and ethnicity or gender, but we did examine themes along these lines to see if any notable differences emerged. Results are based on the common themes arising from these matrices.

We did not ask students about their own sexual behaviors, but during the interviews, the majority of the students revealed whether or not they had had sex.[1] Most of the teens (*n*=31) indicated they had not had sex, 14 that they were sexually experienced, and 13 did not provide information about their sexual experience. During the analysis, we were sometimes surprised at

[1] We generally assumed that interviewees' were referring to heterosexual, vaginal intercourse when they used the terms *sex* and *sexual activity* in regards to both their own behavior and that of others. However, we seldom clarified this definition. Several students referred or alluded to sexual activities other than vaginal intercourse (e.g., oral sex), but we did not probe their responses. Four students indicated that they were, or potentially were, gay, lesbian, or bisexual, and all related that they had not had sex; these individuals, in particular, may have been referring to sexual activities other than heterosexual vaginal intercourse.

the similarities in exposure to, and interest in, different types of contraceptive information according to sexual experience, so our analysis identifies differences by this characteristic, as well.

The study sample included a small number of teens from one or two schools in a single city in each of the two regions where we conducted interviews. Thus, it was not appropriate to examine themes according to region. However, because information about location sometimes helps provide context for the quotes, we provide it for each interviewee.

Language

We did not use the term *contraception* during the interviews out of concern that it would not be understood by some teens. We discovered during pre-testing that the term *birth control* was sometimes interpreted as shorthand for the pill or hormonal methods. We also found that some teens used the term "safe sex" in reference to using contraception, usually condoms, to prevent STDs and pregnancy. Thus, during the interviews, we typically used the following terminology: "Tell me about any discussions you've had with family members about *birth control, condoms or safe sex*." This adds a level of complexity to interpretation as, for example, some parents only talked about condoms, some only birth control, some only "safe sex," and still others some variation of all three. In our analysis, we often use the term *contraception* in reference to all three issues, but distinguish between birth control, condoms, and safe sex when appropriate.

We were also confronted with terminology issues in describing teens' responses to our questions about contraceptive information. In some situations, teens related that they were exposed to contraceptive information they already knew. Sometimes teens had actively sought information, for example by asking friends or family members about these issues; other times it

was provided to them in a more passive manner, for example in class, during commercials or in conversations initiated by others. Even within the context of "passive acquisition," information about contraception may have had an active component. Adolescent females may pay more attention to television commercials about hormonal contraception than males as this particular drug can have direct relevance to their lives. Because it is impossible to adequately distinguish between the different ways the 58 respondents processed contraceptive information from a range of sources, most commonly our analysis refers to respondents being *exposed* to information. Exposure implies passivity on the part of the respondents, and we acknowledge that this was often not the case. However, since even active consumption of information (e.g., using the internet to find out about hormonal contraception) requires exposure to the information, we deem this characterization as accurate, if sometimes inadequate.

Findings

Less than half of the teens we interviewed (*n*=18) recalled exposure to contraceptive information on the internet. By contrast, a majority had been exposed to information about contraception at school (*n*=49) and by family members (*n*=48) and friends (*n*=40). A substantial minority of teens could recall exposure to contraceptive messages in traditional media such as television and movies (*n*=24) and books and magazines (*n*=20). We considered advertisements apart from the media in which they were presented and found that a majority of teens could recall being exposed to advertisements for hormonal contraception (*n*=36) and condoms (*n*=43). Nineteen students had received some type of contraceptive information from a doctor. Below, we summarize the content and nature of contraceptive information from each source. Because there is limited research on how teens use the internet for sexual health information, we provide more

information about this source, including strategies that teens used to evaluate online information about sexual health.

Internet

Most of the teens we interviewed (*n*=43) used the internet on a daily basis, ranging from a few minutes to several hours a day. Among the remaining 15 teens, some used the internet every other day while others did so less frequently; a few lacked home internet access and had to use computers at school and friends houses. Email, instant messaging, and social networking on sites such as MySpace.com and Facebook.com were the most common internet activities, and almost all of the teens used the internet for these purposes.

Despite familiarity with the internet, less than half of interviewees recalled being exposed to any type of contraceptive information from this source. Moreover, this exposure was often task-oriented, and most of the 18 teens had actively accessed this information for school assignments or, less commonly, in response to personal situations or circumstances.

> We had to do this little classroom project, group project, that we had to, like I said before, we had to do research on the different kinds of methods that you can use. And I was surprised at like, that there are so many different alternatives that you can use that are provided for you, so that you can be protected against different diseases. —*NYC (large school), male, Asian, never had sex*

While a minority of teens had obtained sexual health information from the internet, it was not a primary source of sex education for most of them. Only a few of the teens we interviewed used the internet regularly and proactively to educate themselves about contraception and safe sex. Among the majority of teens who could not recall exposure to online contraceptive

information, some related that they knew the information was there if they needed it, but had not been motivated to seek it out.

There was little variation in exposure to online contraceptive information by sexual experience, though it is worth noting that most teens who sought information in response to personal situations were sexually experienced. For example, one male turned to the internet after having unprotected sex with his girlfriend.

> Like, I, this one time I had a question, you know? I didn't really feel comfortable asking like my mom, 'cause she was the only one around. You know, I was like, I went on the Internet and I was like "can a girl get pregnant during her period?"—*Indiana, male, Hispanic, sexually experienced*

Females were more likely than males to report exposure to information about contraceptives in this venue, particularly hormonal methods, but exposure to online information did not differ substantially by race or ethnicity.

During the interviews, other types of sexual information teens identified as being exposed to online included STDs, pregnancy, pornography, sexual anatomy, abortion, sexual pleasure, sexual terminology, and reproductive cancers.

The majority of the teens we interviewed were wary of online sexual health information, regardless of whether or not they had actually sought it out or been exposed to it. Others described outright distrust and only a few indicated trust in the web. There was no pattern in the degree of trust in the internet by gender, race/ethnicity or actual internet use; heavy internet users

(several hours per day), daily but not heavy users, as well as less frequent users were included in the groups of teens who qualified their trust or categorically distrusted this source.

Some of the teens described strategies for evaluating online sexual health information. Most commonly, their trust depended on whether the website was a reputable or known source. News websites and those associated with general health or medical sources (e.g., WebMD or public health departments) were generally trusted, and some teens indicated that sites with the suffixes .gov, .org, and .edu were more likely than .com websites to contain accurate information.

> Well, not Wikipedia, they edit that like every day. But like, depending on the website, it all depends on the website. Like if it says .gov I know I can trust that or .edu. But if it just says .com I am like "Hmm, let me check that out somewhere else first." —*NYC (small school), male, Hispanic, never had sex*

> On the Internet, it depends on how the website looks like. It all depends. Sometimes it doesn't look like it's a site and sometimes like .com, .org; I tend to trust like .org and like .edu or something. —*NYC (large school), female, Asian, never had sex*

Some teens related that trust in an internet source was, or would be, qualified by whether the information corresponded with what they had learned from other sources. Alternately, some teens talked about purposefully using the internet to cross-check or validate information from other sources, including friends, school, magazines, and other websites. Teens were aware that a

lot of information on the internet was user-generated, and this was another reason they did not unquestioningly consume or seek out sexual health information from this source.

> Well some of the stuff I use like, I will like look upon it. And if there was like, either I have seen this in class or I have seen it in other websites. It's not like, oh someone just randomly made a web site and started design to make, you know, write about the topic, you know. And sometimes I use trusted websites, like some famous websites; I can't remember it off the top of my head. —*NYC (large school), male, Asian, never had sex*

> No, because I don't really trust Internet because really anybody can get on the Internet and type up whatever they want and post it on there. So, I don't really trust the Internet that much. —*Indiana male, white, sexually experienced*

The seemingly ubiquitous nature of sexually explicit or sexually oriented material on the internet made some adolescents reluctant to trust it for factual information about sex. Moreover, sex and sexual imagery being used to sell or market products ("sex sells") made some teens skeptical of the validity of factual information.

> I find the Internet is very almost, pro-sex kind of place. It's very easy to hit a missed link or click an ad and you end up on a site and there you go, you have the entire human body, stark naked before you.—*NYC (large school), male, white, sexually experienced*

The fact that there are so many different websites and that different websites will often give different answers to the same question contributed to some teens' wariness. Adolescents also related that using relevant sexual health search terms often meant having to sort through a lot of unrelated material or evaluate different answers to the same question.

> I have done it once and they usually send you around the loop, like you are just on like a massive hunt for information. Yeah, I usually just give up…. when it comes to like things like sexuality, usually websites are like, either they are for it or they are against it. And there is no real information about it. —*NYC (large school), male, Hispanic, never had sex*

School

Most of the teens we interviewed had been exposed to contraceptive information at school, and only a few students (located in each of the three schools) stated outright that they had not received any information about condoms, birth control, or safe sex at school. At the two schools that had the shorter or informal sex education curricula (the Indiana school and the smaller school in New York City), the information recalled by many teens was seemingly superficial and often limited to condoms.

> I think that condoms may have come up but it wasn't really like nothing big; it was like mentioned once or twice.—*Indiana female, Hispanic, sexually experienced*

> Like not birth control, but we did talk about like condoms, female condoms, and how they help prevent STDs, pregnancy, and things like that. But like birth

control, they have actually not talked, they have never spoken to me about birth control.—*NYC (small school), female, Hispanic, never had sex*

By contrast, a number of teens that attended the school with semester-long sex education program recalled exposure to information about a range of methods such as IUDs, rings, patches, and shots as well as birth control pills and condoms.

I didn't know about a lot of different kinds of birth control. I didn't know how certain ones work. Like I know there was birth control, but I wasn't aware [before the class], like how the pills worked, you know, what they actually put in them. I felt the information was very useful, at least for me. —*NYC (large school), male, white, sexually experienced*

Across the three schools, most of the teens trusted the sexual health information they received there, and only two respondents indicated that they did not trust information from this source. Schools and teachers were trusted because they were seen as having fact-based knowledge or expertise about sexual health issues and were responsible for educating adolescents.

…that's a place [school] that I would expect to know what they are talking about, to tell me the truth, to educate me on what I should know.—*Indiana, male, Asian, sexually experienced*

Family

Most respondents had been exposed to contraceptive information from family members, and this information was both fact-based and experiential in content. Information was conveyed to females in several contexts. In most cases, a family member, usually the mother, discussed or referred to different types of contraceptive methods. A few females reported discussing sisters' and cousins' experiences, both positive and negative, with the pill or the shot. Some female respondents related that a family member had discussed hormonal contraception in the context of helping them obtain, or offering to take them to get, a method. In most of these situations, the offer came out of concern or knowledge that the respondent was, or was potentially, about to become sexually active.

> Yeah, we [her and her mom] talked about birth control, like now that I am about to go off to college. Now, she wants to put me on birth control and I am like "okay." —*Indiana female, non-Hispanic Black, never had sex*

Alternately, some teens related that they had discussed, and sometimes obtained, hormonal contraception with their mothers for non-contraceptive purposes.

By contrast, only a few of the male students we spoke to reported obtaining more "hands on" or instrumental information from family members. This occurred in the form of providing condoms, which tended to come from family members close in age to the respondents. Most commonly, males were exposed to seemingly superficial information about condoms, what we refer to as "safe sex sound bites."

Well, um, my dad told me one time to be careful, and my mom basically said the same thing in a different way. So they basically know, but, just only be careful, basically. — *NYC (large school), male, non-Hispanic Black, sexually experienced*

While females were more likely to receive more substantive information, a few of them also related exposure to contraceptive messages of this sort.

Interviewer: And like, how often would they say about waiting to have sex?
Respondent: Not too often. She just says "don't have boyfriends too soon, and then, yeah, you know to protect yourself." —*NYC (large school), female, Asian, sexually experienced*

While sexually experienced adolescents were more likely than those who were not to have had conversations with family members about these issues, more than three quarters of those who had not yet had sex recalled discussions.

Asian females in our sample were more likely than females from other racial and ethnic groups to have obtained no contraceptive information from family members, and both Asian females and Asian males were less likely to report having had substantive discussions about these issues.

Family members were highly trusted by teens. Most, and parents in particular, were regarded as having the respondents' best interests at heart, and they were sometimes willing to speak about their personal experiences. We expect that these teens indicated a high level of trust

based more on their overall relationship with their family members and than on the amount or nature of safe sex information itself.

> Well from my parents I would say, what little I have gotten I would say I trust it completely. —*Indiana male, white, never had sex*

Friends

Most of the teens had discussed contraception with their friends, and, again, factual and experiential information were both conveyed. Males and females related that friends most often discussed or mentioned condoms, typically in a positive light; many related that their friends, including those who were not sexually experienced, advocated using condoms or used condoms themselves. A few males did relate that they had friends who had unprotected sex and/or believed that condoms made sex less pleasurable.

Discussions of and exposure to information about hormonal methods were more varied. Among female teens, birth control was discussed for purposes of both pregnancy prevention and regulating their periods. A minority of females had discussed strategies for obtaining hormonal contraception, the pluses and minuses of various hormonal methods and side effects. A few males related that they had discussed hormonal methods with female friends, but for the most part, these methods were not discussed with other males.

Most of the teens we spoke to related that contraception was promoted and encouraged among friends. This promotion could take on an instrumental role, for example asking a friend if he or she needed a condom, or could also be encouraged through joking around or offering advice.

> I told them about birth control because they think just because they are on birth control, they still can't get pregnant. But my sister was on birth control and she got pregnant on it. So I am like “there is still a chance, you still should tell them to wrap it up.” And they are like “No, no, no. He is not going with anyone.” And I am like “argh.” It's kind of hard.
>
> —*Indiana female, non-Hispanic Black, never had sex*

As with family, exposure to and discussion of contraceptive information with friends was slightly more common among sexually experienced teens, but most adolescents who were not necessarily sexually experienced had talked about these issues with friends.

The only notable difference by race or ethnicity pertained to Asian adolescents. The Asian females we spoke to were less likely than teens of other races and ethnicities to have talked about any issues related to sex with their friends, including contraception.

Adolescents tended to be skeptical of at least some of the sexual health information or messages they had obtained from friends. Respondents thought, and it was sometimes confirmed, that friends provided them with incorrect information or lied about their own sexual experiences. At the same time, friends were sometimes trusted because they had the respondents' best interests in mind and, in some cases, could speak from experience.

Girlfriend/boyfriend

Not all of the teens we interviewed had been in a romantic relationship, but slightly more than one third of all the interviewees had talked with a boyfriend or girlfriend about contraception. These discussions were far more common among those who were sexually experienced though a minority who were not sexually experienced had also discussed

contraceptive issues. For some couples, these discussions, even if brief, occurred on a regular basis.

> Me and my boyfriend right now, we talk about it all the time. Just because I am getting older and I need to, like I am doing what it takes so it can happen. I've been telling him all the time like "do you know that it can happen?" He goes "yeah I know but you are on birth control." It can still happen. —*Indiana female, non-Hispanic Black, sexually experienced*

However, in most cases, it seemed that little substantive or new information was conveyed, the exception being that a few male teens seemed to have learned a little about hormonal methods when they had female partners who used them. Most of the conversations described often seemed brief, with just enough information being conveyed to assure the partner that they were, or would be, protected from pregnancy.

Traditional Media

More than a third of adolescents could recall occasional exposure to contraceptive messages or information on television or movies, most commonly as part of a storyline—for example, a character talking about, purchasing, or using condoms. A few recalled public service announcements promoting safe sex or condom use. Most of these teens did not seem to have obtained new information, with the exception of the few who mentioned more educational programs such as *Berman and Berman* and *Talk Sex with Sue Johanson*.

Magazines and books, by contrast, were typically recalled as purposely conveying factual information about contraception. Most of the students who had been exposed to contraceptive

information in this format were females, and they tended to mention magazines aimed at their age group such as CosmoGirl and Seventeen. They recalled coming across information about different types of contraceptive methods as well as abstinence and STDs. While respondents generally perceived the information from these sources to be accurate, interest varied; some teens seemed to eagerly absorb it while others simply glanced at the articles.

Advertisements

Most of the teens we interviewed had been exposed to advertisements for hormonal birth control and condoms, and only four could not recall exposure to advertisements of either type. Television, the internet and, for females, magazines, were identified as the most common venues. In many cases, respondents did not appear to have learned any new information from these ads. Ads were perceived to serve the purpose of maintaining or increasing awareness of specific brands and, in the case of hormonal methods, increasing awareness of birth control options. A few teens did seem to gain new information, even though the details were sometimes unclear. The potential of fewer periods promised by some hormonal methods seemed to be the most common new information recalled by females and even a few males.

> And birth control pills that talk about having a period for females once a year or something like that or twice a year, and how it doesn't prevent you from getting an STD or whatnot. I see it very often, but I barely watch TV lately. —*NYC (small school), male, non-Hispanic Black, unknown sexual experience status*

Doctors

A sizeable minority of teens, mostly females, had discussed contraception with doctors. Most commonly, they had been asked about their sexual activity status and

informed that they could obtain contraception if they needed it, and/or were advised to use condoms. Some teens, most commonly females, related that the information they obtained was substantive and useful. But in a few notable instances, both females and males related that doctors discouraged or were perceived as discouraging contraceptive use.

> Me and my mom, when we went to the doctor, we have asked about the birth control thing. Because like I have heard somebody say like birth control will make you have like shorter periods or whatever. So I did ask about that because I need shorter period. And we asked about that and the doctor was like "well, for shorter periods, that's not really the way to go unless you are sexually active." —*Indiana female, non-Hispanic Black, never had sex*

While not a common source for information about contraception, these teens did trust doctors or clinics generally because they were seen to have expertise in this area.

Discussion

The results from this exploratory study suggest that a number of teens do not frequently use the internet to obtain factual information about sexual health, at least not as it pertains to contraception. Despite regular exposure to the internet and the existence of numerous teen friendly sexual health websites, the adolescents we interviewed still relied on school, family, and friends for contraceptive and other sexual health information.

Complementary to the expectation that teens rely on the internet as a primary source of sex education is the concern that teens naïvely consume information about sex (as well as sexual

imagery). A number of the teens we interviewed were wary and discerning consumers. They knew there was an abundance of online information about sex and sexual health, but, to some extent, they also knew what they didn't know. As a result, some were able to talk about criteria that helped, or could help, evaluate the trustworthiness of this information. These included placing more trust in websites with the domains .org, .gov, and .edu and relying on strategies such as cross-referencing.

Females were more likely than males to have been exposed to contraceptive information from most of the sources we asked about, including friends, family, physicians, magazines, and the internet. Moreover, many were exposed to qualitatively different types of contraceptive information than males. These patterns are likely due several circumstances including the fact that adolescent females have more at stake when it comes to pregnancy, a wider array of methods available to them, and that hormonal methods also have benefits apart from pregnancy prevention. In fact, we found that a substantial minority of the females we interviewed were aware of and interested in the non-contraceptive benefits of hormonal methods. This is an underexplored aspect of (potential) contraceptive use among adolescent females and should be examined in future research.

Race and ethnicity can serve as markers for shared culture as well as differences in family structure and sexual behavior. We found few differences in exposure to contraceptive information by these characteristics. The one exception was Asian students, who reported fewer conversations with family members and friends about topics related to sexual health issues in general. Findings from our somewhat homogeneous sample cannot be extrapolated to the national population of Asian adolescents. Still, our findings correspond with at least one prior study of conservative attitudes among Asian families (Lau, Markham, Lin, Flores, & Chacko,

2009), and future research might explore these potential associations among a more diverse sample. Similarly, that we did not find notable differences among white, black, or Hispanic adolescents does not mean that they do not exist among the larger population of teens. But our research does suggest that there are similarities in exposure to contraceptive information across racial and ethnic groups for at least some adolescents.

Sexually active teens were more likely to have discussed contraception with friends, family and, in particular, romantic partners. Personal experiences as well as an immediate need for information may have resulted in both active and passive acquisition of information about sexual health issues for these teens. Still, the majority of teens who were not sexually experienced, as well as those for whom sexual experience was unknown, had also spoken with friends and family about these issues. Sexually inexperienced teens valued information about contraception as many recognized that they would someday want to use it, and most had sexually active friends to whom they could pass along this information.

Limitations

Our study has several limitations. First, the findings are only as accurate as the respondents' memories. Some teens may not have remembered, or may have failed to relate, exposure to substantive information about contraception. Respondents may have ignored or forgotten information that was not relevant at the time they received it. For example, teens who were not sexually active may have regarded information about contraception to be irrelevant. Sexually experienced teens or those uncomfortable talking about sex may have been deterred from participating in the interviews. While we tried to make it clear in the recruitment materials that the interviews would focus on where students' obtained *information* about sexual health

issues, several respondents related that they had expected us to question them about their sexual behavior. Without prompting, more than half of the teenagers we interviewed related that they had not had sex. While this proportion seems reasonable, especially in light of the fact that more juniors than seniors were in the sample, we still speculate that sexually experienced teenagers may have been more uncomfortable talking to strangers about these issues. Alternately, sexually experienced teens may have worried that simply asking parents to sign the consent form would result in questions about their own sexual behavior. Similarly, the requirement of written parental consent may have prevented some high school students from participating because of parental refusal (real or anticipated) for other reasons.

At the Indiana site, we are aware that we interviewed two couples (e.g., four of the interviewees were members of two heterosexual romantic dyads) and that several of the students at this school were members of the same friendship network (that included at least one of the couples). This information was related by the students during the interviews and observed by the interviewers while we were in the halls and lunchroom of the school. This may have resulted in a more uniform perspective on the topics covered. We were not aware of friendship and romantic networks among the New York respondents, but we had less opportunity to view student interactions at these schools.

Finally, in the course of the interviews, about 10 of the 58 students talked about being active in groups concerned with sexual health issues, including abstinence, HIV and AIDS awareness, and lesbian, gay, or bisexual issues. These respondents were especially motivated by sexual health issues and thus, unsurprisingly, interested in participating in our study. However, their views may not be representative of the wider student body at these schools. A

counterbalance to this selectivity is that the sexual health issues adopted by these clubs are quite diverse.

Conclusion

While our findings suggest that the internet is not a primary source of sex education for many teens, the information provided suggests that the medium holds promise. Most adolescents are on the internet on a daily basis and many are aware that sexual health information can be accessed in this venue. There are already a number of "teen friendly" websites that provide comprehensive information about sexual health. What are needed are better strategies to both directly link teens to these websites and provide them with assurances that this information can be trusted.

Schools and family members play an important role in providing sexual health information and are generally trusted by teens, so it would be particularly effective to capitalize on these information sources as a way to link teens to information on the web (Jones and Biddlecom 2011). Potential strategies for schools include distributing lists of relevant and useful websites, class assignments that require online research on sexual health topics, and training students how to conduct effective internet searches. Organizations and individuals that work with adolescents, particularly around issues of health, should also provide teens with lists of websites they can access for factual information about a range of sexual health issues. Helping parents or other family members connect teens to useful information on the internet is more challenging, but parents themselves are sometimes eager for reliable health information. Professional organizations such as the Society for Adolescent Health and Medicine, the National Parent Teacher Association, and youth-serving organizations such as the Boys and Girls Club of

America should consider compiling and distributing lists of internet resources that can be used by both parents and adolescents.

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Address correspondence concerning this article to Rachel K. Jones, Guttmacher Institute, 125 Maiden Lane, New York City, NY 10038. Email: rjones@guttmacher.org; Ann E. Biddlecom, Population Policy Section, United Nations Population Division, 2 UN Plaza, Room DC2-1988, United Nations, New York, NY 10017. Email: biddlecom@un.org. Ann E. Biddlecom was formerly a Senior Research Associate at the Guttmacher Institute. The views expressed herein are those of the authors and do not necessarily reflect the views of the United Nations.

Table 1. Respondent characteristics

	Female	Male	Total
Race/ethnicity			
White	9	9	18
Black	8	5	13
Hispanic	9	5	14
Asian	7	6	13
State			
Indiana	16	10	26
New York	17	15	32
Class			
Junior	20	14	34
Senior	13	11	24
Total	33	25	58