

How Adolescents Use Social Media for Health Information

By

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ABSTRACT

Purpose: To describe the reported uses of social networking sites to share health information with adolescent patients and populations.

Data Sources: The MEDLINE database was searched from 2005 through March 2011. Other relevant articles were located by hand-searching bibliographies.

Study Selection: The author reviewed studies that examined current and future uses of social networking sites (Facebook, Twitter, and Myspace) to spread health information amongst patients or between patient and provider.

Data Extraction: A single reviewer abstracted the relevant data from the included articles into tables.

Results: Five articles met inclusion criteria and were reviewed in this analysis. Within disease-specific interest groups on social networking sites, 56% of postings related personal stories or experiences. Less than 15% asked questions or provided answers regarding specific medical conditions. Though no firm measure of accuracy could be applied, overall credibility of health information provided in this online setting was questionable.

Conclusions: Patient-to-patient communication via interest groups on social networking sites serves an important role as a source of support and community, though there is the potential of the spread of misinformation if credibility is not assured. Social networking sites could be used to extend communication between patients and providers, while assuring credibility and legitimacy.

INTRODUCTION

An increasing proportion of the United States population is regularly accessing the Internet. From 2000 to 2009, internet use has risen from 49% to 74% among adults and from 75% to 93% among teens [1]. Internet-based social media are channels of creating and sharing user-generated content, and are utilized by all age groups, though teens access these technologies nearly twice as frequently as adults [1]. Teens access the internet and social networking sites for a variety of reasons, including making new friends, connecting with existing friends, seeking information, and joining groups [1].

Social scientists and researchers have noted the transformative power of this fundamental shift in the way people send and receive information, suggesting significant implications for health [3-9]. Patients are increasingly turning to the Internet and online sources when gathering health information [1-2]. Teenagers are typically considered to be early adopters of technology [10], and 80% of teens are accessing health information online [1].

Despite this major transformation in mainstream usage of these emerging technologies, health care has been relatively slow to adopt social networking sites as a means of health communication [11-12]. Providers and researchers have also been slow to report on these novel means of reaching patients and populations. Though there are countless studies and commentaries on the dangers of social networking sites as it relates to encouraging risky behaviors and predatory acts, there have been few studies examining current or future applications of these sites to communicate health information.

To help determine what the body of evidence currently states, we conducted a review of the literature on the use of online social networking sites (SNS) to share and communicate health information within adolescent populations.

METHODS

To identify relevant articles, we searched the MEDLINE database from January 2005 through March 2011 using keyword searches for general terms, as well as the three most commonly used social networking websites (“*social networking sites*” or “*social media*” or *Twitter* or *Facebook* or *Myspace*). These terms were then combined with age-defining categories (*teens* or *adolescents* or *students* or *youth*). These searches were supplemented by hand searching bibliographies of selected articles. The year 2005 was chosen as a start point since the major modern social networking sites of interest – Myspace, Facebook, and Twitter – were launched in 2003, 2004, and 2006, respectively.

We reviewed articles that examined current or future uses of features within social networking sites to connect with young populations around health topics. We reviewed the titles and abstracts of the articles identified by the literature search and excluded articles that were not eligible. Eligibility criteria were: 1) article addresses component(s) of social media sites Twitter, Myspace, and/or Facebook; 2) study addresses health impact on site users; and 3) study population includes teens. We did not consider quality of the articles when determining eligibility, though it was assessed in analysis. We abstracted the relevant information from each article into evidence tables.

RESULTS

Initial MEDLINE search identified 104 articles. One hundred of these articles did not fit the inclusion criteria; the majority of these excluded articles were studies and commentaries related to issues of online professionalism within social networking sites among medical/nursing students and professionals (Figure 1). The four articles that were included represented content analyses of disease-specific groups on Facebook [13-15] and Myspace [16]. Each employed a specific search strategy to locate the interest groups within a given social networking site and analyzed the nature of the groups, typically commenting on the types of postings and the general veracity of the comments. After hand-searching bibliographies, one more article was included in the analysis. This article was a qualitative study of teens' perspectives on communicating with clinics via Myspace to get information about sexual health [17]. Given the paucity of studies on this topic, studies were not excluded based on design alone, therefore this study fit the criteria and was included in the analysis.

The use of social networking sites to connect adolescents with health information was examined in four content analyses [13-16] and one survey/focus group study [17]. The content analyses evaluated 17 disease-specific groups related to concussions [13], 620 breast cancer groups [14], the 15 largest groups on diabetes [15], and 36 asthma groups [16]. Though each of the studies included adolescents, two explicitly provided information on the age of the group members. Among individuals posting within concussion groups whose age could be determined, 77.6% (n=76) were under 25 years old [13]. In support groups for breast cancer, 27 out of 57 groups made available information regarding the approximate age of the creator; ninety-three percent of these group creators were high school or college students [14]. Though the

adolescents may not be the ones afflicted with the condition in the case of breast cancer, social networking site groups provide convenient and familiar means to accumulate coping resources.

Outcomes for this analysis include types of postings, credibility of health information provided, and physician involvement in social networking sites.

Types of Postings

In total, 56% (n=1416) of postings in disease-specific groups on social networking sites shared personal stories experienced by group members. Less than 15% of posts contained questions directed at fellow members and an even lower percentage answered questions by providing health information.

In terms of the individuals who posted within these groups, Ahmed *et al.* [13] and Bender *et al.* [14] noted that a relatively small proportion of group members actively participated by posting publically. In 14 of the 17 Facebook groups on concussion that were studied, less than 40% of members posted comments [13], and 85% (n=620) of breast cancer-related Facebook groups had less than 25 postings on the group's "wall" [14].

Credibility of Health Information

Authors of each of the content analyses [13-16] noted that none of the postings were written by health care professionals. In addition, none of the groups' creators were health care professionals or associated with health care organizations. Versteeg *et al.* [16] noted that many postings in asthma-related groups "contained substantial misinformation." Among postings with links, 40% of the links were relevant to asthma. Greene *et al.* [15] determined that the "inability to verify the identity of the poster poses a significant problem to the trustworthiness of ...

information” in diabetes-related groups. Ahmed *et al.* [13] did not specifically measure accuracy and quality of information in concussion-related groups because they decided that postings contain personal opinions, however they made note of the potential for misinformation if users interpret opinion as fact.

Physician Involvement in Social Networking Sites

In their analysis of teen survey data, Ralph *et al.* [17] found that 58% of teens reported searching online for information about health, dieting, or physical fitness. However, 50% were interested in receiving health information from a clinic via Myspace. A greater proportion chose other media, such as a website (70%) or e-mail (60%).

Ahmed *et al.* [13], Bender *et al.* [14], and Greene *et al.* [15] note the importance of social networking sites as peer-to-peer forums for sharing mental and emotional support with other individuals suffering from similar medical ailments. Though the quality of these discussion groups may improve with monitoring from health care professionals, Ahmed *et al.* [13] point out that this oversight may compromise the anonymity that users seek.

DISCUSSION

In our review of the pertinent literature on using social media for patient-oriented health purposes, we found that in disease-specific interest groups on Facebook and Myspace, the majority of postings were related to members sharing personal stories or experiences with the disease. Though concerns remain regarding the credibility of the information provided, there are

many opportunities for patient-provider communication via this ever-expanding system of social networking sites.

Since they were created in the mid-2000s, social networking sites have allowed users to connect with other members, share photos, videos, and comments, and join specific interest groups. Many entities, from retailers to political parties and candidates, have been able to successfully utilize the media to communicate consumers. The health sector, however, has been slow to adapt to these changing technologies to reach patients and populations. Some reasons for this include skepticism towards emerging technologies, uncertainty regarding the privacy of patient information, and the lack of a feasible infrastructure to ensure adequate reimbursement for time spent communicating with patients remotely [7,12].

The literature reviewed here shows that there are specific ways in which social networking sites are being used to convey health information. In particular, user-generated features such as posting pictures, videos, comments, and links to other websites have been used in many interest groups centered on chronic diseases such as asthma, diabetes, and cancer. Content analyses show that the majority of user postings have been to relate personal stories and experiences of disease management with other group members. Though the veracity of these comments cannot always be confirmed, there is a significant value to the process of sharing and reading about the stories, struggles, and successes of others through online support groups [18].

Though a relatively small proportion of group members choose to visibly contribute by posting comments, it has been shown that activity alone is not necessary to obtain the empowering effects of online group participation. Non-posting members (“lurkers”) may obtain just as much benefit as active members [18].

The relative scarcity of specific health questions and answers indicates that group users among social networking sites are not seeking health information from their peers as much as they are looking for emotional support. However, the presence of misinformed answers raises concerns about the credibility of such forums, given that many group members may read these comments and interpret them as medical facts. The authors did not assess whether emotional support was achieved or if there are negative consequences with seeking this type of support in this environment with little professional guidance.

Whereas the other articles reviewed evaluated Facebook and Myspace groups that exhibited patient-to-patient communication, Ralph *et al.* [17] evaluated a patient-provider model via Myspace using focus group and survey data. The concept was a sexual health clinic with a Myspace profile that could connect with patients and local teens online. Data from this study suggests that though some teens may have reservations about communicating with health care personnel via social networking sites, a majority of teens are already going online for health information and a significant number would read and benefit from accurate and consistent health information provided by professionals.

There were limitations to this review. The lack of similarities in study design made it difficult to fairly and equivalently compare strengths of studies or to aggregate data. Though the qualitative focus group data introduced preferences and opinions unobtainable from the other types of studies, there were no other studies of this type for comparison. Secondly, the content analyses do not evaluate the effect of online communities and comments posted on an individual's practice or perceived medical knowledge. Third, the content analyses did not specify the ages of the group members, therefore the study population may have included adults. However, given that the largest demographic of Facebook are adolescents and young adults [1],

the results of these studies are directly applicable to this age group. Lastly, the low number of published studies reflects the novelty of these forms of communication and its lack of scientific study. With the increasing number of Americans that get their news and information from online media and social networking sites, it is increasingly important that health care providers understand and adapt to the idea that health information can similarly be shared through these avenues.

CONCLUSION

The current literature shows several examples of patient-to-patient and patient-to-provider health communication via social networking sites. Disease-specific interest groups tend to be unmoderated, unverified forums for people to share personal experiences and occasionally health information and advice, whereas the provider-based profiles could emerge as credible and real-time sources of health information for online teens. More research is needed to further elucidate the range of suitable interaction and information-sharing that could take place among patients and between patients and providers to increase the health knowledge of the general public.

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TABLES AND FIGURES

Author, Year (Reference)	Design	Sample	Results	+ Strengths - Weaknesses
Ahmed <i>et al.</i> , 2010 (13)	Content analysis of postings in concussion-related groups on Facebook (<i>patient-to-patient</i>)	145 postings from 17 groups between 10/06 to 4/09	<ul style="list-style-type: none"> ▪ 57% of postees were male; 87% from USA or Canada. ▪ 65% of posts shared a concussion experience about self or friend. ▪ 8% asked question and 2% provided advice. 	+ considered all searchable groups; systematically chose relevant groups to study - did not explicitly evaluate credibility of postings
Bender <i>et al.</i> , 2011 (14)	Content analysis of breast cancer-related groups on Facebook (<i>patient-to-patient</i>)	620 groups (1,090,397 members) identified on 11/19/08	<ul style="list-style-type: none"> ▪ 45% of groups were for fundraising, 38% to raise awareness, 10% to promote a website to sell products or services, and 7% to generate support for people affected with breast cancer. ▪ 86% of groups had 25 or fewer posts. ▪ None of the support groups were created by health care providers or organizations 	+ evaluated all public groups; provided search strategy - did not analyze postings within groups for content
Greene <i>et al.</i> , 2010 (15)	Content analysis of postings in diabetes-related groups on Facebook (<i>patient-to-</i>	690 individual postings from 480 unique users in the 15 largest groups on	<ul style="list-style-type: none"> ▪ 66% of posts described personal management experiences; 24% shared sensitive aspects; 27% were product 	- no information regarding groups that were not among the 15 largest - data collected over a narrow

	<i>patient)</i>	8/8/09	promotion; 13% contained specific questions.	time frame, may have missed longitudinal postings
Versteeg <i>et al.</i> , 2009 (16)	Content analysis of asthma-related groups on Myspace (<i>patient-to-patient</i>)	581 postings from 36 groups over a 2-week period	<ul style="list-style-type: none"> ▪ 42% of posts shared a personal story; 15% asked a question and 5% gave advice. ▪ Medications composed 40% of questions and 30% of advice. ▪ 40% of links provided in posts were relevant to asthma. 	- little information provided on content analyses and methodology
Ralph <i>et al.</i> , 2011 (17)	Written survey and teen focus groups (<i>provider-to-patient</i>)	Teens age 14-19 years attending teen health clinics in California; 1,071 survey respondents and 58 focus group participants	<ul style="list-style-type: none"> ▪ 58% of Internet-using teens searched online for health information, 40% specifically for sexual health; 21% searched for accessing local sexual health services; more likely among females and older teens. ▪ Teens like the anonymity of Internet but generally distrust the information. ▪ 50% were interested in receiving sexual health information from doctor/clinic via Myspace; 22% would decline a friend request from a clinic. 	+ large sample size + focus group structure allowed for complex opinions to be expressed - subjects selected via convenience sample of teens visiting health clinic - limited to sexual health

Table 1. Evidence Table

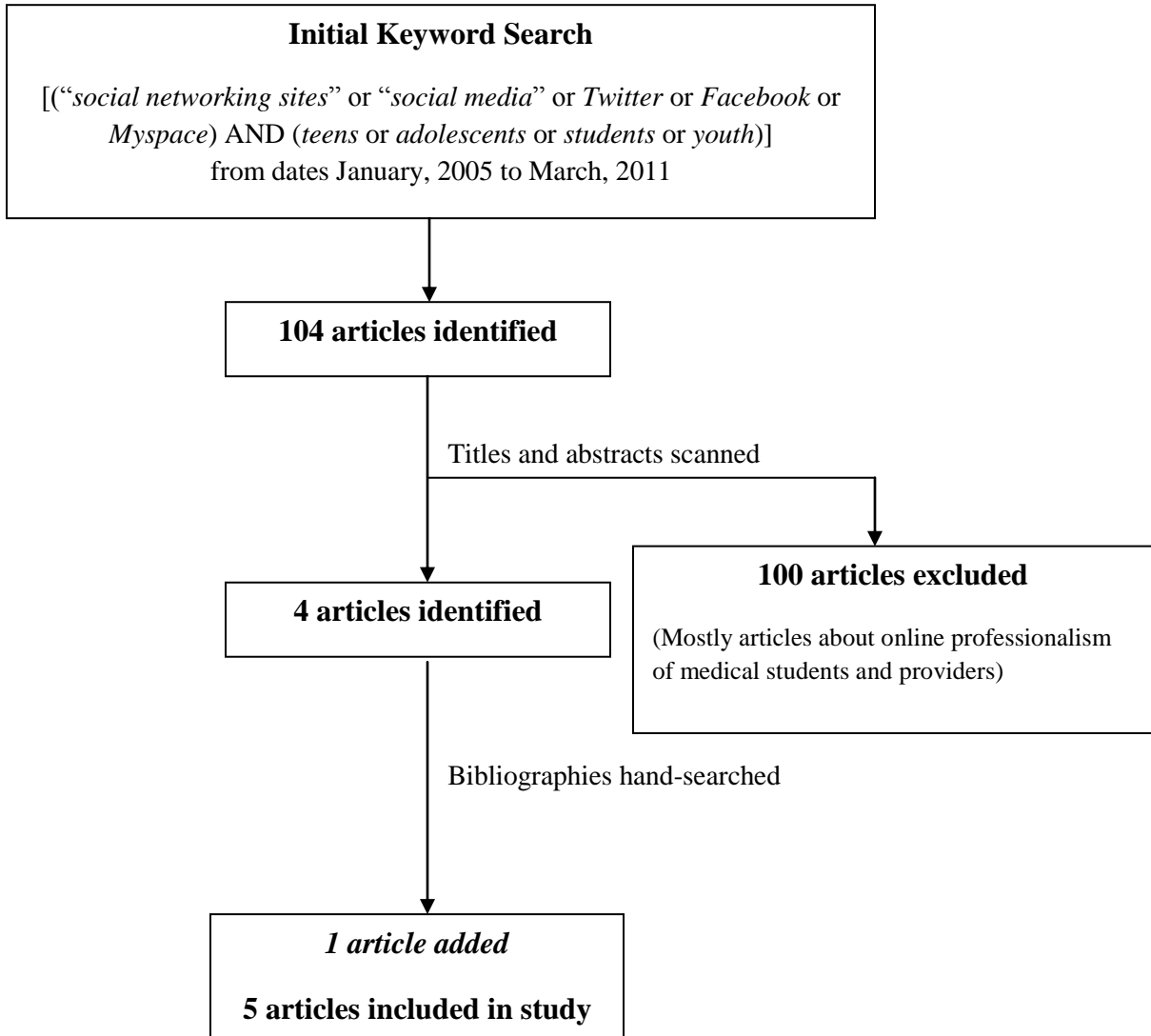


Figure 1. Flow Chart of Data Inclusion

ABSTRACT

Purpose: To identify the ways in which adolescents currently access general health information resources through social media, explore potential uses of social networking sites to increase health knowledge among adolescents, and evaluate the role of health care providers in communication via social media.

Methods: Using a qualitative research design, 3 focus groups were conducted in Chapel Hill, North Carolina. The 14 participants were ages 13 – 19 years and reflected diverse age and racial background. Transcriptions were analyzed to identify major themes.

Results: Study participants typically used social media to communicate with friends, read news, and perform school-related activities. They most frequently had health questions related to nutrition and body image. Though they were concerned about the limited privacy and credibility of information found online and in social networking sites, they were interested in communicating with health care providers through various features on these sites.

Conclusions: Adolescents have many health information needs and often go online to search for information. Communication with health care professionals via social networking sites provides a safe and credible way for this population to retrieve health information and answers to their questions.

INTRODUCTION

Adolescence represents an important transition in life and it presents many challenges for the health care practitioner. As children develop into adults, rules and structure turn into independence and freedom. During this vulnerable period, adolescents are confronted by many personal choices and form habits and health behaviors that they will keep for their adult lives (eg. car safety, sexual practices, smoking, alcohol and drug use). Though they wish to discuss health issues with professionals, they often do not use traditional health services [1,2] or they face challenges in forming therapeutic relationships with their providers [2].

In the United States and around the world, internet and social media usage is on the rise, and adolescents are often considered to be early adopters and active users of these new technologies. Since 2000, internet usage among all Americans has increased from less than half to over 75 percent of the population [3]. Internet usage is nearly ubiquitous among younger populations, as ninety-three percent of teens and young adults ages 12-29 regularly go online [4]. Once social media emerged as a way for users to participate in the internet experience by generating and sharing content online, social networking sites (SNS) such as MySpace and Facebook began to experience rapid growth, with youth leading the surge. Among wired American teens, 73 percent now use social networking websites, a significant increase from previous surveys [3].

With the growth in general internet usage for a wide variety of purposes, personal health is no exception. In 2009, over eight in ten wireless broadband users reported looking online for health information [4], and looking for health information was the third most popular online

activity [5]. Social scientists and researchers have noted the transformative power of this fundamental shift in the way populations send and receive information that influences their health [6-12]. Considering that adolescents do not discuss issues with health care providers despite their desire to, social networking sites could be used to reach this population with health information.

With the rise in social media platforms as a way for teens to connect and share information with a large population, a unique opportunity arises for the utilization of these media to communicate health information on a population level. There is a growing body of literature studying successes and challenges of delivering health interventions via the Internet, but there is little regarding the use of SNS in particular. Qualitative analyses have evaluated the content of asthma interest groups on MySpace [13]; and breast cancer [14], concussion [15], and diabetes [16] interest groups on Facebook, finding that they are most often unmonitored and utilized to relate personal experiences, while much of the clinical information may be false or misleading. In a study of California teens, the anonymity of the Internet was comforting in searching for answers to potentially embarrassing questions, though they expressed general distrust of Internet-based information; yet half (50%) were interested in receiving sexual health information from a doctor or clinic via MySpace or another SNS [17]. However, social networking sites remain underutilized by health care providers and public health professionals [18,19].

The goals of this study are to (1) identify ways adolescents currently access general health information through social media, (2) explore potential uses of social networking sites to increase health knowledge among adolescents, and (3) evaluate the potential role of health care providers in communication via social media.

METHODS

Focus group methodology was used to engage youth participants in discussions about their health information needs and the role of social media technology in attending to these needs. The participants were asked questions [Appendix 1], to which they were permitted to respond in a candid manner. This open-dialogue format was intended to allow youths to express their thoughts and experiences without prompting from the moderator.

Participant Recruitment

We conducted three focus groups with adolescents between the ages of 13 and 19 years from Chapel Hill, Durham, and Raleigh, North Carolina. For this study, volunteers were recruited via two methods: 1) electronic “event invitations” in Facebook, circulated within online networks of local high schools, and 2) email sent to employees (potential parents of teenagers) of the University of North Carolina at Chapel Hill.

Based on eligibility, participants were placed in focus groups with an attempt to stratify groups according to age (13-15 years and 16-19 years). This was done to attempt to create an open environment where teens with similar health needs, experiences, and beliefs felt comfortable expressing their opinions.

Focus Group Procedures

On average, focus group sessions lasted 60 minutes. For consistency, the same moderator and co-facilitator coordinated and conducted each session. To ensure safety and confidentiality, participants were assured that all comments would be kept private, unless there were questions of threats to immediate personal safety. Participants were informed that one of the facilitators

would follow up with the participant individually if safety seemed to be threatened. In addition to assenting each child, we obtained parental or guardian consent in all cases in which an individual participant was less than 18 years of age.

After obtaining informed consent and assent, participants were given a detailed explanation of the focus group procedure and asked to complete a brief written survey. Prior to asking questions from the focus group guides, we defined the term “social media” as a collection of online platforms (limited to Facebook, Twitter, and Myspace) where users create a profile and may share comments and media. Next, we engaged in a brief session to brainstorm ideas about health. Since “health” would be used many times in the context of our focus groups, we found it important to define the concept using words and ideas derived from the participants themselves. The definitions agreed upon were quite similar between groups, and included elements of prevention and treatment of both physical and mental disease.

Data Analysis

The audio from all focus group sessions was recorded and transcribed by SB. Transcripts were randomly cross-checked against recordings to ensure accuracy. Analysis followed a coding template that was developed based on major themes, categories, and issues raised by participants. Some of these were summarized into figures to fully portray the thoughts and sentiments expressed during focus group sessions.

RESULTS

A total of 14 participants attended the focus groups. The sample was well balanced with respect to age and race of subjects (Table 1). The average age was 17 years (range: 13 – 19 years) and the sample was 43% White, 36% Black, and 21% Asian. Twenty-nine percent of participants were male and 71 percent were female. Forty-three percent were recruited via Facebook event invitations and 57 percent were recruited after their parent responded to an email message. All participants used social networking sites: 100 percent had a profile on Facebook, while less than half had an account on Twitter or MySpace.

Health Needs

All participants indicated that they had questions about topics related to nutrition and body image (dieting and nutrition, exercise and fitness, skin health, and puberty/body changes). Nearly three quarters of subjects expressed personal safety concerns regarding sports, automobiles, and injuries. Sixty percent had questions about high-risk behaviors such as sexual health, and drugs and alcohol. Less than half had questions regarding diseases and specific medical conditions (vaccines, mental health, diabetes, heart disease) (Table 2).

In each session, mental health was quickly included in the group's discussion of health and health needs. This included the concept of social health, or having friends and remaining active with them:

Health is all parts of life. Mental and social health are big parts of it...like just being emotionally stable and having friends, because people can be healthy and exercise but be depressed or something, and I wouldn't define them as healthy. [Female, 16-18 years]

Concerns

The major concerns raised by participants regarding the use of social networking sites for health purposes were the lack of privacy and anonymity and questionable credibility. Though they visit SNS for a variety of uses, including communicating publically with friends and posting photos and videos, many of them were hesitant to use SNS for personal health purposes because their name and selected personal information would be attached to public postings. With respect to high-risk behaviors in particular, teens want to keep their questions private:

Social media titles you. If you were to chat somebody then they would see your name, and so for that reason privacy goes away. If you have a serious question like if you were worried you had an STD, it is unlikely that you would get on chat and be like “does anybody know what this symptom means?” you’re not going to publically throw out your personal information. So you can hide behind being anonymous on Google. [Male, 16-18 years]

Credibility of health information was also a significant concern of teen subjects. Though nearly all participants reported using search engines like Google or Yahoo to look for health information, they commented that social networking sites are fundamentally different in the way they are set up. Given that SNS content is typically user-generated, teens find it difficult to determine the source of information:

I feel like social media is not reliable for any information on your health or personal life because there’s no cited work or background behind it. There’s no way to check what’s real and what’s not. [Female, 16-18 years]

Participants would not trust health information provided by their peers on most topics secondary to lack of knowledge, though they recognize the potential of SNS in this regard:

It would be different with a younger crowd. Many people in our age group don’t have a career yet. So maybe my mom has friends from way back when, that’s doctors and stuff. So with her

age group it would work, but ours it probably won't. It depends on who's in your circle.

[Female, 16-18 years]

However, they sometimes seek social support for health topics that are perceived to be of lower severity such as minor fractures, sports injuries, and advice on skin and nutrition.

If it's not too serious, like if you had acne or something you could just ask somebody "I have acne what do I do?" And it's really easy to get quick responses back. [Male, 16-18 years]

Sometimes I run cross-country and I have issues with my leg muscles. I can go to other cross country-type runners on Facebook and ask about a stretch or way to work it out. So I guess you could target audiences similar to you to answer your questions. But again, that's relying on someone's opinions. [Male, 16-18 years]

Implications for Health Care Professionals

Teens expressed interest in "friending" their health care provider or communicating with him or her one-on-one via social networking sites. Participants were resistant toward connecting with providers on SNS by posting questions publically. However, they liked the idea that their provider could periodically supply them with health tips and links to credible online sources. Specifically, one teen suggested that providers post short topic-focused notes on their page with information for teens to access via SNS:

They can post notes and stuff about different things and you can click on the note that the person posted. And they can be about heart disease, diabetes, cancers, and ways to stay healthy.

[Female, 16-18]

A major benefit of being friends with a health care provider was the ability to chat privately about health questions and concerns. Not only did they find it more direct and more convenient, but more trustworthy as well:

If I could talk to a doctor and have a conversation with them on Facebook, I would definitely be much more likely to do that. I would prefer that to going on Google. [Male, 16-18 years]

If you had like a small question and you didn't want to go all the way to your doctor and sit there and have to wait for an appointment, you could just ask them on Facebook. Maybe not post on their wall if it's something serious because you don't want everyone seeing it. [Female, 16-18 years]

You could do that through Facebook which would kinda be more convenient if the person would message you back quickly. [Female, 16-18 years]

Teens indicated they were most likely to communicate with their own health care provider, though they would consider other providers upon verification of their credentials.

Scope of Prevention

Teens' likelihood of seeking information on preventive behaviors was limited and varied. Participants did not agree on whether or not they would find daily preventive health tips and advice provided by a reputable health source useful in their daily life. Some suggested they would enjoy reading the daily tips so they could learn more about general health and make specific changes in their lives:

Participant 1: Like if a doctor added something on his Facebook like every day... like the number one disease in the country is such and such...that's something I want to know. And how you can get it. I would like that. [Female, 16-18 years]

Participant 2: When they post things like that it makes me realize what I can change. [Female, 16-18 years]

If I read it and if somebody says something about it, I would be able to answer their question. And then I'd feel smart. [Female, 16-18 years]

Other teens felt like they did not have frequent enough health problems to subscribe to preventative tips. Further, they indicated this form of information may become annoying if the topics were not relevant:

I don't think the tips provided would be a "make it" factor, and if they got annoying then they would be the "break it" factor. [Male, 16-18 years]

These teens reported that they seek information only when they have a question about a specific topic, adding that this way they felt they were more likely to remember the answer.

DISCUSSION

This study was conducted to elicit how adolescents use social networking sites for health information, explore potential avenues to increase teen health knowledge, and consider the implications for health care providers. We found that though most teens do not seek health information from social networking sites, many of them are open to the idea of periodically receiving small amounts of health advice or tips from a credentialed provider. Further, there is potential for increased communication between patient and provider via SNS, so long as it is initiated by the patient.

Adolescents and young adults use social networking sites at the highest rate of any age group, and this use fills many needs and activities including staying in touch with friends, posting pictures and videos of personal relevance, keeping up with news, and collaborating with peers on school-related activities. To this point, they have rarely initiated public conversations about health via SNS. Teens prefer speaking with their health providers and their parents to find

answers to their health questions. Though they also seek information online, they find it difficult to trust many of the sources encountered via search engines.

One way to address these challenges is to link adolescent patients with their health care providers via social networking sites. This would allow health care professionals the opportunity to guide their patients to credible sources of online health information through a highly popular social interface. In addition, this arrangement increases availability of health providers to adolescent populations, a demographic that can be difficult to reach at times. The results of this study indicate that there may be interest among adolescents in this type of interaction, especially in areas such as nutrition/body image and high-risk behaviors.

One barrier to this approach is maintaining privacy of patient information. Even though messaging may occur through “private chat,” there is always a risk of breach of confidentiality on the internet. Providers and patients should share information to a level at which both feel comfortable. Another potential barrier to this strategy is lack of provider reimbursement. As of now, most providers are not able to bill for electronic correspondence. However, this communication need not take the place of a regular office visit; rather, it should supplement and enrich the patient’s health experience. Again, the frequency of SNS use should be at the discretion of the provider in consultation with the patient.

There were limitations to this study. First, subjects were recruited using two different methods – some participants were contacted directly after responding to an invitation on a social networking site (Facebook), whereas others were contacted after a parent responded to an email invitation for their child. Though all subjects were given a chance to refuse participation during the consent/assent process, it is possible that children in the latter category felt pressured to take

part by a parent. This potential difference in motivation secondary to recruitment method may have differentially affected the quality of the respective focus group discussions. Second, though we tried to roughly arrange subjects in groups based on their age, it is possible that a younger teen was placed in a group with older teens and felt uncomfortable expressing their views if they were different. This may have limited the subject's participation and led to a misrepresentation of his or her beliefs and opinions. Lastly, the small sample size of this pilot study limits the generalizability of our findings. Further research is necessary to determine whether the results of this study are reflective of adolescents' opinions more generally.

CONCLUSIONS

This is one of the first studies to qualitatively explore adolescents' thoughts and perceptions of using social networking sites for health information. We cannot generalize the findings of the study to particular populations, but the strong themes corroborated across groups indicate a health information need among adolescents and an interest in communicating with health care providers through specific features of SNS. Additional research is needed to determine length and frequency of communication, health topics covered, visual layout, and cost-effectiveness of this approach to prevention of childhood disease and disability. Health care providers should consider using social networking sites to reach online teens.

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TABLES AND APPENDICES

1. What is your favorite social media tool? Why?
2. What do you use social media for?
3. What types of health topics do you typically have questions about?
4. Have you used social media sites to search for health information?
If so, how?
5. What are the pros of using social media for health purposes?
6. What are the cons of using social media for health purposes?
7. Would you friend/follow a feed of short bytes of information targeted toward health topics?
8. Would you communicate with a health care practitioner (doctor, nurse) via social media?
9. What advice would you give a health care practitioner who is trying to use social media to reach you and your friends?
10. Is there anything else you would like to say about using social media for health purposes?

Appendix 1. Focus Group Guide

Average Age (years)	17.0
Sex (n=14)	
% Male	29
% Female	71
Race	
% White	43
% Black	36
% Asian	21
Social Media Use	
% Facebook users	100
% Twitter users	43
% MySpace users	7

Table 1. **Baseline Characteristics of Participants**

Category	Health Topic	% of Participants indicating Interest (n=11)
<i>Nutrition and Body Image</i>		
	Skin Health	55
	Puberty/Body Changes	27
	Dieting and Nutrition	55
	Exercise and Fitness	91
<i>Personal Safety</i>		
	Sports Health	55
	Car Safety	27
	Injuries	64
<i>Diseases/Medical Conditions</i>		
	Vaccines	27
	Mental Health	45
	Diabetes	0
	Heart Disease/Cholesterol	9
<i>High-Risk Behaviors</i>		
	Sexual Health	55
	Drugs and Alcohol	55

Table 2. **Health Information Needs of Participants**