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Heather J. Hether , Sheila T. Murphy & Thomas W. Valente

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It's Better to Give Than to Receive: The Role of Social Support, Trust, and Participation on Health-Related Social Networking Sites

HEATHER J. HETHER

Department of Communication, University of the Pacific,
Stockton, California, USA

SHEILA T. MURPHY

Department of Communication, Annenberg School for Communication
and Journalism, University of Southern California, Los Angeles,
California, USA

THOMAS W. VALENTE

Institute for Prevention Research, Department of Preventive Medicine,
Keck School of Medicine, University of Southern California, Los
Angeles, California, USA

Nearly 60% of American adults and 80% of Internet users have sought health information online. Moreover, Internet users are no longer solely passive consumers of online health content; they are active producers as well. Social media, such as social networking sites, are increasingly being used as online venues for the exchange of health-related information and advice. However, little is known about how participation on health-related social networking sites affects users. Research has shown that women participate more on social networking sites and social networks are more influential among same-sex members. Therefore, this study examined how participation on a social networking site about pregnancy influenced members' health-related attitudes and behaviors. The authors surveyed 114 pregnant members of 8 popular pregnancy-related sites. Analyses revealed that time spent on the sites was less predictive of health-related outcomes than more qualitative assessments such as trust in the sites. Furthermore, providing support was associated with the most outcomes, including seeking more information from additional sources and following recommendations posted on the sites. The implications of these findings, as well as directions for future research, are discussed.

The Internet is relied on as a source of health information for many Americans. According to a 2011 study by the Pew Internet & American Life Project, 80% of Internet users have searched online for health information (Fox, 2011a). Studies have shown that the information individuals obtain from the Internet informs their medical decision making, influences their health-related attitudes and behaviors, and affects

Address correspondence to Heather J. Hether, Department of Communication, University of the Pacific, 3601 Stockton Avenue, Stockton, CA 95211, USA. E-mail: hhether@pacific.edu

their relationship with their physician (Anderson, Rainey, & Eysenbach, 2003; Bass et al., 2006; Fox & Jones, 2009; Gerber & Eiser, 2001). As the public increasingly turns to the Internet for health information so, too, must scholars to research the content and potential impacts of participation in these communities (Broom, 2005).

Although health information is available online through a variety of sources, peer-to-peer support communities have flourished with the advent of social media. These social networking sites are the latest version of Internet-based support communities that provide opportunities for the exchange of social support among individuals in similar health situations. Social support is the process by which social relationships promote health and well-being (Cohen, Gottlieb, & Underwood, 2000) and social media, such as social networking sites, are participatory media that thrive on the creation and maintenance of social relationships. Social media offer several advantages as platforms for the exchange of social support including the potential for less embarrassment about sensitive topics, the reduction of logistical constraints, such as distance and scheduling conflicts, and potential access to new and many varied sources of support. A long history of research has shown that social support is associated with a variety of positive health outcomes (e.g., Berkman, 1995; Cohen, 2001; House, Landis, & Umberson, 1988; Schaffer & Lia-Hoagberg, 1997; Seeman, 2001; Spiegel & Kimerling, 2001); however, few studies have examined how social support on health-related social networking sites affects users' health-related attitudes and behaviors.

With the growing popularity of social networking sites related to health, examining the impact of participation in these communities represents an important new area of scholarship. Thus, this study examines how participation on a health-related social networking site is associated with health-related outcomes. More specifically, this study identifies specific dimensions of women's engagement on a social networking site dedicated to the discussion of pregnancy and prenatal health that are associated with positive health outcomes, including attitudes toward prenatal health and being pregnant as well as behaviors related to further information seeking and following recommendations posted on the site. Among the predictor variables of interest are trust in the site, the perception of social support, the provision of social support, and time spent on the site. Before describing the study in detail, we first review the research that examines how online health information and social support are associated with health.

Online Health Information

Studies indicate that the Internet has become a preeminent health information resource for many Americans. Moreover, there seems to be agreement among researchers that user knowledge is increased by online health information (Baker, Wagner, Singer, & Bundorf, 2003; Houston & Allison, 2002); however, it is less clear how online health information is associated with health-related attitudes and actions. For example, Baker and colleagues (2003) found that 16% of respondents indicated that health information they accessed on the Internet affected the treatment they were undergoing, and 7% said that it led them to seek care from different doctors. More recently, Fox and Jones (2009) reported that online health information has influenced the behaviors of a majority of online health information seekers.

There are a variety of online health information resources available to Internet users, including peer-to-peer social networking sites. A 2011 study conducted by the Pew Internet and American Life Project reported that 1 in 5 Internet users has gone online to find others in a similar health situation (Fox, 2011a). In particular, Internet users who have experienced a major change in health status in the previous year were more likely than other Internet users to look online for someone similar to them (Fox, 2011b). Moreover, 62% of all adult Internet users—or nearly

half (46%) of all adults—had used social networking sites and 16% of social networking site users had gotten health information from these sites (Fox, 2011a). Thus, it is clear that the content posted on social networking sites has the potential to reach millions of people.

There is a burgeoning field of health-related research studying participation on social networking sites and social support. For example, studies have examined how social support is provided or received on these sites (Ballantine & Stephenson, 2011; Liang & Scammon, 2011); the potential inequalities of access to these sites (e.g., Kontos, Emmons, Puleo, & Viswanath, 2010), and how participation on social networking sites can facilitate feelings of connection (McDaniel, Coyne, & Holmes, 2012; McLaughlin et al., 2012). There also exists a large body of research about the benefits of social support exchange on other computer-mediated platforms, such as listservs, discussion groups, or clinically run platforms (Beaudoin & Tao, 2007; Dunham et al., 1998; Han et al., 2008; Miyata, 2002; Wright, 1999, 2000). Although there are similarities with these other computer-mediated platforms, social networking sites such as the ones discussed in this study, represent a new era of the Internet (Web 2.0) that depends on interactivity and social network development. Furthermore, these sites are thriving on the Internet with an unprecedented number of participants.

Among the studies that have examined health-related outcomes of participation on health-related social networking sites, is a study by Takahashi and colleagues (2009) that examined participation on a Japanese social networking site for individuals coping with depression. This study identified mixed outcomes associated with participation in this community. Although members benefitted from the exchange of social support, participation on the site was also associated with a psychological burden on participants, wherein members could become overinvolved in someone else's emotional problems, thereby increasing their own level of depression. This study suggests that the effects of participation on these kinds of sites are complex and may involve several mediating variables.

Among the constructs that may influence the impact of online health information is trust. Trust has been defined as the expectation that an interaction with another will lead to gains rather than losses for an individual (e.g., Coleman, 1990; Thiede, 2005; Tsfaty & Cappella, 2003). The literature on trust generally associates trust with positive social outcomes because trust leads to an increased likelihood of cooperation (Putnam, 1993; Tsfaty & Cappella, 2003).

Communication researchers have long suggested that source variables such as trustworthiness facilitate media effects (e.g., Druckman, 2001; Hovland, Janis, & Kelley, 1953; Hovland & Weiss, 1951–1952; Ladd, 2010). Moreover, in the health communication literature, specifically, it has been shown that trust in physicians is associated with better health outcomes because trusting patients are more likely to adhere to treatment recommendations (Lee & Lin, 2009; Thom, Hall & Pawlson, 2004). Similarly, trust in media has also been associated with health-related outcomes. For example, researchers have found that trust in mass media was significantly associated with self-rated good health, seeking more information online and interpersonal communication (Hou & Shim, 2010; Huh, DeLorme, & Reid, 2005; Tokuda, Fujii, Jimba, & Inoguchi, 2009). Therefore, this study will extend the literature by exploring how trust in a health-related social networking site is associated with health-related outcomes.

Social Support and Health

Social support is a multidimensional construct that typically includes the following dimensions: informational, emotional, esteem, tangible, and social network (Cutrona & Suhr, 1992). A long history of research has consistently shown a positive

association between an individual's perception of the availability of social support and health outcomes (Aneshensel & Stone, 1982; Berkman, 1984; Burleson & MacGeorge, 2002; Cohen, 1988; House et al., 1988; Krause, 1990). The positive benefits of social support have been seen across a range of health issues, such as cancer (Epplein et al., 2011; Uchino, 2004); cardiovascular disease (Uchino, 2006); diabetes (Griffith, Field, & Lustman, 1990); and pregnancy (Blake, Kiely, Card, El-Mohandes, & El-Khorazaty, 2007; Chao et al., 2010; Chomitz, Cheung, & Lieberman, 1995; Conway & Kennedy, 2004; Cronenwett, 1985; Dejin-Karlsson, et al., 2000; Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000; Liese, Snowden, & Ford, 1989; Sable & Wilkinson, 2000).

The positive impacts of social support on health outcomes have been found in both offline, face-to-face encounters and online interactions (e.g., Dunham et al., 1998; Miyata, 2002; Rogers & Chen, 2005). Furthermore, research has shown the benefits of social support are not restricted to support recipients only. In a landmark article, Riessman (1965) proposed a "helper therapy principle" wherein he suggested the provision of social support benefits the provider of the support more so than the recipient. Additional studies have suggested the benefits of support provision may be due to an effect of self-disclosure and positive emotional expression (e.g., Han et al., 2008; Han et al., 2011; Pennebaker, 1997; Shaw, Hawkins, McTavish, Pingree, & Gustafson, 2006). However, researchers have also cautioned about a potential backlash effect wherein helpers become overburdened and stressed by their helping role, as previously discussed in the article by Takahashi and colleagues (2009).

Although both men and women participate in online support communities, research has established different patterns of Internet use. For example, more women than men use the Internet to search for health information (Fox, 2011c; Hesse et al., 2005) and women are more likely than men to use the Internet to maintain larger networks of distant contacts (Boneva, Kraut, & Frohlich, 2001). Women also are more likely than men to participate in social networking sites (Hargittai, 2007). Moreover, Christakis and Fowler (2007, 2008) have shown that peer-to-peer influence is stronger among same-sex dyads, suggesting that single-sex networks might be more influential than mixed-sex sites. Therefore, because of all these factors, in addition to the popularity of pregnancy-focused social networking sites (Nigthoujam, 2008) and the importance of this health issue, this study examined social networking sites that are primarily used by women to discuss pregnancy.

The present study examines how pregnant women's participation on a pregnancy-related social networking site is associated with health-related outcomes. Specifically, the study examines how trust, social support, and time spent on the site are associated with attitudes toward pregnancy and prenatal health, information-seeking behavior, and following recommendations posted on the site. The outcome variables were selected because of their potential effect on birth outcomes. The study includes three hypotheses:

Hypothesis 1: Trust in a health-related social networking site is positively associated with the following outcomes:

- 1a: a positive attitude toward living healthfully while pregnant;
- 1b: being happier about the pregnancy;
- 1c: seeking more information about content posted on the site; and
- 1d: following recommendations posted on the site

Hypothesis 2: The perception of social support on a health-related social networking site is positively associated with the following outcomes:

- 2a: a positive attitude toward living healthfully while pregnant;

- 2b: being happier about the pregnancy;
 - 2c: seeking more information about content posted on the site; and
 - 2d: following recommendations posted on the site.
- Hypothesis 3: Providing social support is associated with more positive health-related outcomes than is seeking support.

Less clear is how time spent on a site may predict outcomes. More time spent on a support site may be associated with positive outcomes as Wright (1999, 2000) found. From a theoretical perspective, spending time on the site may “cultivate” (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002) and/or provide models of positive health-related attitudes and behaviors that facilitate observational learning (Bandura, 1977, 1986, 2002). In contrast, as other studies have found (Roman, Lindsay, Moore, & Shoemaker, 1999; Takahashi et al., 2009), spending more time on the site might have a backlash effect whereby participants experience more stress as they are exposed to women potentially experiencing a difficult pregnancy and in need of social support. Thus, the study addresses one research question:

RQ1: How is time spent on a health-related social networking site associated with health-related outcomes?

Method

The study methodology and all associated recruitment notices and survey instruments were reviewed and approved by the university’s institutional review board.

Sample

Survey respondents were recruited from eight social networking sites that focused on the exchange of social support for pregnancy-related issues. A social networking site (SNS) was defined as an online community in which members participate in online discussion threads. Membership was usually free and was required to participate. Site selection included the following three criteria: (a) the message thread remained on the website for an indeterminate amount of time; (b) members had to have the ability to create a personal profile; and (c) these sites had to enable members to form social connections—visible links—to other members. The sampling frame of social networking sites was identified through Google search engine. Keyword combinations such as “pregnancy, support”; “pregnancy, forum”; “pregnancy, social network”; and “mom, network” were entered into the search algorithm. The results from the search were then individually examined to determine whether they met the criteria. The principal investigator read through approximately three pages of Google search results or until the results appeared to be less related to the search terms.

In all, there were 10 social networking sites that met the criteria. Eight of these sites displayed a robust amount of participation (more than 200 messages in the previous month), and they formed the final sampling frame. After receiving permission from the site moderators, recruitment messages were posted on the sites inviting members to participate in an online survey about their social networking experiences. The survey was created with Qualtrics online survey software and included 44 questions. Pilot tests of the instrument resulted in surveys being completed in approximately 20 minutes. Survey respondents were restricted to adult women. All survey questions related to the participant’s experience on the website through which she was recruited. Respondents were incentivized to participate with a lottery of five

electronic gift certificates to an online retailer. Two follow-up reminder messages were posted on each site. Unfortunately, an accurate response rate cannot be calculated because it is unknown how many site members actually viewed the survey invitation but chose not to participate. Moreover, members of these communities would naturally come and go as a function of their pregnancies. After 2 months, the survey link was disabled and all the data were downloaded and prepared for analysis. Incentives were disbursed to survey respondents by random selection.

Survey Measures

Trust in the Site

Trust was measured with two variables. One measure asked respondents how much they trust health-related information found on social networking sites generally, while another measure asked how much they trust the specific site from which they were recruited. These variables factored onto one component (principle components factor analysis: eigenvalue = 1.59; factor loadings for each item = .83) with good reliability ($\alpha = .74$). Therefore, a scale variable for trust, which ranged from 1 (*strongly negative*) to 10 (*strongly positive*), was created by averaging the responses to both variables.

Perception of Social Support

Social support was measured with the Social Provisions Scale (Cutrona & Russell, 1987). This 24-item scale was reproduced in its entirety on the survey and a single composite variable of the five dimensions of social support ($\alpha = .92$) was created and used as a predictor variable.

Providing and Seeking Social Support

Two questions asked how often members had asked for advice and given advice in the past month. Six response options ranged from less than once per month to several times a day.

Time Spent on the Site

Respondents were asked how many minutes they typically spend on the site at one time. There were five response options that spanned 15-min increments and ranged from 15 min or less to more than 1 hour.

Attitudes

Two questions measured respondents' attitudes toward prenatal health and being pregnant. The first question asked respondents to use a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to rate their agreement with the following item: "I am always looking for ways to be healthier while I'm pregnant." The second question asked respondents to use a 7-point Likert scale with response options ranging from 1 (*never*) to 7 (*all the time*) to indicate how often they felt happy when thinking about their pregnancy.

Behavior

Behavior was measured by asking respondents whether they had sought additional information from three different sources as a result of something they had read on the website. These sources included their doctor, their family and friends, and other online sources. In addition, using a 10-point Likert scale ranging from 1 (*strongly disagree*) to 10 (*strongly agree*), respondents were asked to indicate their agreement with the statement, "I have followed recommendations I've read on this website."

Analysis

Statistical Package for the Social Sciences (SPSS) Version 19.0 was used to analyze the data. The analyses relied on hierarchical logistic regression and hierarchical multiple regression to examine how well the independent variables predicted change in the outcome variables, while controlling for other sociodemographic variables. Variables that were controlled for included health status, education level, income, first pregnancy, minority status, marital status, working full-time, age, and networking site from which the member was recruited. These variables were controlled for given their potential association with attitudes toward health and health outcomes, and the networking site was controlled for to account for variance across the specific sites. Correlations were examined among all variables to determine whether there was a risk of multicollinearity, and no such risk was identified. In the hierarchical multiple regression models, the predictor variable was consistently forced into the model as the first block, and the second block of variables (the sociodemographic variables) was entered into the model using stepwise selection. The variables were entered into the model stepwise with an entry value of $p < .05$ and an exit value of $p < .10$. Similarly, in the hierarchical logistic regression analyses, the forward selection, likelihood-ratio method was used with the same entry and exit values. In all of the regression analyses, the model with the highest adjusted R -squared is presented if the predictor variable was significantly associated with the outcome.

Results

Respondent Characteristics

The survey was completed by 288 women; however, the analytic sample was restricted to currently pregnant women ($n = 114$). The majority of the sample (88%) was Caucasian, with a mean age of 29 years ($SD = 5.04$). More than half of respondents (54%) reported this was their first pregnancy. Nearly half (48%) of respondents were in the second trimester of pregnancy, 28% were in the first trimester, and 24% in the third. The majority of these pregnant women were under the regular care of a physician (98%). The sample consisted of regular users of social networking sites: during the previous week, 69% of participants had visited a social networking site every day. Table 1 reports the complete demographic description of the sample.

Analyses revealed two significant differences between the sociodemographic characteristics of pregnant and nonpregnant respondents. The women who were pregnant at the time of the study were significantly younger (29.18 vs. 32.48, $t[240.50] = 4.16$, $p < .001$) and had fewer children (.64 vs. 1.59, $t[248] = 5.378$, $p < .001$) than those who were not pregnant.

Analyses of the independent variables revealed that, on a 10-point Likert scale, the mean score for trust in the health-related social networking site was 4.82 ($SD = 1.04$), while the mean perception of the availability of social support on these sites was 2.90 ($SD = 0.60$), on a 4-point Likert scale. The mean response for seeking support was 2.61 ($SD = 1.31$), which roughly equates to asking for advice once per week; the mean response for providing advice was 4.60 ($SD = 1.54$), which roughly equates to providing advice once per day. Of those who asked for advice, 100% indicated that advice was provided by other members. Members spent an average of 45 minutes on the site at once ($M = 2.70$, $SD = 1.45$).

Among the dependent variables, we assessed attitudes with two questions that used 7-point Likert scales. The first item was "I am always looking for ways to be healthier while I'm pregnant" ($M = 5.61$, $SD = 1.10$), and the second item measured respondents' happiness about their pregnancy ($M = 5.79$, $SD = 1.08$).

Table 1. Characteristics of the survey sample ($N = 114$)

Characteristic	Value
Mean age (years)	29
Age range (years)	19–41
Ethnicity (%)	
White/Caucasian	88
African American/Black	2
Hispanic/Latino	3
Asian American/Pacific Islander/Native American/other	7
Marital status (%)	
Married	82
Unmarried partner	13
Single/separated/divorced/other	5
Education (%)	
Less than high school/high school/GED	15
Some college	26
2-year college degree	8
4-year college degree	31
Master's, doctoral, or professional degree	20
Employment status (%)	
Full-time job outside home	42
Part-time job outside home	12
Work from home	10
Full-time student	4
Not currently working	32
Annual household income (%)	
Under \$20,000	5
\$20,000–\$49,999	30
\$50,000–\$79,999	30
\$80,000 or more	35
Location in the United States ^a (%)	
Northeast	15
Midwest	20
South	32
West	22
International	11
Health status (%)	
Excellent/very good	72
Fair	27
Poor or very poor	1
First pregnancy (%)	54

^aBased on U.S. Census Bureau Regions.

Behavior measures revealed that respondents more often sought additional information about something they read on the site from other online sources (84%), followed closely by their family and friends (83%), and 51% of women had spoken with their doctor about something posted on the website. In addition, on a 10-point Likert scale ranging from 1 (*strongly disagree*) and 10 (*strongly agree*), respondents' mean score of agreement with the statement "I have followed recommendations I've read on this website" was 5.21 ($SD = 1.22$).

Hypothesis 1

Trusting the social networking site was not significantly associated with having a positive attitude toward being healthy nor was it associated with seeking further

Table 2. Significant standardized betas indicating how trust predicts outcomes

	Happiness	Recommendations
Health status	.31**	
Trusting the site	.22*	.58***
Overall F (df)	6.61** (2, 98)	51.34*** (1, 99)
Adjusted R^2	.10	.34

* $p < .05$. ** $p < .01$. *** $p < .001$.

information from any source. However, as Table 2 indicates, trust was significantly associated with being happier about the pregnancy and with following recommendations from the site. Therefore, Hypotheses 1b and 1d were supported, while 1a and 1c were not.

Hypothesis 2

The perception of social support was significantly associated with three outcomes: (a) a positive attitude toward being healthy, (b) following recommendations posted on the site, and (c) seeking further information from one's doctor. Table 3 indicates the significant covariants from the hierarchical stepwise multiple regression models of the first two variables, while a hierarchical logistic regression analysis showed the association with seeking further information (model: $\chi^2[9] = 38.41$, $p < .001$). The best-fitting model included working full-time, adjusted odds ratio = .31, $p < .05$ and perception of social support, adjusted odds ratio = 8.53, $p < .001$. Therefore, Hypotheses 2a, 2c, and 2d were supported, while 2b was not.

Hypothesis 3

Seeking support was not associated with any outcomes, while providing support was associated with two behavioral outcomes. As Table 4 indicates, providing support was associated with seeking additional information from three sources: online, family/friends, and physician. Furthermore, a hierarchical stepwise multiple regression model indicates the more support women provided the more likely they were to follow recommendations made on the site (adjusted $R^2 = .13$, $F[2, 94] = 8.44$, $p < .001$; providing support, $\beta = .30$, $p < .01$). Therefore, Hypothesis 3 was supported.

Table 3. Significant standardized betas indicating how the perception of social support predicts outcomes

	Positive attitude toward being healthy	Recommendations
Minority status	.21*	
Site G	.28**	
Social support	.21*	.45***
Overall F (df)	5.88** (3, 96)	24.80*** (1, 98)
Adjusted R^2	.13	.19

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Significant adjusted odds ratios indicating how support provision predicts behavioral outcomes related to information seeking

	Doctor	Family/friends	Online
First pregnancy		6.65**	
Full-time worker	.23**		
Site E	.19*		
Providing support	1.47*	1.54*	1.68*
Model χ^2 (<i>df</i>)	25.26*** (8)	16.57* (8)	9.58 (8)

* $p < .05$. ** $p < .01$. *** $p < .001$.

Research Question

Spending time on the site was not significantly associated with any outcomes.

Discussion

Health-related social networking sites easily enable patients to exchange advice and social support; however, few studies have examined how participation on these sites is associated with outcomes. The present study aimed to identify variables associated with positive effects of participation on a health-related social networking site. This study hypothesized that trust in a site, the perception of social support, and the provision of social support are positively associated with health outcomes. The study also aimed to determine how time spent on a site is associated with the dependent variables.

Of the predictor variables, providing social support was associated with the most outcomes, including members being more likely to seek information from other sources and being more likely to follow recommendations posted on the site. This finding lends further support to Reissman's (1965) helper therapy principle. It also supports Wallston and colleagues' (1983) study that the more highly involved support providers are, the more they benefit. In this study, the major difference between members who provided more social support and those who perceived more social support as being available is that participants who provided more support also sought out more information from other sources, such as their friends and other online resources. This suggests that highly supportive community members may act as information bridges, seeking information from other sources and relaying it back to the online community.

Advice seeking was not associated with any outcomes. While this supports the helper therapy principle (Reissman, 1965), it is an important reminder for media effects researchers that social media require us to broaden our focus to study effects not only on audience members but also on message producers. This also presents an interesting challenge for health care practitioners using these media for health interventions. While social media are intended to be interactive, many organizations continue to use them frequently as one-way broadcast channels. This study underscores the importance of engaging targeted populations with a strategy focused on encouraging dialogue and peer-to-peer communication rather than one-way messaging.

Having trust in the site was associated with members' feeling happier about the pregnancy and with following recommendations posted on site. These findings support previous research suggesting the important role of trust in facilitating media impacts. They also validate the concern that health care practitioners may have of patients following recommendations posted on a website without first verifying them with other offline sources.

It is interesting that time spent on a pregnancy-related site was not associated with any outcomes. These findings differ from research conducted by Wright (1999, 2000) in which he found that time spent communicating within online support groups was positively associated with network size and satisfaction, and satisfaction was associated with a reduction in stress. The present study's findings may differ because of the nature of the health issue. Wright's (1999, 2000) studies examined individuals seeking support for long-term health issues such as substance abuse recovery, eating disorders, terminal illnesses, social anxiety, and mental illness. Given that the present study focused on pregnancy, which is a transient health issue and one that is not typically stigmatized, time spent on the site might be less important in this context.

The present data suggest that qualitative measures of engagement, such as trust, are better indicators of how much impact participation on a site will have on its members, as opposed to a more quantitative measure, such as time. Time spent on a site is not sufficient to predict impacts; instead, other measures of engagement are needed. As Tsftati and Cappella (2003) suggested, audience members may engage with a media source even if they do not trust it, but, as the present study shows, variables such as trust are critical to facilitate impacts.

This study contributes to our understanding of how participation on health-related social networking sites may predict attitudes and behaviors. The data suggest that it is critical that sites be trustworthy and promote interaction and support exchange among members. However, in communities such as these, where the health condition is only temporary, this may be a challenge. New members may not feel as though they have the expertise to contribute. However, a content analysis of these same sites suggested that when members could not provide informational support, they may have substituted emotional support (Hether, 2009). Therefore, as site moderators seek to build robust communities, encouraging the exchange of support beyond informational support is one way that all members can participate on the site, and potentially reap more positive health outcomes.

Limitations

Obtaining a randomized sample with an online survey is very difficult and was not possible in this study; therefore, this study may be limited by self-selection bias. The analytic sample was small and limited to a majority of well-educated Caucasian women who are more likely to have better access to health care and social support and to be stronger advocates for their own health care. Therefore, findings may vary with other populations and other health issues. The regression models also had fairly low R^2 values, suggesting that our models were not capturing all the relevant variables. Furthermore, there is no way to know exactly how many participants saw the recruitment invitation but declined to participate, so an accurate response rate cannot be calculated. It was also difficult to measure health-related impacts of participation because exposure to any specific message thread was not guaranteed. Another limitation of these measures was the reliance on self-reported data. Nevertheless, we suggest this exploratory research provides insight into an increasingly important health communication platform.

Future Research

Future research should continue to explore the specific causal mechanisms that may explain why providing support was associated with more outcomes than seeking support. For example, research should examine whether the association with more

outcomes is a byproduct of the channel—the act of writing and self-disclosure as some researchers have suggested (Baym, 2002; Pennebaker, 1997; Weinberg, Schmale, Uken, & Wessel, 1995; Wright & Bell, 2003)—or whether other mechanisms are at work, such as cognitive dissonance, involvement, and so forth. In addition, research should explore the qualities of social networking sites that may facilitate—or inhibit—participation and trust. Future research is also needed with a larger sample size, including participants from more diverse backgrounds, dealing with other kinds of health issues.

Conclusion

As health-related social media sites continue to proliferate, it is essential that the potential impacts of participation on these sites be better understood. This was the goal of the present study. The contributions of this study include the finding that spending more time on a social networking site was not essential to facilitate impacts. Instead, qualitative perceptions of trust and perceiving the site as supportive were better predictors of impacts, as was members' participation.

These findings have important implications for the health care community. First, this research suggests that practitioners should be aware that patients who participate on health-related social networking sites are more likely to follow recommendations posted online if they perceive the site as supportive and trustworthy. This may be a cause for concern if the site circulates inaccurate health information. Second, this study suggests that practitioners may want to monitor the health information their patients are being exposed to, or even, perhaps, become involved in popular online sites to help circulate accurate health information. These sites ultimately represent a new opportunity to engage the public in achieving better health. Therefore, it is important for the health care community to identify how these sites can best be leveraged to promote positive outcomes and minimize—or eliminate—negative ones. This study provides some suggestions as to how this may be accomplished.

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