

Social Networking in Online Support Groups for Health: How Online Social Networking Benefits Patients

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An increasing number of online support groups (OSGs) have embraced the features of social networking. So far, little is known about how patients use and benefit from these features. By implementing the uses-and-gratifications framework, the author conducted an online survey with current users of OSGs to examine associations among motivation, use of specific features of OSG, and support outcomes. Findings suggest that OSG users make selective use of varied features depending on their needs, and that perceptions of receiving emotional and informational support are associated more with the use of some features than others. For example, those with strong motivation for social interaction use diverse features of OSG and make one-to-one connections with other users by friending. In contrast, those with strong motivation for information seeking limit their use primarily to discussion boards. Results also show that online social networking features, such as friending and sharing of personal stories on blogs, are helpful in satisfying the need for emotional support. The present study sheds light on online social networking features in the context of health-related OSGs and provides practical lessons on how to improve the capacity of OSGs to serve the needs of their users.

The use of the Internet for health information has increased, with 8 in 10 Internet users in the United States searching online for health information (Fox, 2011). Recently, online social media, such as patient blogs, Internet support groups, and health-related social networking sites, have emerged as popular sources of health information. A report has shown that approximately one third of online health information seekers have used such social media resources (Elkin, 2008). The number of people using health-related online social media and seeking help and information from peer patients is also expected to grow (Fox & Purcell, 2010; Jupiter Research, 2007; Sarasohn-Kahn, 2008, 2009).

Among health-related online social media, online support groups (OSGs) are particularly useful for connecting individuals to large numbers of others with similar health concerns (Walther & Boyd, 2002). With the rising popularity of OSGs, substantial research efforts have been directed at understanding the motivation behind

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their use (e.g., Buchanan & Coulson, 2007; Maloney-Krichmar & Preece, 2005), types of support exchanged among OSG members (e.g., Barnett & Hwang, 2006; Coulson, 2005; Eysenbach, Powell, Englesakis, Rizo, & Stern, 2004; Malik & Coulson, 2008; Meier, Lyons, Frydman, Forlenza, & Rimer, 2007), and outcomes associated with their use (e.g., Baum, 2004; Montazeri et al., 2001; Rodgers & Chen, 2005). Previous research has revealed a good deal about why people use OSGs, what they discuss in OSGs, and what types of health benefits OSGs afford.

Despite the extensive literature on OSGs, little is known about how individuals make use of OSGs in varied ways and how varied patterns of use may affect what individuals gain from OSGs. Researchers have suggested that OSGs do not work in the same way for all (Shaw, McTavish, Hawkins, Gustafson, & Pingree, 2000) and that use of different website features yields different outcomes for each individual (An et al., 2008). For example, benefits from OSG use accrued by each individual can vary by motivation (Tanis, 2008; Wright, 2002), health condition (Cummings, Sproull, & Kiesler, 2002; Davison, Pennebaker, & Dickerson, 2000), pattern of OSG use (An et al., 2008), and level of participation (Pleace, Burrows, Loader, Muncer, & Nettleton, 2000; Richardson et al., 2010; Schweizer, Leimeister, & Krcmar, 2006; Shaw, Hawkins, McTavish, Pingree, & Gustafson, 2006). These studies have shown the importance of acknowledging individual differences in the study of OSG use. Furthermore, as OSGs add new features and expand their functionalities (Bender, O'Grady, & Jadad, 2008; Kamel Boulos & Wheeler, 2007), the mechanism through which OSGs empower and benefit patients increases in complexity, resulting in a growing need to understand how the features are used and affect the experience of individual OSG users.

Focusing on individual differences in the use of OSG, the present study details the association among motivation, use of specific features of OSG, and support outcomes. The researcher employed the uses-and-gratifications perspective (Rosengren, 1974; Rubin, 2002) to answer the following questions: What motivates people to use OSGs? How is the salience of various needs related to the use of different features available on OSG sites? How do OSG users develop feelings of being cared for and supported? Can the use of any specific features of the OSGs be more beneficial than others to patients with certain needs? Answers to these questions can help advance an understanding of patients' use of OSGs as healthcare resources and improve the capacity of online support communities to serve the needs of OSG users.

Characteristics and Benefits of OSGs

Upon diagnosis of illness, many patients experience a range of psychological, social, and physical distress. Social support facilitates coping with such distress (Krause, Liang, & Yatomi, 1989; Penninx et al., 1998), improves mood (Dunn, Steginga, Occhipinti, & Wilson, 1999), and expedites recovery from disease (Burg et al., 2005). With the rapid growth of the Internet over the past decade, the number of people seeking online social support has increased (Fox & Purcell, 2010).

Several characteristics of computer-mediated communication make OSGs an attractive venue for support seeking (Robinson & Turner, 2003). First, OSGs are unconstrained by temporal and geographical boundaries. Individuals can access OSGs at times and locations convenient to them. Those with mobility constraints (Braithwaite, Waldron, & Finn, 1999) and those with rare health conditions (Lasker, Sogolow, & Sharim, 2006) can easily find others dealing with same health issues. Second, the limited social cues available in computer-mediated communication provide a unique

opportunity for self-presentation. People can freely talk about embarrassing health topics (Cooper, 2004; Davison et al., 2000). Last, in OSGs, a person can remain completely invisible. Such anonymity offers an opportunity for participation to those who want to learn from others' experiences but remain unseen. This opportunity is related to silent support, which involves little emotional cost (Bolger, Zuckerman, & Kessler, 2000) and little expectation for reciprocity from those who receive support (von dem Knesebeck & Siegrist, 2003).

The concept of silent support is particularly relevant in understanding lurking behaviors online. Studies have shown that lurkers in OSGs feel informed and emotionally supported as much as posters do (Mo & Coulson, 2010; van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2008). Another line of research, however, showed that posters receive additional benefits through the process of writing and emotional disclosure (Shim, Cappella, & Han, 2011) and social interaction opportunities (Nonnecke, Andrews, & Preece, 2006). Because many OSGs no longer operate on a simple discussion board format and now run on a platform of expanded and complicated features, moving beyond the dichotomy between lurkers and posters is necessary in the study of OSGs.

Social Networking Features in OSGs

Over time, OSGs have added a number of features that facilitate social interaction among OSG users, such as private messaging, real-time chatting, and online social networking (An et al., 2008; Cummings et al., 2002; Feil, Noell, Lichtenstein, Boles, & McKay, 2003; Lu, Shaw, & Gustafson, 2011). One of the latest additions included online social networking features (Bender et al., 2008; Kamel Boulos & Wheeler, 2007), such as profile page for each individual and friend list (Boyd & Ellison, 2007).

Although these social networking features have been integrated to enhance connectivity among OSG users (Bender et al., 2008; Kamel Boulos & Wheeler, 2007), little is known about how they are adopted and used by patients (Newman, Lauterbach, Munson, Resnick, & Morris, 2011; Takahashi et al., 2009). Abundant studies were conducted on general-purpose social networking sites, such as Facebook and MySpace (e.g., Ellison, Steinfield, & Lampe, 2007; Fogel & Nehmad, 2009; Ross et al., 2009; Sheldon, 2008), and yet no studies have been published about how online social networking features are used as supportive care resources in health-related online communities (Bender et al., 2008).

Uses and Gratifications as a Theoretical Framework

The uses-and-gratifications approach emphasizes why people use particular media and how they use media to satisfy their needs (Rosengren, 1974; Rubin, 2002). According to this approach, individual differences in the patterns of media selection and use originate from differences in needs, which also influence the way individuals assesses their media use (Blumler & Katz, 1974). Dutta and Feng (2007) suggested that the uses-and-gratifications approach can be particularly helpful in understanding individuals' use of OSGs.

Although many researchers have identified motivations for participating in OSGs (e.g., Buchanan & Coulson, 2007; Coulson, 2005; Kral, 2006; Maloney-Krichmar & Preece, 2005; Meier et al., 2007; Preece & Ghozati, 2001), they have rarely tapped into the next research question: how those motivations affect use patterns and how use

patterns in turn affect appreciation of online support. A few scholars have suggested a need for conducting a focused evaluation of each feature on OSG sites (An et al., 2008; Barrera et al., 2002), yet little is known about how individuals with different motivations use the features in varied ways and how the use of various features delivers different support outcomes. With uses and gratifications as a theoretical framework, the present study thus examines relationships among the following three variables: motivation, use pattern, and appreciation.

Research Questions

A number of studies have revealed motivations for using OSGs. The most often discussed motivations are the exchange of information and advice (Buchanan & Coulson, 2007; Coulson, 2005; Leimester & Krmar, 2006; Meier et al., 2007; Rodgers & Chen, 2005; Tanis, 2008) and the sharing of emotions (Buchanan & Coulson, 2007; Kral, 2006; Preece & Ghazati, 2001; Rodgers & Chen, 2005; Tanis, 2008). Patients visit OSGs to exchange information on management and treatment of illness (e.g., Meier et al., 2007; Rubenstein, 2009) and to find others to whom they can emotionally relate (e.g., Buchanan & Coulson, 2007; Kral, 2006; Shim et al., 2011).

Questions remain as to the reasons behind using OSGs that have incorporated online social networking features (Bender et al., 2008; Kamel Boulos & Wheeler, 2007). Previous studies have been primarily conducted on OSGs on the basis of e-mail listservs or discussion boards. In these older-generation OSGs, users are often known only by their usernames, and interaction among them occurs through many-to-many e-mails and online postings. In these e-mails and postings, conversations tend to focus on a specific health theme and leave little room for one-to-one interaction, rendering group-level social identity much more salient than individuals' personal identity (Spears & Lea, 1992). On the contrary, newer-generation OSGs that include social networking features provide many more opportunities for personal expression and one-to-one interaction (Sheldon, 2010). In the newer-generation OSGs, individuals can share personal details on their profile pages and connect to others on a person-to-person level through the friend list (Mayfield, 2005; Rau et al., 2008). Thus, motivation to use older- and newer-generation OSGs may differ.

Differences can also be found in the motivation to use online social networking features in health-related communities and in general-purpose communities. Numerous studies on general-purpose social networking sites have shown that the primary motivations for using such sites are to strengthen already existing relationships and to reconnect with friends one knows offline (Ellison et al., 2007; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). By contrast, little is known about the motivation to use social networking features included in health-specific OSGs. Therefore, the present study poses the following question, seeking to identify the primary motivation behind using newer-generation OSGs.

Research Question 1: What are people's primary motivations for using OSGs that include online social networking features?

Newer-generation OSGs often operate on a combination of diverse features and contents. For example, they often include discussion forums, where members can post messages for the whole group; informational resources, where members can obtain knowledge about a specific health concern; and social networking features, which are

new additions to OSG sites. With social networking features, OSG users can set up individual profile pages, share personal stories on blogs or profile pages, create friend lists, and share photos and videos.

According to the uses-and-gratifications framework, when using media, individuals have different patterns of media use because their decisions as to the kinds of contents to consume and features to use are driven by motivation. Certain motivations lead to the use of some types of media contents but not others. Especially when using the Internet, individuals make strategic and active choices as to which pages to open, depending on their needs (Rayburn, 1996). Some people with certain motivations are expected to use certain features on OSG sites more than others. For example, a study on OSG for HIV/AIDS has shown that some patients spent more time using conversational and communicative features (e.g., discussion boards), whereas others spent more time using educational and informational features (Smaglik et al., 1998).

Although diverse features are available in newer-generation OSGs, no study to date has shown how individual users make selective use of these features. The integration of social networking features into OSGs is new, and thus knowledge of how OSG participants make use of these new features is limited. Therefore, the present study explores the link between motivation and use patterns in the context of OSG. The following research question addresses variations in use pattern by motivation.

Research Question 2: How does the use of different features on OSGs relate to motivation?

In addition to the link between motivation and use, the uses-and-gratifications framework supports the study of the link between use and appreciation of consumed content. Several studies have shown that specific psychological outcomes result from the use of specific features of OSGs (Barrera et al., 2002; Freeman, Barker, & Pistrang, 2008; Shaw et al., 2007; Weis et al., 2003). For example, among cancer patients, the use of communicative and social features was found to enhance patients' emotional and functional well-being when other features did not (Beaudoin & Tao, 2007; Walther, Pingree, Hawkins, & Buller, 2005). In a study of the use of OSGs by diabetes patients, the perception of received support was much greater among those who used peer-to-peer discussion forums compared to those who did not (Barrera et al., 2002). Similarly, people who participated in discussion forums adhered to their health goals longer than those who did not (Richardson et al., 2010). These studies suggest that differences in use patterns can result in various outcomes for individuals.

Building on the uses-and-gratifications framework and the findings of previous studies, the present study is undergirded by the assumption that some features are more effective than others in providing certain types of support (Han et al., 2009). Because one major function of online social networking is the development of interpersonal relationships (Ellison et al., 2007; Subrahmanyam et al., 2008), this study hypothesizes a positive relation between the use of social networking features and perceptions of social support. The following research question is designed to examine the link between use and perception of social support with the tentative expectation that those who use social networking features perceive the OSG site as a more supportive venue.

Research Question 3: How does the use of different features on OSGs relate to perception of social support?

Method

Participant Recruitment for Online Survey

An online survey was conducted with current users of OSGs. Participants were recruited through a message posted on four OSG sites. The recruitment message included brief information about the study, a link to the online survey, and a note on participation criteria: Respondents must be (a) 18 years or older and (b) using the site for their own health concerns.

Selection of Study Sites

We compiled a list of OSG sites from various sources, including magazine and newspaper articles and websites, such as 100bestsocialnetworksites.com and findasocialnetwork.com. From the list, only those that met the following four criteria were selected: (a) the content deals with specific health concerns instead of general wellness (such as exercise and diet), (b) the goal is to provide support to patients, (c) the site includes features of online social networking as defined by Boyd and Ellison (2007; profile page and friend list), and (d) at least one new message was posted on discussion boards during the most recent week at the time of screening. An e-mail soliciting permission to recruit participants was sent to the moderators of the 12 sites that met the above criteria. Of the 12 sites, four moderators approved participant recruitment from their sites (2 diabetes, 1 prostate cancer, and 1 young adult cancer).

Survey Administration

For each OSG site, the online survey was open for one month. The survey, which took an average of 15 min to complete, did not require any personally identifiable information. Participants were given an opportunity to enter a drawing for an online retailer gift certificate.

From the four OSG sites, a total of 245 people participated in the survey. Responses from 50 participants were excluded because they did not meet the two participation criteria mentioned above. Responses from the remaining 195 were analyzed.

Measures

Motivation

Because no previous studies have yielded specific information on motivation to use OSGs that include features of online social networking, the present study drew on previous research that measured motivation for using the Internet (Grace-Farfaglia, Dekkers, Sundararajan, Peters, & Park, 2006; Papacharissi & Rubin, 2000), social networking sites (Bumgarner, 2007; Ellison et al., 2007; Joinson, 2008; Sheldon, 2008), and OSGs (Tanis, 2008; Hwang et al., 2010). A total of 28 statements were gleaned. To each statement, respondents indicated their degree of agreement or disagreement on a 5-point Likert scale.

OSG Feature Use

Respondents were asked to report their frequency of using the following 14 features on OSG sites: discussion board (posting, reading, and replying), blog (writing, reading, and commenting), photo sharing and browsing (posting, viewing, and commenting),

video sharing and browsing (posting, viewing, and commenting), and messaging (sending and receiving). Response options were daily (= 6), two to three times a week (= 5), once a week (= 4), two to three times per month (= 3), once a month (= 2), and never (= 1). In addition, respondents were asked about the number of friends they have on their friend list.

OSG Support Perception

Perceived social support from OSG was measured using two subscales (informational and emotional support) of the Social Support Behaviors Scale (Vaux, Riedel, & Stewart, 1987). From the original scale that was used to measure friends' support, five items with the highest factor loadings were adapted to the context of OSGs. Respondents were asked to indicate how likely OSG members would provide a specific type of support when asked. The response option was 5-point scale ranging from "no one would do this (= 1)" to "most would certainly do this (= 5)." Items for informational support included "would tell who to talk to for help." Items for emotional support included "would comfort me if I was upset." Cronbach's alphas were .93 for informational support and .92 for emotional support.

Control Variables

Control variables included age, gender, coresidency (live alone or with someone), education, urban-rural residency, race, self-reported health status, and the duration of OSG use (the number of months using the OSG).

Analysis

We used SPSS 17.0 for data analysis. For Research Question 1, the 28 motivation statements were analyzed using factor analysis. For Research Question 2, items for OSG feature use were analyzed using factor analysis and then entered into regressions models as dependent variables with motivation factors as independent variables. For Research Question 3, regression models were run with OSG support perception (emotional and informational support) as dependent variables and OSG feature use as independent variables.

Results

Descriptive Statistics

Table 1 describes demographic and health characteristics of participants. The mean age was 48 years, and about half were male (47.8%). The majority of respondents were White (91.8%). About 4 in 10 (44.3%) had completed college or earned higher degrees. Most participants (79.2%) lived with someone else. About 70% described their health as good or excellent.

Table 2 presents the correlation matrix. All correlation coefficients were below the recommended threshold of .70 (Campbell, 1998) except one between the two variables of OSG support perception.

Results for Research Questions

Research Question 1 dealt with primary motivations for using OSG sites that include social networking features. The 28 statements were analyzed using principal component

Table 1. Demographic and health characteristics of participants ($N = 195$)^a

Variables	%
Age, in years ($M = 48, SD = 16.29$)	
19–29	17.1
30–39	15.2
40–49	14.6
50–59	27.8
60–69	16.5
70+	8.9
Gender	
Female	52.2
Male	47.8
Live alone	
Yes	20.8
No (live with someone)	79.2
Education	22.8
No formal education or elementary school	32.9
Junior high school, some high school, or high school graduate	23.4
Some college or college graduate	20.9
Graduate or professional degree	
Residency	34.6
Urban	65.4
Rural/suburban	
Race	91.8
White	1.5
Black	1.5
Asian	3.0
Other	
Health status	33.3
Excellent	38.4
Good	20.1
Fair	8.2
Poor	
Duration of online support group use ($M = 9.2, SD = 8.1$)	
Less than 3 months	27.0
3–6 months	14.4
6–9 months	10.9
9–12 months	9.3
1–1.5 years	22.4
1.5–3 years	16.0

^aSample size slightly varies for each variable because of missing data.

factor analysis with Varimax rotation procedures. Using the rule of a minimum eigenvalue of 1.00 per factor, five factors were retained. Four statements with a factor loading less than .40 were excluded for further analysis (Hair, Black, Babin, Anderson, & Tatham, 1998). After removal of the four statements, factor analysis was repeated, and a summary of factor loadings is reported in Table 3.

Table 2. Means, standard deviations, and zero-order correlations ($N = 195$)

	1	2	3	4	5	6	7	8	9	10	11
1 Motivation to relax	—										
2 Motivation to help others	.324**										
3 Motivation to meet others	.551**	.590**									
4 Motivation to seek information	.020	.188*	.207**								
5 Motivation to maintain offline relationship	.477**	.459**	.677**	.160*							
6 Discussion board use	-.253**	-.433**	-.573**	-.274**	-.407**						
7 Photo and video sharing and browsing	-.179*	-.126 ⁺	-.234**	-.094	-.347**	.000					
8 Blog use	-.406**	-.303**	-.351**	.052	-.300**	.000	.000				
9 Friending (number of friends)	.221**	.494**	.523**	-.024	.373**	.549**	.134 ⁺	.206**			
10 Informational support	.172*	.296**	.353**	.204**	.152 ⁺	.417**	-.076	.091	.337**		
11 Emotional support	.257**	.426**	.549**	.137 ⁺	.342**	.527**	.020	.204**	.535**	.839**	—
<i>M</i>	2.82	4.04	3.50	4.28	2.51	0.00	0.00	0.00	0.00	3.49	3.26
<i>SD</i>	1.10	0.81	1.01	0.62	1.03	1.00	1.00	1.00	1.00	1.14	1.26

Note. Sample size slightly varies because of missing data.

⁺ $p < .10$. * $p < .05$. ** $p < .01$ (two-tailed).

Table 3. Exploratory factor analysis of motivation

The reason why I visit [site name] is ...	Factor loadings				
	1	2	3	4	5
Factor 1: Motivation to relax					
To pass time	.92				
To entertain myself	.88				
To occupy my time	.88				
To spend time when I am bored	.78				
To forget my worries	.61				
Factor 2: Motivation to help others					
To help others		.85			
To provide support to others		.82			
To show others encouragement		.80			
To contribute to discussions		.68			
Factor 3: Motivation to meet others					
To make new friends with similar interests			.82		
To meet new people with similar interests			.69		
To get to know other people			.61		
To keep in touch with people I have met through [site name]			.61		
To find people like me			.56		
To communicate with like-minded people			.55		
Factor 4: Motivation to seek information					
To gather information				.82	
To find out things that I need to know				.75	
To look for information I need				.74	
To talk to a knowledgeable individual about topics of my health issues				.71	
To get answers to specific questions				.61	
Factor 5: Motivation to maintain offline relationship					
To keep connected with people who I otherwise would have lost contact with					.74
To find out what old friends are doing now					.72
To deepen relationships with people that I have met offline					.67
To keep in touch with people who live far away					.55
Excluded items					
To learn what others think about something					
To feel relaxed					
To give my opinion on a topic of conversation					
To respond to others on topics of interest to me					
Cronbach's alpha	.93	.90	.91	.85	.86
Eigenvalue	4.8	4.4	4.1	3.6	2.8

Note. Factor loadings below .40 are suppressed and not shown.

For each factor, an average was calculated and compared. Mean comparisons show that motivation to seek information was strongest ($M=4.28$, $SD=0.62$), followed by motivation to help others ($M=4.04$, $SD=0.81$), motivation to meet others in similar conditions ($M=3.50$, $SD=1.01$), and motivation to relax ($M=2.82$, $SD=1.10$). The weakest motivation was to maintain offline relationships ($M=2.51$, $SD=1.03$). All mean differences were statistically significant ($p < .001$).

Research Question 2 was used to test whether any relation exists between motivation and OSG feature use. To determine this relation, the 15 items on OSG feature use were analyzed using the principal component factor analysis method and Varimax procedures. Two items that loaded high (greater than .5) simultaneously on two factors were eliminated (Hair et al., 1998). The factor analysis was then repeated and yielded four factors: photo and video sharing and browsing, discussion board use, blog use, and friending (Table 4). The rotated factor scores were then saved for further analyses. Higher scores indicated more intensive use of OSG features.

Table 4. Exploratory factor analysis of OSG feature use

	Factor loadings			
	1	2	3	4
Factor 1: Photo and video sharing and browsing				
How frequently do you ...				
Post photos (excluding profile photos)?	.66			
View others' photos?	.66			
Comment on others' photos?	.82			
Post videos?	.63			
View others' videos?	.87			
Comment on others' videos?	.88			
Factor 2: Discussion board use				
How frequently do you ...				
Read postings on discussion forum?		.82		
Reply to postings on discussion forum?		.84		
Post messages on discussion forum, excluding replying comments?		.70		
Factor 3: Blog use				
How frequently do you ...				
Write blogs?			.88	
Read others' blogs?			.72	
Comment on others' blogs?			.69	
Factor 4: Friending				
How many people are on your friend list?				.87
Excluded items				
How frequently do you ...				
Send private messages?				
Receive private messages?				
Cronbach's alpha	.90	.83	.83	
Eigenvalue	3.8	2.6	2.3	1.2

Note. Factor loadings below .40 are suppressed and not shown.

Table 5. Multiple ordinary least squares regression analysis predicting use of different features from motivation

	Model 1: Discussion board use	Model: Photo and video sharing and browsing	Model 3: Blog use	Model 4: Friending (number of friends)
Motivation to seek information	.218**	.100	.091	-.064
Motivation to help others	.352***	.138	.093	.278***
Motivation to meet others	.485***	.189*	.143	.287***
Motivation to relax	.128	.034	.208*	-.570
Motivation to maintain offline relationship	.319***	.299***	.185*	.220***

Note. Control variables include age, gender, coresidency (live alone or with someone), education, urban-rural residency, race, self-reported health status, and duration of OSG use. To avoid multicollinearity issues, five motivation factors were entered separately to the regression models following control variables.

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

Regression models were run to test the relation between motivation and the use of OSG features. Table 5 shows the results of regression analyses predicting the use of the discussion board, photo and video sharing and browsing, blog use, and use of the friending feature, respectively. Holding control variables constant, results show that use of the discussion board was significantly related to motivation to seek information ($\beta = .218$, $p < .01$), motivation to help others ($\beta = .352$, $p < .001$), motivation to meet others ($\beta = .485$, $p < .001$), and motivation to maintain offline relationships ($\beta = .319$, $p < .001$). Use of photo and video features was significantly related to the motivation to meet others ($\beta = .189$, $p < .05$) and to maintain offline relationships ($\beta = .299$, $p < .001$). For the use of blog features, motivation to relax ($\beta = .208$, $p < .01$) and motivation to maintain offline relationships ($\beta = .185$, $p < .01$) were the two significant predictors. For the use of friending feature, motivation to help others ($\beta = .278$, $p < .001$), motivation to meet others ($\beta = .287$, $p < .001$), and motivation to maintain offline relationships ($\beta = .220$, $p < .001$) were the three significant predictors.

Research Question 3 was designed to examine how the use of specific features is related to the perception of support from OSGs. The variables for the two types of support were entered into two separate regression models for their high correlation. Tables 6 (informational support) and 7 (emotional support) show the results of multiple regression analyses in which two types of perception of support from OSGs were regressed against the four factors of OSG feature use. The only feature significantly related to the perception of informational support was the use of the discussion board ($\beta = .321$, $p < .01$; Table 6). Table 7 shows that the perception of emotional support was dependent on the use of discussion board ($\beta = .364$, $p < .001$), blog ($\beta = .128$, $p < .10$), and friending ($\beta = .237$, $p < .05$).

Discussion

Summary of Findings

Online social networking features have been increasingly adopted on OSGs (Bender et al., 2008; Kamel Boulos & Wheeler, 2007), yet little is known about OSG users'

Table 6. Multiple ordinary least squares regression analyses predicting OSG informational support from OSG feature use

	Standardized β	
Control variables		
Age	-.109	-.081
Gender (referent = male)	-.079	.040
Live alone (referent = no)	.028	.044
Education	-.188*	-.062
Residency (referent = rural/suburban)	.016	-.003
Race (referent = non-White)	.209**	.171*
Health status (referent = poor)		
Excellent	-.030	.005
Good	.025	.031
Fair	.016	.017
Duration of OSG use	.156 ⁺	.139 ⁺
OSG feature use		
Discussion board use		.321**
Photo and video sharing and browsing		-.047
Blog use		.050
Friending (number of friends)		.101
Incremental R^2		.097**
Total R^2	.162	.259
F	2.789**	3.499*

Note. OSG = online support group.

⁺ $p < .10$. * $p < .05$. ** $p < .01$.

experiences with regard to these new features. Thus, the present study surveyed current users of OSGs and examined how the various features on OSGs are used and appreciated by individuals with diverse needs. A number of interesting results emerged and are subsequently presented in the order of the research questions.

The first research question was designed to investigate motivation behind using OSGs that incorporate features of online social networking. Consistent with previous research on OSGs (Buchanan & Coulson, 2007; Coulson, 2005; Leimester & Krmar, 2006; Meier et al., 2007; Rodgers & Chen, 2005; Tanis, 2008), the strongest motivation was information seeking: to learn more about one's health condition, to find information about treatment, and to seek out advice from people undergoing or having undergone similar health problems. It is interesting that the second strongest motivation was the provision of support to other OSG users. Previous researchers on OSG have rarely tapped into this motivation as a primary reason to visit OSGs, but the literature on social support includes the positive effects of helping gestures, such as feelings of belongingness and reduced distress and mortality (Brown, Nesse, Vinokur, & Smith, 2003; Midlarsky, 1991; Riessman, 1965; Taylor & Turner, 2001). In the use of OSG, helping can be empowering because the act of helping can offer the feeling of becoming a better and useful person (Reeves, 2000; van Uden-Kraan, Drossaert, Taal, Shaw, et al., 2008).

The motivation to meet new people also emerged as a primary reason to visit OSGs. Unlike general social networking sites for which the major motivation is to maintain

Table 7. Multiple ordinary least squares regression analyses predicting OSG emotional support from OSG feature use

	Standardized β	
Control variables		
Age	-.161 ⁺	-.061
Gender (referent = male)	-.249**	-.068
Live alone (referent = no)	.060	.089
Education	-.178*	-.005
Residency (referent = rural/suburban)	.031	-.004
Race (referent = non-White)	.163*	.132 ⁺
Health status (referent = poor)		
Excellent	.059	.126
Good	.069	.104
Fair	.071	.075
Duration of OSG use	.189*	.146*
OSG feature use		
Discussion board use		.364***
Photo and video sharing and browsing		-.001
Blog use		.128 ⁺
Friending (number of friends)		.237*
Incremental R^2		.172***
Total R^2	.292	.464
F	5.888***	8.580***

Note. OSG = online support group.

⁺ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

contact with offline friends (Ellison et al., 2007; Raacke & Bonds-Raacke, 2008), OSGs were found to be valued as a venue for making new online friends. Through these new relationships with people having similar health problems, OSG users can recover a sense of normalcy (Festinger, 1954) and achieve distance from those who may hold unrealistic anticipation for fast recovery (Newman et al., 2011; Tanis, 2007).

The second research question focused on the link between motivation and use of various features of OSGs. According to the uses-and-gratifications framework, individuals use media in the way to fulfill their needs and thus consume certain contents more often than others (Blumler & Katz, 1974). The findings show that blog features are most frequently used by people who used the site as a means of relaxation. Photo and video sharing features are most frequently used by those who use the site as a way for social interaction. It is not surprising that those who join OSGs mainly for information make the least use of diverse features available on OSGs. Information seekers use online social networking features to a minimum degree and limit their use primarily to discussion board. Information seekers' passive patterns of use were also documented by previous studies on lurking behaviors (Mo & Coulson, 2010; Nonnecke et al., 2006; Nonnecke, Preece, & Andrews, 2004). Compared to posters, lurkers are little interested in companionship in online communities, yet they are keen on learning new information as much as posters (Nonnecke et al., 2006; Nonnecke et al., 2004; Preece, Nonnecke, & Andrews, 2004).

By contrast, socializers actively friend others and make intensive use of photo and video sharing features. A close look at friending, a distinct feature of social networking sites, reveals that those who friend many people tend to have a strong motivation to meet new people, maintain offline relationships, and help others. OSG users take advantage of social networking and other various features only when they believe that these features will help fulfill their social and emotional needs (Rau et al., 2008).

The third and final research question was designed to examine how perceptions develop toward availability and types of support in the OSG depending on the use of different OSG features. Results show that use of discussion boards is related to the perception that the OSG offers both informational and emotional support. Uses of blog features and friending, on the contrary, are associated only with the perception that OSG provides emotional support. These results show that online social networking features, such as friending and sharing of personal stories on blogs, are indeed helpful in satisfying the need for emotional support whereas the need for informational support is met primarily through the use of discussion boards.

Implications

Overall, the present study sheds light upon online social networking features in the context of health-related OSGs. As increasing numbers of people turn to OSGs, understanding the ways these new venues and features are used and appreciated as support and healthcare resources is essential.

In a theoretical sense, the present study demonstrates that the uses-and-gratifications framework is useful in conducting a focused assessment of each feature and understanding individual users' experiences in OSGs (Barrera et al., 2002; Dutta & Feng, 2007). Findings show that OSGs do not deliver the same degrees and types of benefits to all users. They also support the argument of the uses-and-gratifications framework as well as optimal matching theory (Cutrona & Russell, 1990; Turner, Grube, & Meyers, 2001) that any variations in media choice and appreciation need to be viewed in conjunction with individual differences in needs and motivations.

In a methodological sense, by surveying people who have been using OSG in natural settings, this study captured the links among motivation, use of various OSG features, and support perception. Despite their own merits, experiments (Barrera et al., 2002; Freeman et al., 2008) are unable to explain thoroughly the processes through which OSGs become efficacious for their users (Han et al., 2009). In experiments, subjects are arbitrarily assigned to participate in OSGs, and thus understanding the motivations that precede OSG use is not feasible.

In addition, two practical lessons can be drawn from the findings. First, the present study empirically supports the claim that the integration and use of online social networking features are advantageous to OSG users (Fenech, 2009; Holahan, 2008; Landro, 2006; Miller, 2008; Morphy, 2008), especially to those in need of emotional support. Healthcare professionals can also use OSGs and social networking features to reach out to those in need and to understand patients' perspectives and emotional coping strategies with regard to their health concerns. Second, findings of the present study have implications for the design of OSGs. Findings have shown that OSG members use some features more often than others depending on their needs (e.g., information seeking, social interaction, relaxation). Therefore, one way to optimize the OSG user experience is to screen the needs of OSG users, learn patterns of use by people with diverse needs, and then customize the display of features according to their use patterns.

Limitations and Directions for Future Research

Several limitations of the present study point to directions for future research. First, the present study examined only one positive outcome associated with OSG use: perception of support. More research is required to understand any possible negative aspects of OSG use, such as decreased face-to-face interaction (Demiris, 2006) and excessive reliance on OSGs (Adams, 2007; Caplan, 2003).

Second, future research should implement other study designs, such as longitudinal and experimental designs, and investigate how the support received from the use of OSGs translates into psychological and health outcomes. Research suggests that support received from OSGs has the potential to foster feelings of empowerment and a sense of control and independence (Barak, Boniel-Nissim, & Suler, 2008; van Uden-Kraan, Drossaert, Taal, Seydel, et al., 2008), which in turn bring positive changes in health (Barak et al., 2008; Seckin, 2009). Such change in health can be captured only in longitudinal studies. Experiments can also help clarify the causal link between the use of each individual OSG feature and psychological and physical outcomes.

The last limitation involves measurement. Some respondents may have inaccurately recalled the frequency of their use of certain features. When coupled with survey data, system-recorded data (such as log of each participant's connecting time, frequency of visit, and continuity of use) can provide more accurate and complete information about the use of OSGs (Han et al., 2009).

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