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Social support in an Internet weight loss community

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Abstract

Purpose—To describe social support for weight loss shared by members of a large Internet weight loss community.

Methods—We conducted a mixed-methods study with surveys ($n = 193$) and interviews ($n = 13$) of community members along with a content analysis of discussion forum messages ($n = 1924$ messages). Qualitative data were analyzed for social support themes.

Results—Survey respondents were primarily white (91.4%) and female (93.8%) with mean age 37.3 years and mean body mass index 30.9. They used forums frequently, with 56.8% reading messages, 36.1% replying to messages, and 18.5% posting messages to start a discussion related to weight loss on a daily or more frequent basis. Major social support themes were encouragement and motivation, mentioned at least once by 87.6% of survey respondents, followed by information (58.5%) and shared experiences (42.5%). Subthemes included testimonies, recognition for success, accountability, friendly competition, and humor. Members valued convenience, anonymity, and the non-judgmental interactions as unique characteristics of Internet-mediated support.

Conclusion—This Internet weight loss community plays a prominent role in participants' weight loss efforts. Social support within Internet weight loss communities merits further evaluation as a weight loss resource for clinicians to recommend to patients. Understanding these communities could improve how health professionals evaluate, build, harness, and manipulate social support for weight loss.

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Conflict of interest statement

None of the authors have any conflict of interest, financial or otherwise, relevant to the conduct or reporting of this study.

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Keywords

Internet; Social support; Obesity

1. Introduction

The purpose of this study was to explore the nature and potential benefit of social support for weight loss shared among participants of a public Internet weight loss community. Social support includes informational, emotional, instrumental (tangible), appraisal (feedback), and network support exchanged among peers [1–5]. Observational and experimental data suggest that social support facilitates weight control [2,6–9]. However, some individuals lack access to social support for their weight management efforts [10–12].

Internet health communities offer new opportunities to share social support via discussion forums, chat rooms, and blogs [4,5,13–15]. Potential advantages of online support include access to many peers with the same health concerns, convenient communication spanning geographic distances, and anonymity (if desired) for discussion of sensitive issues [16,17].

The literature offers little information about how existing members of large Internet communities experience social support for weight loss. Clinical trials have tested online weight loss interventions involving professional counseling, either with no peer support [18] or with peer support solely from other study participants [19,20]. In a trial comparing human e-counseling, automated counseling, and no counseling, all participants were encouraged to use the free Slim-Fast website, which offered peer social support venues [21]. Participants in the counseling groups could also share support with each other via the study website. Two trials examined the efficacy of a commercial online weight loss program with social support features (eDiets.com) [22,23]. However, the eDiets.com participants rarely used the social support features. Overall, the stand-alone or incremental effect of social support from public online weight loss communities has not been adequately assessed. Before conducting future trials, an in-depth exploration of the nature and potential benefit of social support in these communities might yield preliminary insight into their utility as weight loss resources.

Therefore, we conducted a mixed-methods study to explore the characteristics of social support for weight loss exchanged among members of the SparkPeople.com online weight loss community. We surveyed and interviewed members to assess demographic and clinical characteristics, use of social support features, and social support experiences. We corroborated survey and interview findings with a review of random discussion forum messages. From the surveys, interviews, and messages, we identified and tabulated social support themes.

2. Methods

2.1. Environment and study participants

SparkPeople (www.SparkPeople.com) is a free Internet weight loss community. More than 250,000 unique members log in to the website monthly [personal communication, David Heilmann, Chief Operating Officer, SparkPeople, May 21, 2008]. In November 2008, it had the third most visits among weight loss websites and fifth most pages viewed among health websites [24]. We focused on the SparkPeople community because of its popularity and the willingness of administrators to collaborate in research efforts. Study data consisted of surveys and telephone interviews of SparkPeople members and messages posted on SparkPeople discussion forums. Informed consent was obtained for the surveys and

interviews. The study was approved by the Committee for Protection of Human Subjects at the University of Texas Health Science Center at Houston.

2.2. Surveys

The purpose of the survey was to assess demographic and clinical characteristics, use of social support features, and social support experiences of SparkPeople members. We used the SurveyMonkey online survey tool (www.SurveyMonkey.com).

SparkPeople administrators posted an announcement on two general discussion forums, after which 31 individuals began eligibility screening. Since SparkPeople administrators do not repeat posts on forums within a short time frame, they conducted a second recruitment wave via email. Recruitment emails were sent to 3000 randomly selected members who had (1) had given permission to receive email; (2) joined at least 3 weeks prior; and (3) logged in within 24h before the emails were sent (approximately 9:00 a.m. Central Standard Time, April 24, 2008). We limited recruitment to those who had logged in within 24h in order to obtain a sample of recent users of the SparkPeople website. All respondents took the same survey regardless of recruitment mode. From this pool (recruited by forum posting or by email), members were eligible if they were at least 18 years old, were trying to lose weight over the past 4 weeks, and received any support for weight loss from other SparkPeople members over the past 4 weeks. The honorarium was a \$5 Amazon.com gift certificate. Due to budgetary constraints, we set the survey to close automatically after the first 250 individuals had undergone eligibility screening.

Closed-ended survey questions addressed demographic and clinical parameters; usage of social support features of the community; and perceptions of other community members. An open-ended question asked “What kinds of things have SparkPeople members said or done to help with your weight loss effort in the past 4 weeks?” Participants could enter up to 10 answers.

A survey can have several different response rates, depending on the numerator and denominator chosen among the many available. We calculated the response rate as the number of individuals who answered the open-ended question divided by the number who passed eligibility screening.

2.3. Interviews

The purpose of the telephone interview was to gain further insight into members’ social support experiences. We invited a random sample of approximately 25% of survey respondents who indicated possible interest in an interview. The honorarium was a \$10 Amazon.com gift certificate. The interviewer asked four main questions: (1) “Tell me about your experiences with using SparkPeople.” (2) “What do you value most about using SparkPeople?” (3) “How have other SparkPeople members helped with your weight loss effort?” (4) “In thinking about your interactions with SparkPeople members, how are those interactions different from your interactions with other people in your life?” The interviews were recorded and transcribed verbatim.

2.4. Discussion forum messages

In order to corroborate and expand upon the findings from the survey and interviews, we reviewed messages on SparkPeople discussion forums posted by a broader sample of members (*not just survey/interview participants*). We analyzed six general forums related to weight loss and weight loss behaviors. Since SparkPeople also has member-initiated interest groups (SparkTeams) with their own forums, we also analyzed three forums within the most active SparkTeams dedicated to weight loss and weight loss behaviors (Table 1). Within

each forum, we focused on discussion threads which were started on a randomly selected day from January 1 to March 31, 2008, which represented the three most recent full months prior to commencing the study. We imported the text into a database after omitting identifying information.

2.5. Qualitative analysis of social support themes

The data for qualitative analysis were answers to the survey question (“What kinds of things have SparkPeople members said or done to help with your weight loss effort in the past 4 weeks?”), interviews, and discussion forum messages. While at least 30 definitions of social support have been described in the literature, they were not developed in the context of Internet weight loss communities [3]. The unique combination of weight loss behavior, Internet communication, and demographics of community members suggests that social support definitions developed in other contexts may not fit well with Internet weight loss communities. Thus, we used an inductive, grounded theory approach to identify social support themes in our data [25,26]. Two investigators (A.G. and R.C.), with no prior awareness of published social support definitions, independently reviewed the survey responses, interviews, and forum postings to identify themes. They met with K.H. to construct categories of social support themes. The categories were refined in iterative cycles until saturation and final consensus were reached.

2.6. Tabulating social support types

We tabulated the frequency of major social support types, focusing on the survey because forum postings lacked a consistent structure and there were too few interviews for quantitative analysis. From the dominant social support types which emerged from the open-ended survey question, two investigators (A.G. and R.C.) independently categorized all responses into these types or “other.” Since each survey respondent could give 1–10 answers, we did not consider multiple answers from a given respondent to be independent. Percent agreement ranged from 88.6 to 100% and Kappa ranged from 0.83 to 1.00 for the 10 answers slots, indicating excellent inter-rater reliability. Differences were resolved by consensus. Quantitative analysis was performed with SPSS Statistics 17.0 (SPSS Inc., Chicago, IL) and SAS 9.1 (SAS Institute Inc., Cary, NC).

3. Results

3.1. Surveys

The overall response rate was 88% (Table 2). The sample consisted of 193 SparkPeople members who gave a total of 893 and a mean of 4.6 (SD 2.5) responses to the open-ended question. They were primarily white women from the US (Table 3). More than 75% were obese or overweight and 48.1% reported at least one weight-related comorbidity. The gender and age profile was similar to that of the general SparkPeople membership (mean age 39 years and 88% female) [personal communication, David Heilmann, Chief Operating Officer, SparkPeople, January 21, 2009].

Survey respondents were frequent users of SparkPeople social support features (Fig. 1). They did the following activities at least once a day over the previous 4 weeks: read messages related to weight loss on the discussion forums (56.8%), replied to messages related to weight loss on the forums (36.1%), posted a message related to weight loss on the forums to start a discussion (18.5%), and used the Internet for anything (94.2%).

Survey respondents generally reported that other SparkPeople members were available, responsive to questions, empathetic, and welcoming (Table 4). Approximately 60% agreed

or strongly agreed that SparkPeople members were more helpful than other people with regards to weight loss support.

3.2. Interviews

Of the 121 survey respondents who indicated initial interest in being interviewed, 28 were randomly invited, and 13 completed the semi-structured telephone interviews. The interviewees were white women with mean age 36 (SD 11) years and mean BMI 31 (SD 8) from the US (12) and Canada (1).

3.3. Qualitative analysis of social support themes

Several themes emerged from the qualitative analysis of surveys, interviews, and forum postings. Some themes were related to types of interactions, such as sharing information or encouragement. Other themes were related to cross-cutting characteristics of interactions, such as convenience and anonymity. Representative quotes from the surveys are provided.

3.3.1. Types of interactions: major themes Information—Members receive information and advice related to weight loss. They receive personalized advice in response to a question they had posted on a forum. They also access information by observing interactions on forums and blogs without posting messages (“lurking”). The topics are mainly diet/nutrition and exercise/fitness.

“They offer good tips for burning extra calories doing regular everyday things.”

“People have helped in giving ideas on healthy food and snacks when you get bored of the same old “diet” food.”

“Brought to light several unexpected areas that influence my diet (excessive butter use in restaurants).”

Encouragement and motivation: Members receive encouragement and motivation to persist with the lifestyle changes, recover from mistakes, and overcome barriers. Various interactions cause members to feel that they receive encouragement or motivation. For example, members are encouraged and motivated by reading a *testimony* about someone else’s experience (efforts, success), receiving *recognition for success*, and keeping each other *accountable* with regards to nutrition and physical activity behaviors.

“They encourage you to never give up, but keep on striving for your goals.”

“The photos we can post showing our weight loss journey is a big encouragement to keep going.”

“They never criticize you for making wrong choices, like a burger at McDonald’s, and just encourage you to get right back on track.”

Shared experiences: Members discuss and share common goals, struggles, and experiences. This shared understanding sometimes produces empathy. They also participate in *friendly competition* to strive towards a specific goal. This sense of sharing things with other members leads to *non-judgmental interactions* and *accountability*. They described a feeling of belonging to a team or being among family.

“They have been through the same obstacles”

“We can do this together”

3.3.2. Types of interactions: subthemes

Testimony: Members read personal accounts of how other members have succeeded in losing weight. This sometimes provides *encouragement and motivation*.

“Seeing what others in your same circumstances can accomplish encourages you to try things that you though [sic] were not possible for you to do.”

“Members writing their success stories really inspires me to not give up when I am not losing.”

Recognition for success: Members enjoy receiving recognition for success in areas such as diet, exercise, and actual weight loss. This recognition in turn sometimes provides *encouragement and motivation* to persist.

“Lots of congratulations for losing five pounds.”

“Many congratulations when I completed my first half-marathon.”

Accountability: This refers to the process by which members keep each other accountable for diet and exercise behaviors. Mutual accountability is somewhat based on *shared experiences*. Sometimes this leads to *encouragement and motivation* to persist.

“The accountability from my teams of the weigh-ins has been really helpful in keeping me in line on the weekends.”

“We check on each other if we haven’t posted in a few days to make sure we are okay.”

“Another friend and I are Sparkmailing each day to give each other our goals for the next day and telling how we did the previous day. We will sometimes communicate multiple times a day.”

Friendly competition: Members participate in individual or team-based challenges to reach specific short-term goals, such as losing a certain number of pounds within a certain timeframe. This characteristic is also related to *shared experiences*.

“Participating in team challenges has helped me “trim the fat” so to speak from my weight loss plan and get the scale moving downward again.”

“I participate in a few “challenges” that other members have designed. Knowing that I’m going to be documenting and sharing information about a behavior makes me far more likely to carry it out.”

“Being a part of a team, gives it somewhat of a competitive nature to try to exercise more to climb up the team leader-board for exercise minutes. That’s definitely a help to my weight loss efforts.”

Humor: Members laugh with each other and at themselves as they encounter and deal with struggles in their weight loss journey.

“We can laugh about our problems with weight control”

Face-to-face interactions: Some members reported that they met other local members for group exercise sessions.

“We have organized walks planned and meet once a month.”

“They are available to exercise with me (walking, jogging, etc.)”

3.3.3. Characteristics of interactions

Anonymous: Members appreciate the option to remain anonymous. The anonymity gives members the freedom to discuss sensitive topics in an honest fashion. The anonymity also creates an environment in which interactions are *non-judgmental*.

“Having the anonymity helps as you can “talk” and no one holds that against you or throws it back in your face at a later time.”

Non-judgmental: Members feel that other members don’t judge them negatively when they report failures or struggles. Although members can (and often do) attach pictures of themselves to their forum postings, they don’t have to do so. This saves them from being judged by their physical appearance. This is related to *anonymity*.

“Support and understanding without judgement from people with the same problem.”

Convenient: The sheer volume of members creates a dynamic environment in which members can receive responses to questions at any time of the day or night, often within minutes or hours, regardless of physical location. Members who are geographically isolated from other people trying to lose weight find this convenient.

“Participating in the forums keeps me distracted during times when I might be tempted to eat out of boredom.”

Different from other interactions: Members report experiencing *convenient, non-judgmental*, supportive, empathetic interactions with other members which they otherwise would not experience with other people in their life (e.g. spouse and family). Much of this support is based on *shared experiences*. Additionally, members don’t tempt each other to go out and eat unhealthy food as a group.

“I can share good news and get great responses. In my daily interactions with people face to face, diet and exercise discussions are often met with screwed up faces and jealousy, or flat out disdain for my commitment.”

“They’re like a family. No one tears you down or believes your statements/questions are dumb. They’re better than family, actually. A great support group.”

“It’s encouraging to just talk with others who need to lose weight also and know how difficult it can be especially when the people around you don’t have the same weight issues.”

Reciprocal support: Some members also mentioned how they enjoy giving support to others:

“They shared a problem that got me thinking of ways to help - and in helping them I help myself learn too”

In addition to corroborating findings from the surveys and interviews, discussion forum messages yielded additional insight into how community members communicate. Many messages had permanent features, akin to signatures in emails. These features included a weight tracker (listing the starting, current, and goal weight), photos of the message poster, motivational quotes, future rewards for achieving goals (e.g. pedicure for losing next 10 pounds), and links to the poster’s personal SparkPage.

3.4. Tabulating social support types

From the qualitative data, we identified the three most common types of social support interactions for quantitative analysis: encouragement and motivation, information, and shared experiences. We applied these categories to the free-text answers to the open-ended survey question “What kinds of things have SparkPeople members said or done to help with your weight loss effort in the past 4 weeks?” Encouragement and motivation was the most commonly reported type of support, mentioned at least once by 87.6% (169/193) of survey respondents, followed by information (58.5%) and shared experiences (42.5%).

4. Discussion

Members of a large Internet weight loss community exchange social support in the form of encouragement and motivation, information, and shared experiences. The support is similar to face-to-face social support, but also offers the unique aspects of convenience, anonymity, and non-judgmental interactions. Our findings have implications for the potential role of Internet weight loss communities as a resource for clinicians to recommend to patients.

A strength of this study was the use of multiple data sources. Studies of online social support in other health domains analyzed forum postings [4,5] or conducted surveys of members [14,15,27]. We evaluated forum postings, surveys, and interviews. We also employed a context-specific, inductive approach to explore social support as described by members of the online community [3], rather than constraining the evaluation to previous definitions of social support developed in other contexts. To our knowledge, this is the first description of social support among members of a public Internet weight loss community.

The study also had several limitations. First, findings may not generalize to other weight loss communities, although the specific communication avenues (e.g. forums, email, and blogs) are not likely to vary widely between online communities. Second, survey and interview participants were mostly white women. However, the predominance of white women is consistent with the general SparkPeople membership, other online health communities [14,15,27,28], and, to a lesser extent, US internet users [29]. Third, we could not calculate all possible response rates for the survey. We do not know how many members viewed the study announcement on the forums. Nor do we know how many of the 3000 members invited by email would have participated if there was no cap of 250. The response rates using known denominators were acceptable (Table 2). Fourth, selection bias likely occurred, such that survey respondents may have been more active in the SparkPeople community or had more positive social support interactions compared to nonrespondents. However, survey respondents were similar in age and gender to the general membership. We also analyzed discussion forum messages from a broader sample of members to corroborate findings from the survey and interviews. Fifth, questions about interactions with other SparkPeople members (Table 4) were worded positively, which might have led to social desirability bias in how respondents answered the questions. However, the response scale was balanced, with two positive and two negative choices flanking a neutral middle choice. Nevertheless, the possibility of these biases suggests that our findings depict social support benefits of active participants in an Internet weight loss community, rather than a definitive summation of experiences. Accessing people who quit due to negative experiences or explicitly asking current participants about negative experiences would yield additional information about these communities. Lastly, we did not explore the use of other community features which may also aid weight management, such as nutrition and physical activity tracking tools.

Consistent with descriptions of face-to-face social support [1–3], the major types of online social support for weight loss in this study are encouragement and motivation, information,

and shared experiences. These themes are not mutually exclusive. Because of their shared experience of trying to lose weight, SparkPeople members share day-to-day encouragement/motivation and information frequently not available from “offline” contacts. These types of support are also shaped by unique characteristics of convenience, anonymity, and non-judgment.

For example, the prominence of encouragement and motivational support, similar to emotional and appraisal support, is appropriate considering the chronic behavioral modifications necessary for weight loss. Reading testimonies from peers who have lost weight may be particularly helpful, since weight loss is correlated with the weight loss success of peer supporters [8]. Online peers may be more accessible and helpful than clinicians or offline friends who are not experiencing the same challenges. SparkPeople members value the ability to receive such support conveniently and without fear of judgment.

The importance of informational support to our participants is consistent with our previous work [30–32] and other descriptions of online and traditional social support [1,3–5,14,15,27]. Not only has the Internet supplanted clinicians as the primary source of health information for the American public [33], but the primacy of read-only Web resources created by a central core of experts (“Web 1.0”) is giving way to online communities which offer the collective wisdom of peers (“Web 2.0”) [13].

The shared experiences aspect of online support for weight loss is akin to the concept of network support [4,5]. The sense of unity among SparkPeople members is forged not by geographic proximity, but by the common endeavor to lose weight. Our findings resonate with a previous depiction of Internet health communities as “weak tie” networks, characterized by relatively low time commitment, emotional intensity, and intimacy [17,34]. The SparkPeople community offers benefits of weak tie networks, such as diverse sources of support and a safe environment to disclose information without judgment or stigmatization, which lead to integration within the community [17,34].

As traditionally defined, instrumental (tangible) support was not a major type of support described by SparkPeople members. However, this dimension is growing. SparkPeople members occasionally meet in their local communities for group exercise sessions. There were also two national conventions for members in 2009. Furthermore, if instrumental support is that which helps a person lose weight (rather than just cope with being overweight), then many interactions among SparkPeople members might be cast as instrumental support. For example, members reported that advice, encouragement, accountability, and friendly competition empowered them to perform behaviors which directly led to weight loss.

In this aspect, the benefits of online support for weight loss may surpass the benefits of support for other health conditions, although this hypothesis would be difficult to test. For example, online social support for psoriasis [14], infertility [15], Huntington’s disease [4], and HIV [5] can help an individual cope with the psychosocial stressors associated with the health condition, make informed health decisions, and find healthcare providers. In this study, members of the Internet weight loss community reported similar benefits, but also reported that the support actually helped them lose weight.

This online weight loss community, by providing a venue for social support, functions as a valuable weight loss resource for active participants. As the obesity epidemic overwhelms the capacity of clinicians to provide weight loss counseling [35–39], it is unrealistic to expect clinicians to create and maintain venues for social support. Instead, they could refer patients to sustainable social support resources, such as SparkPeople.com and other similar

online communities. Ideally, these communities would provide social support as an adjunct to structured counseling. While concerns exist about the accuracy of online health information, we have previously shown that weight loss advice in this community (and others) is generally accurate compared to clinical guidelines [30].

However, several questions remain unanswered. First, which types of people will join and participate in these communities when referred by clinicians? Current SparkPeople members are primarily white women, but a more sophisticated understanding of psychosocial, socioeconomic, and clinical predictors of community participation is needed. Second, can modifications to these communities increase participation of men and ethnic minorities, or are other interventions needed? Most importantly, what is the objective effect of online social support via these communities in terms of weight loss and other patient-valued outcomes? These questions require prospective studies.

In conclusion, this Internet weight loss community plays a prominent role in participants' weight loss efforts—roles which might not be adequately filled by clinicians or offline family and friends. Internet-mediated support provides similar benefits as face-to-face support, with unique convenience, anonymity, and lack of judgment. Participants report that the support from this Internet community helps them lose weight as well as cope with being overweight. Internet weight loss communities merit further evaluation as a potential resource for clinicians to recommend to patients, especially communities which are free and open to the public.

Summary points

What was already known:

- Face-to-face peer social support facilitates weight loss efforts.
- Internet health communities allow individuals to interact with peers who share similar health issues and concerns.

What this study adds:

- Online social support interactions play a prominent role in the weight loss efforts of members of a large, public Internet weight loss community.
- The support is manifested as encouragement and motivation, information, and shared experiences and it is characterized as convenient, anonymous (if desired), and non-judgmental.
- Community members report that the social support helps them cope with being overweight and helps them lose extra weight.

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REFERENCES

1. House, JS. *Work Stress and Social Support*. Reading, MA: Addison-Wesley; 1981.

2. Verheijden MW, Bakx JC, van Weel C, Koelen MA, van Staveren WA. Role of social support in lifestyle-focused weight management interventions. *Eur. J. Clin. Nutr.* 2005; 59 S1:S179–S186. [PubMed: 16052189]
3. Williams P, Barclay L, Schmied V. Defining social support in context: a necessary step in improving research, intervention, and practice. *Qual. Health Res.* 2004; 14(7):942–960. [PubMed: 15296665]
4. Coulson NS, Buchanan H, Aubeeluck A. Social support in cyberspace: a content analysis of communication within a Huntington's disease online support group. *Patient Educ. Couns.* 2007; 68(2):173–178. [PubMed: 17629440]
5. Mo PKH, Coulson NS. Exploring the communication of social support within virtual communities: a content analysis of messages posted to an online HIV/AIDS support group. *CyberPsychol. Behav.* 2008; 11(3):371–374. [PubMed: 18537512]
6. Elfhag K, Rossner S. Who succeeds in maintaining weight loss? A conceptual review of factors associated with weight loss maintenance and weight regain. *Obes. Rev.* 2005; 6(1):67–85. [PubMed: 15655039]
7. Gallagher KI, Jakicic JM, Napolitano MA, Marcus BH. Psychosocial factors related to physical activity and weight loss in overweight women. *Med. Sci. Sports Exerc.* 2006; 38:971–980. [PubMed: 16672853]
8. Gorin A, Phelan S, Tate D, Sherwood N, Jeffery R, Wing R. Involving support partners in obesity treatment. *J. Consult. Clin. Psychol.* 2005; 73:341–343. [PubMed: 15796642]
9. Wing RR, Jeffery RW. Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *J. Consult. Clin. Psychol.* 1999; 67:132–138. [PubMed: 10028217]
10. Blixen CE, Singh A, Thacker H. Values and beliefs about obesity and weight reduction among African American and Caucasian women. *J. Transcult. Nurs.* 2006; 17(3):290–297. [PubMed: 16757669]
11. Lynch C, Chang J, Ford A, Ibrahim S. Obese African-American women's perspectives on weight loss and bariatric surgery. *J. Gen. Intern. Med.* 2007; 22(7):908–914. [PubMed: 17447097]
12. Kruger J, Blanck H, Gillespie C. Dietary and physical activity behaviors among adults successful at weight loss maintenance. *Int. J. Behav. Nutr. Phys. Act.* 2006; 3(1):17. [PubMed: 16854220]
13. Sarasohn-Kahn, J. The wisdom of patients: Health care meets online social media. [Accessed August 21, 2008]. available at <http://www.chcf.org/documents/chronicdisease/HealthCareSocialMedia.pdf>
14. Idriss SZ, Kvedar JC, Watson AJ. The role of online support communities: benefits of expanded social networks to patients with psoriasis. *Arch. Dermatol.* 2009; 145(1):46–51. [PubMed: 19153342]
15. Malik SH, Coulson NS. Computer-mediated infertility support groups: an exploratory study of online experiences. *Patient Educ. Couns.* 2008; 73(1):105–113. [PubMed: 18639409]
16. White M, Dorman SM. Receiving social support online: implications for health education. *Health Educ. Res.* 2001; 16(6):693–707. [PubMed: 11780708]
17. Wright KB, Bell SB. Health-related support groups on the Internet: linking empirical findings to social support and computer-mediated communication theory. *J. Health Psychol.* 2003; 8(1):39–54.
18. Tate DF, Jackvony EH, Wing RR. Effects of internet behavioral counseling on weight loss in adults at risk for type 2 diabetes: a randomized trial. *JAMA.* 2003; 289:1833–1836. [PubMed: 12684363]
19. Tate DF, Wing RR, Winett RA. Using internet technology to deliver a behavioral weight loss program. *JAMA.* 2001; 285:1172–1177. [PubMed: 11231746]
20. Micco N, Gold B, Buzzell P, Leonard H, Pintauro S, Harvey-Berino J. Minimal in-person support as an adjunct to internet obesity treatment. *Ann. Behav. Med.* 2007; 33(1):49–56. [PubMed: 17291170]
21. Tate DF, Jackvony EH, Wing RR. A randomized trial comparing human e-mail counseling, computer-automated tailored counseling, and no counseling in an internet weight loss program. *Arch. Intern. Med.* 2006; 166(15):1620–1625. [PubMed: 16908795]

22. Womble LG, Wadden TA, McGuckin BG, Sargent SL, Rothman RA, Krauthamer-Ewing ES. A randomized controlled trial of a commercial Internet weight loss program. *Obes. Res.* 2004; 12(6): 1011–1018. [PubMed: 15229342]
23. Gold BC, Burke S, Pintauro S, Buzzell P, Harvey-Berino J. Weight loss on the web: a pilot study comparing a structured behavioral intervention to a commercial program. *Obes. Res.* 2007; 15(1): 155–164.
24. SparkPeople, SparkPeople's Rankings. [Accessed March 31, 2009]. Available at <http://www.sparkpeople.com/about/stats.asp>
25. Creswell, JW. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, California: Sage Publications, Inc.; 2003.
26. MacQueen KM, McLelland E, Kay K, Milstein B. Codebook development for team-based qualitative research. *Cult. Anthropol. Methods.* 1998; 10(2):31–36.
27. Buchanan H, Coulson NS. Accessing dental anxiety online support groups: an exploratory qualitative study of motives and experiences. *Patient Educ. Couns.* 2007; 66(3):263–269. [PubMed: 17320336]
28. Fogel J, Ribisl KM, Morgan PD, Humphreys K, Lyons EJ. Underrepresentation of African Americans in online cancer support groups. *J. Natl. Med. Assoc.* 2008; 100(6):705–712. [PubMed: 18595573]
29. Fox, S. *The Social Life of Health Information*. Pew Internet & American Life Project. 2009 June 11 [on 17 June 2009]. accessed at http://www.pewinternet.org/~media/Files/Reports/2009/PIP_Health_2009.pdf
30. Hwang KO, Farheen K, Johnson CW, Thomas EJ, Barnes AS, Bernstam EV. Quality of weight loss advice on internet forums. *Am. J. Med.* 2007; 120(7):604–609. [PubMed: 17602934]
31. Esquivel A, Meric-Bernstam F, Bernstam EV. Accuracy and self correction of information received from an internet breast cancer list: content analysis. *BMJ.* 2006; 332(7547):939–942. [PubMed: 16513686]
32. Nelson S, Hwang KO, Bernstam EV. Comparing clinician knowledge and online information regarding Alli (Orlistat). *Int. J. Med. Inform.* 2009; 78(11):772–777. [PubMed: 19716762]
33. Hesse BW, Nelson DE, Kreps GL, Croyle RT, Arora NK, Rimer BK, Viswanath K. Trust and sources of health information: the impact of the internet and its implications for health care providers: findings from the first health information national trends survey. *Arch. Intern. Med.* 2005; 165(22):2618–2624. [PubMed: 16344419]
34. Granovetter MS. The strength of weak ties. *Am. J. Sociol.* 1973; 78(6):1360–1380.
35. Huang J, Yu H, Marin E, Brock S, Carden D, Davis T. Physicians' weight loss counseling in two public hospital primary care clinics. *Acad. Med.* 2004; 79(2):156–161. [PubMed: 14744717]
36. Yarnall KSH, Pollak KI, Ostbye T, Krause KM, Michener JL. Primary care: is there enough time for prevention? *Am. J. Public Health.* 2003; 93:635–641. [PubMed: 12660210]
37. Park ER, Wolfe TJ, Gokhale M, Winickoff JP, Rigotti NA. Perceived preparedness to provide preventive counseling: reports of graduating primary care residents at academic health centers. *J. Gen. Intern. Med.* 2005; 20:386–391. [PubMed: 15963158]
38. Moore H, Summerbell CD, Greenwood DC, Tovey P, Griffiths J, Henderson M, Hesketh K, Woolgar S, Adamson AJ. Improving management of obesity in primary care: cluster randomised trial. *BMJ.* 2003; 327(7423):1085. [PubMed: 14604931]
39. Jackson JE, Doescher MP, Saver BG, Hart LG. Trends in professional advice to lose weight among obese adults 1994 to 2000. *J. Gen. Intern. Med.* 2005; 20:814–818. [PubMed: 16117748]

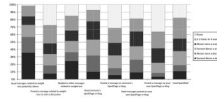


Fig. 1.
Use of social support features over the previous 4 weeks.

Table 1

Discussion forums.

Forum	Threads	Messages
General forums		
“SparkPeople Fast Break” forum	5	15
“Fitness and Exercise” forum	39	188
“Diet and Nutrition” forum	61	492
“Staying Motivated” forum	25	217
“Panic! Button for Immediate Help” forum	17	107
“Woo Hoo! Button to Celebrate Success!” forum	26	173
Within SparkTeams		
Forums within “Fitness and Exercise” SparkTeams	12	121
Forums within “Nutrition and Cooking” SparkTeams	6	120
Forums within “Weight Issues” SparkTeams	26	491
Total	217	1924

Table 2Survey response rate.^a

	Began eligibility screening	Eligible	Answered open-ended question	Response rate
Recruited via forum posting	31	30	24	80%
Recruited via email	250 ^b	190	169	89%
Total	281	220	193	88%

^aResponse rate calculated as the number of individuals who answered the open-ended question divided by the number who passed eligibility screening.

^bPre-set cap of 250.

Table 3

Demographic and clinical characteristics of 193 survey participants.

Characteristic	Total <i>n</i> available	<i>n</i> (%) or mean (SD)
Age, mean (SD)	191	37.3 (11.5)
Female, <i>n</i> (%)	191	181 (93.8)
Ethnicity and race, <i>n</i> (%)	187	
White, non-Hispanic		166 (88.8)
White, Hispanic		5 (2.7)
Black, non-Hispanic		10 (5.3)
Asian, non-Hispanic		2 (1.1)
Native Hawaiian/Pacific Islander, non-Hispanic		0
American Indian/Alaska Native, non-Hispanic		1 (0.5)
Multiracial		3 (1.6)
Married, <i>n</i> (%)	191	121 (63.4)
Highest education completed, <i>n</i> (%)	191	
Graduate or professional school		37 (19.4)
College or university		106 (55.5)
High school		48 (25.1)
Employment status, <i>n</i> (%)	190	
Full time		117 (61.6)
Part time		22 (11.6)
Homemaker		25 (13.2)
Retired		3 (1.6)
Student		16 (8.4)
Unable to work/disabled		3 (1.6)
Unemployed		4 (2.1)
Geographic location, <i>n</i> (%)	191	
United States (37 states)		180 (94.2)
Canada		7 (3.7)
United Kingdom		1 (0.5)
Other		3 (1.6)
Annual household income, <i>n</i> (%)	186	
≥\$80,000		55 (29.6)
\$70,000–79,999		22 (11.8)
\$60,000–69,999		19 (10.2)
\$50,000–59,999		23 (12.4)
\$40,000–49,999		24 (12.9)
\$30,000–39,999		17 (9.1)
\$20,000–29,999		14 (7.5)
\$10,000–19,999		7 (3.8)
\$0–9999		5 (2.7)

Characteristic	Total <i>n</i> available	<i>n</i> (%) or mean (SD)
BMI ^a , mean (SD)	190	30.9 (7.5)
BMI ^a categories, <i>n</i> (%)	190	
Less than 25		46 (24.2)
25 to 29.99		53 (27.9)
30 to 34.99		45 (23.7)
35 or greater		46 (24.2)
Weight-related comorbidities, <i>n</i> (%)		
Diabetes	185	8 (4.3)
Borderline or pre-diabetes	184	12 (6.5)
Hypertension	185	21 (11.4)
High cholesterol or triglycerides	188	45 (23.9)
Sleep apnea	184	17 (9.2)
Arthritis	184	36 (19.6)
Esophageal reflux	185	30 (16.2)
polycystic ovary syndrome	182	14 (7.7)

^aBody mass index.

Table 4

Views about other SparkPeople members.

Statement	Strongly agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly disagree N (%)	Total N (%)
They are available when I need help.	97 (50.3)	80 (41.5)	16 (8.3)	0 (0.0)	0 (0.0)	193
They respond quickly to my questions or requests.	89 (46.1)	77 (39.9)	25 (13.0)	2 (1.0)	0 (0.0)	193
They understand what I'm going through.	140 (72.5)	51 (26.4)	2 (1.0)	0 (0.0)	0 (0.0)	193
They make me feel part of a group.	105 (54.4)	73 (37.8)	14 (7.3)	1 (0.5)	0 (0.0)	193
My interactions with them are anonymous.	57 (29.5)	47 (24.4)	45 (23.3)	32 (16.6)	12 (6.2)	193
They are more helpful than other people in my life.	45 (23.6)	70 (36.6)	54 (28.3)	20 (10.5)	2 (1.0)	191