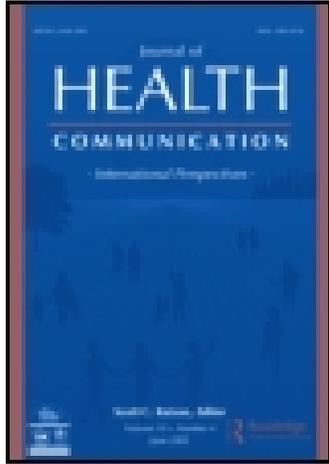


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Publisher: Taylor & Francis

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Journal of Health Communication: International Perspectives

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/uhcm20>

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Published online: 02 Sep 2015.



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To cite this article: David M. Keating & Stephen A. Rains (2015): Health Blogging and Social Support: A 3-Year Panel Study, Journal of Health Communication: International Perspectives, DOI: [10.1080/10810730.2015.1033119](https://doi.org/10.1080/10810730.2015.1033119)

To link to this article: <http://dx.doi.org/10.1080/10810730.2015.1033119>

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Health Blogging and Social Support: A 3-Year Panel Study

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The reported study explored the implications of informal computer-mediated social support for the well-being of individuals coping with illness over the course of 3 years. A panel study was conducted in which respondents—bloggers writing about their experiences living with a health condition—reported on their perceptions of social support and well-being during 2010 and again during 2013. Among respondents who completed both questionnaires ($n = 49$), increases in support availability from family and friends were related to improvements in bloggers' health self-efficacy as well as improvements in bloggers' loneliness, particularly among those who also experienced increased support availability from blog readers. Increased blog reader support availability was associated with improvements in bloggers' health-related uncertainty. Among respondents who completed the initial questionnaire ($N = 121$), a survival analysis showed that neither support available from family and friends nor support from blog readers predicted continued health blogging over the 3-year period.

Social support plays an integral role in the process of coping with illness (Cohen, 1988; Uchino, 2009). Although much of the research on this topic has examined social support in the context of face-to-face interaction (for a review, see Goldsmith & Albrecht, 2011), an increasing amount of research has explored the use and consequences of computer-mediated communication for support (for a review, see Wright, Johnson, Averbeck, & Bernard, 2011). Scholars have considered the support-related implications of online communities (Wright & Rains, 2013), social network sites (Wright et al., 2012), and blogs (Sanford, 2010). These studies have examined informal uses of these technologies by members of the lay public and can be contrasted with formal computer-mediated health interventions (e.g., Lieberman & Goldstein, 2006; Turner et al., 2013). Such research is critical to keeping pace with the significant number of American adults—an estimated 7.5 million people during 2012 (National Cancer Institute, 2012)—venturing online for health-related peer support.

For health practitioners attempting to treat patients who have used or are considering using informal computer-mediated resources to acquire social support, however, several important issues warrant additional consideration. First, insufficient research has been conducted on the support-related outcomes stemming from informal uses of computer-mediated communication over time among people coping with illness. Existing research examining support outcomes tends to be limited to a single point in time (e.g., Sanford, 2010; Wright & Rains, 2013). Second, the

implications of different support resources for support seekers warrant further study. Although the importance of one's family and friends as support resources has been recognized in prior research examining computer-mediated support (Rains & Keating, 2011; Turner, Grube, & Meyers, 2001), much remains to be learned about the connections among online and offline resources in social support processes.

Empirical research is essential to enabling health providers to make informed recommendations about the potential merits and limitations of online support resources—particularly among individuals who lack sufficient support from family, friends, and other strong-tie relationships. Drawing from the optimal matching model (OMM; Cutrona, 1990; Turner et al., 2001) and research on the implications of strong and weak ties for social support (Adelman, Parks, & Albrecht, 1987; Wright & Miller, 2010), the present project examines one specific form of computer-mediated communication and investigates the support-related uses and outcomes of health blogging over a 3-year period.

Social Support and Computer-Mediated Communication

Social support is an umbrella term referring to several related constructs (for reviews, see Barrera, 1986; MacGeorge, Feng, & Burleson, 2011). This project focuses on perceptions that one's online as well as offline connections are available to serve as a resource for informational and emotional social support (Helgeson, 1993). Perceived support availability has been demonstrated to be a robust predictor of health-related outcomes (Gruenewald & Seeman, 2010; Uchino, 2009). There is also evidence that, over time, computer-mediated

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interactions can influence perceptions of specific others as a support resource (Barrera, Glasgow, McKay, Boles, & Feil, 2002).

Computer-mediated support contexts, such as online communities, formal support groups, and blogs, are unique in several important ways. Most germane to this project is the potential to gain access to weak ties consisting of others who are coping or have coped with a similar health condition (Wright & Bell, 2003; Wright & Rains, 2013). Weak ties can provide novel information, less potential for role conflict, and greater objectivity (Adelman et al., 1987; Wright & Miller, 2010). Moreover, weak ties offer an alternative in instances when strong ties such as family and friends—who are widely regarded as critical support resources (Adelman et al., 1987)—are unable or unwilling to effectively provide support (Coty & Wallston, 2010; Dunkel-Schetter, 1984). A few studies have reported evidence that support acquired from online connections is associated with salutary outcomes beyond offline resources (Obst & Stafurik, 2010) or particularly among those who lack support from friends and family (Rains & Keating, 2011).

Despite increased research in recent years (Wright et al., 2011), a number of important questions remain to be answered about the outcomes associated with informal uses of computer-mediated communication for social support among individuals coping with illness—particularly over an extended period of time and in connection with strong-tie support resources. For practitioners such as health care providers, such information would be valuable to help better understand the potential benefits and limitations of computer-mediated support and, consequently, make possible more informed recommendations to patients who are considering seeking support online. The present study examines the implications of support from two types of support resources (i.e., family and friends, blog readers) in the context of personal journal health blogs, which consist of an ongoing narrative about the author's personal experiences with a health condition (Miller & Pole, 2010). Blogs provide a public space in which people can share their thoughts and offer the opportunity for others to respond to specific entries. Research has shown that acquiring social support is an important function of health blogging (Sundar, Edwards, Hu, & Stavrositu, 2007) and that blog readers are meaningful sources of support (Rains & Keating, 2011; Tong, Heinemann-LaFave, Jeon, Kolodziej-Smith, & Warshay, 2013).

Health Blogging Behavior

The OMM (Cutrona, 1990; Cutrona & Russell, 1990) offers a useful framework from which to examine the outcomes of computer-mediated support and, in particular, the implications of changes in one's weak- and strong-tie support resources over time. Although it was originally developed to explain when different types of social support are more or less beneficial, the OMM has since been applied to better understand the implications of computer-mediated communication for the acquisition and outcomes of social

support within the broader context of one's existing support resources (Turner et al., 2001; Wright & Rains, 2013). Turner and colleagues (2001, p. 236) contended that online support resources “may provide a form of empathy and support to patients that may not be available from strong-tie connections by offering a deeper understanding of fears, feelings, and family reactions associated with the illness.” By virtue of their status as weak ties who have similar experiences, the support acquired from others in computer-mediated health contexts like online discussion communities and blogs can offer a valuable alternative to one's offline resources, such as family and friends (Wright & Miller, 2010; Wright & Rains, 2013).

In the context of health blogging, Turner and colleagues' (2001) adaptation of the OMM suggests that blogging behavior is likely contingent on a blogger's perception of support available from weak ties online (i.e., blog readers) and strong-tie relationships (i.e., friends and family). Thus, a blogger's perception of support available from these resources should predict his or her decision to continue blogging over time. As bloggers perceive increasing levels of support available from their strong ties, they are likely to feel less of a need to use blogging as a means of acquiring support from weak ties and should discontinue blogging relatively quickly. In contrast, as bloggers perceive increasing levels of support from their blog readers, they are likely to continue publishing blog posts in an effort to take advantage of this resource. The following hypothesis is proposed to test this idea:

Hypothesis 1: Continued blogging is (a) negatively associated with bloggers' perceptions of social support from their family and friends and (b) positively associated with bloggers' perceptions of social support from their blog readers.

Perceived Support and Bloggers' Well-Being

Perceived social support has been consistently linked with salutary outcomes (Gruenewald & Seeman, 2010; Uchino, 2009), and family and friends are a central support resource (Adelman et al., 1987). Through buffering the effects of a stressor or mitigating a stress response (Lakey & Cohen, 2000), social support contributes to the well-being of individuals coping with illness (Cohen, 1988; Uchino, 2004). Thus, changes over time in bloggers' perceptions of social support available from their family and friends should be positively associated with changes in bloggers' well-being. Bloggers who perceive increased levels of available support over time should also report increased well-being.

Yet Turner and colleagues' (2001) adaptation of the OMM suggests that support available from weak-tie resources online should also be consequential. Because their similar experiences allow them to provide support that strong-tie resources may be unable or unwilling to offer (Wright, 2002; Wright & Rains, 2013), bloggers' readers should serve as unique support resources. Support from readers should have implications for bloggers' well-being

beyond the support available from family and friends. Accordingly, after the influence of changes in perceived support from family and friends is accounted for, changes in bloggers' perceptions of available support from readers should predict changes in bloggers' well-being.

Turner and colleagues (2001) further suggested that the outcomes associated with the support available from readers may be dependent on bloggers' support from their family and friends. This notion is consistent with Kraut and colleagues' (2002) claims about social compensation processes, in which those who have support deficits offline benefit most from seeking support online. Indeed, Rains and Keating (2011) found that social support from blog readers most benefited bloggers who lacked support from their family and friends. Thus, we expect that bloggers who report decreases in support available from family and friends should benefit most from increases in support available from blog readers. In other words, weak-tie support resources (in the form of blog readers) should be most consequential for those who experience a decrease in support available from their strong-tie relationships (in the form of family and friends).

To summarize, the preceding discussion suggests three predictions: First, changes in perceived support available from family and friends should predict changes in bloggers' well-being. Second, when changes in perceived support from bloggers' family and friends are controlled, changes in bloggers' perceptions of support available from their blog readers should predict changes in bloggers' well-being. Third, changes in bloggers' perceptions of support from their family and friends should moderate the association between changes in bloggers' perceived support from their blog readers and changes in their well-being.

The present study focuses on three indices of well-being that have been linked with social support in previous research (e.g., Jones & Moore, 1987; Rains & Keating, 2011). *Loneliness* refers to the extent to which a person feels socially isolated from and misunderstood by others (Russell, Peplau, & Cutrona, 1980). *Health-related uncertainty* involves the extent to which people feel that their illness is predictable and understandable (Mishel, 1981). *Health self-efficacy* refers to the extent to which people feel that they can positively influence their health (Strecher, DeVellis, Becker, & Rosenstock, 1986).

- Hypothesis 2: Increases in perceived social support available from family and friends are associated with improvements in bloggers' (a) loneliness, (b) health-related uncertainty, and (c) health self-efficacy.
- Hypothesis 3: When change in support available from bloggers' friends and family is controlled, increases in perceived social support available from blog readers are related to improvements in bloggers' (a) loneliness, (b) health-related uncertainty, and (c) health self-efficacy.
- Hypothesis 4: Change in perceived social support available from family and friends moderates the relationships between

change in support available from blog readers and bloggers' (a) loneliness, (b) health-related uncertainty, and (c) health self-efficacy.

Method

A group of health bloggers was surveyed during the summer of 2010 and again during the summer of 2013. A sampling frame of 3 years was selected in an effort to balance the objective of examining the outcomes of health blogging over as long a time period as possible with the prospect of respondent attrition.

Sampling Procedure and Respondents

A two-step procedure was implemented to recruit health bloggers (i.e., people who author a personal weblog that focuses on their health) at the first time point. In the first step, one of 22 search phrases was used to search one of four popular blog hosting websites (e.g., blogspot.com, wordpress.com) using two search engines. A total of 176 searches were conducted. Each search could yield up to 1,000 results; because of this, 100 of the results were randomly selected and reviewed. This first procedure yielded a pool of 253 public blogs. In the second step, we reviewed the blogrolls for each of the 253 blogs. An additional 131 public blogs were found that met the study's criteria. A more complete description of the sampling procedure can be found in Rains and Keating (2011).

A total of 384 potential participants were identified. We posted a request on each potential respondent's blog asking him or her to participate. A total of 121 respondents completed the questionnaire at the first time point (i.e., 2010). Bloggers who completed the first questionnaire were contacted via e-mail to complete the follow-up questionnaire at the same time of the year (i.e., summer) in 2013. A total of 49 respondents (40.5%) completed the follow-up questionnaire. The majority of respondents who completed both questionnaires were female ($n = 34$, 69.4%), and a majority had earned a college degree or completed higher education ($n = 33$, 67.3%). Respondents ranged in age from 21 to 70 ($M = 48.57$ years, $SD = 11.95$) and reported suffering from a wide range of conditions, such as bipolar disorder, breast cancer, HIV/AIDS, multiple sclerosis, and Parkinson's disease.

Instrumentation

Unless otherwise noted, the measures used in this project included a 7-point scale with the anchors *strongly disagree* (1) and *strongly agree* (7). Descriptive information and correlations for the variables described here are displayed in Table 1.

Support Availability

Bloggers' perceptions of the availability of social support from friends and family and from blog readers were assessed via the Medical Outcomes Survey social support survey

Table 1. Means, standard deviations, standardized-item alpha coefficients, and zero-order correlations for the primary variables

Variable	1	2	3	4	5	6	7	8	9	10
1. T1 FF support	(.93)									
2. T2 FF support	.61*	(.89)								
3. T1 reader support	-.07	-.21	(.93)							
4. T2 reader support	-.09	.01	.42*	(.93)						
5. T1 lonely	-.65*	-.36*	-.08	.07	(.74)					
6. T2 lonely	-.25	-.20	-.10	.01	.50*	(.69)				
7. T1 uncertain	-.24	-.20	.21	.26	.15	-.02	(.64)			
8. T2 uncertain	-.14	.02	.00	-.22	-.06	-.19	.45*	(.61)		
9. T1 efficacy	.38*	.17	.26	-.04	-.41*	-.19	-.19	-.18	(.88)	
10. T2 efficacy	.02	.08	.34*	.10	.00	.04	-.12	-.22	.64*	(.85)
<i>M</i>	5.33	5.39	5.01	4.84	2.89	2.86	4.19	3.71	5.77	5.78
<i>SD</i>	1.39	1.03	1.36	1.41	1.20	1.07	1.29	1.24	0.97	0.86

Note. Standardized-item alpha coefficients are in parentheses on the diagonal. Correlations in bold are auto-correlations between 2010 and 2013 scores. T1 = scores at the first time point in 2010; T2 = scores at the second time point in 2013; FF support = support availability from family and friends; reader support = support availability from blog readers; lonely = loneliness; uncertain = health-related uncertainty; efficacy = health self-efficacy.

* $p < .05$ with $df = 47$.

(Sherbourne & Stewart, 1991). This measure contained a set of eight items that evaluated the extent to which bloggers had people in their lives who could extend informational and emotional support. Respondents were asked separately about support available from family and friends (Time 1 [T1]: $\alpha = .93$, $M = 5.33$, $SD = 1.39$; Time 2 [T2]: $\alpha = .89$, $M = 5.39$, $SD = 1.03$) and about support available from blog readers (T1: $\alpha = .93$, $M = 5.01$, $SD = 1.36$; T2: $\alpha = .93$, $M = 4.84$, $SD = 1.41$).

Well-Being

Loneliness was measured via the 4-item short form of the UCLA (University of California at Los Angeles) Loneliness Scale (Hays & DiMatteo, 1987); higher scores on this variable represent greater levels of loneliness (T1: $\alpha = .74$, $M = 2.89$, $SD = 1.20$; T2: $\alpha = .69$, $M = 2.86$, $SD = 1.07$). Health-related uncertainty was measured with four items from the uncertainty in illness scale (Mishel, 1981), which assessed the extent to which bloggers felt that their health was unpredictable; higher scores on this variable represent greater levels uncertainty (T1: $\alpha = .64$, $M = 4.19$, $SD = 1.29$; T2: $\alpha = .61$, $M = 3.71$, $SD = 1.24$). Health self-efficacy was measured with six items adapted from previous research (Lee, Hwang, Hawkins, & Pingree, 2008) that gauged the extent to which bloggers felt that they had could have a positive impact on their health; higher scores on this variable represent greater feelings of health self-efficacy (T1: $\alpha = .88$, $M = 5.77$, $SD = 0.97$; T2: $\alpha = .85$, $M = 5.78$, $SD = 0.86$).

Results

Preliminary Analyses

Prior to performing the primary analyses, we conducted several tests in order to assess whether meaningful differences existed between the bloggers who only completed the initial questionnaire and those who completed the 3-year follow-up. No differences existed between respondents who completed the 3-year follow-up ($n = 49$) and those who did

not ($n = 72$) in terms of age or blog reader support: age, $t(115) = -1.26$, $p = .20$; blog reader support, $t(119) = -0.46$, $p = .65$. Moreover, no relationship existed between completion of the follow-up and biological sex, $\chi^2(1, N = 116) = 2.19$, $p = .14$. However, those who did not complete the follow-up questionnaire had higher baseline perceptions of family and friend support availability ($M = 5.91$, $SD = 1.07$) than those who completed the follow-up ($M = 5.33$, $SD = 1.39$), $t(119) = 2.56$, $p = .01$.

Predicting Continued Blogging

A survival analysis was conducted in order to assess whether, as predicted in Hypotheses 1a and 1b, 2010 reports of support availability were related to continued blogging over the subsequent 3 years. Survival analysis is a statistical technique that assesses the extent to which participant dropout—or, in this case, bloggers' discontinued posting to their blog—can be predicted from measured variables. Each blog from the initial sample was examined across the course of the 3 years between when the respondents completed the first and second questionnaires. Two bloggers died (i.e., their blogs explicitly noted that they were deceased) during the sampling frame. After we excluded these two cases, a total of 104 blogs (86.0% of the original 121) remained publicly observable and were used for the analysis. The intervening period between the first and second questionnaires was divided into eight discrete 4-month intervals, and each blog was coded for the interval in which the author ceased blogging: Intervals for each blog were coded as 1 up until blogging was discontinued, and then every subsequent interval was coded as 0. Most respondents ($n = 74$, 71.2%) continued blogging throughout the 3-year evaluation period.

A survival function was specified in a structural equation modeling analysis—with each dummy-coded 4-month interval set as an indicator of the function—and the two support availability measures at the first time point were specified as predictors of this survival function. Two control

variables (i.e., total number of days blogging prior to completing the first questionnaire [$M = 702.86$, $SD = 594.04$] and self-reported health at the first time point rated on a 5-point scale with higher values indicating better health [$M = 2.41$, $SD = 1.05$]) were included in the analysis to account for the influence of those factors and ensure that they did not unduly influence the results.

The standardized estimates suggested that the total number of days blogging prior to the first time point ($\beta = .77$, $p = .01$) and bloggers' self-reported health at the first time point ($\beta = -.58$, $p = .05$) were significant predictors of blog survival. However, baseline family and friend support availability scores ($\beta = -.10$, $p = .80$) and baseline blog reader support availability scores ($\beta = -.30$, $p = .43$) were not statistically significant predictors. The results did not support Hypotheses 1a and 1b.

Changes in Well-Being as a Function of Support Availability and Quality

A series of regression models were constructed to test the extent to which changes in bloggers' well-being were associated with changes in support availability. A separate model was constructed for each measure of well-being (i.e., loneliness, health-related uncertainty, health self-efficacy). Change scores were computed for the well-being and support availability measures, with 2010 scores subtracted from 2013 scores. In the first block of the models, change in bloggers' self-reported health between 2010 and 2013 ($M = 0.14$, $SD = 1.17$, range = -3.00 to 4.00) was included to account for the potential influence of this variable on the outcomes. In the second block, the change scores for family and friend support availability were entered. In the third block, the change scores for blog reader support availability were entered. In the fourth and final block, scores representing the interaction between change in family and friend support availability and change in blog reader support availability were entered. We mean-centered the two support availability measures prior to constructing the interaction term (Aiken & West, 1991). The results are displayed in Tables 2-4.

Changes in bloggers' reports of support availability from family and friends were related to beneficial changes in loneliness, which was qualified by a significant interaction effect, and health self-efficacy. Increases in support availability from family and friends were significantly associated with decreases in loneliness ($\beta = -.38$) and increases in health self-efficacy ($\beta = .45$). Change in family and friend support explained 14% of the variance in loneliness change and 20% of the variance in health self-efficacy change. These results supported Hypotheses 2a and 2c. The results also offered evidence consistent with Hypothesis 3b. After we controlled for changes in support from family and friends, changes in blog reader support availability were associated with beneficial changes in health-related uncertainty. Increases in support availability from blog readers were associated with decreases in uncertainty ($\beta = -.26$). Change in blog reader support explained 6% of the variance in health uncertainty change.

Table 2. Regression model for loneliness

Block	β	t	sr
Block 1: Change in health $R^2 = .05$	.23	1.65	.23
Block 2: Change in family and friend support availability $R^2_{change} = .14^*$	-.38	-2.87*	-.38
Block 3: Change in blog reader support availability $R^2_{change} = .00$	-.01	-0.05	-.01
Block 4: Change in Family and Friend Support Availability \times Change in Blog Reader Support Availability $R^2_{change} = .05^\dagger$	-.23	-1.69 [†]	-.22

Note. $N = 49$. sr = semi-partial correlation. Overall model: $F(4, 44) = 3.61^*$, $R^2 = .25$. Positive coefficients indicate that the predictor is related to increases in loneliness scores from 2010 to 2013; negative coefficients indicate that the predictor is related to decreases in loneliness scores from 2010 to 2013.

[†] $p < .10$. * $p < .05$.

Consistent with Hypothesis 4a, there was a significant interaction between family and friend support availability and blog reader support availability for loneliness (see Figure 1). The interaction term explained 5% of the variance in loneliness change between 2010 and 2013. The interaction was decomposed using the PROCESS macro created by Hayes (2013). Although it was expected that support from blog readers would be most consequential among individuals who experienced decreased support from their friends and family, the association between change in blog reader support and change in loneliness was not significant among people who experienced an increase or a decrease in support from family and friends. Instead, the data showed that change in family and friend support was negatively

Table 3. Regression model for health-related uncertainty

Block	β	t	sr
Block 1: Change in health $R^2 = .03$	-.17	-1.20	-.17
Block 2: Change in family and friend support availability $R^2_{change} = .00$	.05	0.35	.05
Block 3: Change in blog reader support availability $R^2_{change} = .06^\dagger$	-.26	-1.79 [†]	-.25
Block 4: Change in Family and Friend Support Availability \times Change in Blog Reader Support Availability $R^2_{change} = .01$	-.09	-0.59	-.08

Note. $N = 49$. sr = semi-partial correlation. Overall model: $F(4, 44) = 1.27$, $R^2 = .10$. Positive coefficients indicate that the predictor is related to increases in uncertainty scores from 2010 to 2013; negative coefficients indicate that the predictor is related to decreases in uncertainty scores from 2010 to 2013.

[†] $p < .10$.

Table 4. Regression model for health self-efficacy

Block	β	t	sr
Block 1: Change in health $R^2 = .04$	.19	1.32	.19
Block 2: Change in family and friend support availability $R^2_{change} = .20^*$	.45	3.45*	.45
Block 3: Change in blog reader support availability $R^2_{change} = .00$	-.03	-0.19	-.02
Block 4: Change in Family and Friend Support Availability \times Change in Blog Reader Support Availability $R^2_{change} = .00$	-.02	-0.11	-.02

Note. $N = 49$. sr = semi-partial correlation. Overall model: $F(4, 44) = 3.37^*$, $R^2 = .23$. Positive coefficients indicate that the predictor is related to increases in efficacy scores from 2010 to 2013; negative coefficients indicate that the predictor is related to decreases in efficacy scores from 2010 to 2013. $*p < .05$.

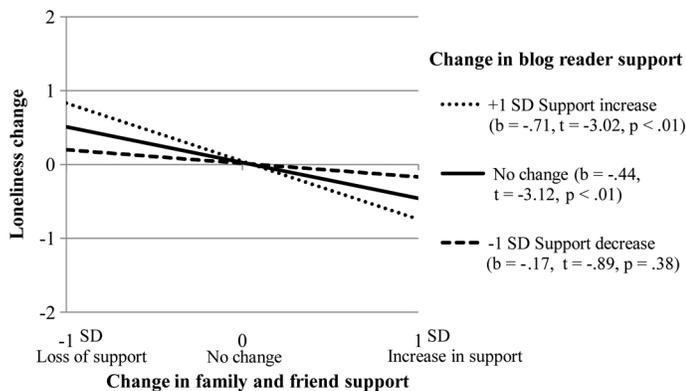


Fig. 1. Interaction effect between change in family and friend support availability and change in blog reader support availability for change in loneliness.

associated with loneliness change among respondents who experienced no change or an increase in support from their blog readers. When blog reader support was stable or increased, respondents who experienced an increase in family and friend support reported decreased loneliness. Among respondents who experienced a decrease in support from blog readers, the relationship between family and friend support change and loneliness change was not significant. The implications of these findings are considered in the following sections.

Discussion

The present investigation sought to explore informal uses of computer-mediated communication for social support among individuals coping with illness over an extended period of time. Changes in health bloggers' perceptions of the support available from their readers as well as friends and

family were examined as predictors of continued blogging and of changes in three dimensions of well-being over a 3-year period. The findings hold a number of implications for health practitioners.

Social Support and Bloggers' Well-Being

The results indicated that changes in support available from blog readers and from family and friends over the course of 3 years were significant predictors of changes in bloggers' well-being. Increased support availability from bloggers' family and friends was associated with a decrease in bloggers' feelings of loneliness and an increase in their feelings of health self-efficacy. These results underscore the importance of strong ties such as family and friends as a resource for social support (Adelman et al., 1987). Increased perceived support available from family and friends appears to have allowed bloggers to feel more confident about their ability to cope with illness.

The results also demonstrate the benefits of blog reader support and suggest that this type of support can serve as a unique resource above and beyond strong ties. After we controlled for changes in support available from family and friends, change in blog reader support was associated with decreased health-related uncertainty. Bloggers who reported an increase in support from blog readers across the two measurement periods also felt that their health condition was less unpredictable. These findings are consistent with the results of previous studies that have considered the outcomes of acquiring social support through blogging (e.g., Sanford, 2010; Sundar et al., 2007) as well as theory about the role that weak ties can play in the support process (Turner et al., 2001; Wright & Miller, 2010). Turner and colleagues' (2001) adaptation of the OMM in the context of computer-mediated support suggests that online connections such as blog readers may be uniquely situated to offer social support. One benefit of connecting with weak ties relative to strong ties such as family members and friends is that weak ties may have similar health experiences and are well suited to providing empathy and novel information (Wright & Miller, 2010). In the case of the health bloggers in this sample, such information may have been critical in managing the uncertainty associated with their health condition.

It was expected that support availability from friends and family and from blog readers would jointly impact bloggers' well-being. The results suggested that the benefits of support from family and friends only extended to respondents who reported no change or an increase in support from their blog readers. Among respondents who experienced a decrease in blog reader support, support from family and friends was unrelated to changes in loneliness. These findings are consistent with the notion that support acquired online may serve to complement support from strong ties (Wright, 2002). Support from family and friends and blog readers may have a synergistic effect. Yet because blog readers represent a source of novel information, the loss of support from blog readers may render support from family and friends less effective. Support acquired online from weak ties may be more beneficial to those who lack support from

strong ties such as family and friends, but not necessarily those who experience a decrease or increase in support as was evaluated in this study.

Blogging Behavior Over Time

Theory and research regarding the OMM (e.g., Cutrona, 1990; Turner et al., 2001) led to the hypothesis that bloggers who believed, at the first time point, that they had access to support resources via their blog (i.e., from blog readers) would continue to blog longer than bloggers who did not endorse this belief. The results were inconsistent with this prediction—the two support availability measures were not associated with continued blogging behavior. Rather, consistent with the notion that past behavior is a powerful predictor of future behavior (e.g., Ouellette & Wood, 1998), blogging momentum played a more important role. The results suggest that habit, more than the belief that support resources can be leveraged, determines bloggers' decisions to keep posting. In addition, the findings suggested that bloggers who perceived themselves as being in better health at the first time point were less likely to continue blogging over an extended period of time. It could be the case that those who evaluated themselves as being in better health were less likely to perceive value in continuing to document their experiences.

Implications for Health Practitioners

The findings from this study have several implications for health practitioners working with patients who have used social support online or are interested in acquiring social support online and/or in blogging about their illness experiences. First, the results underscore the importance of support from strong ties such as one's family and friends. Support from strong ties played an important role in two of the three measures of well-being examined in this study. Second, the results of this project suggest the value of support from resources beyond strong ties and offer evidence that blog readers can be a novel support resource. After we accounted for the variance explained by support from family and friends, changes in support from blog readers predicted changes in bloggers' health-related uncertainty. These results indicate that blogging might be particularly useful for making sense of one's illness. Through connecting authors with individuals who are coping or have coped with a similar condition, blogs appear to be a particularly useful resource for helping individuals to better understand their illness experiences.

A third implication of the results is that practitioners should be mindful of the connection between patients' weak- and strong-tie support resources. The benefits of support from bloggers' family and friends for changes in loneliness were dependent on changes in support from blog readers. These findings suggest that patients' use of online support resources does not occur in a vacuum. The relative benefits of acquiring support online may depend on the support available from existing relationships. Fourth and finally, the results offer insights about who might be a good

candidate for health blogging. The survival analysis indicates that individuals who have prior experience with blogging are more likely to persist in authoring a health blog over time. In addition, individuals who initially view their health as positive may not be good candidates.

Limitations

Some limitations of this study warrant consideration. First, although the total number of bloggers who completed both questionnaires was somewhat small, the sample size should be considered in the broader context of the project. Respondents were all adults coping with and blogging about one or more serious illnesses, and 3 years elapsed between the two surveys. Second, the bloggers sampled represented a wide range of health conditions, from life-threatening physical health conditions (e.g., forms of cancer) to serious mental health conditions (e.g., bipolar disorder). It is plausible that meaningful differences could exist among bloggers coping with different types of illnesses and disorders. Yet it could be argued that this diverse range of health conditions lends to the generalizability of the findings. Finally, all of the blogs in the sample were public in that they were not password protected or otherwise limited to potential readers. The results of this project may not extend to private blogs or instances when a blog is not being read by others.

Conclusion

The significant number of American adults seeking health-related peer support online has raised a number of important questions about the informal use of new communication technologies to acquire social support. This study examined the implications of health blogging for social support and well-being over the course of 3 years. The results offer evidence for the importance of offline and online connections as support resources. As more and more people turn to the Internet for various health-related concerns, it seems safe to assume that the use of online support resources will only grow in the future. Continued research is critical in order to develop a complete understanding of the uses and effects of these technologies among people coping with illness.

Acknowledgments

We are grateful to the bloggers who served as respondents and made this project possible. The views, opinions, and findings contained in this article are solely our own and should not be construed as an official Fors Marsh Group position unless so designated by other documentation.

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