

Special Section

Weak-Tie Support Network Preference and Perceived Life Stress Among Participants in Health-Related, Computer-Mediated Support Groups

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The study reported here examines characteristics of weak-tie support network preference among members of health-related computer-mediated support groups. Drawing on weak-tie support network theory and socioemotional selectivity theory, participants' age and health condition were assessed as predictors of weak ties support network preference. Relationships between the dimensions of weak-tie support network preference and perceived stress also were evaluated. The results demonstrated that age was negatively associated with a preference for weak-tie support, and that participants not facing a terminal illness were more likely than those preferring a terminal illness to prefer weak-tie support. The objective utility and greater-perceived-risks dimensions of weak-tie support network preference were significant predictors of perceived stress. The implications of these findings for health communication interventions are discussed.

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The Internet has become a widely used resource for obtaining social support (Walther & Boyd, 2002), particularly in the context of health (Neuhauser & Kreps, 2003; Wright & Bell, 2003). One way in which the Internet facilitates social support is through creating access to computer-mediated support groups: individuals interacting in groups using the Internet and the World Wide Web to exchange social support. Web sites such

as Yahoo! Groups and WebMD, for example, offer discussion forums where individuals concerned with a specific health condition share information and offer emotional assistance. An estimated 90 million Americans have participated in some type of computer-mediated support group and that one in four people seeking information about disease join such groups (Horrigan & Rainie, 2002; Levy & Strombeck, 2002).

Computer-mediated support groups are a particularly useful resource for connecting to weak ties (Walther & Boyd, 2002; Wellman, 1997; Wright & Bell, 2003). *Weak ties* typically consist of individuals who are not interpersonally close, but with whom people interact in a somewhat limited way within certain contexts, such as neighbors, service providers, and counselors. *Strong ties*, in contrast, consist of those individuals with whom one has a close relationship, such as friend and family member (Adelman et al., 1987; Granovetter, 1973). Prior to the Internet, individuals facing health concerns were somewhat limited in terms of their options for finding potential weak-tie support. Computer-mediated support groups make it possible for people to gain access to a plethora of individuals with similar health concerns—regardless of how rare the condition is or unique people's questions are—who may serve as supportive weak ties.

Granted the important role played by computer-mediated support groups in providing access to weak ties, understanding preferences for weak-tie support may offer considerable insights for theorizing about computer-mediated support groups and developing and facilitating Internet-based support interventions. One's support network preference, defined as a person's motives for communicating with strong tie or weak-tie support network members (Wright & Miller, 2006), appears to be a key variable in the process of social support mobilization (see Adelman, Parks, & Albrecht, 1987; Granovetter, 1973, 1982, 1983; Lockenhoff & Carstensen, 2004; Rook, 1995; Walther & Boyd, 2002; Wright & Bell, 2003), particularly in cases where strong-tie support may be perceived to be inadequate. For example, some individuals are motivated to seek advice from weak ties because they perceive the advice from weak-tie network members to be more objective and less emotional than advice from close friends or family members. Although many scholars have discussed reasons why people may prefer weak-tie support and potential benefits of weak-tie support in both face-to-face and computer-mediated contexts (Adelman et al., 1987; Granovetter, 1979, 1982, 1983; Rook, 1995; Walther & Boyd, 2002; Wright & Bell, 2003), surprisingly, no studies have empirically measured people's preferences (i.e. motives) for seeking weak-tie support and the relationship between these motives and key health-related outcome variables (such as perceived stress), nor have they explored relationships among these variables in computer-mediated support groups for people facing health concerns.

Toward that end, this study examines weak-tie support network preference among members of health-related, computer-mediated support groups. Specifically, relationships between four dimensions of weak-tie network preference (i.e. specific motivations for seeking weak-tie support) and perceived stress are studied. The four dimensions of weak-tie support preference include (Wright & Miller, 2006):

(a) access to different viewpoints, (b) reduced risk, (c) access to objective feedback from others, and (d) reduced role obligations. In addition, relationships between participants' age and health condition and their preference for weak ties are evaluated. In the following sections, we review research on social support and stress, as well as literature on weak-tie network preferences, to provide a foundation for the study's hypotheses and research questions.

Review of Literature

Support Network Preference Theory and Research

Several decades of research have provided empirical support for the negative relationship between social support and perceived stress, in general (see Cobb, 1976; Cohen & Wills, 1985; Cutrona & Suhr, 1992; Franks, Cronan, & Oliver, 2004; Uchino, Holt-Lunstad, Smith, & Bloor, 2004), and social support as an important mediator of stress (Chappell & Novak, 1992; Ellis & Miller, 1994; Kalliath & Morris, 2002; Tyler & Cushway, 1995). There are several theoretical explanations for the relationship between social support and perceived stress. Most notable are the buffering hypothesis (Cohen, 1988; Dean & Lin, 1977), which states that social support buffers or shields individuals from negative effects of prolonged stress following a crisis, and the direct effects model (Aneshensel & Stone, 1982; Thoits, 1982), which posits that social support has a direct effect on stress levels by elevating people's mood or by providing other types of support that help to directly ameliorate the crisis a person is facing.

The process of seeking support when coping with stressful situations, as well as the provision of support in such cases, can be both highly complex and problematic (Albrecht & Goldsmith, 2003; Burleson & Goldsmith, 1998; Goldsmith, 2004; La Gaipa, 1990). Findings from a variety of research programs (see Albrecht, Burleson, & Goldsmith, 1994; Barbee, Derlega, Sherburne, & Grimshaw, 1998; Brashers, Neidig, & Goldsmith, 2004), suggest that many individuals find it difficult to obtain appropriate support from friends and family because they may feel that their close ties lack experience or have limited information about certain health conditions the individual is facing. Strong-tie support networks can be perceived as inadequate or incapable of providing satisfactory support, which appears to be particularly the case when it comes to seeking support for health issues. Health concerns are often difficult topics for people to discuss, especially when communicating with a close, loved one. Researchers have found that family members and friends often minimize the concerns of close others who are seeking support for difficult health problems. In many cases, it is not uncommon for close ties to steer conversational topics away from emotional talk about problems, refrain from in-depth discussion of such topics, or avoid consequent interaction all together (Brashers et al., 2004; Dakof & Taylor, 1990; Dunkel-Schetter & Wortman, 1982; Helgeson, Cohen, Shultz, & Yasko, 2000).

Studies also have revealed that role obligations and related reciprocity issues in close ties can lead to problems with the provision of social support. Support for a loved one who is ill can lead to increased conflict, resentment, and negative feelings for both parties involved due to reluctance to form new, complicated role obligations, on the one hand, and feelings of guilt and shame stemming from the perceived inability to reciprocate, on the other (Albrecht & Goldsmith, 2003; Chesler & Barbarin, 1984; LaGaipa, 1990; Pitula & Daugherty, 1995; Wortman & Dunkel-Schetter, 1979). According to Adelman et al. (1987), "Those suffering from chronic illnesses, for example, sometimes react to support attempts by close friends and family with discomfort and anxiety because they do not believe that they will be able to reciprocate" (p. 129). This discomfort is based on a sense of inequity that may lead individuals receiving support to feel overbenefited if they cannot help or return the favor to their friends in a similar manner. Granted these difficulties, an alternative to strong ties network of family and friends is the use of a weak-tie support network.

Communicating within Weak-tie Networks

Granovetter (1973) originally developed the theory of weak ties, and it has been a useful framework for explaining various social support phenomena, such as computer-mediated support groups, virtual community support, and support networks within organizations (Walther & Boyd, 2002; Wright & Query, 2004). Individuals facing stressful situations, such as life-threatening illnesses, often find that weak-tie networks offer them certain advantages in terms of social support over strong-tie networks. Previous research has identified several dimensions of weak-tie network support that may be advantageous to computer-mediated support group members, and may motivate them to seek weak-tie support (Wright & Miller, 2006). In particular, one's preference for weak ties likely involve the importance of (a) access to different viewpoints, (b) reduced risk, (c) access to objective feedback from others, and (d) reduced role obligations. These components are discussed in turn.

One reason why individuals may opt for a weak-tie support group is that weak ties often provide access to diverse points of view and information that may not be available within more intimate relationships (Adelman et al., 1987). Typically, many individuals form close relationships with others who are similar to them in terms of demographics, attitudes, and backgrounds (Botwin, Buss, & Shackelford, 1997). This homogeneity with others can limit the diversity of information and viewpoints obtained about topics, including health concerns. Interacting with a more diverse network of people also increases the number of social comparisons people can make about their health condition vis-à-vis others (Adelman et al., 1987). The opportunity for more social comparisons has been found to be an integral component of support groups (Helgeson & Gottlieb, 2000), and social comparisons often help individuals to manage uncertainty about their health condition. By interacting with a wider network of individuals experiencing similar problems, assessments can be made about how one is coping with a problem compared to others, which further helps to reduce uncertainty and anxiety.

A second advantage of weak-tie support networks is reduced risk relative to communicating with strong-tie support networks. Individuals may feel more comfortable sharing with individuals whom they do not share overlapping relationships, rather than their friends or family members. Many diseases and medical conditions have been found to carry a social stigma (Brashers et al., 2004; Mathieson, Logan-Smith, Phillips, MacPhee, & Attia, 1996; Sullivan & Reardon, 1985), and this dehumanizing process can negatively affect the provision of social support (Bloom & Spiegel, 1984). Weak-tie support networks may help members to overcome any stigma they perceive to be associated with their health condition and that undermines the acquisition of social support. Because members of weak-tie networks do not typically share an intimate relational history, they may be less likely to judge or feel judged by one another.

A third reason individuals may choose weak-tie support is because those ties may offer more objective feedback than close ties. Strong ties, by definition, have interdependent needs and goals. It may be difficult for members of strong tie relationships to separate their needs and goals from the partner requesting support. Weak ties, in contrast, are less interdependent and have less of an emotional attachment than do strong ties. Hence, weak ties are in a better position to provide objective, disimpassioned feedback about health problems (Adelman et al., 1987).

A final advantage of weak ties, compared to strong tie social support networks, is that they carry fewer role obligations. LaGaipa (1990) contended that “social obligations may override the positive effect of companionship and social support. Such constraints may have a negative effect on a person’s mental well-being that may not make up for the beneficial aspects of personal relationships” (p. 126). For example, although a person may care deeply for those who are close, he or she may easily feel overburdened if a loved one becomes ill and needs a great amount of support, with the experienced stress leading to conflict between the individuals (Chesler & Barbarin, 1984). In contrast, weak-tie network members do not require the same level of role obligation. According to Adelman et al. (1987), “[s]upport from weaker links will not create such intense discomfort. The expectations of weaker ties are generally less extensive and more easily reciprocated” (p. 129).

Wright and Miller (2007) developed the strong-tie/weak-tie support network preference scale to assess the preceding four dimensions of weak-tie support preferences as well as a preference for strong-tie support. This instrument was the first to contain items that measure specific motives individuals have for communicating with both strong ties and weak ties (including similarity, comfort level, less risk, role obligations, etc.) when attempting to obtain social support. Previous measures of social support preference asked respondents to report the type of person from whom an individual seeks support (e.g. neighbor, brother, friend, etc.). Wright and Miller (2006) found that both preference subscales were correlated with strong tie/weak-tie network size and network satisfaction; however, they did not examine whether their strong-tie/weak-tie support network preference scale (as a whole or specific dimensions) was predictive of perceived stress.

The extant research on social support network preference suggests one hypothesis and one research question. First, weak-tie support may be important in reducing perceived life stress for computer-mediated support group members. Those who have a stronger preference for weak ties should report less stress. To test this idea, however, it is important to control for participants' preferences for strong ties. Controlling for strong-tie preference makes it possible to isolate one's preference for weak ties and, thus, rule out the notion that a relationship between weak-tie preferences and stress is an artifact of a more general desire for increased support. Accordingly, we propose the following hypothesis.

H1: Controlling for participants' preferences for strong ties, perceptions for weak-tie network support among health-related computer-mediated support group members will be negatively associated with perceived stress.

Second, several dimensions of weak-tie network support were identified that may be advantageous to computer-mediated support group members (Wright & Miller, 2006). People's preference for weak ties are likely involve the importance of (a) access to different viewpoints, (b) reduced risk, (c) access to more objective feedback from others (objective utility), and (d) reduced role obligations. Although previous research on weak tie social support has contributed a valuable conceptual understanding of motives behind the use of weak tie social support networks (e.g. Adelman et al., 1987), one aim of the current study was to contribute to this body of research by providing empirical support for relationships among specific motives for using weak-tie support networks and perceived stress. Understanding the relative importance of the four components (i.e. motives for using weak-tie support networks) in predicting stress has important implications for health interventions aimed at fostering social support. We propose the following research question to examine the dimensions of weak-tie preferences.

RQ1: How do the four dimensions of weak-tie preference differ in regard to predicting stress among members of a health-related computer-mediated support group?

Socioemotional Selectivity Theory and Support Network Preference

A second theoretical perspective that deals with preferences for weak versus strong support network ties is socioemotional selectivity theory (SST; Carstensen, 1995, 1998; Carstensen, Isaacowitz, & Charles, 1999; Lockenhoff & Carstensen, 2004). SST has been used to explain differences in weak versus strong-tie support preference among individuals facing terminal illness, older age, or other health conditions that may limit the amount of time a person has to live. SST asserts that individuals are guided by the same essential socioemotional goals throughout life, but that the priority of these goals changes as a function of perceived time left in life. According to Lockenhoff and Carstensen (2004), "Perceived limitations on time lead to reorganizations of goal hierarchies such that goals related to deriving emotional

meaning from life are prioritized over goals that maximize long-term payoffs in a nebulous future” (p. 1396).

SST posits that younger individuals and those who perceive themselves to be in good health tend to be future oriented when developing relationships (Carstensen & Fredrickson, 1998; Lockenhoff & Carstensen, 2004). By contrast, older people or those facing a terminal illness tend to prefer smaller social networks comprised of familiar, emotionally close, and meaningful relational partners due to the perception that they have relatively limited time left (Lang, 2000; Lang & Carstensen, 2002; Lockenhoff & Carstensen, 2004). SST suggests that weak-tie support network preference is dynamic and depends on factors such as age or if one has a terminal illness. Those who are older and or facing terminal illness have a limited-time perspective and, therefore, may be less likely to prefer weak ties support. Much of the work on SST regarding limited time perspective and strong/weak-tie support has focused on these variables in more general ways (stemming from qualitative interviews), but no previous studies have linked age and terminal illness to motives for using weak-tie support networks. Accordingly, we propose the following hypotheses based on SST:

H2: Age is negatively associated with preference for weak ties.

H3: Individuals facing a potentially terminal illness have less preference for weak ties than those individuals not facing a potentially terminal illness.

Method

Participants and Procedure

A convenience sample of participants was recruited from 40 online support groups. An administrator for each support group was first contacted to secure consent for recruiting participants. A message was then posted on the support group Web site explaining the study and containing a link to the Web-based questionnaire. Support group members were required to be at least 18 years of age to participate.

A total of 191 computer-mediated support group members adequately completed the questionnaire. Participants ranged in age from 18 to 72 ($M = 41.07$, $SD = 11.93$). A majority of participants were female (75.9%). Approximately 87% of participants were White, 3% were Black, 2% were Asian, 4% were Native American, and 4% self-identified as “other.” Over half (56%) of the participants had earned a college degree or had more advanced education. Participants were from various online health support groups about topics from aicardi syndrome to stuttering; groups focused on cancer, infertility, mitochondrial disease, epilepsy, and diabetes were represented most frequently.

Instrumentation

Weak and strong-tie preferences was assessed with items from the weak-tie/strong-tie support network measure (Wright & Miller, 2006), which measures people’s

preference for social support from weak and strong ties. The measure of preference for weak ties consists of 13 items focused on four dimensions that are added together to obtain a total score: (a) the objectivity and utility provided by weak ties, (b) the value of different viewpoints provided by weak ties, (c) the reduced risk associated with seeking support from weak ties, and (d) the reduced role obligations of obtaining support from weak ties. The measure of strong ties consists of 11 items focusing on three dimensions: (a) comfort level of seeking support from strong ties, (b) importance of similarity participants and their strong ties, and (c) the amount/quality of support provided by strong ties. All items were rated on a 5-point scale, with greater values indicating more of a dimension or, in the case of the overall measures, a greater preference for weak or strong ties.

Perceived life stress was assessed with 10 items from the global measure of perceived stress (GMPS) scale (Cohen, Karmack, & Mermelstein, 1983). The GMPS assesses the amount of stress people currently face in their life. Sample items include: “In the last month, how often have you felt nervous and stressed?” and, “In the last month, how often have you felt that you were effectively coping with important changes occurring in your life?” (reverse-scored). Ratings were made on a 5-point scale, with greater values indicate that participants perceived more stress.

Demographic information was collected by asking participants to report their age, gender, race/ethnicity, highest level of education obtained, and the health condition that is the focus of their support group. Illness severity was operationalized such that potentially terminal illnesses included a higher probability of death (e.g., various types of cancer, muscular dystrophy, alagille syndrome, mitochondrial disease, and Gaucher’s Disease); illnesses not potentially terminal included those that are treatable and not likely fatal (e.g., restless leg syndrome, depression, dyslexia, hemochromatosis, infertility, and diabetes). One of the authors used the topic of the support group to code participants into the potentially terminal illness group ($n = 62$) and the nonpotentially terminal illness group ($n = 77$). Several participants ($n = 52$) did not identify a specific health topic associated with their support group.

Results

Confirmatory Factor Analysis

Confirmatory factors analyses (CFAs) were conducted for the measures of weak-tie preferences and perceived stress. Factor loadings, the comparative fit index (CFI), and standardized root mean-squared residual (SRMR) were used to evaluate each measure. Following Hu and Bentler’s (1999) recommendation, a CFI value of greater than or equal to .96 and a SRMR value of less than or equal to .10 were used as criteria to assess the alternate fit indices.

One CFA model was tested to assess the weak-tie preference measure. The dimensions of less risk, fewer role obligations, different viewpoints, and objective utility were modeled as first-order factors, and weak-tie preference was modeled as a second-order factor. The factor loadings for the items assessing less risk (.73–.84),

fewer role obligations (.70–.75), different viewpoints (.55–.75), and objective utility (.61–.83) were satisfactory. The second-order factor loadings for weak-tie preference (.64–.97) were also satisfactory. Although the chi-square test of the model was significant, $\chi^2(df = 61) = 108.14, p < .01$, the factor loadings and alternate fit indices (CFI = .98, SRMR = .05) demonstrated the adequacy of the WTNP measure. Means were computed for the dimensions of less risk ($M = 3.24, SD = 1.12, \alpha = .76$), fewer obligations ($M = 2.22, SD = .87, \alpha = .69$), different viewpoints ($M = 3.71, SD = .82, \alpha = .58$), and objective utility ($M = 3.36, SD = .80, \alpha = .87$), as well as the overall measure of weak-tie preference ($M = 3.22, SD = .71, \alpha = .89$).

One CFA model was used to assess the strong-tie network preference measure. The dimensions of comfort, amount/quality, and similarity were modeled as first-order factors, and strong-tie preference was modeled as a second-order factor. The factor loadings for the items assessing the amount/quality of support (.80–.83) and similarity (.70–.91) were sufficient. However, two items in the comfort dimension had low factor loadings (.23 and .25) and were thus re-moved. The factor loadings for the remaining items in the comfort dimension were sufficient (.68–.76) as were the loadings for the second-order factor STNP (.69–.85). Although the chi-square for the revised model was significant, $\chi^2(df = 24) = 59.75, p < .01$, the alternate fit indices (CFI = .97, SRMR = .05) and factor loadings indicate that the revised measure of strong-tie network preference was adequate. A mean was computed for the overall measure of strong-tie preference ($M = 3.09, SD = .70, \alpha = .87$).

A CFA model was tested with perceived stress modeled as a first-order factor. However, the loadings for 2 of the 10 items assessing perceived stress were low. The items, “In the last month, how often have you been upset because of something that happened unexpectedly?” and “In the last month, how often have you dealt successfully with irritating life hassles?” (reverse-scored) had factor loadings of .14 and .34, respectively. These two items were removed and the model was re-run. The factor loadings for the remaining eight items were adequate (.66–.86). The model chi-square was not significant, $\chi^2(df = 18) = 21.52, p = .25$, and the alternate fit indices met the criteria noted previously (CFI = 1.0, SRMR = .03). These results indicate that the revised measure of perceived stress was satisfactory. A mean was computed for the measure of perceived stress ($M = 3.18, SD = .81, \alpha = .91$).

Weak-tie Preference and Stress

Hypothesis 1 predicted that, controlling for one’s strong-tie network preference, weak-tie preference was negatively associated with perceived stress. A regression model was tested with perceived stress serving as the outcome variable. Strong-tie preference was entered into the first block of the model as a control variable; weak-tie preference was entered in the second block. The results of the regression analysis indicated that, controlling for strong-tie preference, a preference for weak ties was negatively associated with perceived stress, $\beta = -.32, t = -3.96, p < .01$. Hypothesis 1, thus, was supported.

Examining the Dimensions of Weak Ties

Research Question 1 asked how the four dimensions of weak-tie preference differ in predicting stress among members of health-related computer-mediated support groups. To answer this question, a regression model was constructed with perceived stress serving as the outcome variable, and the four dimensions of weak ties included in the first block of the model. The regression analysis showed that objective utility, $\beta = -.22$, $t = -2.19$, $p = .03$, and reduced risk, $\beta = -.21$, $t = -2.22$, $p = .03$, were significant predictors of perceived stress. The regression coefficients for the fewer role obligations dimensions was in the predicted direction, but not statistically significant, $\beta = -.06$, $t = -0.73$, $p = .47$. The relationship between the different viewpoints dimension and perceived stress was not significant, $\beta = .10$, $t = 1.19$, $p = .24$.

Relationship Among Age, Illness Severity, and Weak-tie preference

Hypotheses 2 and 3 predicted that participants' age and illness severity would be associated with their preference for weak ties. A regression model was tested to assess Hypothesis 2, with age entered in the first block of the model and preference for weak ties serving as the outcome variable. The beta coefficient representing the relationship between age and weak ties provided support for Hypothesis 2, with age negatively associated with participants' preference for weak ties, $\beta = -.21$, $t = -2.90$, $p < .01$. A one-way ANOVA was conducted to test Hypothesis 3. The results indicated that participants from support groups focused on illnesses that are not potentially terminal ($M = 3.36$, $SD = .61$) had a greater preference for weak ties than members of support groups focused on potentially terminal conditions ($M = 2.95$, $SD = .66$), $F(1, 139) = 14.30$, $p < .05$, $\eta^2 = .09$. Hence, Hypothesis 3 was supported.

Discussion

The purpose of this study was to examine the relationship between the dimensions of weak-tie support network preference (i.e. motives for using weak-tie support networks) and perceived stress. In addition, based on socioemotional selectivity theory, the study also focused on age and terminal illness as predictors of weak-tie support network preference. The results showed that, when controlling for strong-tie network preference, participants' preference for weak ties was negatively associated with perceived stress. Furthermore, the objective utility and reduced risk dimensions of weak-tie support preferences were particularly important in predicting stress perceptions. Finally, consistent with SST, older participants and those facing a terminal condition were more likely to prefer weak-tie support. In the following sections, we discuss the implications of these findings for research on computer-mediated support groups, social support network preference, and socioemotional selectivity theory along with key limitations of the study, directions for future

research, and several ways in which the findings may inform computer-mediated support interventions.

First, the findings provide empirical support for the relationship between weak-tie network support preference and perceived stress. Although previous researchers have detailed the possible benefits of weak-tie support within computer-mediated support groups, the current results provide a link between weak-tie support preference and lower perceived stress. Furthermore, through controlling for strong-tie preferences, we can be confident that the relationship between weak-tie preference and stress is not simply an artifact of a broader desire for more support. There appears to be a unique relationship between preferences for weak ties and stress. Stress is an important factor to consider because it may exacerbate existing health problems, weaken the immune system, lead to increased morbidity and mortality rates, and contribute to other problems, such as extended hospital stays (see Ballieux & Heijen, 1988; Berkman, 1985; Kohn, 1996).

In addition, the findings from the current study contribute to theorizing about support network preferences by demonstrating an empirical link between some dimensions of weak-tie support network preference (i.e. motives for using weak-tie support networks) and perceived stress. Specifically, the data suggest that objective utility, or the degree to which individuals in computer-mediated support groups are perceived able to communicate about illness objectively, may be the most important motive for seeking weak-tie support for participants. As Adelman et al. (1987) suggested, weak ties may exhibit less emotional attachment than stronger ties, and, consequently, they may be more adept at providing objective feedback about health problems. Given the emotional involvement that most people feel toward close ties, it may be more difficult for close tie supporters to provide more detached and objective advice when it comes to communicating about health concerns with loved ones. Perhaps the fact that other computer-mediated support group members have experienced similar feelings, diagnoses, reactions to medications, and other experiences may help them to discuss these issues in a more impartial way than with strong ties who are much less likely to have experienced the same health conditions. Furthermore, previous research (Brashers et al., 2004; Dakof & Taylor, 1990; Dunkel-Schetter & Wortman, 1982; Helgeson, Cohen, Schultz, & Yasko, 2000) has found that strong ties often do not want to discuss certain topics (e.g. aspects of the illness itself and death), which perhaps also explains why weak tie social support may be seen as an attractive alternative.

A second noteworthy finding regarding the dimensions of weak-tie support preference is that the reduced risk dimension predicted reduced stress. The importance of the reduced risk related to weak ties has been discussed in previous research (Adelman et al., 1987; Shaw, McTavish, Hawkins, Gustafson, & Pingree, 2000; Wright & Bell, 2003; Wright & Query, 2004). The social stigma that can be associated with health and illness makes the reduced risk associated with weak ties critical. The opportunity to communicate with people who have “been there” and are better able to understand one’s perspective in regard to dealing with a health issue likely makes

it less frightening to discuss health concerns (compared to close friends or relatives). Individuals who have “been there” are less likely to discriminate against others facing the same health concern. As such, it makes sense that the preference for reduced risk should be associated with lower perceived stress.

It is surprising that the diverse viewpoints and role obligations dimensions of the preference for weak ties did not predict perceived stress. First, although weak-tie support networks via computer-mediated support groups should provide access to more diverse viewpoints about participants’ health conditions, perhaps it is the case that greater diversity in terms of knowledge about a health issue does not necessarily lead to reduced stress. In some cases, it is plausible that diverse viewpoints (particularly information about negative health outcomes or communication with undesirable individuals within computer-mediated support groups) could actually increase perceived stress (Weisgerber, 2004). Diverse viewpoints may not be congruent, which could lead to greater uncertainty and information overload. In addition, some information exchanged may be perceived as bad information or from unappealing or untrustworthy sources (Goldsmith & MacGeorge, 2000), particularly in the computer-mediated environment (Finn & Banach, 2000; Waldron, Lavitt, & Kelley, 2000).

Second, it is less clear why reduced role obligations were not predictive of lower stress. Perhaps participants in computer-mediated support groups feel some degree of obligation to others to provide support. In receiving support, individuals may feel a need to reciprocate that cannot be met. It also seems plausible that the import of role obligations depends on the nature of an illness. For chronic illnesses, such as diabetes, the continued demand placed on strong ties may make reduced role obligations associated with weak ties more important. Additional research is necessary to further explore the nature of role obligation in preferences for weak ties.

The findings from this study also offer support for socioemotional selectivity theory (SST) (Carstensen, 1995, 1998; Carstensen et al., 1999; Lockenhoff & Carstensen, 2004). Participants’ age and health condition were both associated with weak-tie support network preference. Although SST researchers have found these variables to be important in terms of weak-tie preference in previous research, the current study extends these findings by linking them statistically to specific dimensions of weak-tie preference and to the context of computer-mediated support groups. Younger people and those not facing a potentially terminal illness have stronger future orientations and, thus, a greater preference for weak ties provided by computer-mediated support groups. These individuals perceive the future as relatively open-ended and seek goals, such as the acquisition of new information, that are aimed at personal development, as well as goals that are aimed at establishing new social contacts that could be beneficial sources of social capital in the future. Older people and those facing a terminal illness, in contrast, prefer strong ties of family and close friends—possibly because they feel that they have limited time left.

Implications for Health Interventions

The findings from this study have important implications for developing health interventions related to computer-mediated support groups and, more generally, Internet-based support. First, the results demonstrate a relationship between preference for weak ties and reduced stress among members of a computer-mediated support group. This finding suggests that the weak ties provided by computer-mediated support groups can be beneficial to group members. At a basic level, access to weak tie social support provides positive outcomes for group members. Second, the findings highlight several factors that could be used to target individuals who would benefit most from a computer-mediated support group or Internet-based intervention that capitalizes on weak ties. In particular, individuals who believe that their friends and family members are incapable of being objective about their health concerns or those who feel stigmatized due to their health condition by members of their close tie support network may benefit the most from access to weak-tie support through computer-mediated groups. Finally, the results relevant to SST indicate that younger people and people facing nonterminal health conditions were more likely to prefer weak tie social support, and, therefore, should be more likely to use, and benefit from, a computer-mediated support group or Internet-based support intervention that provides access to weak ties.

Limitations

Although this study revealed some important findings, it is limited in several ways that merit further discussion. The first limitation of this study is the absence of relevant data that could further inform the investigation of stress. Although the results of the present study provide evidence that weak-tie support is negatively related to perceived life stress, it remains unclear how that relationship occurs. Specifically, the data cannot address whether weak-tie support mediates stress (i.e., the buffering hypothesis), has a direct effect on stress, or is a combination of both. Disentangling the buffering hypothesis from the direct effects model is important for both scholars and social support providers because the competing explanations suggest different implications about how social support functions.

A second limitation of the present investigation is that the researchers did not measure the perceived social stigma that participants felt when communicating with about their health condition. Although it is assumed that perceived stigma contributes to weak tie social support preference, and the reduced risk dimension significantly predicted reduced life stress, this relationship cannot be directly assessed without measuring perceptions of stigma. Future research would benefit by directly assessing stigma and examining how social support may moderate the effects of stigma in reducing stress and negative health outcomes.

A third limitation of the study was the use of self-report measures. In addition to well-known problems with such measures (e.g. social desirability bias, memory, etc.), self-reports make it difficult to measure actual communication behaviors. Future studies of weak-tie support within computer-mediated support groups

would benefit from assessing observations of actual communication behaviors. For example, it would be helpful to observe characteristics of messages that are exchanged between support group participants and tying characteristics of these messages (such as indicators of the type of weak tie benefits they are seeking or possible motives for seeking weak-tie support) to perceptual measures (such as perceived stress). Such efforts are challenging given the difficulty of obtaining participant consent to analyze actual messages exchanged within these groups, as well as finding ways to link participant messages to self-report measures (from a survey) in an environment where people typically want to guard their anonymity. Moreover, it would be useful to examine qualitative accounts of reasons why individuals seek weak-tie support within these groups in an effort to uncover other benefits and limitations of weak-tie support within this context.

Finally, future research would benefit from examining relationships between dimensions of weak-tie support network preference and additional variables that may mediate perceived stress. For example, both social support satisfaction and coping styles have been identified as important influences on perceived stress (Kohn, 1996; Query & Wright, 2003; Sullivan & Reardon, 1985). Although Wright and Miller (2007) found that the strong-tie/weak-tie network scale is correlated with social support network satisfaction, support network satisfaction was not measured in the current study. In addition, a host of perceptions, including perceptions of support providers, perceptions of supportive messages, and perceptions of the crisis situation have all been found to influence perceived stress (see Barbee et al., 1998; Cutrona & Russell, 1990; Kausser & Akram, 1998; Wright, 2000). While including all of these variables was beyond the scope of the current investigation, future researchers should consider including measures of weak-tie support network preference along with other perceptual measures that are theoretically related to the social support—stress relationship.

Conclusion

This study was an attempt to explore how motives for using weak-tie support networks are related to perceived stress, as well as how age and health condition predict weak-tie preferences. Although previous research on weak tie social support has contributed a valuable conceptual understanding of motives behind the use of weak tie social support networks, the current study contributes to this body of research by providing empirical support for relationships among specific motives for using weak-tie support networks and perceived stress. Of the four individual dimensions of weak-tie support network preference, objective utility and reduced risk significantly contributed to reductions in perceived stress, while fewer role obligations and access to more diverse viewpoints were not significant predictors of perceived stress. Consistent with socioemotional selectivity theory, the results indicated that age is negatively related and that severity of illness is positively related to preference for weak-tie network social support. Although future research is needed

in this area, the findings provide empirical support for several aspects of weak-tie network theory and socioemotional selectivity theory, and offer insights for health practitioners developing computer-mediated support interventions for individuals facing health concerns.

References

- Adelman, M. B., Parks, M. R., & Albrecht, T. L. (1987). Beyond close relationships: Support in weak ties. In T. L. Albrecht, M. B. Adelman, & Associates (Eds.), *Communicating social support* (pp. 126–147). Newbury Park, CA: Sage.
- Albrecht, T. L., Burleson, B. R., & Goldsmith, D. J. (1994). Supportive communication. In M. Knapp & G. R. Miller (Eds.), *Handbook of interpersonal communication* (pp. 419–449). Thousand Oaks, CA: Sage.
- Albrecht, T. L., & Goldsmith, D. J. (2003). Social support, social networks, and health. In T. L. Thompson, A. M. Dorsey, K. I. Miller, & R. Parrott (Eds.), *Handbook of health communication*. Mahwah, NJ: Lawrence Erlbaum.
- Aneshensel, C. S., & Stone, J. D. (1982). Stress and depression: A test of the buffering model of social support. *Archives of General Psychiatry*, **39**, 1392–1396.
- Ballieux, R. E., & Heijen, C. J. (1989). Stress and the immune response. In H. Weiner, I. Floring, R. Murison, & D. Hellhammer (Eds.), *Frontiers of stress research* (pp. 51–55). Toronto, Canada: Huber.
- Barbee, A. P., Derlega, V. J., Sherburne, S. P., & Grimshaw, A. (1998). Helpful and unhelpful forms of social support for HIV-positive individuals. In V. J. Derlega & A. P. Barbee (Eds.), *HIV & social interaction* (pp. 83–105). Thousand Oaks, CA: Sage.
- Barrera, M. (1988). Models of social support and life stress. In L. H. Cohen (Ed.), *Life events and psychological functioning: Theoretical and methodological issues* (pp. 211–236). Newbury Park, CA: Sage.
- Berkman, L. F. (1985). The relationship of social networks and social support to morbidity and mortality. In S. Cohen & S. L. Syme (Eds.), *Social support and health* (pp. 241–262). Orlando, FL: Academic Press.
- Bloom, J. R., & Spiegel, D. (1984). The relationship of two dimensions of social support to the psychological well-being and social functioning of women with advanced breast cancer. *Social Science Medicine*, **19**, 831–837.
- Botwin, M. D., Buss, D. M., & Shackelford, T. K. (1997). Personality and mate preferences: Five factors in mate selection and marital satisfaction. *Journal of Personality*, **65**, 107–136.
- Braithwaite, D. O., Waldron, V. R., & Finn, J. (1999). Communication of social support in computer-mediated groups for people with disabilities. *Health Communication*, **11**, 123–151.
- Brashers, D. E., Neidig, J. L., & Goldsmith, D. A. (2004). Social support and the management of uncertainty for people living with HIV or AIDS. *Health Communication*, **16**, 305–331.
- Burleson, B. B. & Goldsmith, D. J. (1998). How the comforting process works: Alleviating emotional distress through conversationally induced reappraisals. In P. A. Andersen & L. K. Guerrero (Eds.), *Handbook of communication and emotion: Research, theory, applications, and contexts* (pp. 245–280). San Diego: Academic Press.

- Campbell, K., & Wright, K. B. (2002). On-line support groups: An investigation of relationships among source credibility, dimensions of relational communication, and perceptions of emotional support. *Communication Research Reports*, *19*, 183–193.
- Carstensen, L. L. (1995). Evidence for a life-span theory of socioemotional selectivity. *Current Directions in Psychological Science*, *4*, 151–156.
- Carstensen, L. L. (1998). A life-span approach to social motivation. In J. Heckhausen & C. S. Dweck (Eds.), *Motivation and self-regulation across the life span* (pp. 341–364). New York: Cambridge University Press.
- Carstensen, L. L., & Fredrickson, B. L. (1998). Influence of HIV status and age on cognitive representations of others. *Health Psychology*, *17*, 494–503.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181.
- Chappell, N. L., & Novak, M. (1992). The role of support in alleviating stress among nursing assistants. *Gerontologist*, *32*, 251–359.
- Chesler, M. A., & Barbarin, O. A. (1984). Difficulties of providing help in a crisis: Relationships between parents of children with cancer and their friends. *Journal of Social Issues*, *40*, 113–134.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*, 300–314.
- Cohen, S. (1988). Psychosocial models of the role of support in the etiology of physical disease. *Health Psychology*, *7*, 269–297.
- Cohen, S., Karmack, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*, 385–396.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*, 310–357.
- Cutrona, C. E., & Russell, D. W. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 319–366). New York: John Wiley & Sons.
- Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse supportive behaviors. *Communication Research*, *19*, 154–174.
- Dakof, G. A., & Taylor, S. E. (1990). Victims' perceptions of social support: What is helpful from whom? *Journal of Personality and Social Psychology*, *58*, 80–89.
- Dean, A., & Lin, N. (1977). The stress buffering role of social support: Problems and prospects for systematic investigation. *Journal of Health and Social Behavior*, *32*, 321–341.
- Dunkel-Schetter, C., & Wortman, C. B. (1982). The interpersonal dynamics of cancer: Problems in social relationships and their impact on patients. In H. S. Friedman & M. R. DiMatteo (Eds.), *Interpersonal issues in health care* (pp. 69–100). New York: Academic Press.
- Eckenrode, S. (1983). The mobilization of social supports: Some individual constraints. *American Journal of Community Psychology*, *11*, 509–520.
- Ellis, B. H., & Miller, K. I. (1994). Supportive communication among nurses: Effects on commitment, burnout, and retention. *Health Communication*, *6*, 77–96.
- Finn, J., & Banach, M. (2000). Victimization online: The downside of seeking services for women on the Internet. *CyberPsychology and Behavior*, *3*, 276–285.

- Franks, H. M., Cronan, T. A., & Oliver, K. (2004). Social support in women with fibromyalgia: Is quality more important than quantity? *Journal of Community Psychology*, *4*, 425–438.
- Goldsmith, D. J. (2004). *Communicating social support*. New York: Cambridge University Press.
- Goldsmith, D. J., & MacGeorge, E. L. (2000). The impact of politeness and relationship on perceived quality of advice about a problem. *Human Communication Research*, *26*, 234–263.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*, 1360–1380.
- Granovetter, M. S. (1982). The strength of weak ties: A network theory revisited. In P. V. Marsden & N. Lin (Eds.), *Social structure and network analysis* (pp. 105–130). Newbury Park, CA: Sage.
- Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, *1*, 201–233.
- Helgeson, V. S., Cohen, S., Schulz, R., & Yasko, J. (2000). Group support interventions for women with breast cancer: Who benefits from what? *Health Psychology*, *19*, 107–114.
- Helgeson, V. S., & Gottlieb, B. H. (2000). Support groups. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 221–245). New York: Oxford University Press.
- Horrigan, J. B., & Rainie L. (2002). *Getting serious online*. Washington, DC: Pew Internet & American Life Project.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*, 1–55.
- Kalliath, T., & Morris, R. (2002). Job satisfaction among nurses: A predictor of burnout levels. *Journal of Nursing Administration*, *32*, 648–654.
- Kausar, R., & Akram, M. (1998). Cognitive appraisal and coping of patients with terminal illness versus non terminal illness. *Journal of Behavioural Sciences*, *9*, 13–28.
- Kohn, P. M. (1996). On coping adaptively with daily hassles. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 181–201). New York: John Wiley & Sons.
- LaGaipa, J. L. (1990). The negative effects of informal support systems. In S. Duck & R. C. Silver (Eds.), *Personal relationships and social support* (pp. 122–139). Newbury Park, CA: Sage.
- Lang, F. R. (2000). Endings and continuity of social relationships: Maximizing intrinsic benefits within personal networks when feeling near to death. *Journal of Social & Personal Relationships*, *17*, 155–182.
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology & Aging*, *17*, 125–139.
- Levy, J. A., & Strombeck, R. (2002). Health benefits and risks of the Internet. *Journal of Medical Systems*, *26*, 495–510.
- Lockenhoff, C. E., & Carstensen, L. L. (2004). Socioemotional selectivity theory, aging, and health: The increasingly delicate balance between regulating emotions and making tough choices. *Journal of Personality*, *72*, 1395–1423.

- Mathieson, C. M., Logan-Smith, L. L., Phillips, J., MacPhee, M., & Attia, M. L. (1996). Caring for head and neck oncology patients: Does social support lead to better quality of life? *Canadian Family Physician*, *42*, 1712–1720.
- National Cancer Institute. (2007). *Health Information National Trends Survey* [Data file]. Available from the National Cancer Institute website, <http://hints.cancer.gov/index.jsp>
- Neuhauser, L., & Kreps, G. L. (2003). Rethinking communication in the e-health era. *Journal of Health Psychology*, *8*, 7–23.
- Pitula, C. R., & Daugherty, S. R. (1995). Sources of social support and conflict in hospitalized depressed women. *Nursing and Health*, *18*, 325–332.
- Preece, J. J., & Ghozati, K. (2001). Experiencing empathy on-line. In R. E. Rice & J. E. Katz (Eds.), *The Internet and health communication: Experiences and expectations* (pp. 237–260). Thousand Oaks, CA: Sage.
- Query, J. L., Jr., & Wright, K. B. (2003). Assessing communication competence in an on-line study: Towards informing subsequent interventions among older adults with cancer, their lay caregivers, and peers. *Health Communication*, *15*, 205–219.
- Rook, K. S. (1995). Support, companionship, and control in older adults' social networks: Implications for well-being. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (pp. 437–463). Mahwah, NJ: Lawrence Erlbaum.
- Shaw, B., McTavish, F., Hawkins, R.P., Gustafson, D., & Pingree, S. (2000). Experiences of women with breast cancer: Exchanging social support over the CHES computer network. *Journal of Health Communication*, *5*, 135–149
- Sullivan, C. F., & Reardon, K. K. (1985). Social support satisfaction and health locus of control: Discriminators of breast cancer patients' style of coping. In M. L. McLaughlin (Ed.), *Communication yearbook* (Vol. 9, pp. 707–722). Beverly Hills, CA: Sage.
- Thoits, P. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social Behavior*, *23*, 145–159.
- Turner, J. W., Grube, J. A., & Meyers, J. (2001). Developing an optimal match within on-line communities: An exploration of CMC support communities and traditional support. *Journal of Communication*, *51*, 231–251.
- Tyler, P. A., & Cushway, D. (1995). Stress in nurses: The effects of coping and social support. *Stress Medicine*, *11*, 243–251.
- Uchino, B. N., Holt-Lunstad, J., Smith, T. W., & Bloor, L. (2004). Heterogeneity in social networks: A comparison of different models linking relationships to psychological outcomes. *Journal of Social and Clinical Psychology*, *23*, 123–139.
- Waldron, V. R., Lavitt, M., & Kelley, D. (2000). The nature and prevention of harm in technology-mediated self-help settings: Three exemplars. *Journal of Technology in Human Services*, *17*, 267–293.
- Walther, J. B., & Boyd, S. (2002). Attraction to computer-mediated social support. In C. A. Lin & D. Atkin (Eds.), *Communication technology and society: Audience adoption and uses* (pp. 153–188). Cresskill, NJ: Hampton Press.
- Weinberg, N., Schmale, J. D., Uken, J., & Wessel, K. (1995). Computer-mediated support groups. *Social Work with Groups*, *17*, 43–55.
- Weisgerber, C. (2004). Turning to the Internet for help on sensitive medical topics: A qualitative study of the construction of a sleep disorder through online interaction. *Information, Communication, & Society*, *7*, 554–574.

- Wellman, B. (1997). An electronic group is virtually a social network. In S. Kiesler (Ed.), *Culture of the Internet* (pp. 179–205). Mahwah, NJ: Lawrence Erlbaum.
- Wills, T. A., & Fegan, M. F. (2001). Social networks and social support. In A. Baum, T. A. Revenson, & J. E. Singer (Eds.), *Handbook of health psychology* (pp. 209–234). Mahwah, NJ: Lawrence Erlbaum.
- Wortman, C. B., & Dunkel-Schetter, C. (1979). Interpersonal relationships and cancer: A theoretical analysis. *Journal of Social Issues*, *35*, 120–155.
- Wright, K. B. (2000). Perceptions of on-line support providers: An examination of perceived homophily, source credibility, communication and social support within on-line support groups. *Communication Quarterly*, *48*, 44–59.
- Wright, K. B., & Bell, S. B. (2003). Health-related support groups on the Internet: Linking empirical findings to social support and computer-mediated communication theory. *Journal of Health Psychology*, *8*, 39–54.
- Wright, K. B., & Miller, C. H. (June, 2006,). *A measure of weak tie/strong-tie support network preference: Theoretical rationale, development, and validation of the W/STNP scale*. Paper presented at the meeting of the International Communication Association, Dresden, Germany.
- Wright, K. B., & Query, J. L., Jr. (2004). Online support and older adults: A theoretical examination of benefits and limitations of computer-mediated support networks for older adults and possible health outcomes. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (2nd ed., pp. 499–519). Mahwah, NJ: Lawrence Erlbaum.