

Computer-Mediated Support for Health Outcomes: Psychological Influences on Support Processes

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The growth and popularity of computer-mediated support groups and other, less formal, types of online social support (i.e., social support that occurs within Facebook and other social media) has gained the attention of social support researchers in recent years who are interested in the underlying psychological processes of social support within this context (e.g., Barrera, Glasgow, McKay, Boles, & Feil, 2002; Gustafson et al., 2005; Lieberman & Goldstein, 2005; Tanis, 2008). Scholars have been intrigued by the potential of online support networks to supplement or replace traditional face-to-face social support networks (Rains & Young, 2009; Wright & Miller, 2010).

Communication scholars and other social scientists have begun to examine the implications of these innovations in terms of their impact on the process of how and why individuals obtain online support, advantages and disadvantages of computer-mediated support, and the relationship between online support and health-related outcomes (i.e., reductions in physical symptoms, stress, depression, etc.). More recently, scholars have begun to focus on computer-mediated support interventions (see Gustafson et al., 2005), particularly among individuals who may lack access to adequate support for their health concerns in their traditional face-to-face support networks. Despite great strides in research during the past 15 years, many questions regarding the psychological predispositions of computer-mediated support group participants, social support processes within this context, and the relationships among social support, behavioral change, and key health outcomes remain to be explored.

The purpose of this chapter is to provide an overview of the state of research in the area of computer-mediated support and health outcomes with a focus on key psychological variables and processes. Toward that end, the chapter examines the growth and prevalence of computer-mediated support in the past two decades, research on the perceived advantages and disadvantages of computer-mediated support, key variables, and theoretical frameworks that are useful for understanding

psychological processes related to computer-mediated support, common methods for studying computer-mediated support, limitations of this body of research, and suggestions for future theoretical and applied work in this area.

Prevalence and Growth of Computer-Mediated Support

Over the past two decades, paralleling the growth of the Internet, mobile technologies, and new communication applications, we have witnessed a tremendous growth in online social support activity. In recent years, various types of social media have changed patterns of communication by increasing individuals' connectivity, interactivity, and direct participation in computer-mediated support (see Chou, Hunt, Beckjord, Moser, & Hesse, 2009; Wright & Bell, 2003).

Fifty-nine percent of US adults, constituting 8 in 10 Internet users, seek health information on the Internet (Fox, 2011). Of those online health information seekers, 60% have performed at least 1 of 11 social media activities assessed related to health and health care, such as reading someone else's commentary or experience about health issues (Fox, 2011). Moreover, in addition to formal, disease-specific, computer-mediated support groups, social support appears to be a common activity that occurs within social networking sites, such as Facebook and Twitter (Steinfeld, Ellison, & Lampe, 2008; Wright, 2012).

Motivations for Participating in Computer-Mediated Support Groups

Researchers have found that people have a variety of different motivations for participating in computer-mediated support groups and other types of online support (McKenna, 2008; McKenna & Green, 2002; Wright, 2002). Uses-and-gratifications theory (Katz, Blumler, & Gurevitz, 1974) is a helpful framework in terms of examining motives for using various types of media, including online communities (Courtois, Merchant, De Marez, & Verleye, 2009; Ebersole, 2006; Wright, 2002). These researchers have found motives to be important antecedent variables in terms of understanding cognitive processes behind various communication-related behaviors, such as the amount of time individuals spent online, relational development and maintenance activities, and they ways in which individuals communicate with others in virtual communities.

Researchers have identified a number of motives for using computer-mediated support groups as well as differences in interaction based upon a persons' motives. One such motivation is the amount/quality of health information available within online support communities. According to Purcell, Rainie, Mitchell, Rosenstiel, and Olmstead (2010), 39% of Americans say there is not enough coverage of health and medical news. This may in part account for the increasing number of people going online for health information. Perceived risk and efficacy (as they relate to health issues) have been shown to motivate information-seeking behaviors

(Rimal & Real, 2003), including online health information seeking (e.g., Cline & Haynes, 2001).

A second motive that has been identified in the online support literature is the desire for emotional support and relationship formation (Buchanan & Coulson, 2007; Coulson & Knibb, 2007; Leimeister, Schweizer, Leimeister, & Krcmar, 2008). Leimeister et al. (2008) found that both informational motives and interpersonal motives for joining a virtual cancer support community were linked to the formation of virtual relationships, and subsequently receiving support. Butler, Sproull, Kiesler, and Kraut (2007) found that individuals who value the social benefits of an online community are more likely to engage in community building activities (e.g., posting, providing encouragement) compared to those who turn to the community for informational benefits. By contrast, Nonnecke, Andrews, and Preece (2006) found that informational motives for joining an online support group in the absence of socio-emotional support motives were linked to “lurking” (i.e., reading but not posting messages) in the online community. Wright (2002) found that interpersonal and social integrative motives predicted increased interpersonal communication, relational development and maintenance, and social involvement in online support communities. These findings suggest that members who are motivated solely by a strong desire for information will be less active in providing support to others.

Perceived Advantages and Disadvantages of Computer-Mediated Support

Early studies of computer-mediated support largely focused on participant perceptions of advantages and disadvantages of using these groups. While largely descriptive, these studies helped to identify key variables and processes that were subsequently investigated in later work. The following section provides a brief overview of the findings related to perceived advantages and disadvantages of obtaining social support in computer-mediated contexts.

Perceived advantages

According to studies of individuals who seek support in computer-mediated environments, the Internet (and related new technologies) provides several advantages over traditional face-to-face support, including broad reach, 24-hr availability, increased interactivity with others, international participation, multimedia capabilities, and greater anonymity (Cline & Haynes, 2001; Neuhauser & Kreps, 2008; Wright, 2002). Researchers have also identified many other advantages of computer-mediated support, including (a) reduced feeling of being stigmatized due to one’s health condition (which I will discuss in greater depth later in the chapter), (b) it allows participants to be evaluated on their contributions to the group rather than their physical appearance or disabilities (Wright, 2000), (c) convenience, (d) increased opportunities for social comparisons, and (e) access to in-depth and diverse information about a health condition (Wright, 2002). Moreover, the greater anonymity in online

social interaction allows people who are reluctant to seek support in a face-to-face setting to communicate with others in a straightforward and honest way about their conditions and concerns (Caplan & Turner, 2007; Tidwell & Walther, 2002), and participation within online support groups enhances the possibility that individuals get incidental exposure to health information in addition to their active information seeking online (Kontos, Emmons, Puleo, & Viswanath, 2010).

Perceived disadvantages

However, computer-mediated support groups have also been found to suffer from a variety of problems, such as off-topic discussion, flaming, sporadic membership, and other negative aspects, such as deception and cyberstalking (Caplan & Turner, 2007; Wright, 2002; Wright & Bell, 2003).

Essentially, there are risks involved with obtaining social support online that may potentially undermine perceptions regarding the credibility of support providers and ultimately lead to dissatisfaction with the support that is offered within computer-mediated support groups. For example, the anonymity of participants within these groups may lead to flaming and other forms of unsupportive behavior (Barak, Boniel-Nissim, & Suler, 2008) and can make it more difficult than in face-to-face settings for individuals to detect deception, insincerity, and alternative motives for using the group (Hancock, 2007; Wright, 2002). This includes people within the groups who are voyeurs, profiteers who hope to sell health-related products to participants, or people who may have other motives for using the group (besides giving and receiving support). These factors, as well as others, can potentially undermine the credibility of online support providers and the usefulness of computer-mediated support groups for obtaining adequate support.

Key Variables That Influence Participation in Computer-Mediated Support

Health-related stigma

One variable that appears to be an important predictor of participating in some form of computer-mediated support is the degree to which individuals perceive they are stigmatized because of the issues they face (particularly health-related issues). Health-related stigma is a significant problem that many individuals facing health concerns have to deal with on a daily basis (Herek & Glunt, 1988). It has been linked reductions in the size of individuals' support networks, problems discussing concerns with others, dissatisfaction with one's support network, reduced compliance with treatment recommendations, and increased health problems (Rosman, 2004; Venable, Carey, Blair, & Littlewood, 2006). Individuals with stigmatized health issues report increased stress and depression (Riggs, Vosvick, & Stallings, 2007; Wolitski, Pals, Kidder, Courtenay-Quirk, & Holtgrave, 2008), both of which have been linked to a multitude of health problems, including alcohol and substance abuse, increased usage of

tobacco products, anxiety and related mental health problems, reduced immune system functioning, and increased physical health problems (Duncan, Hart, Scoular, & Bigrigg, 2001).

Computer-mediated support groups can provide people with stigmatized health problems greater access to online weak ties and weak-tie support (Wright & Bell, 2003; Wright, Rains, & Banas, 2010). These weak ties offer several advantages relative to strong ties including being less judgmental and more objective, offering unique information, and a reduced potential for role conflict (Wright & Miller, 2010). Applied communication researchers (and applied scholars from other disciplines) have become increasingly interested in computer-mediated support groups as a way to supplement (or replace) traditional face-to-face support networks in the development of interventions for individuals facing a variety of health concerns (Houston, Cooper, & Ford, 2002; Shaw, Hawkins, McTavish, Pingree, & Gustafson, 2006). McKenna (2008) found that becoming actively involved in a virtual community that focuses on a stigmatized or secret aspect of one's identity that was previously kept hidden leads individuals to become more self-accepting of this aspect of themselves and to feel more comfortable sharing that identity with others, thus becoming less socially isolated and more socially connected with their face-to-face community.

Homophily

A second variable that appears to influence participation in computer-mediated support is homophily, or the degrees to which members of a social network are similar to one another in certain attributes or characteristics. Homophily predisposes people to more attraction, trust, and understanding than one would find in dissimilar individuals. Close, personal networks tend to be homophilous, although weaker ties online can exhibit situational homophily (Walther & Boyd, 2002; Wright, 2000) in terms of stressful situations that online communicators have in common. Similarity between a sender and receiver may increase the persuasiveness of messages, and may be especially important when new attitudes and beliefs are formed. For example, Wang, Walther, Pingree, and Hawkins (2008) showed that perceived similarity of support group members influenced perceptions of their credibility and, in turn, the evaluation of health information they provided. Moreover, Wright (2000) and Campbell and Wright (2002) found that homophily was a key perception that influences social support satisfaction and perceptions of credibility of support providers within health-related online support groups.

Perceptions of support provider credibility

A third important set of variables is perceptions of online support provider credibility. For example, Robinson, Patrick, Eng, and Gustafson (1998) argue that several characteristics of the Internet influence perceptions of source/information credibility, including (a) improved opportunity to tailor messages; (b) the increased possibility for users to remain anonymous, which may increase their willingness to engage in more honest discussions; and (c) increased access to information and support on

demand. The increased interactivity of computer-mediated communication (e.g., the ability to post comments and receive feedback within on-line communities, etc.) is also important to consider since individual users are able to ask direct questions of information sources, which is generally impossible with traditional media. In addition, the ability of members within the larger online community to read and respond to online posts provides an opportunity for increased quality control of information (Esquivel, Meric-Bernstam, & Bernstam, 2006). For example, information that does not resonate with the experiences of members of the larger community may be subject to greater scrutiny (Rieh & Belkin, 2000), a process similar to peer review.

Research conducted to date has shown that perceptions of online support group credibility are associated with several noteworthy outcomes. Wright (2000) found that two dimensions of source credibility, perceived competence and character, were associated with the perceived similarity of other online support group members, online support group network size and satisfaction with the support they received. Similarly, Campbell and Wright (2002) found that these dimensions of source credibility were associated with perceptions of situational similarity among online support group members. Moreover, both dimensions of source credibility were associated with perceptions of social support providers' receptivity and status equality within these groups.

Coping strategy predispositions

Finally, a fourth variable that is likely to influence social support processes within computer-mediated contexts is the coping styles/predispositions of individuals who seek support within this context. Stemming from Lazarus and Folkman's (1984) theory of psychological stress and coping, coping styles have received a substantial amount of scholarly attention, particularly as they relate to social support (Billings & Moos, 1981; Kohn, 1996). Coping can be defined as a persons' ongoing cognitive and behavioral efforts to manage external or internal demands that are appraised as taking or exceeding a person's resources (Lazarus & Folkman, 1984). Studies suggest that problem-focused coping, which is "directed at remedying a threatening or harmful external situation" (Kohn, 1996, p. 189), is often linked with positive adaptation to stressful situations (Heady & Wearing, 1990; Lazarus & Folkman, 1984), while emotion-focused coping, which is defined as "ventilating, managing, or palliating an emotional response to a situation" (Kohn, 1996, p. 189), is typically associated with negative adaptation (Billings & Moos, 1981; Kohn, 1996). However, problem-focused coping strategies are more likely to be used when a situation is appraised as changeable whereas emotion-focused strategies tend to be used when a situation is assessed as unchangeable (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1987). As a result, sometimes emotion-focused coping can lead to positive outcomes, although to a lesser extent than we typically see with problem-focused coping. In the context of research on computer-mediated support groups, Wright (1999, 2000) found that support group participants who were more satisfied with the support provided by other group members were more likely to use problem-focused coping strategies than individuals who had lower support network satisfaction scores.

Prominent Theoretical Frameworks in Computer-Mediated Support Research

Theory plays an important role in terms of understanding social support processes and outcomes within computer-mediated contexts. This section presents several theories that have been applied to the study of computer-mediated social support. While many early studies of computer-mediated support tended to lack strong theoretical frameworks, more recent work has become more theoretically rich, with scholars testing various hypotheses derived from theory in many studies of computer-mediated support. These theories appear to have utility in terms of providing explanations of online support processes as well as helping scholars to predict relationships among variables.

Social support and the optimal matching model

One theoretical framework that has received a good deal of attention in the computer-mediated support literature is the optimal matching model (Cutrona & Russell, 1990). For many years, social scientists have known that people often differ in terms of the types of support they find useful due to factors such as the context of the stressful situation they are facing, their perceived coping skills, and their relationship with the support provider (Cutrona & Russell, 1990). The optimal matching model (Cutrona & Russell, 1990) suggests that matching the specific type of support offered with the dimensions of a stressor (e.g., desirability, controllability, life domain, and duration of consequences) produces the most positive outcomes. More generally, the model is grounded in the notion that a match between the needs of support seekers and the resources/abilities of support providers is important in terms of coping with the many relational challenges associated with communicating social support. For example, if an individual is seeking emotional support for a health concern and he or she perceives that members of his or her support network have competently listened, expressed empathy, and acknowledged the severity of the issue, then this would be considered an example of an optimal match between the support seeker and support providers.

People tend to make decisions regarding approaching potential supporters based on the perception that members of their network will be able to meet their specific need(s) for support as well as their relational needs. Goldsmith (2004) contends that optimal matches in supportive episodes may lead to more positive perceptions of relational partners and the type of support that is being offered, and this, in turn, may ultimately influence positive health outcomes. Yet it is also possible that a recipient of support may perceive some types of support negatively (which is often the case among strong ties who react negatively to stigmatized health conditions), and this may negate the positive effects of the supportive attempt or it may actually have a negative impact on health or quality of life (Dakof & Taylor, 1990). There is evidence to suggest that weak ties accessed via computer-mediated communication might be particularly valuable when strong ties are unable or unwilling to provide support.

This perspective may help to provide important insights into the supportive needs of individuals who seek computer-mediated support. For example, drawing upon an optimal matching theory framework, Eichhorn (2008) found that informational support through shared experiences was the most common type of support for members of an online support groups for eating disorders (followed by emotional support). Moreover, Sullivan (2003) found that men were more likely to seek informational support within online support groups, whereas women were more likely to seek emotional support and validation.

Social comparison theory

Social comparison theory (Festinger, 1954) has been useful in terms of examining perceptions of people within our support networks and for understanding why support from these individuals may not always lead to positive outcomes. According to social comparison theory, individuals make assessments about their own health and coping mechanisms by comparing them to others in their social network (Helgeson & Gottlieb, 2000).

Helgeson and Gottlieb (2000) mention that *lateral comparisons*, comparisons to similar others, may normalize people's experiences and reduce uncertainty and stress for those dealing with health concerns. However, when individuals compare themselves to others, their self-assessment could be either positive or negative. For example, if a person with cancer feels that he is coping with problems less effectively than others in his network (such as a friend or relative who has or had cancer or a similar life-threatening illness), this may create *upward comparisons*, which could produce feelings of frustration or serve as a source of inspiration to the person to cope more effectively by emulating the successful behaviors of those other members. Conversely, *downward comparisons* to others in the social network, such as when an individual feels that he or she is coping better than other members, can lead to positive self-assessments and/or to negative feelings about people if interaction with the other members is perceived as being unhelpful.

Participants often glean information about the status of their health issues through social comparisons that take place within supportive interactions (Davison, Pennebaker, & Dickerson, 2000). According to Sarasohn-Kahn (2008), the second most popular reason people seek health information through online social networks is to research other participants' experiences with a health condition. Such social comparison processes do not even require actual participation in the online group; rather, individuals may engage in these practices passively by reading the posted group discussions.

Social information processing theory

One computer-mediated communication theory that has been useful in terms of understanding the effects of computer-mediated channels on the perceptions of individuals who engage in online social support is social information processing theory (Walther, 1992; Walther, 2007). Walther (1992) asserts that within the context of computer-mediated communication, message senders portray themselves in a socially favorable

manner to draw the attention of message receivers and foster anticipation of future interaction. Message receivers, in turn, tend to idealize the image of the sender due to overvaluing minimal, text-based cues. Idealized perceptions and optimal self-presentation in the computer-mediated communication process tend to intensify in the feedback loop, and this can lead to what Walther (1996) labeled as “hyperpersonal interaction,” or a more intimate and socially desirable exchange than in face-to-face interactions.

Hyperpersonal interaction is enhanced when no face-to-face relationship exists, so that users construct impressions and present themselves “without the interference of environmental reality” (Walther, 1996, p. 33), and it appears to skew perceptions of relational partners in positive ways, and in some cases, computer-mediated relationships may exceed face-to-face interactions in terms of intensity (King & Moreggi, 1998; Walther, 1996; Wright & Bell, 2003). Moreover, according to Walther (1996), the reduced number of available nonverbal cues in CMC increases message-editing capabilities, and the temporal features of CMC allow communicators to be more selective and strategic in their self-presentation, form idealized impressions of their partners, and, consequently, engage in more intimate exchanges than people in face-to-face situations. For instance, Walther, Slovacek, and Tidwell (2001) found that individuals rated online interaction partners as more socially attractive and affectionate when a photo was not present compared to those who did view a photo of the interaction partner. In addition, dyads in computer-mediated settings also appear to self-disclose more than face-to-face dyads (Tidwell & Walther, 2002).

Strength of weak ties

Several of the preceding theories suggest that some individuals may benefit from characteristics of online networks in terms of obtaining optimal support. One theory that links social support processes to social network characteristics is Granovetter’s Strength of Weak Ties theory (1973). This theory posits that the spread of social support is dependent upon the structure of communication networks in communities. Specifically, personal networks are made up of strong ties (such as close friends and family), weak ties (such as coworkers, acquaintances, and people with whom one has infrequent contact), and absent ties. Small clusters made up of an individual and his or her strong ties may be linked to other strong tie clusters by weak ties. Without weak ties, communication can only flow among small clusters, and groups become information saturated. Weak ties reach larger numbers of people, and longer distances than strong ties. The strength of weak ties theory is essential in adding an element of structure to understanding online supportive interactions and for distinguishing the roles and relationships inherent in the different positions people hold within online networks.

Individuals often seek support through weak tie networks instead of within their strong tie network because weak tie networks can provide access to more diverse points of view and information that may not be available within more intimate relationships (Adelman, Parks, & Albrecht, 1987; Haythornthwaite, 2002). Typically, individuals form close relationships with others who are similar to them in terms of demographics, attitudes, and backgrounds. This homogeneous preference can limit

the diversity of information and viewpoints obtained about topics, including health concerns. Access to more diverse viewpoints about health problems can provide individuals with more varied informational support about health issues, and interacting with varied types of people increases the number of social comparisons a person can make about his or her health condition vis-à-vis others (Adelman et al., 1987).

The advantage of weak tie sources are that there are more of them, they are more likely to be different from the receiver and from one another, and there's a greater likelihood of being able to find an expert in a particular area in weak tie rather than strong tie sources. Members of weak tie networks may be more willing to talk about illness since these individuals tend to be less emotionally attached to a person (Adelman et al., 1987). Weak tie network members are often able to provide more objective feedback about a problem since they are less emotionally attached to a person with health problems than family and friends. People with whom we have close relationships, in an effort to spare our feelings when talking about a health problem, may be more likely to "sugar coat" the advice they give us or not be completely honest when discussing how they feel about our illness. According to Goldsmith and Albrecht (2011), weaker ties tend to be perceived as helpful when a person is coping with an issue that requires new information or skills (that may be limited within a close-knit family or friendship social network).

In addition, studies have found that role obligations in close ties and reciprocity issues can lead to problems with the provision of social support. Support for a loved one who is ill in close ties can lead to increased conflict or negative feelings toward the person due to role obligations (Albrecht & Goldsmith, 2003; LaGaipa, 1990), despite the fact that people may care deeply for the person. According to LaGaipa (1990), "social obligations may override the positive effect of companionship and social support. Such constraints can have a negative effect on mental well-being that may not make up for the beneficial aspects of personal relationships" (p. 126). All of these features of weak ties can be beneficial to people who are coping with stressful situations that may be difficult to ameliorate in strong ties due to lack of information and relational problems in close relationships, and access to weak ties is facilitated by the features of computer-mediated communication (Wright & Miller, 2010).

Health Outcomes Related to Computer-Mediated Social Support

Decades of social support research have linked improved social support to a variety of positive physical and mental health outcomes, such as increased health literacy, reduced stress, increased coping abilities, lower depression levels, greater adherence to treatment, and reduced morbidity and mortality rates (Barrera et al., 2002; Rains & Young, 2009). Communication researchers have contributed to this body of literature by providing a broader understanding of social support processes by examining characteristics of supportive messages (Goldsmith, 2004), and the relationship between social support processes and health outcomes among individuals living with a

variety of health conditions (Braithwaite, Waldron, & Finn, 1999; Query & Wright, 2003), and by demonstrating how several key aspects of supportive relationships play critical roles in both psychological and physical health.

Researchers have known for decades that perceived life stress is inversely related to many physical and psychological health outcomes, including increased blood pressure, reduced immune system response, cardiovascular disease, morbidity and mortality rates, depression, and loneliness (Aneshensel & Stone, 1982; Berg & McQuinn, 1989; Berkman & Syme, 1979; Houston et al., 2002). Perceived stress is also associated with perceived quality of life and general physical/psychological well-being.

In recent years, a growing number of studies have measured psychological and physical health outcomes related to participation in computer-mediated support groups (Barrera et al., 2002; Rains & Young, 2009; Wright, 2000). There is empirical evidence that these groups provide a wide variety of health benefits for users (such as individuals with cancer, diabetes, and substance abuse problems), including reduced stress, increased positive coping, increased quality of life, increased self-efficacy in terms of managing one's health problems, reduced depression, and increased physical health benefits (Beaudoin & Tao, 2007; Gustafson et al., 2005; Houston et al., 2002; Jones et al., 2008; Owen, Klapow, Roth, Shuster, & Bellis, 2005; Rains & Young, 2009; Shaw et al., 2006; Wright, 1999, 2000).

Wright (2000) provided evidence that participation in a computer-mediated support community for older adults predicted reduced stress and increased coping skills. Owen et al. (2005) discovered that participation within an online support group for cancer patients predicted higher quality of life and reduced stress. In addition, in a recent meta-analysis of 28 computer-mediated support group studies, Rains and Young (2009) found that participation in computer-mediated social support groups led to increased social support, decreased depression, increased quality of life, and increased self-efficacy in terms of managing health conditions. Two decades of research on the Comprehensive Health Enhancement Support System (CHESS) has demonstrated positive health outcomes for women with breast cancer and people with HIV/AIDS, such as reduced stress, fewer healthcare visits and hospitalizations, and fewer incidents of disease symptoms (Gustafson et al., 1999, 2001). Wright et al. (2010) found that characteristics of weak-tie support network preference among members of health-related, computer-mediated support groups were predictive of reduced stress surrounding health problems. Other researchers have found similar health benefits for individuals who obtain social support within social networking sites (see Ellison, Steinfield, & Lampe, 2007; Kim & Lee, 2011; Manago, Taylor, & Greenfield, 2012; Wright et al., 2013).

Finally, the act of helping others appears to be associated with reduced stress and an increase sense of well-being. For example, Caplan and Turner (2007) contend that effective comforting communication within computer-mediated support groups fosters adaptive cognitive reappraisals of upsetting experiences, which in turn ameliorate emotional distress. Caplan and Turner (2007) assert that comforting communication helps on-line support group members to reduce stress by "discursively constructing" adaptive, or less troublesome, cognitive reappraisals of a distressing experience or situation during the process of comforting other members.

Prominent Methods Used in Computer-Mediated Support Research

Researchers have used a variety of methods to study computer-mediated social support, including survey research, content analysis, experimental designs, and naturalistic research. My own research and work with colleagues (Campbell & Wright, 2002; Johnson et al., 2008; Wright, 1999, 2000, 2002; Wright et al., 2010) in this area has been largely limited to survey research (with some content analysis and ethnographic methods), as well as work by other online support group researchers (see Shaw & Gant, 2002; Walther & Boyd, 2002). While survey research has a number of limitations and it lends itself to more descriptive types of research, it will likely continue to be a prominent method of studying online support due to the convenience of online survey tools (such as Qualtrics and SurveyMonkey) and the ability to use online surveys to reach large numbers of individuals who share common characteristics despite being geographically dispersed (Wright, 2005). However, many researchers have engaged in experimental or quasi-experimental methods to examine several facets of computer-mediated social support for people facing health concerns (see Barrera et al., 2002; Shaw & Gant, 2002; Gustafson et al., 1999, 2001, 2005). These designs will continue to be important to our understanding of causal relationships among exogenous variables, key online support variables, moderating variables, and key health outcomes, which is particularly helpful in terms of designing and evaluating support interventions.

Finally, researchers have also relied on content analysis and naturalistic methods in the study of computer-mediated social support. For example, Preece (1999) content-analyzed postings in online support groups for people coping with serious health problems, such as diabetes and cancer, and she found that the highest percentage of messages were some form of empathic discourse followed by personal narratives. Rains and Keating (2011) used content analysis to assess supportive messages and self-reported health outcomes within health-related blogs. Rains and Young (2009) conducted a meta-analysis of over 20 computer-mediated support interventions, and they found moderate effect sizes when assessing the relationship between online support and a variety of health outcomes. Ley (2007) used ethnographic methods to study social support in an online pregnancy support group, and found that the groups' technical features influenced patterns of social support and, in some cases, had contradictory effects on the perceived helpfulness of support. Future computer-mediated support research will likely benefit from other types of naturalistic research, particularly studies that allow researchers to understand how meanings of supportive messages are co-constructed through interactions within the groups.

Limitations of Computer-Mediated Support Scholarship and Future Theoretical/Applied Directions for Research

Despite the promise of computer-mediated support, there are still many facets of individual support predispositions, support processes, and links between computer-mediated support and health outcomes that need to be investigated. This section briefly discusses several of these issues.

One issue concerns accounting for the influence of overlapping sources of social support on key outcome variables, such as stress and depression. According to Haythornthwaite (2002), both online and offline supportive exchanges influence health outcomes. In short, it becomes difficult to separate online supportive influences from offline influences. For example, we typically mix face-to-face contact with e-mail, searching the Internet with asking friends and reading books, and sending regular mail and e-mail with use of the telephone. Caplan and Turner (2007) contend that future computer-mediated support researchers should pursue whether online supportive communication employs messages that are more, less, or equally empathic to those conveyed in similar face-to-face encounters.

Future research in this area would benefit from the development of theories and methods that take into account a more ecological perspective of the influence of social support on health outcomes, including the main effects and interaction effects of online and offline sources of social support, psychological predispositions, mediated variables (i.e., the influence of CMC channels, contexts), and key demographic and environmental variables (such as whether a person lives in a city, rural location, etc.) on health outcomes.

Although computer-mediated channels are able to connect individuals with larger, more diverse, networks of individuals who may be able to offer types of social support that transcend the quantity and quality of support within traditional face-to-face networks (i.e., weak tie support), less is known about potential negative aspects of weak tie support, such as the potential for increased deception, manipulation, cybersurveillance, and other problems that can occur when communicating with relative strangers (Barak et al., 2008; Finn & Banach, 2000). Given the potential benefits of computer-mediated support groups and the risks associated with seeking support online, it is critical for computer-mediated support researchers to better understand how group members evaluate the credibility of supportive providers and supportive messages within these groups.

As we have seen in this chapter, the bulk of research on computer-mediated support has focused on more formal health-related online support groups, although everyday types of online social support, such as support within social networking sites and virtual organizations, have been studied more in recent years (Steinfeld et al., 2008; Wright, 2012). Future research would benefit from studies that increase our understanding of the many types of daily, mundane social support people give and seek online, and the cumulative effects of this support on health outcomes.

Finally, relatively little is known about how minority groups and other populations facing health disparities use computer-mediated support groups. However, it appears that members of minority groups engage in a variety of online social support activities, and individuals within these groups may benefit from computer-mediated support interventions. For example, Fogel et al. (2003) found that while African-Americans, Hispanics, and Asian Americans tend to use the Internet less than whites, their Internet use was associated with greater ability to talk with someone about problems and to obtain other types of social support.

Researchers have also found that access to traditional face-to-face support networks (such as close family ties) often deteriorates among members of certain low-income and minority groups due to factors such as unemployment, transience, and substance abuse (Roschelle, 1997), underscoring the need to develop interventions targeting these groups. Weinert and Hill (2005) found that rural women (including a high

percentage of minorities and individuals from lower socioeconomic backgrounds) using a computer-mediated support intervention had lower levels of depression and higher self-reported management of day-to-day chronic illness symptoms than a control group of similar rural women living with chronic illness. Irrizary, Downing, and West (2002) and Wright (2000) found that computer-mediated support communities were helpful in terms of helping isolated older adults facing health concerns to become better connected with other individuals with similar circumstances. In short, there is great potential for researchers to develop and test computer-mediated support interventions with underserved populations.

Conclusion

Paralleling the growth of the Internet and social media, computer-mediated support has become a common online activity in recent years, and it has gained the attention of many researchers interested in understanding the nature of social support processes and outcomes within this context. Building upon initial descriptive studies, scholars have identified a number of theoretical frameworks that help to explain computer-mediated support processes and their relationship to positive health outcomes for individuals who participate in computer-mediated social support. While early studies relied on survey research to understand the nature of computer-mediated social support, more recent studies have moved toward experimental designs and intervention approaches. The findings from these studies provide support for the idea that computer-mediated support interventions may benefit certain populations (e.g., people coping with a stigmatized health condition, individuals who lack support resources in the face-to-face world, etc.). Future research is certainly needed to gain a better understanding of intervening variables that may influence the relationship between computer-mediated social support and various outcomes, and more studies are needed that examine computer-mediated support among more diverse populations.

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