

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Papers in Communication Studies

Communication Studies, Department of

1999

Communication of Social Support in Computer-Mediated Groups for People with Disabilities

Dawn O. Braithwaite

University of Nebraska–Lincoln, dbraithwaite1@unl.edu

Vincent R. Waldron

University of Nebraska–Lincoln

Jerry Finn

University of New Hampshire

Follow this and additional works at: <http://digitalcommons.unl.edu/commstudiespapers>



Part of the [Critical and Cultural Studies Commons](#), [Gender, Race, Sexuality, and Ethnicity in Communication Commons](#), and the [Other Communication Commons](#)

Braithwaite, Dawn O.; Waldron, Vincent R.; and Finn, Jerry, "Communication of Social Support in Computer-Mediated Groups for People with Disabilities" (1999). *Papers in Communication Studies*. 104.

<http://digitalcommons.unl.edu/commstudiespapers/104>

This Article is brought to you for free and open access by the Communication Studies, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Papers in Communication Studies by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Published in *Health Communication* 11:2 (1999), pp. 123–151; doi: 10.1207/s15327027hc1102_2
Copyright © 1999 Lawrence Erlbaum Associates, Inc.; published by Routledge/Taylor and Francis.
Used by permission.
Published online December 10, 2009.

Communication of Social Support in Computer-Mediated Groups for People with Disabilities

Dawn O. Braithwaite,¹ Vincent R. Waldron,¹ and Jerry Finn²

1. Department of Communication Studies, University of Nebraska–Lincoln
2. Department of Social Work, University of New Hampshire

Corresponding author – Dawn O. Braithwaite, Department of Communication Studies, University of Nebraska–Lincoln, Lincoln, NE 68588-0329, email dbraithwaite@unl.edu

Abstract

This study documented the types and extent of social support messages exchanged by persons with disabilities who participated in a computer-based support group. A modified version of Cutrona and Suhr's (1992) social support category system was used to code 1,472 support messages. The largest percentage of these messages offered emotional and informational support, whereas network support and tangible assistance were least frequently offered. It appeared that many of the support messages directly redressed limitations and challenges associated with disability-related mobility, socialization, and self-care. Results are discussed in terms of the generalizability of existing category systems for coding support to this mediated context, the relative importance of different types of support in the communication of support group members, and the unique features of social support in mediated environments. The implications of this study for social support researchers, persons with disabilities, and human services professionals are also discussed.

When an individual experiences a serious illness, disabling condition, or both, the effects can influence numerous areas of the person's life: mobility, self-care, employment, communication, and social relationships (Crewe & Athelstan, 1985). The person may need additional help and support in the short term and, if the health problems persist or become

permanent, he or she may need different kinds of social support on a long-term basis. Researchers across several disciplines have long studied social support. Albrecht, Burleson, and Sarason (1992) highlighted social support as “the cornerstone for the quality of human life” (p. 149). Albrecht and Adelman (1987) provided a definition that was most useful for this study, arguing that “social support refers to verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance a perception of personal control in one’s experience” (p. 19).

A considerable amount of literature documents the physical and psychological benefits of receiving social support (Albrecht & Adelman, 1987; Burleson, Albrecht, Goldsmith, & Sarason, 1994; L. H. Cohen, McGowan, Fooskas, & Rose, 1984; Cutrona, Russell, & Rose, 1986; Dean & Ensel, 1982; Dickson-Markman & Shern, 1990; Goldsmith, 1992; Lin & Dean, 1984; Lin & Ensel, 1984; Query & James, 1989). For persons with health problems, however, the acquisition of face-to-face social support may be problematic due to limitations in mobility, access, or communication. Online support groups may be a particularly useful alternative for these individuals. Despite the potential value of online support, relatively little is known about how such support is enacted, particularly by persons with disabilities. Accordingly, this project had several purposes. First, we hoped to determine the quality and quantity of support messages used by participants in an online support group serving individuals with disabilities. Second, in-depth analysis of these messages allowed us to determine whether existing support message classification schemes were adequately generalized to the mediated support context. Finally, we sought to describe forms of support that may be unique to this context and population. In pursuing these objectives, we hoped not only to contribute to the theory base of social support generally but also to improve our understanding of how mediated support may be used to advance the health and well-being of persons with disabilities.

One line of research directly related to our effort has attempted to describe categories of social support behaviors used by able-bodied persons (e.g., Barbee & Cunningham, 1995; Cutrona & Suhr, 1992; Gottlieb, 1985; House, 1981; Shilman & Giladi, 1985). Existing category systems range from simple to extremely complex. For example, House (1981) identified four classes of supportive behaviors: *emotional support* (i.e., concern), *appraisal support* (i.e. affirmation or feedback), *informational support* (i.e., advice or suggestions), and *instrumental support* (i.e., physical assistance). Barbee and Cunningham’s (1995) Interactive Coping Behavior Coding System is much more complex and comprises five supratypes: (a) *solve behaviors* (problem-focused approach), (b) *solace behaviors* (emotion-focused approach), (c) *dismiss behaviors* (problem focused-avoidance), (d) *dismiss behaviors* (problem focused-avoidance), and (e) *escape behaviors* (emotion-focused avoidance). There are 26 subcategories listed under these five supratypes. Cutrona and Suhr (1992) created and validated their Social Support Behavior Codes framework, a coding system identifying five supratypes of support: informational support, *tangible assistance* (physical or instrumental help), esteem support, *network support* (connecting an individual to helping others), and emotional support. Their system contains 23 subcategories of behaviors under these five supratypes (see “Method” section and Table 1).

Most researchers have focused on social support during stressful life events, such as in a health crisis or bereavement (e.g., Albrecht & Adelman, 1984; Cluck & Cline, 1986; Cutrona, 1986; Cutrona & Suhr, 1992; Lehman, Ellard, & Wortman, 1986; Winstead, Derlega, Lewis, Sanchez-Hucles, & Clarke, 1992). Although it is clear that support is needed in these extraordinary and stressful times, others have recognized that support is something that we give and receive informally on a day-to-day basis (Barnes & Duck, 1994; Leach & Braithwaite, 1996). Barnes and Duck (1994) discussed the necessity of studying support in everyday communicative contexts, because these everyday interactions form the basis for support given in extraordinary circumstances. They stressed that “everyday discourse helps to construct and embody personal relationships as dynamic structures within which social support functions” (p. 176). Therefore, one advantage of this project was the opportunity to study ongoing, everyday supportive interaction in a mediated environment.

Social Support and Self-Help Groups

The focus of most social support communication research has been one-on-one social support within family and close friendships (e.g., Gallagher & Gerstel, 1993; Leach & Braithwaite, 1996; Lehman et al., 1986; Samter, 1992; Simpson, Rholes, & Nelligan, 1992). However, we know that support emanates from sources beyond dyadic and family relationships. In the literature, researchers have documented the provision of support coming from both support networks (e.g., Granovetter, 1973; Israel, 1985; Pilisuk & Minkler, 1980; Powell, 1981; Ray, 1992) and support groups (e.g., Cluck & Cline, 1986; Pattison, Llamas, & Hurd, 1979; Pilisuk & Minkler, 1980; Query & James, 1989; Query & Smilowitz, 1988; Schopler & Galinsky, 1993).

Self-help groups have become a permanent fixture in American culture and provide an important social resource for individuals (Katz & Maida, 1990). These groups are an attempt by people with mutual needs to exert control over circumstances that affect their lives. In general, although there are differences among self-help and support groups, their goals are very similar (Query & James, 1989), and they are based on principles of empowerment, inclusion, nonhierarchical decision making, shared responsibility, and a holistic approach to people’s cultural, economic, and social needs. The values of these groups include cooperative self-organization, nonbureaucratic mutual helping methods, social support, and free services (Segal, Silverman, & Temkin, 1993). It has been estimated that there are 400 distinct types of self-help groups, comprising 500,000 groups in the United States, having quadrupled in the last 10 years (Boreman, Brock, Hess, & Pasquale, 1982; Leechsen, Lewis, Pomer, Davenport, & Nelson, 1990). The most recent estimates available reveal that 10 to 11 million people participated in these groups in the last year, with 25 million people having participated at some point in their lives (Kessler, Mickelson, & Zhao, 1997).

The evidence points to several positive outcomes of participation in self-help groups, including (a) sharing information such as ideas, facts, and resources; (b) engaging in dialogue to reveal multiple perspectives; (c) discussing taboo subjects; (d) being “all in the same boat” with others; (e) experiencing mutual support; (f) engaging in problem solving and rehearsing; (g) overcoming alienation and isolation; (h) engaging in catharsis; (i) tak-

ing on the role of helper; (j) developing inspiration and hope; (k) developing social networks; and (l) assisting more people less expensively (Ayers, 1989; Boreman et al., 1982; Caplan, 1974; Fullmer & Majumder, 1991; Gottlieb, 1981; M. A. Lieberman, 1976; Lipson, 1982).

Computed-Based Support Groups for People with Disabilities

Computer-based support groups have become an additional way to provide social support to people with a variety of health and human service-related concerns, and in just the past few years, the majority of face-to-face self-help groups have also been duplicated online. Schlesinger (1995) published a large list of web, gopher, listserv, net, and educational sites for people with disabilities. These groups are quite similar in philosophy and intervention techniques to face-to-face self-help groups. However, they take place without the constraints of time and distance by utilizing existing telecommunication networks such as the Internet, commercial online services (e.g., CompuServe, America Online, Genie, Prodigy), and private computer-based bulletin board systems (BBSs) as "meeting places" (Finn, 1993).

The potential of the computer to promote greater relatedness among members of society by reducing barriers of time, distance, and social status through the formation of electronic or virtual communities has been noted by several scholars (Maciuszko, 1990; Naisbitt, 1982; Vallee, 1982), and there have been anecdotal descriptions of individuals being helped through such groups (Maciuszko, 1990; Madera, 1989). In addition, scholars have recently begun the task of describing the structure and extent of participation in public and commercial computer-based groups as well as in computer-based information bulletin boards, and they have provided profiles of specific computer-based groups for people with addictions and for people who have experienced sexual abuse (Finn, 1993; Finn & Lavitt, 1994; D. Lieberman, 1992; Madera, 1991; Sparks, 1992; Scheerhorn, Warisse, & McNeilis, 1995).

Online support groups have yet to be widely studied by communication researchers; a recent exception was Sullivan (1997). More research on how social support is enacted in these groups would be particularly useful to those interested in designing, providing, using, or evaluating online support as an alternative to face-to-face support. This work might be particularly relevant to persons with disabilities, who may find face-to-face support especially problematic due to challenges of mobility and access. In addition, many caregivers of people who are disabled, elderly, or both are essentially homebound themselves due to their caretaking responsibilities. They too may find online support groups useful. Studies of online support practiced by persons with disabilities may also shed light on the giving and receiving of support among other groups, such as persons who are bereaved (Cluck & Cline, 1986), people who are abuse survivors (Finn & Lavitt, 1994), or people who are elderly (Dickson-Markman & Shern, 1990; Query & James, 1989).

Disability affects multiple aspects of an individual's life—behavioral, economic, and social—and may result in isolation and disenfranchisement within one's own culture (Braithwaite, 1996). Crewe and Athelstan (1985) defined *disability* as affecting one or more "key life functions": self-care, mobility, communication, socialization, and employment. Of these five key life functions, mobility, communication, and socialization are most directly related to social support. First, persons who have mobility-restricting disabilities

may have significant difficulty moving around or traveling from place to place, and some may find travel overly fatiguing. Thus, leaving home to interact with others may be prohibitive. Second, people who have disabilities affecting their communication capabilities may also find access to both disabled and nondisabled people restricted. For example, persons with cerebral palsy or aphasia from a stroke may have severe limitations in verbal speech, and persons who are deaf are limited when others are not able to use sign language. Both mobility and communication issues would render a computer-mediated form of support attractive.

The third key life function, socialization, may disadvantage persons with disabilities just as significantly as the first two. For many able-bodied persons, the prospect of interacting with people who are disabled is uncomfortable. Similarly, persons with disabilities are acutely aware that many able-bodied persons seem to be uncertain and awkward around them, and this uneasiness can lead to defensiveness, strained communication, or the feeling they are not wanted (Braithwaite, 1990, 1996; Coleman & DePaulo, 1991; Grove & Werkman, 1991; Havranek, 1991; Heinemann, Pellander, Vogelbusch, & Wojtek, 1981; Thompson, 1982; Thompson & Seibold, 1978). A number of social and emotional problems result from the condition of being "cut off" from the larger society. These include depression, loneliness, alienation, lack of social interaction, lack of information, and lack of access to employment (Shworles, 1983; Zastrow, 1986).

Potential advantages of online support groups have been discussed by a number of scholars but to date have not been widely studied (Finn, 1993). The first advantage of online support groups is that they can help people with health problems or disabilities overcome mobility-related challenges that may prevent them from participating in face-to-face groups (Fullmer & Majumder, 1991; Fullmer & Walls, 1994). Getting face-to-face support groups together can be quite challenging due to the mobility considerations of disabled members because many potential group members would need transportation. Other members find travel difficult, especially if they are dependent on medication or equipment that is not easily transportable. Thus, online groups eliminate transportation needs and provide opportunities for large numbers of members to participate.

A second advantage concerns people who have physical or communication-related barriers to participation. People who experience partial or complete loss of the ability to communicate orally find that the computer allows them to develop and respond to messages at their own speed and to send coherent and complete messages. This can be a very empowering experience for people who find face-to-face communication difficult or socially punishing (Banks, 1988).

A third advantage of computer-based groups for people with disabilities is the potentially great number of participants from whom information and perspectives may be drawn. The online groups can provide perspectives across different types of disability, diverse cultures, and a wide array of experiences (Finn & Lavitt, 1994; Fullmer & Walls, 1994). A related fourth advantage of online support groups is the large numbers of participants who, in turn, provide and promote a sense of universality and community for people who are disabled. Knowing they are part of a larger cultural group can help people with disabilities adjust, provide a base of knowledge and political action, and decrease

feelings of isolation or alienation for individual participants (Braithwaite, 1996; Braithwaite & Labrecque, 1994).

Finally, computer-based groups can provide a learning opportunity for others who are not members but who would benefit from learning about the participants' perspectives. For example, potential new members, friends, relatives, and professionals may "lurk" (i.e., read messages but not participate) in an online group without being intrusive or disturbing the group process (Finn & Lavitt, 1994). The messages may provide insight and pragmatic information for those who are faced with understanding and coping with effects of having a disability themselves or with other people who are disabled (e.g., family member, coworker, client).

The previous discussion provides some idea of potential advantages of participation in online support groups. However, there is little known about the content of the messages exchanged in these online encounters. An exception is a study by Fullmer and Walls (1994) that compared the subject matter of disability-related messages and the amount of participation in five different disability-related computer conferences. They found 17 subject-matter categories discussed by participants, all focusing on information given and requested (e.g., assistive devices, agencies, legislation, accessibility, employment, chronic pain). Unlike Fullmer and Walls (1994), however, our goal was to move the focus beyond information exchange only (what they called *subject matter*) and to study the communication of social support messages in computer-mediated support groups for people who are disabled. In particular, we wanted to study both the nature and quantity of electronic social support messages as exchanged by people who are disabled by first assessing their respective frequencies. Thus, our first two research questions (RQs) ask:

- RQ1:** What types of supportive messages are communicated in computer-mediated support groups serving persons with disabilities?
- RQ2:** To what extent is social support manifested in the messages of computer-mediated social support groups serving persons with disabilities?

A primary purpose of our study was to provide an in-depth description of the types of support messages used by participants with disabilities. Careful attention to the messages themselves increased the likelihood of discovering how support was accomplished through interaction (Burlinson et al., 1994). The literature provided several reasons to suspect that social support may be qualitatively or quantitatively different in the computer-mediated context we studied. First, the literature on computer-mediated communication established that such communication may be different, and in some ways more advantageous, than face-to-face interaction (Walther, 1996a). In terms of specific categories of support, mediated communication obviously provides limited opportunities for tangible assistance—the type of support that involves physically doing something for another person. Yet, other forms of support may be enhanced in mediated settings; for example, the time-delayed nature of mediated communication may result in more time to think about support requests before replying. Relieved of the need to respond immediately, support providers may be able to provide better or more thoughtful advice. Offline, participants

may be able to research possible sources of help or locate referrals. Researchers may be able to find evidence of time delay in the quantity or quality of messages offering advice or in what Cutrona and Suhr(1992) have called *information support*. The connectivity of computer networks potentially increases the number of people who “hear” a request for support, thus increasing opportunities for support seekers to connect with similar others. Thus, the mediated nature of the context we study may facilitate the use of network support. Finally, mediated support offers opportunities for users to engage in other forms of support that may not ordinarily be acceptable in personal interaction. For example, long narratives might be prohibited by the turn-taking rules of face-to-face conversation; however, users in mediated settings have the opportunity to read narrative at their leisure. The anonymous nature of mediated support groups may encourage more use of potentially risky messages that might seem too personal or private in other instances.

In addition to the unique characteristics of mediated communication, the quality of support messages may be impacted by the health limitations and special circumstances experienced by people with disabilities. First, because of limitations on mobility, persons with disabilities may find mediated support groups a more accessible source of advice about medical conditions than visits to physicians or other professionals. Evidence for this proposition may be found in support messages related to advice and/or education. More compelling, however, is research suggesting that mobility and communication limitations are associated with social alienation and depression (e.g., Braithwaite, 1990; Shworles, 1983; Thompson, 1982). For this population then, we expect that emotional support might be more prominent than it is with persons who are not experiencing disability (e.g., Cutrona & Suhr, 1992).

The computer-mediated support literature and the literature on disability and communication are not conclusive enough to produce precise predictions about the nature of support in the context studied here. However, these literatures are suggestive because they indicate that message types reported previously might be more or less prominent in our sample. They also suggest that additional forms of support might be located in our data. Therefore, we posit a third RQ with two parts:

- RQ3:** How, if at all, do the patterns of support messages exchanged by persons with disabilities in a mediated context vary from those reported in previous literature? Are previously undocumented forms of support evident in this context?

Method

Data for this study were the messages posted to a computer bulletin board called “Support Network” (the name has been changed to protect confidentiality), a computer-based “conference” (support group) for persons with disabilities.¹ Its messages were distributed via E-mail through a nationwide computer BBS network. Data comprised all postings during a 1-month period in 1995. We conceptualized each posting as a conversational “turn.” In all, our database includes 1,179 turns. Turns could contain multiple social-support messages, although in practice most turns contained only one. Messages identified the sender,

intended recipient, and topic of each message, followed by the actual text itself. Some messages were addressed to all users of Support Network, but the large majority were addressed to individuals. Messages often were responses to previous postings. In such cases, parts of the previous posting were typically reproduced in the current message, as a way of reconstructing the original context. When possible, the reconstructed messages from previous postings were coded. Coders also used the reproductions to help them interpret current messages.

Participants

Our sample included all individuals who posted messages to Support Network during the study period. We counted 42 unique sender names or code names. All names were changed in this research article to protect confidentiality. Due to the anonymous nature of bulletin boards, demographic data were limited to that spontaneously offered by message senders. Participants were distributed across the United States. Due to the names and information revealed in the messages, the sample appeared to be evenly distributed between men and women. In their messages, participants referred to a broad array of physical disabilities, whereas a small portion of the sample referenced psychological disabilities. Thus, we concluded that most of the network members were persons with physical disabilities.

Coding Procedures

Unitizing

At this stage, *social support postings* were defined broadly as those offering caring, belonging, esteem, or assistance to the recipient (cf. Cushman & King, 1986; Gottlieb, 1985). One coder unfamiliar with the specifics of the study applied this definition to all turns, finding that 98% of the turns involved a type of social support element. A second coder reviewed the same messages, finding social support in 97%. The few instances where unitizing disagreement existed were resolved by one of us. Coders also indicated the number of support messages within each conversational turn. Within the 1,175 conversational turns, coders agreed on the presence of 1,472 social support messages, for an average 1.2 messages per turn. Unitizing agreement based on this number of agreed-on messages was 95.3%.

Evaluation of category systems

Because no taxonomy of the mediated support messages used by persons with disabilities could be located in the literature, our first task was to review taxonomies developed in other social support contexts. Consistent with RQL, the objective was to determine whether an existing taxonomy can, in modified form, adequately account for the diversity of support messages posted to the bulletin board. We initially chose the coding system described by Barbee and Cunningham (1995), because it was developed relatively recently, its validity and reliability received preliminary empirical support, and it appeared to be comprehensive. In addition, the system was purported to capture the interactive quality of social

support (Barbee & Cunningham, 1995). Although not fully interactive in “real time,” computer bulletins do permit delayed message exchange, and we hoped to capture this quality when possible.

Pilot testing

Approximately 10% of the turns were used for a pilot test of the coding scheme. One of us and a research assistant unfamiliar with the specifics of the study reviewed the transcripts, discussed the applicability of coding categories, identified examples for each category, and revised category definitions as needed. Through this iterative process, we determined that the Barbee and Cunningham (1995) coding system was unworkable with this particular data set, largely because we lacked access to the full range of nonverbal behaviors. As a result, coders found it difficult to discriminate among many of the 26 subcategories.

To ameliorate these difficulties, we decided to adopt a simpler, more intuitive coding system, settling on the five-category system developed by Cutrona and Suhr (1992): information support, tangible assistance, esteem support, network support, and emotional support. Their system incorporates the social support categories most frequently encountered in the social support literature (e.g., Gottlieb, 1985; House, 1981). Cutrona and Suhr (1992) proposed subcategories within each of these five categories. These appeared to represent examples of the types of messages that might fit within the larger categories, and we used them as guidelines only.

Using the pilot testing procedures described previously on 10% of the data, one of us and a research assistant determined the Cutrona and Suhr (1992) category system to be feasible with some minor clarifications. We attempted to code subcategories when possible, but consistent with Cutrona and Suhr (1992), reliability calculations were based exclusively on the five-category system. One subcategory, “listening,” was eliminated because it referred to listener behaviors that occurred simultaneously with the partner’s utterances—an impossibility in mediated communication. Thus, we attempt to code 10 of Cutrona and Suhr’s (1992) 23 original subcategories.

Pilot testing revealed one significant source of coding confusion due to overlapping subcategory definitions. Within the esteem support supracategory, a subcategory called *validation* was difficult to differentiate from *give encouragement*, which is a subcategory associated with Cutrona and Suhr’s (1992) emotional support supracategory. These two categories sometimes conflicted with the *assess situation* subcategory of information support, which included messages that share information about the sender’s perception of the recipient. Coders decided to code these separately on the first pass through the data to see if ambiguities could be resolved, with the intention that all three categories would be collapsed eventually into a single category if necessary. Ultimately, coders found numerous examples supporting the uniqueness of these categories (see the “Results” section). However, they also continued to find examples that represented conceptual overlap, making these categories more problematic than the other 19 message types. To ameliorate this problem, the three categories were collapsed into one.

Interrater reliability

Two coders independently coded all social support messages into supracategories and then subcategories. Based on analysis of 50% of the coding data, simple agreement within all five categories, as modified previously, was 80%. Scott's (1955) pi statistic, which corrects for chance agreement, was .76. Simple agreement for all subcategories was above 70% with the exception of the understanding-empathy subcategory of *emotional support* (55%). Coders found the definition of this category to be too broad. Because of the emphasis on conveying an understanding of the message recipient's situation, the coders most frequently confused this category with information support.

Results*Types of Support Behaviors*

RQ1 asked about the types of social support messages used in computer-mediated support groups. We discuss these, organized within Cutrona and Suhr's (1992) category system of supratypes and subtypes: information support, tangible assistance, network support, esteem support, and emotional support (see Table 1).

Information support

The first category, information support, included messages that conveyed instructions, including (a) advice, (b) referrals to experts, (c) situation appraisal, and (d) teaching. Messages coded as information support appeared to reduce uncertainty or help make life more predictable for the message recipient. Messages in the advice category typically offered suggestions or guidance for coping with the challenges offered by a disability or difficult condition. For example, one Support Network member received this advice about the effects of a new piece of equipment on his ability to walk and jump: "You go jumping back and you might land in an awkward position. . . . If you're gonna jump . . . please make it straight up and down." Members of Support Network also asked those online for advice and support regarding relationships they had outside their electronic circle of friends. For example, Matthew wrote:

I'm kind of in a situation, well not really a situation at all but currently confused about a relationship that I know will go absolutely nowhere, but at the same time seems to be getting slowly too comfortable. . . . Ok Explanation: First everybody around here knows the way things are around here with me . . . right . . . ? . . . Last year I ran into an old female friend . . . we've chatted, joked, kidded . . . blah, blah, la, . . . Normal stuff. . . . Here's the problem. I'm finding myself making excuses to run to the store just to get a look at her and hear her talk. . . . Question is . . . Do I want to be around her because she makes me feel good or do I actually want to have a serious relationship with her? If so, at what cost? She has given me a few kisses and some hugs, but what gets me most is when she looks at me . . . I melt. . . . Anybody got some advice?

Referrals were efforts to link the recipient with a source of help or expertise. For example, in making a referral to a person with expertise on a particular disability, one message sender wrote: "His wife is that Dr. I have been talking about." In response to a series of conversations about companies that supplied devices to assist people with limited ability, one member posted a list of 11 companies with complete addresses and phone numbers.

Situation appraisals reassessed or redefined circumstances, often in a manner that helped make them more positive or revealed new information that could be helpful; in short, they provided a different way to look at things. In a series of messages, one member had offered the diagnosis of another member's wrist pain as carpal tunnel syndrome and suggested he or she use a wrist brace. Another member responded, "It is nothing compared to real problems. I am fine and will use that good ole commonsense to master it."

Teaching included comments that provided factual or technical information about situations described by network participants. For example, one participant posted a message describing how a computer with dictation would help her get more work done. "There's an IBM program called Dragon dictate that has lots of good comments. However, it costs \$3,000." Members sometimes forwarded detailed information from published sources as a form of teaching. For example, an article posted from *Arthritis Today* explained how certain kinds of craft work could be performed by persons with arthritis. In another example, a bulletin was posted from an electronic news service, explaining the effects of budget cuts in New York on programs serving people with disabilities.

Tangible assistance

The second category was tangible assistance. Here the sender offered to take concrete, physical action in support of the recipient, for example, offering to escort the sender or lend him or her software. We were able to locate three types of tangible assistance in these data: (a) performing a direct task, (b) active participation, and (c) expressing willingness (the categories of loaning and performing an indirect task did not appear in these data). The direct task category included messages to perform an action in response to a need or request. For example, one member responded to a request for appliances or other materials that might help members of the support group, "I will put that on my list of 'to do's.' . . . I'll take inventory of my closet and see if there is anything else in there that may be of use to your group."

The second category, active participation, was exemplified when one member offered to join another member on a photo shoot, promising, "If I ever get up there we will do stories w/photos [together]." The last category of tangible assistance included those statements expressing a willingness to help. Janie wrote that several of her friends were having problems using Support Network and explained that she was helping them. She then offered to provide similar assistance to others: "I'll be glad to help in anyway I can. . . . As you know, all too well, I know and recognize desperation when I see it . . . (smile)."

Network support

The third category, network support, involved messages that appeared to broaden the recipient's social network, by connecting him or her to others with similar interests or situations, including access, presence, and companions. This category referred only to attempts

to create structural connections; attempts to build emotional connections were classified elsewhere. Any referrals to experts (e.g., physicians, counselors) were coded as informational support.

Some messages offered support to members by creating access to new correspondents and companions. Access messages invited new members to join in online conversations or offered to connect members with others having similar interests. One member offered, "Some fellow in England has a project similar to yours. . . . Maybe I can get you two in touch with one another." Some comments emphasized the presence of listeners and encouraged continued use of Support Network: "If you have questions or comments, please continue to share them with me."

The companions category reminded correspondents of supportive others; for example, this message was delivered by the manager of the Network:

You will be seeing some new folks online. . . . They are associated with the project here. . . . Ranging from youngins to old foggies, they have lots to share and are interested in everything. I . . . encourage them to reach out nationally to all you fine folks.

Esteem support

The fourth category was esteem support. These messages validated the recipient's self-concept, importance, competence, and rights as a person and included compliments, validation, and relief from blame. Compliments conveyed positive assessments of the recipient and his or her abilities. In response to a message discussing the challenges associated with her physical disability, one respondent wrote: "But then, Janet, ultimately its all in the mind. It's mind over body all the way. And from what I see, your mind is one beautiful piece of artistry."

Those comments that acknowledged agreement or common ground with the message sender were labeled validation. In response to a message offering opinions about the difficulties of physical therapy, a writer posted a long parody as an apparent validation of the original message's accurate assessment: "Read about your BBS blues. . . . I sent along a parody called 'the don'ts of physical therapy.' Did you get that?" Another example was illustrated by the discovery of a common response to an episode of physical distress: "You and I have the same attitude. Just before I broke down and called the cardiologist I said to myself: 'I hope I'm not doing something stupid like dying.'" The last type of esteem support, relief of blame, was the apparent objective of messages like "Its not your fault" or "Don't blame yourself."

Emotional support

The final category, emotional support, included all attempts by the sender to express empathy, support the emotional expressions of the recipient, or reciprocate emotion. The emphasis here was on supporting emotional states rather than the recipient's identity or self-concept and there were seven types of emotional support coded: (a) relationship, (b) physical affection, (c) confidentiality, (d) sympathy, (e) understanding, (f) encouragement, and (g) prayer.

Relational support stressed the importance of closeness and love. For example, one couple wrote to a friend during the Christmas season: "Pam and I wish you and yours the happiest of the holidays. . . . We share our hugs and love. Love and friendships are the best." Obviously, physical affection could not be given online; however, it was often offered and conveyed verbally. One member wrote, "If you have contact with her again, please let her know I sent a truckload full of hugs."

A few members expressed support to one another through offers of confidentiality; for example, one member expressed to another, "This will be our secret." Obviously, confidentiality was mostly symbolic, as this was an open group. Members also offered one another messages of sympathy, such as "Sorry it had to happen to you."

The category of understanding included messages of empathy, stressing the similarity of one person's experiences with another's. For example, one writer responded with understanding to a previous message describing a discouraging round of physical therapy: "I know! I just got my first symptoms on July 22nd and I still have problems when I move in certain ways." Similarly, encouragement messages provided the recipient with hope or confidence. In one message, a sender indicated that she might start an anonymous kind of "12-step" group for net users. A Support Network member responded: "Go for it! I'll be your first anonymous person!" Finally, prayer messages were straightforward offers of emotional support in the form of prayer for members who were suffering or in need of help. One member responded to another, "I have had you in my prayers. Are they working? :-)." ."

It was not unusual for exchanges to include more than one type of emotional support. For example, this longer exchange included examples of sympathy, encouragement, and offers of physical affection. Rita had returned to the electronic group after a serious illness, and this yielded a chorus of emotional support from group members. In addition, their celebration of her return and insistence that "everybody has been asking about you" also validated Rita's self-worth as seen in the following exchanges:

Rita announced her return with this message: "I've been seriously ill. Having pneumonia that has sent me in and out of the hospital."

Sally copied this announcement into her own message and preceded it with these enthusiastic words: "She's baaaaaaack!!!! Horray!!!!!"

Another member responded: "Oh Rita. I'm sorry to read this! All better now? [Hugs]."

Rita responded to these initial supporting messages from the group: "Drop me a line to induce me back . . . it might help!"

Sally responded with a lengthy message encouraging Rita to resume her participation in the group to persevere in the fight against her illness: "Get yourself back to [the chat line]!! Everyone has been asking about you!! Hear me???? . . . You gotta help defend the females! Those ole turkeys [men] are up to something. . . . Hope this finds you all better and ready to battle with the guys. . . . So glad to see your name light up my monitor. Hope to see you back. . . . It will get better!"

This next exchange illustrates the emotional support given by Allan to Larry as he struggled with the failing state of his romantic relationship:

Allan: Hope things are going better now.

Larry: Ah, most of my time is spent being bummed out about one thing or another. And tonight is absolutely no exception. Right now I'm so aggravated.

Allan: No wonder you are bummed out. . . . If you need another ear, I'm hear. As they say, "been there, done it, got the tee-shirt."

Larry: All I gotta say is something's gotta give somewhere.

Allan: It will. Either by your choice or her's. . . . But I can tell you that even misery is not forever. Spring will come!

Frequency of Support Behaviors

RQ2 concerned how frequently different types of social support messages are used in the computer-mediated network. Table 1 presents the 22 message categories and their frequency of use. Emotional support messages ($n = 590$) were the most frequently enacted, constituting 40% of the total support messages. Expression of understanding or empathy (12.7% of the grand total) and providing encouragement (11.4%) constituted most (24.1%) of these messages. Informational support messages ($n = 461$) were second in frequency of use (31.7%). Within this category, "teaching" messages, which provided facts and information to help the recipient cope with his or her situation, were most common (12.8%). These were followed closely by situation appraisals (11.8%), messages that represented the senders' attempt to reassess or redefine the recipients' perspective about a situation.

Esteem support was third in terms of frequency ($n = 275$), accounting for 18.6% of the messages. Validation of the recipients' sense of self or opinions was the subcategory used most, accounting for 13.2% of all messages. Fourth, network support ($n = 105$) was offered in 7.1 % of the messages, making it fourth in terms of frequency. Messages that reminded the recipient that there were people with similar circumstances available to them in the network accounted for 4.1 % of all messages in this supracategory. Finally, tangible assistance ($n = 41$) was the form of social support communicated least on Support Network, accounting for only 2.7% of the 1,472 messages.

A chi-square test was conducted to determine whether these observed frequencies varied from what might be expected on the basis of chance. The result was statistically significant, $\chi^2(4, N = 1,472) = 732, p < .001$. Information and emotional support categories exceeded the expected frequency of 204.4; tangible assistance, network support, and esteem support occurred less frequently than expected.

Table 1. Descriptive Statistics for Social Support Categories

Support Category	Frequency	% of Total
Information	461	31.3
Advice	77	5.2
Referral	21	1.4
Situation appraisal	174	11.8
Teaching	189	12.8
Tangible assistance	41	2.7
Loan	0	0
Perform direct task	24	1.7
Perform indirect task	0	0
Active participation	7	0.001
Express willingness	8	0.001
Esteem support	275	18.6
Compliment	68	4.6
Validation	195	13.2
Relief of blame	12	0.008
Network support	105	7.1
Access	18	1.2
Presence	26	1.7
Companions	61	4.1
Emotional support	590	40.0
Relationship	63	4.3
Physical affection	103	7.1
Confidentiality	5	0.003
Sympathy	41	2.7
Understanding or empathy	187	12.8
Encouragement	168	11.5
Prayer	23	1.5

Note: $N = 1,472$ messages

Combinations of Support Types

As one might expect, many messages included a combination of different support types. Additionally, conversations often carried over to a number of people and topics, and often, members copied portions of previous messages into their new message. This extended example highlights the combination of information and network support:

Craig, who was new to Support Network, received advice from Dan about how to meet people on the net. "A good way to start is to say hello. You can always introduce yourself. Ask them how their day is going. . . . Ask about their hobbies."

Seth copied that advice into his message, and then initiated a conversation with Craig: "Hi Craig. I see from your [names Craig's origination] you are a

friend of Tina's. Welcome to Support Network. My hobbies are computer and reading books and magazines. Its nice to meet you."

Cynthia responded with a similar invitation to join the Network: "Come on in, grab your favorite beverage, and sit and talk. Glad to have you here."

Craig wrote to Cynthia: "I'm kind of new to the board. . . . Maybe you could tell me a little more about Support Network. Hey what's [names an eastern state] like? I've spent most of my life in [the west]."

A short time later Craig copied all of the preceding messages and sent this message to all members: "Howdy. Out here in [names his western state] some of my favorite things to do is ride horses. . . . What do you all do in your neck of the woods? I would love to hear back from you."

Unique Support Behaviors

Coders were also instructed to make note of social support messages encountered in the data set that did not fit readily into the category system. Because the RQ3 also sought to identify the unique features of mediated support, we undertook a qualitative analysis, seeking patterns, if any, in these support themes. We analyzed the support messages found in (a) humor, (b) nonverbal cues, (c) narratives, and (d) signature lines.

Humor

We found humor to be a staple in these mediated interactions. Humorous comments were often codeable within an existing category, as when senders joked about their own problems as a way of conveying empathy. For example, two participants shared that they were having respiratory difficulties. One said: "What are you doing? Not breathing? Imagine! I can't exhale and you can't inhale. Between the two of us we have one healthy respiratory system!" In another example, a member reported that the appliance she was using could be offered to others when she did not need it anymore. Another member responded with humor: "I can just see it now — Annie's Appliances!"

In other cases, humor was sarcastic or ironic. These messages were sometimes hard to interpret, but most seemed genuinely supportive. In this example, after listening to a fellow participant discuss an arm that was not fully functioning, one person posted this message: "Tell ya what I'll do though. . . . I'll look around and see if somebody's got one [an arm] that would work good . . . better than mine even, and [I will] send that sucker to you!" In another exchange, one member claimed that she needed a support group for addicted "message junkies" like herself. Another member responded in jest, "O.K. Jane. Put down the mouse and nobody get's hurt — back away from the keyboard slowly."

In some cases, humor seemed to be used to ease the early stages of relationship development, a function common in nonmediated contexts. In the course of a description about the stresses of relocation on a romantic relationship, one person wrote: "I just can't understand it . . . no fights yet. But we are unpacking the moving truck today, so stand by HAHAHA!" The response of her electronic correspondent was "If that doesn't do it, nothing will! HAHAHA."

Nonverbal cues

Although the variety within messages on a computer network might appear to be rather limited by whatever verbal expressions the written word allows, nonverbal communication was a much greater part of these messages than we would have expected. Message senders coped with the limited availability of nonverbal means of communication and sometimes embedded nonverbal support messages in their texts. For example, comments intended to be humorous were followed with "(Smile!)". Similar messages included "blush," "grin," and "giggle." The symbols :-) and :- (were used to convey a smiley face and a sad face, respectively. Another form of nonverbal communication, physical affection, was also offered quite often in the messages. We found 103 instances (6.9% of all messages) of senders offering physical contact, including hugs, hand holding, kisses, and shoulder patting.

Narratives

The use of journals, personal narratives, poetry, and art in online groups has been an avenue for emotional expression and an effective tool for promoting self-awareness, self-esteem, and recovery (Dinsmore, 1991).

Poetry was shared by bulletin board users in a manner not encountered frequently in face-to-face support settings. At times, the poems were offered as a form of emotional support for another person who had posted an earlier message. Other times, the specific purpose of the poems seemed unclear. Especially when sent to all rather than to a specific individual or in response to a specific interaction, poems appeared to be a form of self-expression rather than an attempt at social support for another.

Whatever the intended purpose, Support Network members responded very positively to the sharing of poetry. For example, Fred wrote and offered a poem: "Remember, poetry is the language of love. . . . I'm leaving all of you a wonderful poem today and hope that you like it." Cynthia copied his message into hers and then responded: "It was a beautiful poem. I printed it and gave it to my husband. It said exactly what I felt."

Signature lines

Finally, signature or tag lines provided an interesting form of support. Signature lines appear at the end of the sender's message. Besides a name or codename, often users would post signature lines that conveyed personal axioms, jingles, quotations, and other short strings of text that also conveyed general supportive themes. Some examples follow:

"Anyone who helps you grow is an angel."

"The majority is never right unless it includes me."

"That which does not kill us makes us stronger."

"Men play the game. Women know how to score."

"Some days it all seems so feudal."

"Fight on . . . Fight back!!!"

"Friends are family you choose for yourself."

"I love happy faces. Don't you?"

Discussion

The results of this study have implications for the generalizability of existing social support coding systems to the mediated environment. More important, the results provide some indication of the types of mediated social support that are most often exchanged by members of a group serving persons with disabilities. In addition, our data suggest that some forms of support used in this context are relatively unique. This information is potentially useful to social support scholars, to organizers as well as members of mediated support groups, and to human services professionals.

Generalizability of Social Support Message Categories

This study contributes to the social support literature by determining the degree of fit between existing taxonomies of social support and the support actually enacted in a mediated support group serving persons with disabilities. Data relevant to RQ1 demonstrated that the typology reported by Cutrona and Suhr (1992) appeared to be most generalizable. This was evident despite the fact that the taxonomy was originally developed to study short conversations in marital dyads, not support groups. Our reliability figures were comparable to those reported in their study. We reported a chance-corrected Scott's pi statistic of .30, whereas they reported reliability of .76, using a statistic comparable to J. A. Cohen's weighted kappa (Cutrona & Suhr, 1992, note 2; see J. A. Cohen, 1968). All five of the supracategories and all but 2 of 22 subcategories of Cutrona and Suhr's (1992) typology were coded in our data. Only the tangible assistance categories of offering the recipient a loan and offering to perform an indirect task (i.e., offering to take over a task not directly related to current stress) were not found. This high level of classification is probably due to Cutrona and Suhr deriving their category system from a broad review of the social support literature.

In contrast, the taxonomy reported by Barbee and Cunningham (1995) could not be reliably implemented by our coders due to its partial reliance on nonverbal messages and the apparent conceptual overlap among some categories. In fact, the reduced visual and aural cues provided in mediated communication may largely explain why our coders were unable to make the distinctions required in this complex coding system. We believe the interactive nature of the Barbee and Cunningham (1995) system makes it appealing for the study of social support conversations; however, significant modification and simplification may be required if it is to be used in coding mediated messages.

Members of Support Network appeared to adapt these traditional forms of support to their own needs. The types of social support messages we located appear directly related to some of the key life functions affected by disability (Crewe & Athelstan, 1985). For example, network support seems to redress limitations on mobility and access to others (i.e., mobility function). Information support, particularly advice and suggestions, was often directed toward helping Support Network members tend to their physical and housekeeping needs (i.e., self-care function). Esteem support, as delivered over Support Network, often countered the recipient's loneliness, depression, and alienation (all related to the socialization function). In short, there is much evidence in our data to suggest that members

of computer groups like Support Network actively help one another to manage some of the physical and social limitations imposed by disability.

Relative Frequency of Social Support Categories

The mediated nature of the communication we studied and the potentially unique support needs of persons with disabilities led us to wonder if the relative prominence of the various types of social support would be different in this population, as compared to able-bodied persons using face-to-face support. RQ2 led us to examine the frequencies and percentages associated with each support category. These measure the relative prominence of each message type in the body of 1,472 messages delivered on Support Network. It is clear from our statistical results that some types of support messages were favored by members. Although not completely straightforward due to measurement differences, the comparison of our results to those of Cutrona and Suhr (1992) was instructive. They reported mean scores for each message type, an indication of how often each type was used in the seven-minute conversations they observed.

Even so, we noted that emotional support was most prominent in our data, whereas informational support was most prominent in the Cutrona and Suhr (1992) study. This difference may merely reflect the presumably nonemotional experimental setting they examined. More intriguing from a theoretical standpoint is the possibility that our results support the optimal matching model (Cutrona & Suhr, 1992), which contends that emotional support is more likely to be given when the recipient is experiencing distressful circumstances that are not subject to his or her control. This type of support can promote comfort and healing in such circumstances. According to the model, information support (suggestions and advice) is most useful and prominent when the recipient can control the situation and put the information to use. Perhaps it was because health problems and disabilities are not fully under the control of the members of Support Network that emotional support was so prominent. For instance, a person who is disabled may not always be able to control his physical environment or the impressions others have of him. However, we qualify this observation by noting that the amount of information support in our data was also substantial, suggesting that members were simultaneously involved in providing support via advice, suggestions, and referrals.

Network support was more prominent in our data than in those reported by Cutrona and Suhr (1992), where it was quite rare. This finding is not surprising given that one stated purpose of Support Network is to connect persons with disabilities to others in the network. It is important for theoreticians and human services professionals to note that this form of support may be more valuable in some contexts than others. Moreover, it may be particularly valued by persons with disabilities that constrict their social networks. We should note that even in our study, the incidence of network support messages was quite low compared to other forms of support with the exception of tangible assistance. An obvious explanation for this result is that members met their needs for network support simply by participating in Support Network. Therefore, members did not need to make network support the object of their messages. Emotional and informational support needs may have been more salient and may have required more explicit discussion. Tangible assistance was the least commonly used form of social support in our study. Given the lack

of physical proximity of the participants to one another, coupled with mobility challenges for some participants, tangible support may have been difficult to promise and enact.

As we noted, what the participants of this online support group offered to one another most was emotional support, information, and esteem support. Participants often validated one another's experience and perceptions and often provided encouragement, understanding, and empathy to one another. In addition, members of this support group provided much information to one another, especially providing skills, facts, and information that would help the recipient redefine a negative situation. These types of social support in this study are similar to what researchers have found in face-to-face support groups (Boreman et al., 1982; Caplan, 1974; Fullmer & Majumder, 1991; M. A. Lieberman, 1976).

Unique Forms of Social Support

Pursuant to RQ3, however, some relatively unique forms of supportive communication emerged on Support Network. The written nature of online communication explains some of these variations. For example, poetry was shared quite often by the members of the online group, a tendency briefly noted by Dinsmore (1991). The anonymity afforded by the computer-mediated channel may provide a safe place for participants to create poetry as a form of expression. Additionally, the lack of pressure for an immediate response creates opportunities for the creation of thoughtful prose. This feature may be an especially salient advantage for those with communication-related disabilities who find that the computer liberates them from the difficulties they encounter with oral speech. The differential support needs created by different types of disabilities seem well worth exploring in future studies.

As we interpreted these data, humor seemed an unusually important form of support. We noted that humor was used in self-deprecating ways, in sarcastic ways, and as a way to diffuse tension and decrease discomfort in early stages of relationships. Braithwaite (1989, 1990, 1991) and Jones et al. (1984) reported on the uses of humor by persons who are disabled when interacting with able-bodied persons. People with disabilities reported that they used humor in a positive manner, for example, to help reduce the discomfort and uncertainty of able-bodied others (Braithwaite, 1989; Jones et al., 1984) and as a way to model how they would like to be treated in return (Braithwaite, 1990). People with disabilities also reported that they would use sarcastic or aggressive forms of humor in response to perceived violations of their privacy (Braithwaite, 1991). They also monitored the outcome of their humorous attempts. If the recipient could not eventually "get over it" and appreciate the humor, this was considered a sign that a relationship would be undesirable (Braithwaite, 1989). We suspect that the anonymous nature of the online support network makes using humor less risky for the senders and perhaps for recipients as well. Our data indicate that humor was pervasive and important in Support Network interactions. We suggest that it warrants more study in other mediated contexts.

Applications and Future Directions

Our analysis of these online interactions suggests that Support Network was used by members to give and receive high levels of social support. Much of this support seems directed

at the emotional and informational needs of members, some of which are heightened by the disabilities that impose limitations on members' health status and daily living. The apparent utility and vitality of the supportive communication appearing in the mediated interactions we observed should be encouraging to both designers and potential users of mediated support groups. Mediated support appears to be quite useful to people who are isolated from social networks due to limited mobility or physical energy. Individuals who find typing easier than speaking are likely to experience increased social support in mediated environments. Embarrassment or communication apprehension, both of which might discourage support speaking, might be less important in the anonymous mediated environment. Access to specialized or widely dispersed health information may be more easily obtained through far-reaching electronic networks. We see evidence in our data of members distributing such information, giving advice, and teaching other participants how to cope with disabilities. We also see how this type of support could be useful to caregivers of people who are ill, physically limited, or elderly. Caregivers often find themselves isolated and essentially as homebound as the people within their care.

It is imperative to remember that the use of computer-mediated support groups is still limited to those with access to the training and equipment necessary to participate. Although most support groups are based on the self-help model, health and human services professionals can play a significant role by helping persons locate and use this resource. Professionals should become aware of the types and uses of computer-based groups and make this information available to clients. In addition, professionals can help people with disabilities obtain necessary skills through workshops and in-home training. An increasingly important role of human services professionals may be the securing of grants and donations in kind to underwrite hardware, software, and training for those who cannot otherwise afford it. Finally, professionals can promote access to computer-based groups by encouraging public institutions, such as libraries, hospitals, and social service organizations, to provide access to computer networks.

Although the advantages of computer-mediated support groups have been our concern thus far, potential disadvantages must be considered. First, little is known about the extent to which members experience harm through negative, hostile, or malicious encounters. Some groups are monitored, and some have ground rules about the type of interactions permitted. However, many groups do not. Several researchers have argued that in some instances the anonymity of computer-based communication can remove inhibitions typically associated with politeness and remove the social cues that normally constrain behavior (Sproull, 1986; Sproull & Kiesler, 1986). Conversely, Walther (1996b) cautions that online communication may be overly friendly or "hyperpersonal," so that people treat one another in stereotypical ways, rather than engaging in more straightforward and honest types of reactions (p. 345). Communication educators and human services professionals must take it upon themselves to make users aware of these pitfalls.

A second potential disadvantage is that members may receive misinformation from other group members that may not be corrected or corrected only after a time delay. Ethics and safety considerations dictate that human services professionals should play a significant role in defining the communication rules regulating mediated support groups and in monitoring the accuracy of information exchanged by members. A third concern is that

computer-based groups might be addictive, may take time away from other more personal forms of social contact that would benefit people with disabilities and others, or both. Of course, this is a concern that has been voiced about all online communication, as evidence of online addictions is beginning to surface. Finally, concern has been raised that computer-based resources are targeted and available only to people with financial resources, access, and computer skills, leaving out people who are poor, undereducated, elderly, and other potentially marginalized groups (Glastonbury & LaMendola, 1992).

We did not witness glaring examples of these potential problems in our examination of the messages exchanged. For example, we did not see obviously hurtful or inaccurate messages posted. In fact, when advice was given by one member, others often weighed in with their own opinions, creating opportunities for message receivers to debias and weigh the accuracy of previous messages. We realize however, that our research method is not the one best suited for understanding hurtful messages from the point of view of recipients. Certainly, though, both the advantages and disadvantages of computer-mediated communication warrant more study in the social support literature.

Computer-mediated groups will continue to flourish as more people gain access to the Internet. We believe that these groups will continue to provide an important research venue as scholars understand the motivations and advantages of using this form of communication (cf. Finn, 1993; Finn & Lavitt, 1994). Both practical and theoretical contributions will be made in the future by researchers who extend our work to different populations, study the effects as well as the forms of support offered in mediated contexts, and explore the advantages and disadvantages of different types of electronic formats. Scholars and practitioners should examine the ethical implications of mediated support and contribute to the development of groups that protect the safety of members. Finally, communication educators and human services professionals should combine their efforts as they prepare professionals and students for the opportunities and limitations of mediated interpersonal interaction.

Methodological Limitations

The results of our study are qualified by the methodological choices we made. First, we studied only one computer support group, targeted toward persons with disabilities. One obvious direction for future research is to examine communication in other groups to determine whether the patterns we found are generalizable. We might expect some variation in groups like Support Network due to the evolving relationships and culture that emerges in any collective. Further, our results may or may not be helpful in understanding online groups serving other populations. For example, the anonymous nature of online communication has been posited as a potentially facilitating factor in online groups serving sexual abuse survivors (Finn & Lavitt, 1994).

A second methodological issue concerns our decision to code actual messages rather than self-reported message behavior. We believe the ecological validity of social support literature is improved by studies that examine support messages as they are enacted in natural settings. However, our method did not allow us to incorporate the perspectives of message senders as we coded the messages. We did not determine, for example, whether

messages coded as emotionally supportive were actually perceived that way by the recipient. This problem is overcome somewhat by the fact that we could read a sequence of messages and responses. This is an improvement over methods that code messages without reference to the partners' reaction. Still, future studies might explicitly incorporate partner interpretations as an additional source of data.

A third issue concerns the accuracy of our coding systems. Chance-corrected reliabilities reported in this study are reasonably high and comparable to previous studies of social support in nonmediated contexts. However, our decision to study mediated interaction meant that certain types of nonverbal cues would be unavailable to coders. This explains in part why we found the first coding system (Barbee & Cunningham, 1995) less workable than it apparently has been in nonmediated contexts. We found that the fine coding distinctions required to code messages into subcategories of support (e.g., types of emotional support) were sometimes difficult to make with this data. This has been true in other contexts as well (Cutrona & Suhr, 1992), but it might be magnified in mediated environments. We speculate that the public nature of such communication might encourage message senders to use private codes, heavy editing, and ambiguity, all of which complicate message coding.

Despite these limitations, we believe the method used here is useful because it allows the study of communication occurring between people who have disabilities. Braithwaite and Braithwaite (1997) have critiqued research on people with disabilities that has studied their communication solely from the perspective of able-bodied people. In recent years, researchers have described the communicative perspective of people with disabilities (cf. Braithwaite, 1990, 1991; Braithwaite & Braithwaite, 1997; Fox & Giles, 1996). However, there has been scant research on how people with disabilities communicate with one another. Computer-mediated networks provide a window through which researchers can observe this form of interaction.

Although computer conferencing does not take place in real time (there are not immediate messages and responses as in face-to-face interactions), our research method did preserve content and sequencing of these messages. This approach provides a viable alternative to retrospective self-reports or written responses to researcher-created scenarios. This method also answers the call of other scholars to study social support as an everyday type of interaction rather than something that occurs only during periods of crisis (Barnes & Duck, 1994). We tracked the messages of participants across a typical month, finding that most of the support messages were not crisis related.

Acknowledgments – An earlier version of this article was presented at the annual meeting of the Speech Communication Association, November 1996, San Diego, California.

We thank research assistants Teri Gentry and Erica Molander-Stropka for their contributions.

Note

1. Throughout the study we were careful to protect the identity of the participants. As with other computer bulletin boards, these data were accessible to the public. To protect the identity of the participants of Support Network, we do not use real names (pseudonyms are used) in this article nor do we provide any examples that would identify an individual. When including exemplar

quotes from the data in this article, we made no attempt to correct any spelling, grammar, or punctuation errors.

References

- Albrecht, T. L., & Adelman, M. B. (1984). Social support and life stress. *Human Communication Research, 1*, 3-32.
- Albrecht, T. L., & Adelman, M. B. (Eds.). (1987). *Communicating social support*. Newbury Park, CA: Sage.
- Albrecht, T. L., Burlleson, B. R., & Sarason, I. (1992). Meaning and methods in the study of communication and social support: An introduction. *Communication Research, 19*, 149-153.
- Ayers, T. D. (1989). Dimensions and characteristics of lay helping. *American Journal of Orthopsychiatry, 59*, 215-225.
- Banks, M. (1988). *The modern reference*. New York: Brady.
- Barbee, A. P., & Cunningham, M. R. (1995). An experimental approach to social support communications: Interactive coping in close relationships. In B. Burlleson (Ed.), *Communication yearbook 18* (pp. 381-413). Thousand Oaks, CA: Sage.
- Barnes, M. K., & Duck, S. (1994). Everyday supportive contexts for social support. In B. R. Burlleson, T. L. Albrecht, & I. G. Sarason (Eds.), *Communication of social support* (pp. 175-194). Thousand Oaks, CA: Sage.
- Boreman, L. D., Brock, L. E., Hess, R., & Pasquale, F. L. (1982). *Helping people to help themselves: Self-help and prevention*. New York: Haworth.
- Braithwaite, D. O. (1989, February). *An interpretive analysis of disabled persons' impression management strategies in response to perceived discomfort and uncertainty of able-bodied others*. Paper presented at the annual meeting of the Western Speech Communication Association, Spokane, WA.
- Braithwaite, D. O. (1990). From majority to minority: An analysis of cultural change from able-bodied to disabled. *International Journal of Intercultural Relations, 14*, 465-483.
- Braithwaite, D. O. (1991). "Just how much did that wheelchair cost?": Management of privacy boundaries and demands for self-disclosure by persons with disabilities. *Western Journal of Speech Communication, 55*, 254-274.
- Braithwaite, D. O. (1996). "Persons first:" Exploring different perspectives on the communication of persons with disabilities. In E. B. Ray (Ed.), *Communication and disenfranchisement: Social health issues and implications* (pp. 449-464). Mahwah, NJ: Lawrence Erlbaum Associates.
- Braithwaite, D. O., & Braithwaite, C. A. (1997). Understanding communication of persons with disabilities as cultural communication. In L. A. Samovar & R. Porter (Eds.), *Intercultural communication: A reader* (8th ed., pp. 154-164). Belmont, CA: Wadsworth.
- Braithwaite, D. O., & Labrecque, D. (1994). Responding to the Americans with Disabilities Act: Contributions of interpersonal communication research and training. *Journal of Applied Communication Research, 22*, 287-294.
- Burlleson, B. R., Albrecht, T. L., Goldsmith, D. J., & Sarason, I. G. (1994). The communication of social support. In B. R. Burlleson, T. L. Albrecht, & I. G. Sarason (Eds.), *Communication of social support* (pp. xi-xxx). Thousand Oaks, CA: Sage.
- Caplan, G. (1974). *Support systems and community mental health*. New York: Behavioral Publications.
- Cluck, G. G., & Cline, R. J. (1986). The circle of others: Self-help groups for the bereaved. *Communication Quarterly, 34*, 306-325.

- Cohen, J. A. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. *Psychological Bulletin*, 70, 213–220.
- Cohen, L. H., McGowan, J., Fooskas, S., & Rose, S. (1984). Positive life events and social support and the relationship between life stress and psychological disorder. *American Journal of Community Psychology*, 12, 567–587.
- Coleman, L. M., & DePaulo, B. M. (1991). Uncovering the human spirit: Moving beyond disability and “missed” communications. In N. Coupland, H. Giles, & J. Wiemann (Eds.), *Miscommunication and problematic talk* (pp. 61–84). Newbury Park, CA: Sage.
- Crewe, N., & Athelstan, G. (1985). *Social and psychological aspects of physical disability*. Minneapolis: Department of Independent Study and University Resources, University of Minnesota.
- Cushman, D. P., & King, S. S. (1986). Communication of social support as a strategy for mediating life stress. *Progress in Communication Sciences*, 7, 225–241.
- Cutrona, C. E. (1986). Behavioral manifestations of social support: A microanalytic investigation. *Journal of Personality and Social Psychology*, 51, 201–208.
- Cutrona, C. E., Russell, D., & Rose, J. (1986). Social support and adaptation to stress by the elderly. *Psychology and Aging*, 1, 47–54.
- Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse support behaviors. *Communication Research*, 19, 154–174.
- Dean, A., & Ensel, W. M. (1982). Modeling social support, life events, competence and depression in the context of age and sex. *Journal of Community Psychology*, 10, 392–408.
- Dickson-Markman, F., & Shern, D. L. (1990). Social support and health in the elderly. *Journal of Applied Communication Research*, 18, 49–63.
- Dinsmore, C. (1991). *From surviving to thriving: Incest, feminism and recovery*. Albany: State University of New York Press.
- Finn, J. (1993). An exploration of computer-based self-help/mutual aid groups. In B. Glastonbury (Ed.), *Human welfare and technology* (pp. 70–79). Assen, The Netherlands: Van Gorcum.
- Finn, J., & Lavitt, M. (1994). Computer-based self-help/mutual aid groups for sexual abuse survivors. *Social Work with Groups*, 17, 21–46.
- Fox, S. A., & Giles, H. (1996). “Let the wheelchair through”: An intergroup approach to interability communication. In W. P. Robinson (Ed.), *Social groups and identity: The developing legacy of Henri Tajfel* (pp. 215–248). Amsterdam: Elsevier.
- Fullmer, S., & Majumder, R. K. (1991). Increased access and use of disability-related information for consumers. *Journal of Rehabilitation*, 57, 17–22.
- Fullmer, S., & Walls, R. T. (1994). Interests and participation on disability-related computer bulletin boards. *Journal of Rehabilitation*, 60, 24–30.
- Gallagher, S. K., & Gerstel, N. (1993). Kinkeeping and friend keeping among older women: The effect of marriage. *The Gerontologist*, 33, 675–681.
- Glastonbury, B., & LaMendola, W. (1992). *The integrity of intelligence*. New York: St. Martin’s Press.
- Goldsmith, D. (1992). Managing conflicting goals in supportive interaction: An integrative theoretical framework. *Communication Research*, 19, 264–286.
- Gottlieb, B. H. (1981). *Social networks and social support*. Beverly Hills, CA: Sage.
- Gottlieb, B. H. (1985). Social networks and social support: An overview of research, practice and policy implications. *Health Education Quarterly*, 12, 5–22.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Psychology*, 78, 1360–1380.

- Grove, T. G., & Werkman, D. L. (1991). Conversations with able-bodied and visibly disabled strangers. *Human Communication Research, 17*, 507–534.
- Havranek, J. E. (1991). The social and individual costs of negative attitudes toward persons with physical disabilities. *Journal of Applied Rehabilitation Counseling, 22*, 55–21.
- Heinemann, W., Pellander, F., Vogelbusch, A., & Wojtek, B. (1981). Meeting a deviant person: Subjective norms and affective reactions. *European Journal of Social Psychology, 11*, 1–25.
- House, J. S. (1981). *Work, stress, and social support*. Reading, MA: Addison-Wesley.
- Israel, B. A. (1985). Social networks and social support: Implications for natural helper and community-level interventions. *Health Education Quarterly, 12*, 65–80.
- Jones, E. E., Farina, A., Hastorf, A. H., Markus, H., Miller, D. T., & Scott R. A. (1984). *Social stigma: The psychology of marked relationships*. New York: Freeman.
- Katz, A., & Maida, C. (1990). Health and disability self-help. In T. Powell (Ed.), *Working with self-help organizations* (pp. 141–155). Silver Spring, MD: National Association of Social Workers.
- Kessler, R. C., Mickelson, K. D., & Zhao, S. (1997). Patterns and correlates of self-help group membership in the United States. *Social Policy, 27*, 27–46.
- Leach, M. A., & Braithwaite, D. O. (1996). A binding tie: Supportive communication of family kinkeepers. *Journal of Applied Communication Research, 24*, 200–216.
- Leechsen, C., Lewis, S. D., Pomer, S., Davenport, L., & Nelson, M. (1990, February 5). Unite and conquer. *Newsweek, 115*, 50–54.
- Lehman, D. R., Ellard, J. H., & Wortman, C. B. (1986). Social support for the bereaved: Recipients' and providers' perspectives on what is helpful. *Journal of Consulting and Clinical Psychology, 54*, 438–446.
- Lieberman, D. (1992). The computer's potential role in health education. *Health Communication, 4*, 211–225.
- Lieberman, M. A. (1976). Change induction in small groups. *Annual Review of Psychology, 27*, 217–250.
- Lin, N., & Dean, A. (1984). Social support and depression. *Social Psychiatry, 19*, 83–91.
- Lin, N., & Ensel, W. M. (1984). Depression-mobility and its social etiology: The role of life events and social support. *Journal of Health and Social Behavior, 25*, 176–188.
- Lipson, J. G. (1982). Effects of a support group on the emotional impact of cesarean childbirth. In L. D. Boreman, L. E. Brock, R. Hess, & F. L. Pasquale (Eds.), *Helping people to help themselves: Self-help and prevention* (pp. 17–29). New York: Hayworth.
- Maciuszko, K. L. (1990). A quiet revolution: Community online systems. *Online, 14*, 24–32.
- Madera, E. J. (1989). *The New Jersey self-help clearinghouse*. Newark, NJ: Clearing House Publications.
- Madera, E. J. (1991, September). *Mutual aid self-help on-line: The new telecommunities*. Paper presented at the International conference on Computer Technology and Human Services in the 90's, HUSITA 2, Rutgers University, NJ.
- Naisbitt, J. (1982). *Megatrends*. New York: Warner.
- Pattison, E. M., Llamas, R., & Hurd, G. (1979). Social network mediation of anxiety. *Psychiatric Annals, 9*, 56–67.
- Pilisuk, M., & Minkler, M. (1980). Supportive networks: Life ties for the elderly. *Journal of Social Issues, 36*, 95–116.
- Powell, T. J. (1981). Impact of social networks on help-seeking behavior. *Social Work, 26*, 335–337.

- Query, J. L., & James, A. C. (1989). The relationship between interpersonal communication competence and social support among elderly support groups in retirement communities. *Health Communication, 1*, 165–184.
- Query, J. L., & Smilowitz, M. (1988, November). *Alzheimer support groups: A review of the relationships among perceived locus of control, communication strategies, and social support*. Paper presented at the annual meeting of the Speech Communication Association, New Orleans, LA.
- Ray, E. B. (1992). Assessing the ties that bind: Social support versus isolation in communication networks. In E. B. Ray (Ed.), *Case studies in health communication* (pp. 175-187). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Samter, W. (1992). Communicative characteristics of the lonely person's friendship circle. *Communication Research, 19*, 212–239.
- Scheerhorn, D., Warisse, J., & McNeilis, K. D. (1995). Computer-based telecommunication among an illness-related community: Design, delivery, early use, and the functions of HIGHnet. *Health Communication, 7*, 301–325.
- Schlesinger, J. (1995) Web sites for information on the disabled and disability issues. *Journal of Mediated Communication, 10*, 35–45.
- Schopler, J. H., & Galinsky, M. J. (1993). Support groups as open systems: A model for practice and research. *Health and Social Work, 18*, 195–207.
- Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *Public Opinion Quarterly, 19*, 321–325.
- Segal, S. P., Silverman, C., & Temkin, T. (1993). Empowerment and self-help agency practice for people with mental disabilities. *Social Work, 38*, 705–712.
- Shilman, R. P., & Giladi, B. H. (1985). Bridging the isolation gap: Making telephone connection. *Social Work with Groups, 8*, 134–137.
- Shworles, T. R. (1983). The person with disability and the benefits of the microcomputer revolution: To have or to have not. *Rehabilitation Literature, 44*, 322–330.
- Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology, 62*, 434–446.
- Sparks, S. M. (1992). Exploring electronic support groups. *American Journal of Nursing, 12*, 62–65.
- Sproull, L. (1986). Using electronic mail for data collection in organizational research. *Academy of Management Journal, 29*, 159–169.
- Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science, 32*, 1492–1512.
- Sullivan, C. F. (1997, April). *Cancer support groups in cyberspace: A preliminary examination of sex differences and research obstacles*. Paper presented at the annual meeting of the Central States Communication Association, St. Louis, MO.
- Thompson, T. L. (1982). Gaze toward and avoidance of the handicapped: A field experiment. *Journal of Nonverbal Behavior, 6*, 188–196.
- Thompson, T. L., & Seibold, D. R. (1978). Stigma management in normal-stigmatized interactions: A test of the disclosure hypothesis and a model of stigma acceptance. *Human Communication Research, 4*, 231–242.
- Vallee, J. (1982). *The network revolution: Confessions of a computer scientist*. Berkeley, CA: And/Or Press.
- Walther, J. B. (1996a). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*, 1–41.

- Walther, J. B. (1996b). Group and interpersonal effects in international computer-mediated collaboration. *Human Communication Research, 23*, 324–369.
- Winstead, B. A., Derlega, V. J., Lewis, R. J., Sanchez-Hucles, J., & Clarke, E. (1992). Friendship, social interaction, and coping with stress. *Communication Research, 19*, 193–211.
- Zastrow, C. (1986). *Social welfare institutions*. Chicago: Dorsey.