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Social Support for Japanese Mothers Online and Offline

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Abstract

This study explored how the receipt of social support through the Internet affected people's well-being, and how the Internet facilitated the provision of social support to friends and neighbors both on online and in "real life." In particular, it focused on the effects of childcare-related online communities on mothers' psychological well-being in Japan. The author conducted a longitudinal panel design study targeted on mothers who have preschool children and also exchange childcare information on the Internet. The appropriate participants were recruited from four electronic bulletin boards and forums to answer the questionnaires on the web site. In this paper, the data of 331 participants who answered both the first and the second surveys was analyzed. The results show the receipt of social support from weak ties via an online community promotes psychological well-being. In particular, mothers in the "posting group," who have posted a message in a supportive online community received more support from weak ties on the online community in addition to that from strong ties in real life, resulting in increased self-esteem and decreased depression than those in the "non-posting group," who has never posted any message. Moreover, those in the "posting group" were likely to provide social support to others in real life both short- and long-term because of a sense of generalized reciprocity. These findings suggest that active participation in online communities may supply "network social capital," that is, social relations that significantly provide companionship, emotional aid, goods and services, information, and a sense of belonging.

Author's Note

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There is no consensus yet about the effects of the Internet on social involvement and personal well-being. Some survey research shows that Internet use, such as contact with neighbors, friends, and family by email and participation in online communities, affects people's exchange of social support (Dunham et al., 1998; Haythornthwaite and Wellman, 1998; King, 1994), their probability of having fulfilling personal relationships (Cole, 2000; Howard et al., 2001), their commitment to their communities (Wellman et al., 2001), and their psychological well-being (Kraut et al., 2002; LaRose et al., 2001; Mickelson, 1997; Turner et al., 2001; Wright, 2000). By contrast, different survey research suggests that the Internet pulls people away from other interactions inside and outside the household (Nie and Erbring, 2000).

Whether the Internet will have a positive or negative social impact may depend upon the nature of online activities (Wellman et al., 2001) and the quality of people's online relationships (Kraut et al., 2002). For instance, when the Internet engages people primarily in asocial activities such as web-surfing and reading the news, its immersiveness can turn people away from community, organizational and political involvement, and domestic life (Wellman et al., 2001). By contrast, use of email helps people build their social networks by extending and maintaining friends and family relationships (Howard et al., 2001).

I explore here how the acquiring of social support through the Internet affects people's well-being, and how the Internet facilitates the provision of social support to friends and neighbors, both on online and in "real life." In particular, I focus on the effects of childcare-related online communities on mothers' psychological well-being in Japan.

Why are Online Communities Important for Child-Raising Mothers?

Childcare networks in Japan

The boundaries of family systems are closed in Japan so that there is little involvement from outside the household. Due to traditional gender roles, mothers are likely to take a leading role in childcare (Watanabe, 1994). These circumstances sometimes cause mothers to be

burdened and feel isolated during their child-raising years. Thus, childcare can be a stressor.

Mothers can reduce their stress and increase their well-being by receiving social support. Their well-being is highest when childcare networks outside the household are large, and the proportion of their kin and the density of their networks is neither too low nor too high (Matsuda, 2001). The larger a social network is, the more weak ties it contains, and weak ties with socially heterogeneous people provide more diverse information (Granovetter, 1973). On the other hand, the denser the network becomes, the more often members tend to communicate with each other and to grasp their needs for social support. When the network is densely knit, the members of the network tend to reach consensus on norms, and they exert consistent informal pressure on one another to conform to the norms and to keep in touch. Consequentially, a densely knit network may restrict members' freedom to obtain social support from outside the network (Bott, 1957). Hence, child-raising mothers with a large childcare network structure that is mixed in composition and with neither too low nor too high density will receive a variety of social support to increase their psychological well-being.

Supportive online communities

Online community on the Internet may provide enough social support to improve the well-being of mothers. Online environments can provide anonymous spaces where mothers can communicate. This anonymity protects members' privacy. The open type of community on the Internet affords access to anyone from anywhere at any time and lets them exit at will. In addition, the Internet supports interest groups that are composed of a massive and heterogeneous number of people with knowledge of certain topics. It is a cyber-place that is likely to provide useful information to solve a problem. It can also provide social and emotional support, companionship, advice, and information (Wellman and Gulia, 1999).

The proportion of Japanese homes owning computers or mobile phones that connect to the Internet has increased year over year. The penetration rate of the Internet reached 34 percent of households in 2002 in Japan. In particular, the percentage of women who use the Internet has increased since access via mobile phone first became possible in February 1999 (Ministry of Public Management, Home Affairs,

Posts and Telecommunications, Japan, 2001). Thus, online communities can become important for child-raising mothers to seek contact with others, and to obtain advice on child-rearing practices to help them cope with stress.

Four questions about social support via online communities

1 What kinds of mothers are receiving social support from online communities?

A survey of parents of disabled children by Mickelson (1997) demonstrated that parents accessing online supportive communities received less unsolicited support from their parents and casual friends than did mothers who participated in local health organizations. Mothers who posted messages on online supportive communities more often perceived more stress from experiencing their child's special needs, and less help from their husbands. In another study, cancer patients participated more within the online community when they perceived that the support received from online community was high and when the support received from one specific significant face-to-face partner in mind was low (Turner et al., 2001).

In light of these results, it can be supposed that mothers who receive a considerable amount of "Internet support" – defined as social support exchanged via online supportive communities – tend to receive less "real-life support" – defined as social support exchanged in their personal networks of the "real world," such as from family and friends. I hypothesize the following:

H1: Mothers who receive less real support are inclined to receive more Internet support.

2 Does receiving Internet support increase mothers' well-being?

A longitudinal study of Internet use, by Kraut et al. (2002) shows that users experienced overall positive effects from the Internet on the frequency of interpersonal communication, extent of community involvement, and personal well-being. In particular, extroverts who used the Internet more often reported increased psychological well-being. This included lower levels of loneliness, fewer negative effects, decreased time pressure, and increased self-esteem. Moreover, a study

of college students found that the Internet led to less depression because of the support obtained through email exchanges with associates (LaRose et al., 2001).

Online interpersonal relationships bring diverse information to mothers who are seeking solutions, including suggestions about how to cope with problems. Mothers may also more easily find online someone who has similar worries or ideas about childcare. Therefore, it is predicted that a mother's well-being can be raised by gaining diverse social support from online community members sharing the same concerns, such as information on childcare, empathy with one's problems, encouragement, and consolation.

H2a: Mothers who receive more Internet support have higher psychological well-being than those who receive less Internet support.

Ikeda (1997) found that only the members of online communities who posted some messages could satisfactorily gain suitable information for their needs, because other members were likely to comment on or answer their messages. However, people did not obtain useful information when they simply read the discussion logs of online communities. Applying these findings to my study, I infer that mothers who post messages to an online community can receive appropriate Internet support. Thus, their well-being can be increased. On the other hand, mothers who do not post any message are unlikely to see benefits in their well-being. Wright (2000) also revealed that older adults' greater involvement with an online community was associated with lower perceived life stress.

H2b: Mothers who post a message are likely to gain more Internet support to increase their well-being than are those who do not post any messages.

3 Why are mothers motivated to provide childcare information and support in online communities?

One possibility is that the process of providing support and information on the Internet is a means of expressing one's identity, particularly if technical expertise or supportive behavior is perceived as an integral part of one's identity. Helping others can increase self-esteem, respect from others, and status attainment. We also know that workers will provide technical advice to an in-house community of practice

because of norms of generalized reciprocity and organizational citizenship, rather than because of personal reasons such as being pleased to help others or a desire to achieve respect (Constant et al., 1997). An online community concerned with childcare is a self-help group in which norms of generalized reciprocity might be easily established. Mothers provide Internet support because of a sense of generalized reciprocity. As an online community is open for anyone to access and exit freely, the boundary between members and non-members is hard to draw. Mothers who strongly identify with a supportive online community should provide more support directly to others who have helped them in the past or to total strangers in the online community.

H3: Mothers who identify with an online community tend to provide more Internet support to other members of the online community.

4 Are there correlations between the receipt and the provision of Internet support and real support?

Miyata (2000) found that over 60 percent of participants in online communities shared information earned from the online community with family and friends in real life. Both strong ties (for example, with family, friends, and so on in real life) and weak ties (for example, with members of the online community) might affect behavior, psychological processes, and everyday life. Receiving Internet support may reduce one's coping in the long term, if receiving Internet support interferes with access to real-life sources of support. However, gaining Internet support may raise one's well-being, if it facilitates receiving real support. If Internet support assists in providing real support to family and friends, it may raise self-efficacy and thus increase self-esteem. Hence, this study explores the interactions between real support and Internet support, and it examines how one's well-being is affected by their interplay.

Method

Survey

To study these issues, I conducted a longitudinal panel design study of mothers who have preschool children and also exchange childcare information on the Internet. This research examines the causal rela-

tionship between people's use of the Internet, their exchange of social support, and some likely psychological consequences of exchanging social support. With longitudinal data, I can draw stronger causal conclusions than is possible in research in which the data are only collected once.

In January 2000, I recruited participants for my survey from four forums devoted to childcare and childhood education on Nifty: "Child-Rearing Forum," "Wife Network," "Forum for Working Mothers" and "Forum on Education." Nifty is Japan's biggest Internet provider and AOL-like portal, with about seven hundred forums on genres from hobbies to business. I chose these four forums because they had many participants and provided chat rooms, bulletin boards, and smaller electronic conference rooms for members of Nifty to exchange information and advice on child-raising (see table 18.1).

I posted announcements on these forums to recruit mothers with a preschool child or children to participate in my first survey after I had obtained permission from the forums' managers. I asked the mothers to answer the questionnaires on my web site. I got 416 responses to the first survey. Three months later, I conducted a second survey by sending emails to the original participants. I used almost the same questionnaires as in the first survey and received 331 responses. My investigation has been carried out by analyzing the information received from the 331 participants who answered both the first and the second surveys. Most (87 percent) came from the Child-Rearing Forum.

Sample

Participants ranged in age from 22 to 42 years old (mean = 32.6 years). Most 60.9 percent, were housewives, 21.2 percent were part-time workers, and 17.9 percent were full-time workers. As for educational background, 20.2 percent had finished junior high school or high school, 32.3 percent had finished technical school or two-year college, and 47.5 percent had finished four-year college or another form of higher education. Over half, 55.6 percent, had one child; 35.0 percent had two children; and 9.4 percent had more than three children. The mean number of children was 1.6 per household. Most of the participants' families were made up of husband, wife, and child(ren), with no parents or parents-in-law. Participants reported an average of 3.5 persons were available as babysitters. However, 11.2 percent of the

Table 18.1 The nature of online communities

Name	*Purpose*	*Type of participants*	*Contents*	*No. of participants*
Child-rearing forum	To discuss and exchange information on child rearing and consult about troubles mutually	Married persons, doctors and nurses who are interested in child-rearing	28 electronic conference rooms and information on childcare from the doctor who manages this forum	289 (87.3%)
Wife network	To exchange information on housekeeping, cooking, childcare and problems of housewives	Housewives and house husbands	15 electronic conference rooms, a chat room, a bulletin board, and information on housekeeping, cooking, and childcare	7 (2.1%)
Forum for working mothers	To discuss problems of working mothers, such as a return to work after a delivery, child rearing, and education	Working mothers	18 electronic conference rooms, a chat room, a bulletin board and a mail magazine	34 (10.3%)
Forum on education	To discuss educational practice	Teachers and persons interested in early childhood education	37 electronic conference rooms and web pages of information on education	1 (0.3%)
Total				331 (100%)

participants claimed to not have any relatives, neighbors or friends to baby-sit their child(ren) – even for half a day.

Results

How different is Internet support from real support?

To explore how participants exchange social support, I examined the amount of social support reported in the past three months at Time 1 (the first survey) and at Time 2 (the second survey).

(a) Receipt of real support was measured by asking how often the mothers gained three types of social support regarding childcare from family, neighbors and friends:

1 The receipt of informational support was measured by asking "How often do you receive the following three types of information?": information about child illness, physical development and training; useful information to come into contact with many people or to know social issues; and information on babysitter and day-nurseries.
2 The receipt of emotional support was the sum of two questions; "How often are you encouraged or gain the empathy of others about childcare trouble?" and "How often do you learn that there is someone else who has similar troubles and worries?"
3 The receipt of instrumental support was measured by "How often do you babysit?" Each question was reported on a 4 point scale: 1 = "not at all", 2 = "seldom", 3 = "often" and 4 = "usually." The score for the amount of received real support was calculated by summing up these six items. Scores range from 6 to 24.

(b) Provision of real support was measured by asking questions about the frequency of providing informational, emotional, and instrumental support to family, neighbors, and friends. I used the same six items as those measuring the receipt of real support. The score on amount of real support provided was calculated by summing these six items.

(c) Receipt of Internet support was measured by asking how often the mothers receive informational support (three items) and emotional support (two items) from the online supportive community from where they were recruited. I used the same items as those measuring

the receipt of real support, except I excluded instrumental support because it is rarely provided online. The score on amount of received Internet support was calculated by summing these five items. Scores range from 5 to 20.

(d) Provision of Internet support was measured by asking how often the mothers provide informational support (three items) and emotional support (two items) to the online community. I used the same five items as those measuring the receipt of Internet support.

Table 18.2 shows that the amount of receipt of informational and emotional support through the Internet ($M = 14.93$, $SD = 2.68$) exceeds the amount of receipt of the support from friends and family in real life ($M = 12.58$, $SD = 3.19$) at Time 1 ($t = -11.43$, $p < 0.01$). Participants were likely to receive more social support from online community members than from friends and neighbors at Time 1. To take a closer look at each item of Internet support, mothers were likely to receive the most social support when they learned "I was not the only one who was worried about childcare" on the online community. Also, they felt they received social support when online community members encouraged them. Thus, they tended to receive more support, especially emotional support, from online community members than from friends. This is congruent with their accessing online communities with the expectation of finding someone who also has similar worries about childcare.

At Time 2, however, there is no significant difference between the receipt of information and emotional support in real life and the receipt of such support in the online community. The receipt of Internet support declined from Time 1 to Time 2, although the receipt of real support did not change during this period. The receipt of real support may be more stable than the receipt of Internet support because mothers in need may seek Internet support in addition to receiving real support.

Mothers tended to provide more informational and emotional support to their friends and neighbors than to other community members. The amount of informational and emotional support provided via the Internet (Time 1: mean = 7.58, standard deviation (SD) = 3.43; Time 2: mean = 6.89, SD = 2.93) is less than the amount of support provided from friends in real life (Time 1: mean = 12.36, SD = 3.02; Time 2: mean = 12.38, SD = 2.87) at both Time 1 and Time 2 (Time 1: $t = 20.63$, $p < 0.01$; Time 2: $t = 26.34$, $p < 0.01$). Mothers provided the most Internet support when they were encouraging other mothers in their online community who had childcare trouble.

Table 18.2 Means of amount of social support received and provided

Contents of social support	Time 1						Time 2					
	Receipt			Provision			Receipt			Provision		
	Real	Internet	t-test	Real	Internet	t-test	Real	Internet	t-test	Real	Internet	t-test
Informational support												
1 Receipt/provision of information about childhood illness, physical development, and training	2.76	3.44	−12.22**	2.74	1.58	18.74**	2.75	2.95	−3.72**	2.67	1.39	24.49**
2 Receipt/provision of information about coming into contact with many people or to know social issues	2.45	2.74	−4.83**	2.23	1.44	14.54**	2.40	2.40	n.s.	2.24	1.35	16.52**
3 Receipt/provision of information about babysitter and day-nursery	1.63	2.01	−6.32**	1.68	1.23	9.12**	1.70	1.66	n.s.	1.79	1.15	12.36**

Emotional support												
4 Receipt/provision of encouragement and empathy about childcare troubles	2.88	3.22	−5.29**	2.92	1.69	18.53**	2.87	2.70	2.77**	2.93	1.52	24.30**
5 Learning/teaching that there is someone else who has similar troubles and worries	2.86	3.52	−12.39**	2.79	1.49	20.99**	2.86	3.15	−5.14**	2.77	1.49	21.68**
Instrumental support												
6 Receipt/provision of babysitting	2.57			1.67			2.51			1.69		
Mean of the sum of items 1 through 5	12.58	14.93	−11.43**	12.36	7.58	20.63**	12.58	12.86	n.s.	12.38	6.89	26.34**
Mean of the sum of items 1 through 6	15.15			14.03			15.10			14.07		

** $p < 0.01$. Higher scores indicate more received/provided social support. Items 1 through 3 measured informational support. Items 4 and 5 measured emotional support. Item 6 measured instrumental support.

Table 18.2 also shows that the receipt of Internet support exceeds the provision of Internet support at Time 1 ($t = 18.67$, $p < 0.01$) and Time 2 ($t = 15.28$, $p < 0.01$). These results suggest mothers are more likely to access online communities to get informational and emotional support than to provide such support to other members. The provision of Internet support was more stable than the receipt of Internet support over time. Some mothers who participate in the online community may frequently provide Internet support to other members.

Who receives Internet support?

Who receives social support in an online community? Do mothers with more real support also gain more Internet support or those with less real support?

To examine hypothesis 1, I conducted a stepwise multiple regression analysis by setting the amount of received Internet support at Time 2 as the dependent variable. I used seven independent variables at Time 1:

(a) Amount of received Internet support at Time 1: the sum of received informational and emotional support from the online community at Time 1.

(b) Amount of received real support: the sum of received informational, emotional, and instrumental support in real life at Time 1.

(c) "Childcare stressors caused by child's health." This scale was measured by six items on a 4-point scale, asking, for example, "How often do your children not eat/drink properly?" The score was calculated by summing up these responses, and ranged from 6 to 24. See the appendix for this and other scales.

(d) "Childcare stressors caused by restraining mothers' behavior." This scale was measured by six items on a 4-point scale, for example asking "How often do you experience not having time for yourself?" The scores on this scale ranged from 6 to 24.

(e) Frequency of access to the online community. This is measured on a 6-point scale by asking how often they accessed the online community from where they were recruited to this survey.

(f) Identification with the online community. This is measured on a 4-point scale by asking the degree to which they agree with the statement: "I recognize my being a member of the online community."

Table 18.3 Multiple regression analysis predicting amount of Internet support received at time 2

Predictor variables	β	*t*
Amount of receipt of Internet support at time 1	0.309***	5.80
Amount of receipt of real support at time 1	0.155**	2.92
Childcare stressors caused by restraining mothers' behavior at time 1	0.187**	3.59
Frequency of access to the online community at time 1	0.146**	2.88
Perception of diversity of the online community at time 1	0.127*	2.47

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. $R^2 = 0.231$; adjusted $R^2 = 0.219$.

(g) Perception of diversity of the online community. This is measured by asking on a 4-point scale the degree to which they agree with the statement: "The online community comprises members with a wide diversity of ideas and thoughts so that there are a variety of comments." Results are shown in table 18.3. Mothers receive more Internet support at Time 2 when they:

1 receive more Internet support at Time 1;
2 perceive a higher level of the diversity in their online community;
3 have stronger feelings that childcare restrains them;
4 receive more real support;
5 frequently access their online community.

It was not that mothers who received less real support received more Internet support. Rather, mothers who received real support also tended to receive Internet support. Thus, Hypothesis 1 was not supported. In other words, mothers who have existing social support got more social support from using the Internet. This is a manifestation of the Matthew effect (Merton, 1968).

This result is inconsistent with earlier studies of mothers with disabled children (Mickelson, 1997) or cancer patients (Turner et al., 2001). Such mothers may have difficulty finding people who have a similar stressor in their real life, so they turn to the Internet for support. The mothers I studied can rather easily find other mothers who have similar stressors regarding childcare in real life. Hence, they can receive more support from their friends than mothers with disabled children or cancer patients. However, they may find more

suitable information for their needs and seek more adequate encouragement from online community members than from friends.

Mothers who perceive diversity in the online community receive more Internet support. Online communities often have many weak ties that are formed by a network of acquaintances that reaches beyond local groups and brings information from the outer world (Wellman, 1997). The social networks work as pools of heterogeneous information sources that are sometimes useful and influential for decision-making, job changes, and so on. Weak ties also increase the probability of finding someone who has similar interests or worries (Granovetter, 1973). Taking these phenomena into account, it can be conjectured that mothers expect to get more advice and information or to find more people with childcare troubles from heterogeneous sources such as the online communities than from homogeneous sources such as their friends and family. Thus, they turn to online communities for support.

Mothers with stronger "childcare stressors caused by restraining mothers' behavior" receive more social support from online communities. However, the degree of "childcare stressors by child's health" is not related to the receipt of Internet support. Such mothers may gain enough information and advice for their child's health from relatives and childcare experts (such as medical doctors, public health nurses) to suppress "childcare stressors caused by your child's health." On the other hand, "childcare stressors caused by restraining mothers' behavior" varies from mother to mother. Moreover, these are sometimes regarded as mothers' self-indulgences. Hence, social support to deal with "childcare stressors caused by restraining mothers' behavior" might be difficult to receive in real life. Given these circumstances, mothers may seek social support from the online community. In sum, mothers with strong "childcare stressors caused by restraining mothers' behavior" are likely to receive more social support from the weak ties of these online communities as well as receiving social support from strong ties in real life.

How does the receipt of Internet support affect depression and self-esteem?

Does receiving Internet support increase mothers' well-being? Some studies have shown that the receipt of social support was correlated with depression and self-esteem (for example, Cohen and Wills, 1985).

Table 18.4 Means and standard deviations of the depression and self-esteem scales by "posting group" and "non-posting group"

Depression	*Time 1*	*Time 2*
All participants (n = 331)	15.97 (4.87)	15.57 (4.69)
"non-posting group" (n = 172)	16.39 (5.17)	15.80 (4.85)
"posting group" (n = 159)	15.52 (4.50)	15.33 (4.52)
t (df = 329)	1.63	0.90
p <	0.11	n.s.
Self-esteem		
All participants (n = 331)	7.13 (1.58)	7.25 (1.59)
"non-posting group" (n = 172)	6.96 (1.68)	7.19 (1.67)
"posting group" (n = 159)	7.31 (1.45)	7.31 (1.50)
t (df = 329)	2.02	0.73
p <	0.05	n.s.

Lower scores on depression scale indicate lower depression. Lower scores on self-esteem scale indicate lower self-esteem.

Depression and self-esteem were used as indicators of how the receipt of social support affects the mothers' well-being. As shown in appendix 18.1, depression was measured using ten items of the Todai Health Index (Suzuki and Roberts, 1991). Each item was scored as 1 = Rarely, 2 = Occasionally, 3 = Most. The scores on each item were summarized into a scale, ranging from 10 to 30, with lower scores indicating lower depression. Self-esteem was measured by asking two statements from the Rosenberg self-esteem scale (1965). (1) "I feel that I have a number of good qualities." (2) "All in all, I am inclined to feel that I am a failure." Both were on a 5-point scale; 1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree. The sum of reversed score of statement (1) and score of statement (2) was used as an indicator of self-esteem. This scale score ranges from 2 to 10, and a higher score indicates higher self-esteem.

I divided the participants into two groups: the "posting group" and the "non-posting group." The "posting group" refers to the participants who had posted at least one message on the online community during the past three months at Time 1. They are considered to be more involved with the online community than the "non-posting group."

Table 18.4 shows that the "non-posting group" has stronger depression and lower self-esteem than the "posting group" at Time 1. However, there was no significant difference at Time 2 in the level of

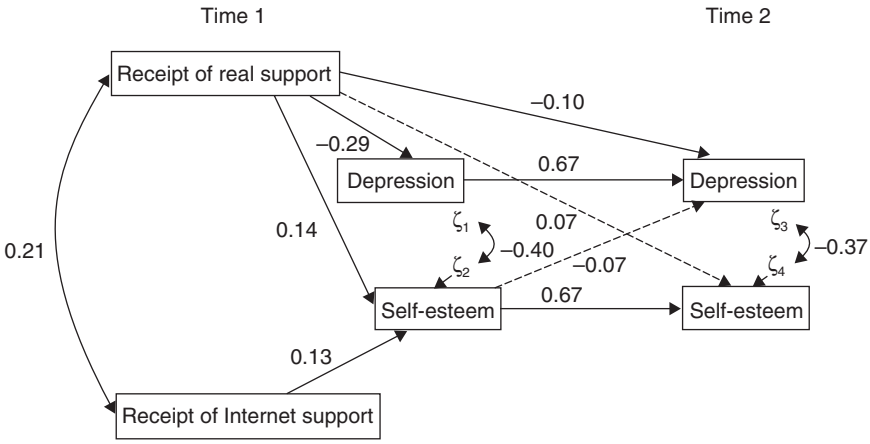

Figure 18.1 Structural equation model of correlation between the receipt of support and well-being (all participants)
Source: Solid lines illustrate statistical significance ($p < 0.05$). Broken lines indicate a significant tendency ($p < 0.1$). Unconnected variables are not significantly related

depression and self-esteem between the "posting group" and the "non-posting group." The "non-posting group" reduced depression and increased self-esteem over time. Is it because mothers in the "non-posting group" might have received enough real support at Time 2 to increase psychological well-being?

Structural equation modeling (Bollen, 1989) was conducted to examine how the receipt of real support and Internet support at Time 1 affects depression and self-esteem at Time 1 and Time 2. Figure 18.1 shows, for all participants, that receiving real support at Time 1 reduced depression and raised self-esteem at Time 1 and at Time 2. Mothers who received more real support showed greater well-being in the short and long term. On the other hand, although the receipt of Internet support at Time 1 increased self-esteem at Time 1, it did not have a direct and significant effect on self-esteem and depression at Time 2. However, Figure 18.1 also shows that receiving Internet support at Time 1 may indirectly raise self-esteem and reduce depression at Time 2 by mediating the rise of self-esteem at Time 1. Thus, H2a was partially supported.

Figure 18.2 presents the analysis of the "non-posting group." The receipt of real support by the "non-posting" mothers has some effects on reducing depression and raising self-esteem at Time 1 and also has

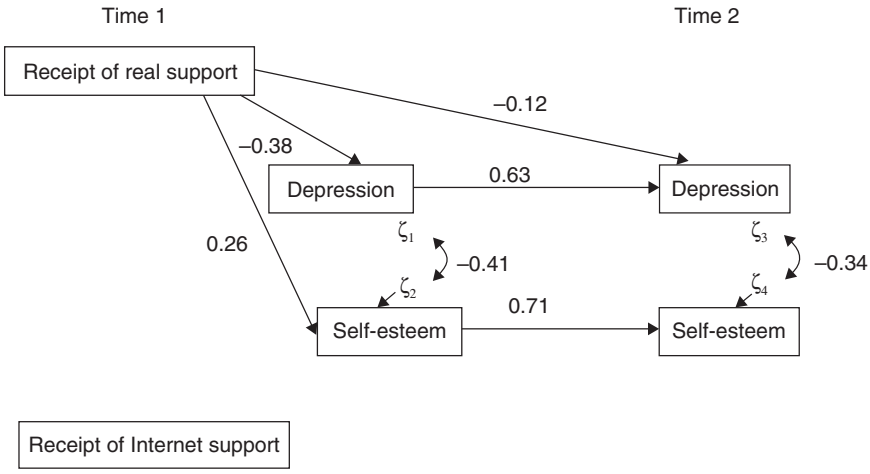

Figure 18.2 Structural equation model of correlation between receiving support and well-being ("non-posting" group)
Source: Solid lines illustrate statistical significance ($p < 0.05$). Unconnected variables are not significantly related

a direct effect on reducing depression at Time 2. However, there is no effect of received Internet support on well-being in the short and the long term. This implies that in the "non-posting group" the effects of received real support on psychological well-being is stronger than the effects of received Internet support.

In the "posting group," the receipt of Internet support at Time 1 correlates negatively with depression and positively with self-esteem at Time 1. By mediating the rise of self-esteem and the reduction of depression at Time 1, receiving Internet support appears to reduce depression and raise self-esteem at Time 2 (see figure 18.3). These results show that mothers who receive more Internet support demonstrate more well-being than those who receive less Internet support, but only when they communicate with the online community. Hence, H2b was confirmed. This is probably because the "posting group" can receive more diverse social support by actively exchanging communication in the online community. These activities are associated with the rise of self-esteem and the reduction of depression. Moreover, the data reveal that the receipt of real support at Time 1 reduces depression at Time 1 and raises self-esteem in the long run.

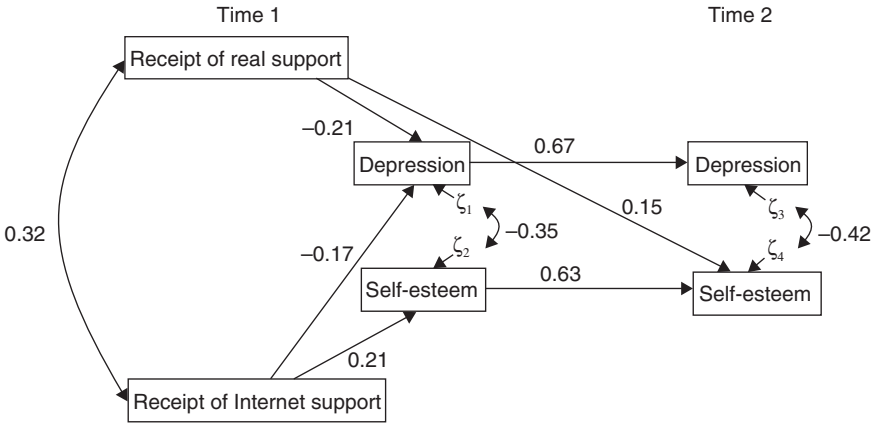

Figure 18.3 Structural equation model of correlation between receiving support and well-being ("posting-group")
Source: Solid lines illustrate statistical significance ($p < 0.05$). Unconnected variables are not significantly related

Motivation to provide Internet support

Who was motivated to provide childcare information and support in online communities? To explicate the factors that determine Internet support provision, a stepwise multiple regression analysis was performed. The amount of provided Internet support at Time 2 was set up as the dependent variable. I used five independent variables at Time 1:

(a) Amount of provision of Internet support at Time 1.
(b) Amount of provision of real support.
(c) Frequency of posting a message to the online community on a 7-point scale: 1 = not at all, 2 = rarely, 3 = monthly, 4 = a few times a month, 5 = weekly, 6 = a few times a week, 7 = daily.
(d) Identification with the online community.
(e) Perception of the online community's diversity.

Table 18.5 shows a tendency to provide Internet support at Time 2 when the participants provide a lot of Internet support at Time 1. When mothers frequently post on the online community, and have a stronger identification with the online community at Time 1, they

Table 18.5 Multiple regression analysis predicting amount of provision of Internet support at time 2

Predictor variables	β	*t*
Provision of Internet support at time 1	0.374***	5.44
Frequency of posting at the online community at time 1	0.281***	4.07
Identification to the online community at time 1	0.095*	2.09

*** $p < 0.001$; * $p < 0.05$. $R^2 = 0.446$; adjusted $R^2 = 0.441$.

provide more Internet support at Time 2. This indicates that the participants who provide Internet support ordinarily post messages on the online community and have a stronger identification with the online community. Therefore, H3 is supported.

This study also examines the psychological motivation for mothers to provide childcare information and support to the online community. Kollock (1999) demonstrates a list of possible motivations for providing support to online communities. One possible motivation is anticipated "generalized reciprocity" (Sahlins, 1965). Mothers are motivated to contribute valuable information to the online community in the expectation that they will receive useful help and information in return. A second possible motivation is the effect of contributions on reputations. High-quality information, impressive technical details in one's answers, a willingness to help others, and elegant writing can all work to increase one's prestige in the community. A third possible motivation is a sense of efficacy, that is, the mothers' feeling that they have some effect on this environment. A fourth is the attachment or commitment mothers can have to the online community.

I measured providers' motivation by asking them to select one reason why they gave Internet support to other members, from the nine items listed on table 18.6. Table 18.6 shows the means of providing Internet support by motivation at Time 1 and Time 2. The providers of Internet support who answered, "someone on the online community helped me before, and I wanted to help someone in turn," provided a mean of 11.19 Internet support at Time 1 and 10.92 at Time 2 (on a 6–24 scale). About one-fifth of the providers gave Internet support because they thought sharing information benefited them too. Their scores were 11.25 at Time 1 and 9.35 at Time 2. Over 10 percent of the providers did so because of an attachment for their online community.

Table 18.6 Means of amount of Internet support provided by motivation

Why did you provide social support to other members?	*Time 1* *Amount of Internet support provided*				*Time 2* *Amount of Internet support provided*			
	N	%	*M*	*SD*	*N*	%	*M*	*SD*
I want to increase my prestige in the community to present my knowledge and information about childcare to others	0	0.00	—	—	0	0.00	—	—
I feel attached to my online community	17	12.41	10.24	2.84	13	10.83	10.62	1.85
I am pleased to help others	5	3.65	10.80	3.56	8	6.67	8.13	1.96
I am pleased to solve problems	9	6.57	10.78	1.72	9	7.50	8.56	2.24
I would like to receive respect	1	0.70	14.00	—	0	0.00	—	—
Sharing information benefits me too	24	17.52	11.25	2.35	26	21.67	9.35	2.19
My duty is to help other members	1	0.70	13.00	—	1	0.83	7.00	—
Someone on the online community helped me before, and I wanted to help someone in turn	73	53.28	11.19	2.78	52	43.33	10.92	2.58
I expect that others will help me in turn if I help others	3	2.19	11.33	2.08	6	5.00	9.33	1.97
Other reasons	4	2.91	7.25	2.63	5	4.17	11.60	5.03
Total	137	100.00	10.96	2.71	120	100.00	10.10	2.62

These results show that most of the participants who provide social support to the members of the online community are motivated by an anticipated generalized reciprocity. The amount of Internet support provided by those motivated by an anticipated generalized reciprocity is larger than the support provided by those who are motivated by personal reasons, such as pleasure in helping others. This suggests that supportive online communities, such as the childcare networks studied here, may promote norms of generalized reciprocity and facilitate supportive exchanges.

Does the receipt of Internet support facilitate the provision of real support?

As described above, receiving Internet support and real support each leads to increased psychological well-being. It is essential to investigate the association of the receipt and the provision of real support and Internet support to understand the long-term effects of the two on psychological well-being. I used a longitudinal design to analyze the association of real support and Internet support.

The result of structural equation modeling indicates that participants who receive more Internet support at Time 1 receive more real support and also provide more real support at Time 1 (see figure 18.4). There is also a significant relation between the receipt of Internet support at Time 1, and the receipt and the provision of real support at Time 2. This implies that the receipt of Internet support promotes the provision of real support, and it does not interfere with the receipt of real support in both the short and the long term.

In the "non-posting group," participants who receive more Internet support at Time 1 receive more real support and provide more real support at Time 2 (figure 18.5). However, the receipt of Internet support is not related to the receipt and provision of real support during the same time period (Time 1). This demonstrates that in the "non-posting group," the effect of receiving Internet support takes a while to influence the practice of receiving and providing real support.

By contrast, in the "posting group," there is a significant positive correlation between the receipt of Internet support at Time 1 and the provision of real support only at Time 1 and Time 2. However, the receipt of Internet support was related to the receipt of real support at Time 1 (figure 18.6). This means that in the short term, mothers can

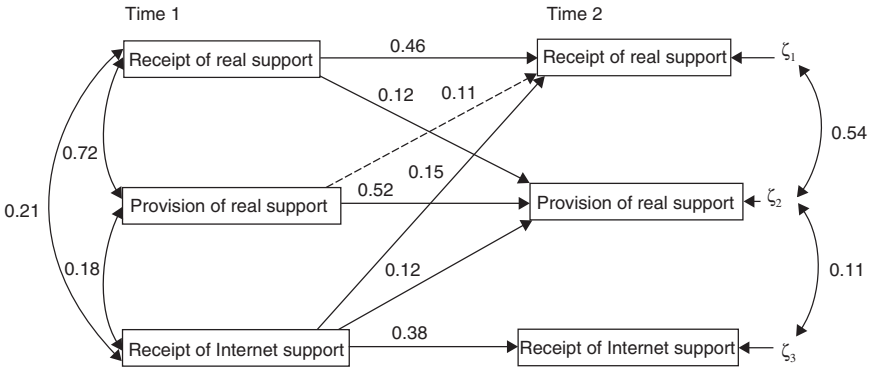

Figure 18.4 Structural equation model of correlation between receipt and provision of social support at time 1 and time 2 (all participants)
Source: Solid lines illustrate statistical significance ($p < 0.05$). Broken lines indicate a significant tendency ($p < 0.1$)

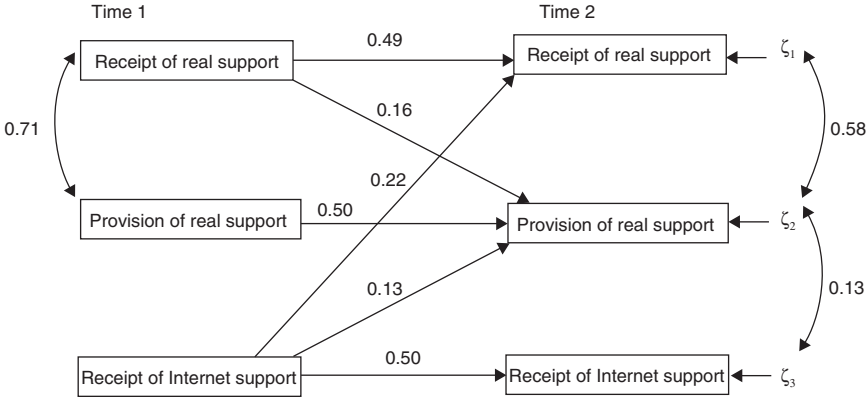

Figure 18.5 Structural equation model of correlation between receipt and provision of social support at time 1 and time 2 ("non-posting group")
Source: Solid lines illustrate statistical significance ($p < 0.05$). Unconnected variables are not significantly related

acquire diverse sources of support by increasing communication in the online community without hindering the exchange of support in their real lives. Perhaps they may stop receiving real support in the long-term, because they have received enough support via the online community.

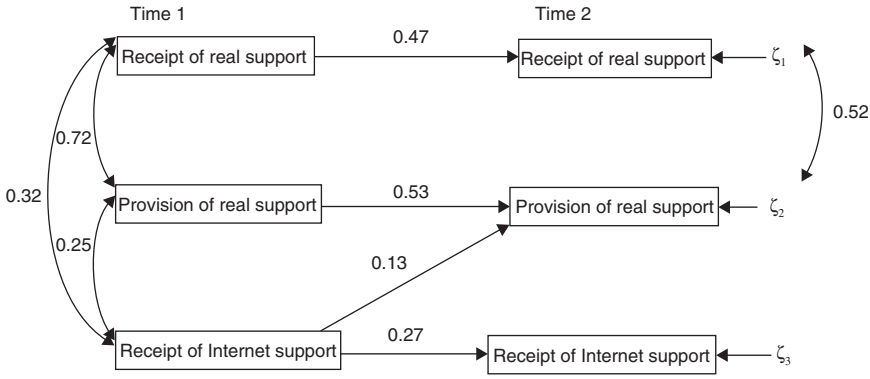

Figure 18.6 Structural equation model of correlation between receipt and provision of social support at time 1 and time 2 ("posting group")
Source: Solid lines illustrate statistical significance ($p < 0.05$). Unconnected variables are not significantly related

Discussion

This study has shown that mothers with high "childcare stressors caused by restraining mothers' behavior" accessed childcare-related online communities to find information to suit their needs and to seek encouragement from weak ties. They do this more when they perceive the online community to be diverse. The more mothers already obtain social support from their strong ties, the more they seek social support from weak ties. These findings imply that Internet support supplements existing real support rather than displaces it for child-raising mothers. This is probably because weak ties in online communities serve as information bridges across clusters of strong ties and can offer people access to resources that are not found in their strong tie relationships.

Second, weak ties on the online community help to maintain and promote psychological well-being. However, these weak ties supported by computer networks are likely to be more limited than friendships supported by physical proximity. Kraut et al. (1998) indicate that when people first go online, they are less likely than friends established at school, work, church, or in the neighborhood to be available for help with tangible favors, such as offering small loans, rides, or babysitting. Moreover, because online community members are not embedded in the same day-to-day environment, they are less likely to

understand the context for conversations, thereby rendering the need for support less explicable.

However, mothers who are likely to post messages in the online community tend to acquire more Internet support and possess higher self-esteem and lower depression. When mothers express their worries about childcare, ask questions, and seek help from other members of the childcare-related online community, other participants can recognize them and try to provide information and advice.

LaRose et al. (2001) suggest that stressful interactions with the Internet itself, rather than inadequate interaction with other people through the Internet, may lead to depression. He further suggests that a sense of self-efficacy can reverse the effect of the stress. Mothers who communicate actively may have achieved the necessary degree of self-efficacy to cope with the new sources of stress that the Internet introduced into their lives. Thus, they may reduce depression and increase self-esteem by receiving Internet support. They may learn how to obtain social support through the Internet and build confidence in their ability to acquire Internet support.

Hence, mothers who contribute to the online communities can receive considerable information and advice from the more diverse resources of weak ties. They can select the most useful information and advice to fulfill their needs or resolve their troubles, and they are better able to cope with their distress and increase their well-being.

Third, mothers who provide Internet support strongly identify with the online community, perhaps because they perceive the existence of norms of generalized reciprocity and group citizenship (see also Quan-Haase and Wellman, this volume). Those online communities that have norms of generalized reciprocity or group citizenship are relatively few in comparison to the thousands of online communities that are focused on professional advice, hobbies, and entertainment. However, the childcare-related online communities I studied are formed specifically to provide support. Hence, they may have more access to the communities and provide social support to other members according to the norm of generalized reciprocity.

Fourth, the receipt of Internet support is associated with the receipt and provision of real support in both the short and the long term. This suggests that one can acquire diverse sources of support by increasing communication with an online community without ruining the exchange of support in one's real life. Some observers (Rheingold, 1993; Wellman and Gulia, 1999) have reported that individuals who regularly offer advice and information receive more help more quickly when they ask for something on online communities. This study

suggests mothers who receive Internet support are also likely to provide real support in both the short and the long term. Participants in those online communities that have a norm of generalized reciprocity may facilitate provision of social support not only online but also in real life, due to the anticipation of future reciprocity.

Conclusions

As the Internet becomes more commonplace in the lives of mothers, it is important to understand the mechanisms of its impact on their lives. This study is an attempt to shed light on how the receipt and provision of social support through the Internet affects the lives of child-raising mothers. My findings show that receiving social support from weak ties via an online community increases psychological well-being. At the same time, receiving support from strong ties in real life in the short and the long term, similarly increases psychological well-being. Moreover, gaining social support through the Internet promotes the receipt and provision of social support in real life, in both the short and the long term.

Taken together, these findings suggest that participation in online communities supplies "network capital," a form of "social capital." Network capital means relations with friends, neighbors, relatives, and workmates that significantly provide companionship, emotional aid, goods and services, information, and a sense of belonging (Wellman and Frank, 2001). We have seen that those who have more "real" support receive more Internet support. Thus the receipt of support happens synergistically online and offline. It may also be the case that a gregarious personality is involved, with certain types of people "knowing" how to attract support in multiple milieux, offline and online. In the future, more detailed studies should focus on the way in which people spend their time both online and offline is related to the supply of "network capital."

Appendix 18.1 Scales used in the Study

1 Childcare stressors caused by child's health and behavior

The six-item scale was measured by asking how often participants experienced the following stressors on a 4-point scale (1 = "not at all", 2 = "seldom", 3 = "often" and 4 = "usually"): "Children do not listen

to parents," "Children lose their temper," "I do not know how to bring up my children," "Children do not eat/drink properly," "Children tend to be sick," "Children are not healthy enough." Cronbach's Alpha = 0.667 at Time 1. Cronbach's Alpha = 0.689 at Time 2.

Children stressors caused by restraining mothers' behavior

This scale was measured by asking how often participants experience these stressors on a 4-point scale: "I do not have my own time," "My husband does not cooperate with childcare," "I am in a circle of my children and myself, and have no contact outside the circle," "I do not have anyone to babysit my children," "I am doing routine work everyday," and "I feel irritated about myself for not enjoying rearing my children": Cronbach's Alpha = 0.776 at Time 1. Cronbach's Alpha = 0.785 at Time 2.

The Todai Health Index: depression scale

The scale was measured by ten questions: Each question was reported on a 3-point scale: 1 = Often, 2 = Sometimes, 3 = Hardly ever or never. The questions were: "Do you feel blue?", "Do you feel that your life is hopeless?", "Do you lose interest in things you usually enjoy?", "Do you feel lonely even when you attend a meeting or are in a group?", "Do you feel lonely?", "Do you sometimes feel like not seeing other people?", "Do you feel inferior?", "Are you depressed?", "Do you feel as if your life is going badly?", "Have you had less confidence lately?": Cronbach's Alpha = 0.894 at Time 1, Cronbach's Alpha = 0.897 at Time 2.

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