

Computers in the Family Context: Perceived Impact on Family Time and Relationships

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ABSTRACT. This article examines the perceived affect of computers on family time and relationships. A family systems theoretical framework guided the exploratory qualitative investigation. Results indicate that computer use generally replaced solitary or minimal interaction activities. However, the majority of participants ($n = 79$; 89%) perceived that the computer impacted their family relationships. Of those participants, 45% ($n = 36$) cited a mostly positive impact; 24% ($n = 19$) a mixed impact and 20% ($n = 16$) a mostly negative impact. Themes included connection and the computer as a source of family information. The potential benefit of considering family characteristics was demonstrated as differences emerged based on family type as well as reported family levels of cohesion and adaptability.

As computers have proliferated in homes, research focus has intensified. Over the past decade, large scale studies have documented computer adoption and usage patterns in the home (Annenberg Public Policy Center [APPC], 2000; Center for Digital Future [CDF], 2000-2005 & NTIA, 2000, 2002, 2004). While vast amounts of quantitative data have been collected, no consensus has been reached about how computers affect family time and relationships. Several studies report that home computer use reduces contact with the social environment and family time (Kaiser Family Foundation, 2000; Nie & Ebring, 2000; Nie & Hillygus, 2002; Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002). However other studies find no change or an increase in family time resulting from home computer use (Kayany & Yelsma, 2000; CDF, 2000-2005). Nuanced data collected using qualitative methods and guided by a family theoretical framework may be better suited to understanding perceptions of computer impact within family contexts.

Activities Displaced by Home Computer Use

One approach to understanding the effects of home computer use has been to measure changes in time engaged in alternative activities. Nie and Hillygus (2002) proposed a hydraulic conception of time use in relations to technology. Their displacement hypothesis views time as a zero sum phenomenon. This suggests that given the constraints of a 24 hour day, time spent engaged in home computer use must be drawn from another activity. Their quantitative analysis of time-diary data suggested that Internet time is negatively correlated with time spent in discretionary activities such as television viewing, hobbies and social activities. Less is known about the degree to which family members are aware of these shifts in family time use patterns

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and whether family members interpret those changes as positive or negative.

Impact of Computers in the Family Context

In a survey conducted by the Kaiser Family Foundation (2000), Harvard's Kennedy School of Government and National Public Radio, 58% of the respondents said that computers have led people to spend less time with their families and friends. Preliminary results from the Quantitative Study of Society (SIQSS) confirms that the more time individuals spend in front of a computer screen the less contact they have with their social environment (Nie & Ebring, 2000; Nie & Hillygus, 2002). The HomeNet study found that computer and Internet use isolated some users from household members and reduced communication (Kraut et al., 2002). The nature of computer use may contribute to how that use is perceived by family members. In a study of Israeli adolescents, recreational Internet use contributed to intergenerational conflict, while educational internet use was associated with closer parent-adolescent relations (Mesch, 2003). A review of Internet infidelity studies confirmed the potential for home computer use to disrupt couple relationships and families (Hertlein & Peirce, 2006). The researchers noted the need for further research to understand the context in which computer use becomes dysfunctional. Research studies confirm that many families feel the computer negatively affects their functioning, interactions and time together; the factors that contribute to their negative perceptions and the characteristics of those families for whom computer use is problematic remain unclear.

Other studies have found no change in time spent in conversation with family members or time spent engaged in activities with household members. Horrigan and Rainie (2002) reported found that 88% of their nationally representative sample said the computer had no impact on family time. The Center for the Digital Future found that 2.7% of Internet users said the household spent less time together, while 97.3% said their family spent the same or more time together. Thirteen percent said Internet use directly resulted in more family time. The quantitative study did not examine the family characteristics associated with perceptions of computer impact or explore the mechanisms by which the computer affected family time. Some researchers have discovered that the interactive nature of computers fosters social development and communication (Calvert, 1999; Kommers & Rainie, 2002). These inconsistent research findings may be due to differences in how family time was conceptualized, the nature of data collected or a failure to consider family characteristics.

Applying a Family Theoretical Framework

Previous studies have examined families as a homogeneous unit, failing to take into consideration family characteristics. Watt and White (2000) suggest that the lack of a family based theoretical framework accounts for the haphazard and inconsistent findings regarding the impact of computers on families. The current study uses family systems theory to frame research questions and guide analysis. Family systems theory conceptualizes the family as a dynamic, self regulating system characterized by transactional patterns and processes that regulate relationships among members and with its environment (Rodgers & White, 1993). Computers may impact the family system in terms of roles, the negotiation of new rules, boundary defense, cohesion, adaptability, and communication.

This study expands upon previous research in two ways. First, a qualitative approach was used to increase understanding of how the family context influences perceptions regarding the effect of computers on time use, family time and relationships. Second, data about family functioning was collected to explore whether use of a family theoretical framework and family characteristics could inform analyses. Three research questions guided the exploratory investigation:

RQ1: What activities are being displaced by time family members spend on the computer?

RQ2: What impact, if any, is the computer perceived to have on family relationships?

RQ3: Do family characteristics affect the perceived impact of the computer in the family context?

Method

Participants

Participants for this study were drawn from the population of online computer users who visited cooperating websites or subscribed to cooperating listservs, newsletters and user groups. The objective was to identify websites frequented by the following family types: parents of children under 12, parents of children 12 and up, post parenting families, and couples without children. Forty sites were randomly selected for the survey based on their affiliation, level of traffic, and intended audience. Data came from individuals who responded to the online posting asking for research volunteers to complete a survey about the impact of computers on family relationships. Participants were directed to a website that described the study and participant rights. Those who elected to participate were linked to the study questionnaire. One hundred three participants completed the survey. Five surveys were partially completed and did not contain sufficient data for analysis leaving 97 surveys for analysis. Women comprised 82.8% of the sample ($n = 82$). Most participants (84.9%; $n = 82$), reported some education beyond a high school diploma. Thirty three participants had completed some college, 21 held a 4 year degree and 20 held advanced degrees. Participant age ranged from 18 to over 60 years old ($M = 41.8$, $SD = 4.23$).

Measures

Family Characteristics

Family Process. Participants completed the Family Adaptability and Cohesion scale (FACES III) as a measure of family functioning (Olson, Portner & Lavee, 1985). FACES III assesses family adaptability and cohesion on a 5-point Likert-type scale. The instrument reports an internal consistency of .62, a test-retest estimate of .80 as well as content and face validity. (Olson, Watson-Tiesel, 1991). The Circumplex Model of Family Functioning, which evolved over several decades, serves as the theoretical basis for FACES III. The model views family behavior along three dimensions: adaptability, cohesion, and communication (Fredman & Sherman, 1987). The cohesion dimension includes emotional bonding, internal and external boundaries, coalitions, and decision-making. Cohesion measures how family systems balance member separateness and togetherness (Olson, 2000). Adaptability examines the flexibility of the family system and the amount of change in leadership, roles, and rules. The construct assesses how the family system balances stability and change.

In order to be categorized along the cohesion, adaptability or family type dimensions, participants needed to complete all scale items. Three participants failed to complete all items on the cohesion scale, and twelve skipped items on the adaptability scale. Their data was not included in analyses involving family process. The remaining participant scores ($n = 94$) were categorized into four levels of cohesion: disengaged ($n = 20, 21.3\%$), separated ($n = 24, 25.5\%$), connected ($n = 29, 30.9\%$) and very connected ($n = 21, 22.3\%$). Along the adaptability dimension, scores from 87 participants were categorized into four levels: rigid ($n = 15, 17.4\%$), structured ($n = 21, 24.4\%$), flexible ($n = 22, 25.6\%$) and very flexible ($n = 28, 32.6\%$). A family type of separated, mid-range, moderately balanced, and balanced was determined by combining scores for the cohesion and adaptability subscales. The majority of respondents was categorized as living in moderately balanced ($n = 29, 33.7\%$) and mid-range ($n = 38, 44.2\%$) family types. The remaining participants rated their family type as balanced ($n = 11, 12.8\%$) and separated ($n = 8, 9.3\%$). The sample distribution is similar to that reported in the FACES III manual (Olson et al.).

Alternative Use of Computer Time

An open ended question asked “If you were not spending this time using the computer, what would you do instead?” A text box was provided for participants responses. Three fourths of respondents listed two or more alternative activities for computer time.

Perceived Impact on Family Relationships

An open ended question asked “What, if any, impact do you feel having a computer in your home has had on your family relationships?” A text box was provided for participants responses.

Results

Qualitative analysis used an inductive approach employing the mixed strategies of pattern clarification and interactive synthesis. This allowed themes and patterns to emerge from the data (Huberman & Miles, 1997; Mayring, 2000). The qualitative data were viewed in four formats: responses grouped by question; responses grouped according to participant reported level of family cohesion, adaptability and family type as measured by FACES III. Each format was analyzed separately. Coding was initiated upon the third reading and the data were condensed into a series of matrices that consisted of identified themes and patterns.

RQ1: Activities Displaced by Computer Time

Responses from the entire sample were analyzed. Two themes emerged: replacement of computer function and selection of solitary versus interactive activities.

Replacement of Computer Function

Respondents were aware of the multiple uses that the computer now fills in their home. Thirteen participants directly stated that time currently spent using a computer would be devoted to activities that fulfilled similar functional uses. Several participants mentioned the computer’s time-saving value.

I would do things I do on the computer other ways, i.e. balance my checkbook, look things up, shop for things write letters & messages and talk on the phone. It would just take longer.

All alternative uses of computer time could be placed into the functional usage categories Kraut (1996) outlined for the computer: entertainment, information gathering, interpersonal communication, work and electronic commerce. Two thirds of alternative activities could be classified as entertainment and/or information gathering. Reading was cited most frequently as a substitute for computer time, followed by watching television or movies. Only 8% of participants substituted alternative methods of communicating for time spent on the computer. Table 1 lists the functional categories and activities included and the number of responses.

Table 1

Replacement Activities for Computer Time Listed According to Function

Functional Category	Total Responses	Percentage*
Entertainment and Information Gathering	132	67%
Read	61	31%
Watch TV/Movies	39	20%
Hobby	17	9%
Exercise/Sports	7	3%
Go out	3	1%
Research	5	3%
Communication	16	8%
Telephone	7	4%
Family time	8	4%
Write	1	>1%
Work	6	3%
Shop	5	3%
Substitute Multiple Functions	13	7%

Note. Percentages are based on total number of activities listed. Participants listed between 1 and 6 alternative activities.

Solitary versus Interactive Replacement Activity Classification

A pattern emerged regarding the nature of activities participants listed to replace time spent on the computer. Substitute activities could be classified according to whether or not they promoted interaction with others. Only 9% of the activities listed could not be identified as belonging to categories labeled solitary, minimal interaction, or interactive. Eighty percent of the activities listed fell into the solitary or minimal interaction category as is shown in Table 2.

Table 2

Nature of Replacement Activity

Category and Activity	Number of subjects listing activity	Percentage
Solitary activities		
Read	61	80%
Chores/housework	23	24%
Individual hobby/gardening	16	16%
Research	5	5%

Individual exercise	4	4%
Write	1	1%
Minimal interaction activities		
Watch television	39	40%
Watch movies	4	4%
Social/interactive activities		
Telephone	7	7%
Family Time	8	8%
Go out	3	3%
Exercise/sports	3	3%
Social Hobby	2	2%
Unable to classify		

Note. Category percentages are based on total number activities listed by subjects and total 100. Activity percentages are based on total number of subjects who listed that activity. Subjects could list multiple activities so these percentages do not total 100.

RQ2 Perceived Impact on Family Relationships

The majority of participants ($n = 67$, 69%) reported that the computer had some positive impact on family relationships. Analysis of responses showed that 45% of individuals ($n = 44$) cited a positive influence, while 24% ($n = 23$) listed mixed responses that listed both positive and negative influences. A negative impact on relationships was reported by 21% of the participants ($n = 20$). The remaining respondents ($n = 10$) felt that having a computer in the home had little or no impact on family relationships. Qualitative analysis was conducted on data from the 87 participants who perceived some impact of home computer use on family relationships. Two themes emerged: connection and source of information.

Connection

The majority of responses mentioned the theme of connection ($n=85$). The presence of a computer in the home impacted the frequency and intensity of connections between family members. For 66 respondents the impact was mostly positive, while 21 participants felt there was a negative impact in family connection. Analysis of responses related to connection resulted in the identification of 3 sub themes.

Improved family communication. Increased communication utilizing computer features such as email, instant messaging and the capacity to transmit photographs were instrumental in forging connections. A total of 42 responses stated that the computer enhanced relationships by fostering communication with spouse, family or friends. The computer contributed to a stronger connection to extended family according to 48% of the participants ($n = 42$). In many cases, the computer helped families reconnect and overcome geographic divides.

I believe it has helped me become closer to some of my family because [Instant Messaging] and email are so much easier than to send a letter via snail mail. I don't think they would have made the effort otherwise.

Eight informants stated that the computer enhanced communication with family members living under the same roof. Spouses were the family member cited most often as benefiting from computer communication. Four of the survey respondents stated that they met their life partners

or spouses online. Others used the computer to maintain contact, share thoughts and information throughout the day.

The computer has helped me share information with my husband throughout the day where we can both respond to requests at our own pace/time than we could via telephone.

The computer has helped us be more open with each other.

The computer also helped three working parents maintain contact with latch key children. Five participants said that the computer allowed them to work from home on a full or part time basis. This was perceived to enhance relationships by increasing availability to family members, time for communication and connection.

It enabled me to work at home and be around my kids more than if I had to work outside the home.

One person now partly works from home, running a web-based business. Less time spent commuting to & from work and therefore less stressed and able to spend more quality time with significant other.

While I'm at work, the children can contact me directly through instant messenger...

Mutual interest or shared activities. The computer also increased connection within the immediate family by serving as a source of mutual interest. Fifteen informants reported coming together around computer activities such as games, crafts, photography, information gathering and problem solving.

My granddaughter and I spent time online looking up things for school projects.

My kids and I share information with each other and play games together.

Gives a mutual interest with husband, way to stay in touch more easily.

Impaired Family Connections. Not all informants who noted the computer's ability to connect individuals felt the result was positive. Nine informants stated that contacts made through the computer seriously harmed the spousal relationship. Two subjects blamed the computer in part for the end of their marriages.

The computer not only helped break up my marriage, it introduced me via a chat room to my current partner.

Informants also cited Internet affairs, addiction, pornography and over-involvement with friends or interests via the computer as causing serious harm to the spousal relationship.

It was a ticking time bomb- husband had Internet affair- the kids are more leery than interested in the computer due to that I believe.

One spouse is addicted to the point that family is not the focal point. Like any addiction, this had taken a toll.

The remaining 21 informants felt computer time, connections and communication resulted in less serious harm to family relationships. Twenty respondents expressed mixed feelings about the computer's impact. They felt that communication via the computer was beneficial in that it

connected far flung family members and friends, but somewhat harmful in that it kept those living under the same roof from spending time together.

Shared activity surrounding computer use was regarded as enhancing relationships, but when activity levels or interest in the computer varied between family members, the perception was that time spent on the computer reduced connection and harmed relationships. This view was expressed by 18 of the participants. Jealousy about time spent using the computer, conflict surrounding allocation of computer time, and perceptions of excessive use emerged as problems.

Kids fight over getting to use it.

It has been a source of contention with my husband and we have both accused the other of spending too much time online.

Source of Information.

A second theme emerged in which the computer contributed to relationships indirectly by serving as a source of information. A majority of respondents ($n = 71$) said that information gathered over the computer contributed to their quality of life. Sub themes related to use of the computer to gather information to: support personal growth, to enrich and maintain important relationships, improve family functioning and quality of life.

Support personal growth. Information gained about the computer and through the use of the computer contributed to personal growth and development. Mastering the skills necessary to operate the new technology in the home resulted in increased self-esteem. In addition, the vast array of resources offered on the Internet offered the potential intellectual growth and exploration of specialized interests. This growth was seen by some as providing more topics about which family members could talk.

The computer is a much more interactive pursuit which gives us more to talk about. Others saw the opportunity to widen their horizons and increase knowledge. Participants who used the computer to increase their personal knowledge and abilities, whether formally through distance education or informally, felt good about their efforts. Those positive feelings have the potential to contribute to improved relationships.

Makes me a more rounded person.

Computers have opened new avenues of contact with people and places all over the world.

Support for life roles and relationships. Participants gathered information to assist in carrying out life roles such as spouse, parent or caretaker for sick family members. Twelve of the respondents said they benefited from the support and information garnered from individuals who had faced similar circumstances.

I have found lots of information regarding marriage and relationships, web posting of people with problems identical to mine, from whom I have found support and help.

I can quickly look up child-related information (behavioral and health).

As we are grandparents raising our grandchild and I also suffer from health issues, I have found support groups that have given me not only support but valuable info.

Organize family activities. Nineteen used the computer to locate information about local events to plan family activities, outings or vacations. This allowed the family to spend more quality time engaged in mutually interesting activities.

Provides recreation for individual and family activities.

Facilitated planning for trips, vacations, sporting and cultural events.

RQ3: Family Characteristics and Perceived Computer Impact

In order to examine whether family characteristics affected perceptions of computer impact, data were grouped according to family process scores on the cohesion, adaptability and family type dimensions as measured by FACES III, amount of computer usage and family stage of development.

Cohesion

Activities Displaced by the Computer. Participants categorized as disengaged listed 42 activities that would replace time currently spent on the computer. This group was slightly more likely to name alternative activities that were solitary or involved minimal interaction ($n = 17$, 88%) than respondents in the total sample ($n = 70$, 80%). Respondents in the disengaged group were more likely to list television as a replacement for computer time ($n = 13$, 65%) than the respondents in the very connected group ($n = 9$, 47%), or total sample ($n = 41$, 40%).

Perceived Computer Impact on Family Relationships. Participants placed in the disengaged category were more likely to answer that the computer had a negative or mixed impact on relationships ($n = 13$, 62.5%) than the study sample ($n = 26$, 30%) or the 21 respondents from the very connected group ($n = 4$, 20.8%). Participants categorized as disengaged accounted for half of the total number of participants who perceived a negative impact on family relationships. The degree of harm participants in the disengaged group perceived the computer to cause varied. Responses citing serious harm to the relationship include:

The computer not only helped break up my marriage, it introduced me via a chat room to my current partner. Although my marriage was already in trouble the computer via chat rooms gave me an outlet and let me test the waters without actually going out and dating.

My husband has gotten into online porn, I have cruised the chat rooms, and gotten into online relationships which have clouded my judgment in real life. These things are not the root cause of our marriage trouble, but extensions of.

Other statements suggested the computer caused temporary harm to family relationships.

Enhanced but it wasn't without prior issues.

A problem at first until she got hooked on the Internet.

Some respondents cited less serious harm to relationships.

It has caused us not to spend quite as much time together as a family.

The very connected group was somewhat less likely to respond that the computer had a negative impact on family relationships ($n = 5$, 23.8%) than the study sample ($n = 28$, 30%). The

very connected group was more likely to view the impact of the computer as neutral ($n = 6$, 29%) than the sample ($n = 14$, 15%). The very connected group accounted for slightly less than half of the participants who reported the computer had a neutral affect on family time.

I don't think it has. We spend a lot of time on the computer, but we also play games together online a lot.

Most of my online time is while the rest of the family is sleeping. Most of the rest is while I'm watching something on TV that the others are not interested in.

Adaptability

Activities Displaced by the Computer. The alternative uses of computer time listed by participants placed into the rigid ($n = 15$) and very flexible ($n = 28$) categories along the adaptability dimension were analyzed. A slightly higher percentage of respondents in the rigid group named activities that were solitary or involved minimal interaction ($n = 13$, 89%) than respondents in the very flexible group ($n = 23$, 82%) or entire sample ($n = 69$, 80%). Respondents classified as very flexible were more likely to use time typically devoted to the computer to engage in social pursuits such as spending time with their children or talking on the phone ($n = 4$, 13%) than respondents in the rigid group ($n = 1$, 7%). Respondents from the very flexible group accounted for a third of the participants who listed social alternative uses of computer time.

Perceived Computer Impact on Family Relationships. The responses of participants placed into the rigid ($n = 15$) and very flexible ($n = 28$) categories along the adaptability dimension differed from one another and the sample. Participants classified as rigid were less likely to view the computer as positively impacting relationships ($n = 6$, 39%) than the sample ($n = 56$, 65%) or participants categorized as very flexible ($n = 21$, 75%). The very flexible participants accounted for nearly half of the participants who believed the computer affected family relationships positively. Positive responses of participants in the very flexible group frequently focused on computer applications and functions such as email, chat, access to research, word processing, business programming.

Closer w/grandchild helping with homework, asking for her help in computer activities.

Positive effect. We play games together, share information with each other via email.

Allows us to teach our child research skills, enhance her education...shop, read, explore together as a family.

The computer has helped us be in closer touch with friends & family by email, IM's, web cam's & web phone.

Participants in the rigid group were most likely to respond that the computer had a negative or mixed impact on family relationships ($n = 7$, 47%). This view was shared by 30% of the sample ($n = 26$) and 21% of participants classified as very flexible ($n = 6$). All but one of the negative comments in the rigid group focused on how the computer decreased interaction and personal contact.

We do not communicate as much.

At times, decreased personal contact time.

Family Type

Activities Displaced by the Computer. Eight families were classified as extreme having low scores along both the cohesion and adaptability dimensions. Eleven families were categorized as balanced with scores that fell at the high end of the cohesion and adaptability dimensions. Analysis of data showed that respondents in the extreme family type group differed from participants in balanced family types and the sample regarding the type of activities listed to replace time normally spent on the computer. Participants in the extreme family type group differed from participants in the balanced family types and the total sample regarding the type of activities listed to replace time normally spent on the computer. Participants in the extreme group were much more likely to list an activity that was solitary or involved minimal interaction ($n = 7, 87.5\%$) than participants from balanced family types ($n = 7, 64\%$) or the total sample. Just one respondent listed an alternative activity that could be considered social, visiting. The percentage of balanced family types who cited a social activity to replace computer time was the same in the total sample.

Perceived Computer Impact on Family Relationships. Twice as many extreme respondents ($n = 4$) perceived the computer as having a negative impact on their family relationships than a positive ($n = 2$) or neutral effect ($n = 2$). On the other hand, balanced family types were more likely to rate the computer as having a positive impact ($n = 8$) on family relationships than negative ($n = 1$), mixed ($n=1$), or neutral ($n = 1$). These remarks are representative:

My husband and I met via the Internet, so having a computer in the house has been vital for our family relationships.

I have found the presence of our computer to be a lifeline...

Allows all of us to be in closer touch with family than we were before we had Internet access.

The computer has opened up a whole new world for us to visit and see...

Discussion

Family Time and Computers

The qualitative data from the current investigation provide further evidence that computer time does not diminish family interaction time. When asked what activities would replace time currently spent on the computer, only 11% of respondents listed alternative activities that promoted interaction. Of those, only two specifically mentioned interacting with family members. Solitary or minimal interaction pursuits such as television were listed by 80% of those surveyed. This finding is consistent with the Pew Internet & American Life survey (Horrigan & Rainie, 2002) which found that 88% of their nationally representative sample said the computer had no impact on family time. The results support the observational study by Kayany and

Yelsma (2000) that time spent using the computer displaced time spent viewing television rather than time spent in conversation.

The multifunctional capabilities of computer technology are changing the way families function. This study indicates that the computer is used for entertainment, communication, information gathering and household management. Computer technology appears to provide an alternative means of fulfilling existing family functions and needs. Several participants indicated that computer use increased efficiency resulting in more discretionary time. This could explain the positive correlation between computer use and family time reported in the CDF study (2004).

While individuals might not replace computer time with time spent in family interaction, the perception that the computer interfered with family time was evident in responses from a small percentage of the participants. Examination of family process characteristics indicated that individuals who perceived that the computer interfered with family time were more likely to classify their family as rigid or extreme on FACESIII. These family types are less flexible in roles, rules and leadership and more resistant to change. The perception of decreased family time may result from an inability to redefine family time as it relates to computer use or a negative interpretation of changes in family patterns resulting from the computer. Family functioning might influence how technology is adopted and integrated into the family context. This interpretation is consistent with Oravec's (2000) suggestion that technology may present as a mechanism for expressing family dysfunction in therapy. More research is needed to examine the interaction between family functioning and technology integration.

Computers and Family Relationships

Participants reported that the computer both supported and impaired family connections. The means through which the computer supported connection included improved family communication. The widespread use of home computers for communication has been well documented in surveys (Kraut, Mukhopadhyay, et al., 1997; Horrigan & Rainie, 2002; Nie & Erbring, 2000; NTIA, 2002). There is some evidence that the communication function of the computer is especially valued by females. A Pew Internet and American Life survey (Rainie, 2000) found that women used email to enrich their important relationships and expand networks. The majority reported an improved connection to family members due to e-correspondence. One third said email encouraged more frank communication which was perceived as good for the family. As the majority of respondents in the current study were female (82.8%), it is not surprising that their responses focused on communication.

The computer also served as a shared activity and information source that met a variety of family needs and interests. The CDF (2005) found that 56.3% of users felt the Internet was their most important source of information. Study participants utilized the information gathering capability of the computer to strengthen relationships by locating websites and discussions groups that: promoted personal growth; increased knowledge and training; improved self esteem; supported life roles such as spouse, parent, and caregiver; and helped organize a variety of family activities. This penetration of the computer and Internet in the home reflects a national trend towards increased reliance on the Internet as a personal information source (Madden, 2006).

The solitary nature of the computer was perceived by some to impair connections, however, especially among family members living in the same household. A unique aspect of computers is the potential for anonymous connections that provide group membership and social support especially among marginalized individuals (Bargh & McKenna, 2004). It's possible that individuals who perceive their families to be less functional seek connection elsewhere. This

explanation is consistent with the finding that participants belonging to extreme family types were more likely to view the computer as having a negative effect on the family. In addition, the increased permeability of family boundaries was perceived by some participants to negatively impact family relationships. Computer use has been shown to reduce boundaries between public and private worlds resulting in negative spillover from work to family and reduced family time (Chelsey, 2005; Garcia-Montes, Caballero-Munoz, & Perez-Alvarez, 2006).

Benefits of Using a Family Theoretical Framework

This exploratory study demonstrated the potential benefits of using a family oriented theoretical framework to examine the effect of computer technology on family process. Organizing qualitative analyses using measures of family process provided a more nuanced view of the way computers are incorporated within the family context. Individuals who classified their family as disengaged, rigid, and/or extreme were more likely to replace computer use with a solitary activity. A higher percentage of those individuals perceived that the computer impaired family relationships. Individuals who categorized their family as flexible were more likely to list a social replacement activity for the computer and generally viewed the computer as a positive addition to the family. While these analyses are preliminary and involve small sample sizes; they do illustrate the benefit of considering family characteristics.

Limitations

The results of this exploratory study need to be viewed with caution. The relatively small sample is not representative of the general population or online population. The sample consisted of mostly females (85%) and individuals with formal education beyond high school (83%). Qualitative analyses organized according to family characteristics were based on small numbers. Participants were volunteers recruited through randomly selected websites, discussion groups and newsletters likely to be visited by the individuals in the family stages of development targeted by the study. As online subscribers, these participants already displayed a high interest and involvement in computer use. External validity of the study was limited, due to the self-report nature of the data collected.

Future Research

This study demonstrated the potential usefulness of using a family oriented theoretical framework. A family systems theoretical framework can structure investigations regarding the impact of the computer technology on how families negotiate change and the flexibility of leadership, roles and rules; practice emotional bonding; maintain internal and external family boundaries; form coalitions; and make decisions. Research efforts should focus on the characteristics of families and individuals for whom technology is problematic, addictive, isolating, or marginalizing; and the characteristics of families and individuals for whom technology is adaptive and beneficial. This would promote the much needed development of empirical based best practice guidelines for incorporating computer technology in the home. The study also demonstrated the effectiveness of a qualitative approach for understanding how technology is perceived within the family context. While there is a continued need to document the demographics associated with computer use and how computer time is being spent; more

attention should be paid to how users feel about emerging technologies and how they integrate those technologies into their lives and homes.

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