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Communication technologies and their effect on adolescents

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COMMUNICATION TECHNOLOGIES AND THEIR EFFECT ON ADOLESCENTS

A Project

Presented to the

Faculty of

California State University,

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In Partial Fulfillment

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Master of Social Work

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by

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ABSTRACT

The research focused on adolescent use of communication technology and how it may be affecting their relationships with their family and their peers. A quantitative survey was administered to private school students aged 13 to 17, concerning their use of communication technology, their current friendships, and their current family relationships. All data was analyzed for frequencies and Pearson correlations to find significant connections between responses. Findings show no conclusive link between the quality of relationships and an increase in use of digital communication platforms. This study will inform concerned parties of the possible benefits or risk factors which may originate from persistent online interaction among teens.

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CHAPTER ONE

INTRODUCTION

This chapter will cover the central features of the research at hand including a statement of the problem as it appears in society, the reasoning behind the need for research in this field, and how it may relate to social work practice in general.

Problem Statement

Innovations in technology over the last 20 years have radically altered communication patterns in the U.S. It is just as easy to stay in touch with friends and relatives who live 2000 miles away as it is to say hello to your next door neighbor. New 3D technology is available from electronics stores for home use, pointing to the possibility of virtual reality in the next few decades. While face to face interaction will never disappear, virtual interaction has been increasing in popularity.

The field of social services stands to gain much in this new era of technology. Social workers will soon be pressed to use more advanced tools in the hopes of

bettering their outcomes. As communication becomes easier and less cumbersome the ability of a worker to help and empower their clients grows tremendously. Resources, which may have been previously unknown to many agencies, could be located and negotiated with via email in mere hours. People in need should be able to find and talk to their worker during a crisis thanks to cellular phones. Charting across agencies over the internet and the ability to cooperate with other workers will ensure no break in service for at risk populations who are unable to stay in one area. The beginnings of these steps are already being seen in many places, and many more advances are likely to have equal effects. Yet not all new forms of communication can be so easily seen as beneficial.

Communication technology is widely available from urban centers to rural farmsteads, and thus socializing via the internet has become commonplace in many circles. What society has yet to understand is how this move into the digital world is affecting the quality of interpersonal relationships. Since youth culture is typically quicker to embrace change and technology, it

seems fitting that research on this phenomenon begins with the data they can provide.

Adolescents in the U.S. are relying more and more on communication technologies to interact. Quan-Haase and Wellman state that "for a large proportion of the population of Internet users, Internet access is a daily activity" (2002, p. 1). According to the Youth Internet Safety Survey (YISS-2), among children ages 10 to 17, 49% report being online five to seven days a week and more than 50% of the time it is for longer than one hour per day (Wollak, Mitchell, & Finkelhor, 2006). It is apparent in nearly everything teens do, from using the computer, to talking and texting on phones, and using online games. This is due to a number of factors like increased availability, technological requirements of modern urban lifestyles, and peer expectations.

Due to the many freedoms Americans enjoy there are no governmental controls on by what means or how often anyone can spend online or talking with others. It is unlikely that the near future holds any kind of federal or state legislation which would regulate this kind of interaction. Indeed, most of the guidelines in effect for limiting such activities are generated by

institutions like families, school and the workplace. Yet, these rules are often made up in response to some specific crisis or problem

Purpose of the Study

The purpose of this study is to see how substantial the effect of technology has been and will be on current and future generations' relationships. For this study to make the best use of the information gathered, definitions of key terms are needed. They are as follows:

- Communication Technologies
  - Any device that is used to interact with other individuals via an electronic network
- Family cohesiveness
  - How well family members communicate and respect each other's needs and wishes
- Immediate family
  - Members of a family who live in the same household.

• Peer relations	• Regular interactions among youth within a five year age range
• Close family	• Relatives who youth rely on to be emotionally supportive, respect their individuality, and treat them fairly
• Close friends	• Non-relatives who youth rely on to help them understand themselves, stay non-judgmental about their actions, and not disclose secrets they impart
• Family support system	• The group of relatives who youth rely on to assist them in times of stress
• Peer support system	• The group of friends who youth rely on to assist them in times of stress

Interaction via mobile wireless, or online sources, seems to be on a path to becoming more prevalent as

technological advancements make connecting to the web easier. Yet, to date, there is no clear understanding of how these new forms of communication will affect the very relationships they involve. Hypotheses exist on the subject with some indications that the new web based community "may be reinforcing peer communication at the expense of communication with parents" (Subrahmanyam & Greenfield, 2008). Research needs to be done on what effect online communication patterns are having.

Many different groups should be concerned with this issue. Parents could potentially lose close familial bonds. Institutions and communities should take heed over the apparent loss of face to face interaction. Social workers and therapists need to know what kind of recommendations to make when faced with family strife caused by online interaction. Researchers and theorists will be the people determining if development or practice models should be altered.

There is a strong likelihood that a relationship exists between the increase in communication technology (CT) use and quality of adolescent family and peer dynamics. Gathering this information is important for three reasons. First, by ignoring this issue there is

potential for not fully understanding if CT use is a benefit or detriment to family or peer relationships among adolescents. Second, these data are needed to better understand modern foundations of youth relationships through their daily interactions. Third, the information collected could help in predicting risk factors for youth problems like depression, delinquency, and sexual abuse.

The best way to procure these data seems to be via studying the relationships of teens that not only have access to the types of technology this study is interested in, but also use it on a regular basis. Surveys will be administered to private school students in an attempt to glean said knowledge. The reasoning for a different education institution than a regular public school is that the students in private schools are more likely to come from families of means, and thus have more access to communication technologies than public school teens that may be living at or below poverty levels. It is expected that even though a higher standard of living is likely, there should be enough persons in the sample that do not have the technology access that others do,

allowing for a comparison of the different level of impact CT presents.

Significance of the Project for Social Work Practice

The goal of the research is to influence the perceptions of how adolescent CT use affects their relationships. If society is to come to terms with the rapid pace of technological adaptation it should know how to keep the most core units of interpersonal relationships, friends and family, from becoming damaged. To be clear, the research question is: What are the effects of increased communication technology use on the family and peer relationships of adolescents?

This study has the potential to inform all concerned parties of the possible benefits or risk factors which may originate from persistent online interaction among teens. Parents can determine if removing access to communication is harmful or helpful in their journey toward strong family cohesiveness. Schools and communities can better respond to the prevalent use of new technologies by younger generations. Social workers stand to benefit by better understanding family and peer

dynamics stemming from increased digital communication. Researchers and theorists may be able to use and analyze the data to predict possible outcomes due to changes in adolescent CT use.

It is important to remember that social workers, though only mentioned as one of these factions, are actually tied to all of them. Social workers are often times parents, work in schools and communities, and are researchers. Not to mention, they can and will be expected in many cases to offer their own input, based on research, about issues like this to all of these groups. Social workers will have the opportunity to look at the matter from an objective and informed position in order to make recommendations.

This project will take a close look primarily at the engagement and assessment phases of the generalist model, via consent letters and surveys (Johnson & Yanca, 2009). The intent is to survey the aforementioned population to see what kind of information can be gleaned about the potential problem.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The records researched for this study included EBSCOhost, PsychINFO, the California State University system library catalogue, and Google Scholar. The query of terms such as youth, adolescent, internet, communication, technology, family, friends, and others, resulted in very few sources which either offered information on or examined the topic at hand. Many resources were not included in this study due to the fact that they were extrapolations of information from a few key articles. The reports determined to have the most relevance to the study, while not duplicating information, will be the focus of the literature review. All of the articles on the subject are from national organizations, or researchers, who had some interest in the subject. The six articles which are reviewed in this section were broken down into three categories.

The first two articles are labeled "reasons for CT use." They both attempt to understand not just the data, but why adolescents are using communication technology to

such a large extent. The second two articles have been labeled as "most current research" since both used data gathered within their study and the second Youth Internet Safety Survey (YISS-2) to extrapolate possible hypotheses. The last two articles were labeled "theories guiding conceptualization"; due to the fact that they both offer theoretical frameworks and observations that will be expanded on during the study.

Reasons for Communication Technology Use

An article on human development and technology by O'Keeffe and Clarke-Pearson (2011) does not contain any original research and is more of a review of other research articles. After reviewing the statistical analyses of the various polls and minor studies in their reference list, they conclude that "a large part of this generation's social and emotional development is occurring while on the Internet and on cell phones" (O'Keeffe & Clarke-Pearson, 2011, 800). That is to say, adolescents are now creating their identities though electronic communication. Later they discuss why youth are so engaged in using CT, proposing that it can let teens accomplish online most of the things that are

important to them offline. This includes staying in touch with friends and family, forming new relationships, sharing their lives through pictures, and exchanging their personal thoughts or beliefs (O'Keeffe & Clarke-Pearson, 2011). These are both very useful concepts in understanding youth involvement in CT.

A survey of Dutch youth was done to determine how the use of instant messaging affected depression (Selfhout, Branje, Delsing, Bogt, & Meeus, 2008). The applicability of its findings on negative outcomes was not as helpful as their explanations of how to conceptualize the quality of friendships. A section of their work is dedicated to discussing how instant messaging is used as a safe way of practicing social skills that some adolescents may have trouble with face to face (Selfhout et al., 2008). This is interesting theory as, like the previous article, it clearly points to underlying reasons that youth engagement with communicating technologies is so important to their development.

Between these two articles a trend can be seen that shows just how important a study of this type could be. Both studies show that CT has a major effect on how

adolescents act and react to peer relationships in modern times. Also, they lend credence to the idea that it may be important to normal maturation. With the acquisition of more data on the subject, society may uncover new realities of human development, which may have been overlooked or ignored.

Most Current Research

Unfortunately, there has been very little in the way of large examinations of teen communication patterns. There is, to date, only limited data on how, when, or why most adolescents are using CT. Thanks to the two Youth Internet Safety Surveys (YISS-1 and YISS-2) a lot of very useful information is available to social workers and researchers alike that will guide future assessments and predictions of adolescent behaviors.

This survey, conducted first in 2000 and again in 2005, asked children ages 10 to 17 about various aspects of their online communication patterns. The intent was to look at online victimization and how it is being perpetrated. A somewhat ignored result was the bevy of information about daily youth internet use. A study examines the data from the YISS-1 and draws some very

interesting conclusions (Wollak, Mitchell, & Finkelhor, 2003).

An interesting pattern that should be noted is that the data seemed to show very little difference in internet use among different demographic groups, including gender and race (Wollak, et al., 2003). The authors also found that higher rates of close online relationships existed among teens that had troubled relationships with their parents (Wollak et al., 2003). Much of their article examined the relationships of adolescent and peers through online communication. However, the bulk of the research was done on the negative effects of depression and internet use. Unfortunately, the information was not entirely useful, since this project is focused on communication patterns and relationship quality and not the emotional status of youth who use CT.

Helpfully, the article does analyze factors contributing to a decrease in family cohesiveness and an increase in social activity. Wollak et al. conjecture:

> It may be that adolescents who are troubled or alienated from their parents have more difficulties satisfying friendship needs through face-to-face

relationships and that, for some, the Internet provides an alternative. If this is so, it is not necessarily a problem. The Internet may be a source of positive social support and connection for some adolescents (2003, p. 116).

Mishna, McLuckie, and Saini examined a database of posts by youth to a national web counseling, and referral services (2009). Again, the study's focus was on negative interactions online, this time with cyber abuse. Also, the sample guidelines were much more wider then the YISS-2, using ages 11-24 (Mishna et al., 2009).

The most interesting piece of the data was the part about parental knowledge of the youths' activities. It explores why participants did not engage parents when issues arose with online interactions. The authors note that in their study "several children and youths characterized their parents as out of touch with contemporary socializing and dating. The children and youths preferred to endure difficulties with online interactions rather than involving parents and risking the loss of Internet access" (Mishna et al., 2009, p. 114). This is telling of the disconnect which exists between parents and their children, in regards to digital

communication. If the parents had had more familiarity with the same methods of technological communication then they may have had a stronger bond with the youth and been able to see firsthand any potential abuse. The authors go on to propose that it is imperative for adults to recognize how often children and youths socialize online and to understand the implication of online relationships (Mishna et al., 2009).

It can be seen that there is a lack of standalone research on the subject at hand. This is probably due to the relative newness of the issue. What better reasoning could there be for a new study, even as modest as this one may be, to collect more data on the subject?

Theories Guiding Conceptualization

A very important article to the research project overall is by Subrahmanyam and Greenfield (2008). The authors are focusing on determining what effect digital communication tools are having on adolescent relationships such as friendship, romance, family and strangers. They use a theoretical framework that will be adopted for this research study. In their words:

> Our theoretical framework draws on John Hill's claim that adolescent behavior is best understood in terms of the key developmental tasks of adolescence—identity, autonomy, intimacy, and sexuality—and the factors, such as pubertal and cognitive changes, and the variables, such as gender and social class, that influence them. Extending his ideas, we propose that for today's youth, media technologies are an important social variable and that physical and virtual worlds are psychologically connected; consequently, the virtual world serves as a playing ground for developmental issues from the physical world, such as identity and sexuality. Thus understanding how online communication affects adolescents' relationships requires us to examine how technology shapes two important tasks of adolescence—establishing interpersonal connections and constructing identity. (p. 124)

This theory will provide an examination of the roles that communication via technological sources plays in guiding relationship quality both with peers and families.

This model is, in many ways a parallel to existing models on identity and relationship formation. Some

theorists had already proposed that normal adolescent development is affected by external stimuli such as access to resources, friends, family and relationships (Blos, 1968; Bowlby, 1988; Flum & Lavi-Yudelevitch, 2002; Josselson, 1996).

Greenfield and Yan (2006) wrote an editorial on previous research utilizing a variation of the Uses and Gratification model which was developed by (McQuail, Blumler, & Brown, 1972). This is a way of looking at technology use from a perspective of what perceived benefits the youth may receive. Some good aspects of the review are that it is using a large sample of youth from many sources, and that it is not concentrating on the negative effects like so many previously mentioned articles do. It is not as in-depth as the Subrahmanyam and Greenfield article, but it has a very interesting spin on what benefits exists from CT that should be helpful when scrutinizing data.

Summary

Through some relatively recent studies, research and theory a picture of the proposed study's background is perceived. The motives for obtaining more information on

the problem are obvious, considering the possible influences this new communication pattern has on development and the lack of data present on the subject. The limited data available does appear to show a distinct change in how youth interact with their family and friends compared to just 20 years ago. These studies illustrate that increased CT use is indeed creating a different model for relationships and possibly damaging family unity.

This project will build on the successes and failures of investigation methods used in the past, and utilize their methodology in the survey design. The intent is to incorporate existing ideas, and new data, to either support or refute their conclusions. Furthermore, it will be able to integrate the information received into a plausible and understandable conclusion via a theoretical perspective which has already been established.

CHAPTER THREE

METHODS

Introduction

In this chapter the methods employed for gathering data will be outlined. Topics covered include the design of the research, the reasoning for sample selection, the creation of the survey used, the procedures for administering the instrument, the considerations for ethical human research and breakdown of the analysis used.

Study Design

The question, as declared in the problem statement, is to determine the effect that adolescent communication technology (CT) use has on familial and peer relationships. This project hypothesized that not only does a correlative relationship exist, but that it is negative in regards to strength and number of family bonds and positive in regards to strength and number of friendships.

The intention was to use a quantitative model for a various reasons. The information needed would be better

suited to being collected from many different participants as opposed to only a few. A survey appeared to be the best method of obtaining a larger sample. A qualitative study would carry with it a prohibitively lengthy interview process.

Sampling

The population that was looked at were adolescents, since they can best report their own communication technology use habits. Also, they would have a better feel for their own relationship statuses than an outsider like a teacher or parent. The study necessitated a place where surveys could be administered and receive a valid response. A determination was made that the best location to gather data is at a private school, as a likely higher median family income gives a better probability of student interaction with communicating technologies.

It was assumed that the school where the data collection took place did not have any first hand information on the subject, other than observational records. This was confirmed by the school

representative. Thus, as survey was developed to ascertain the information desired.

The concentration was on teens, ages 13 to 18. A sample of 30 to 70 individuals was sought. This would allow for a large enough sample to ensure reliability, while not overstretching the abilities of the researcher to gather data. There were, necessarily, very few restrictions on sample criteria, as to encourage data to be as representative as possible. Unfortunately, due to various extenuating circumstances, only 17 surveys were collected.

Data Collection and Instruments

The independent variables consisted of seven questions regarding the specific use of and familiarity with CT. This was measured by tallying the number of different types of CT being used and time spent using the indicated formats.

Dependent variables included quantity and quality of family relationships and peer relationships. Quantity was measured by the number of reported close friends and family members. To understand quality, questions were asked about perceived closeness of relationships on a

Likert scale. Other dependent variables were face to face time spent with friends and family, and time spent with friends and family via CT. These variables were measured in hourly increments.

To quantify this information a list of 20 questions was employed (Appendix A). Some questions used a numerical value and others used nominal indicators. This instrument was developed by the researcher to address the specific data required for the study.

The self-administered questions were carefully picked with regard to their content, their contribution to study relevance, their ease of understanding and the overall length of the survey. Pretesting was done on friends and family of the researcher to ensure that the questions were understandable and the information reliable. It was especially important to use language that teens would understand, since their perception of what is being asked could distort the answer they would give. All data from the pretests was destroyed and omitted from the study.

During the instrument's creation, examples from tools found in the literature were used to guide both wording and format, particularly the approach to the term

"closéness" offered by Valkenburg and Peter (2007, p. 268). The researcher drew considerable influence from the wording of questions k7, k13, k14, k16, k17, k18, k19, k21, k25 in the Princeton Survey Research Associates for the Pew Internet in American Life Project (2001, pp. 2-13).

Item k7 examines what types of internet communication are being used, k13 and k14 both look at interaction between youth and others, k16 through k19 ask about time spent using the internet, k21 is regarding the reasons internet communication is used, and k25 is about adolescent perceptions of use expertise. These questions in particular were very helpful in structuring the proposed data collection.

Possible strengths of the survey include the familiarity of language used, the repetition of familiar concepts, and the length. Some weaknesses could center on the lack of validation via a peer review process, the exclusion of parental input, and the possibility that the group surveyed had no formal understanding of what was being studied.

Procedures

The decision was made to ask a private school to allow the distribution of surveys during geometry class. Within this school, students meeting the sample criteria had a letter of consent sent home to the parents (Appendix B) and an assent script (Appendix C) read to participants in class just before the surveys were administered. Surveys were distributed to all students in a controlled environment which accounted for privacy. This allowed for the greatest possible return of data from the location. The survey took less than 15 minutes so as not to cause undue hardship to those who had assented to participate. The researcher handed out surveys and collected them in a sealed envelope when they were completed.

Protection of Human Subjects

Confidentiality was kept by limiting the identifiable data to only the names of participants who received parental consent to take the survey. These consent forms will be held by the researcher and stored separately in a secure location until it is necessary to destroy them. To be clear, no identifying information

was placed on the survey itself. Thus, it should be highly improbable to trace back the answers given by any particular individual to their consent form.

Data Analysis

After the data were collected all of the variables were entered into SPSS in order to run quantitative analysis on the findings. Frequency distributions detailed real numbers of responses to confirm that the data are not comprised of non-variant answers. Pearson correlations among the answers provided by participants, and how closely each variable is linked to each other, was also completed in SPSS.

The examination of data revolved around the responses participants gave to the first eight questions about CT use in relation to the responses given to questions nine through fourteen for friendships and questions fifteen through twenty for families. Another correlation examined was the answers given for questions relating to friendship in opposition to questions relating to families. The patterns gleaned from this information are most useful in supporting or disproving the hypothesis stated earlier.

Summary

The overall design of the instrument was intended to provide more than enough data to extrapolate the information needed to render a verdict on the validity of the hypothesis. SPSS was able to identify frequencies and correlations within the data which later informed the discussion of the material. The end result consisted of tables which clearly show how the data can be interpreted in a reasonable manner. These are tempered, however, by the lack of data collected and the prospect of little to no generalizability across participant responses.

CHAPTER FOUR

RESULTS

Introduction

In this chapter the results of the surveys will be presented. It will include a presentation of findings, via tables, and an explanation of the frequencies and correlations found therein.

Presentation of Findings

The sample obtained for the study consisted of 17 students ages 13-17. All 17 participants provided a parental consent and their own assent to completing the survey. Every survey had all questions answered with no stated confusion over the wording from any participant.

The data has been broken into three categories for analysis of frequencies, each with its own discussion section. These include communication technology (CT) prevalence, friend relationships, and family relationships. A final section explaining relevant correlations is presented after the initial three groupings.

All Likert scales ran from 1 being "not at all" to 10 being "very", all variables which were not chosen at least once were not included in the tables to reduce clutter. The questions concerning "type" of communication used (Questions 1, 4, and 7) were broken into whole usage numbers instead of listing out the actual variables. For example, if a participant circled more two of the listed technologies it was coded as using two technologies. The coding did not account for specific technology use. This was done for two reasons. First, all frequencies were run with consideration to this methodology, not using each type as a standalone variable. Second, the study did not give any weight to one form of communication technology over another.

The first table shows the frequency of use and perceived familiarity with CT. Questions in this section were concerned with identifying how many and how often participants were using forms of internet communication throughout their day to day routines.

Table 1.

Communication Technology Prevalence

Variable	Frequency(N)	Percentage(%)
Number of CT Types		
1 Type	1	5.9
3 Types	9	52.9
4 Types	4	23.5
5 Types	3	17.6
Perceived CT Expertise		
4	1	5.9
5	2	11.8
6	1	5.9
7	7	41.2
8	3	17.6
9	3	17.6
CT Use (hrs/wk)		
1 - 4	4	23.5
4 - 8	7	41.2
> 8	6	35.3
Number of Cell Phone Types		
1 Type	3	17.6
2 Types	5	29.4
3 Types	1	5.9
4 Types	3	17.6
5 Types	5	29.4
Cell Phone Use (hrs/wk)		
< 1	1	5.9
1 - 4	6	35.3
4 - 8	1	5.9
> 8	9	52.9
Video Games Use (hrs/wk)		
< 1	13	76.5
1 - 4	2	11.8
> 8	2	11.8
Number of Internet Types		
1 Type	8	47.1
2 Types	6	35.3
3 Types	2	11.8
4 Types	1	5.9
Internet Use (hrs/day)		
< 1	5	29.4

1 - 4	6	35.3
4 - 8	4	23.5
> 8	2	11.8

The table shows some interesting trends among youth. Overall, a picture of regular use and above average perceived expertise is displayed. The number of responses which specify very low usage of any communication technology type, less than one hour per week, is only large in the category of video games. This is not to say that adolescents are not playing these games, just that they are not doing it online with other players. This is important to underscore, as the question was designed to understand how often these games are being used as a form of communication technology.

Almost all of those surveyed indentify more than one type of CT being used recently. This includes cell phones, internet devices, and gaming systems. However, it appears that the hours of use with cell phones and internet is fairly split between high and low utilization. In other words, respondents are either spending low amounts of time using these forms of communication or are spending a lot of time using them.

The data shows that just over half of those surveyed use cell phones more than eight hours per day, while just under half use them less than four hours per day. In the category of internet use, we again see one third reporting more than four hours and about the same margin reporting more than less than one hour.

The hours of use reported seem to trend lowest in video games. More than 75% of those surveyed report using them less than one hour per week. This could point to the availability of the device being used, with cell phones staying on ones person at all times and computers being available at home and at school.

The second table shows the descriptive statistics for perceived relationships among peers. These questions were very straight forward in asking the number of close friends a participant might have, and patterns of communication between them.

Table 2.

Friend Relationships

Variable	Frequency(N)	Percentage(%)
Face Time (hrs/day)		
1 - 4	2	11.8
4 - 8	8	47.1

> 8	7	41.2
CT Time (hrs/day)		
< 1	5	29.4
1 - 4	2	11.8
4 - 8	4	23.5
> 8	6	35.3
Number of Close Friends		
3 - 5	7	41.2
6 - 8	6	35.3
> 9	4	23.5
Closeness to Friends		
5	1	5.9
7	2	11.8
8	2	11.8
9	4	23.5
10	8	47.1
Number of CT Close Friends		
0 - 2	11	64.7
3 - 5	5	29.4
6 - 8	1	5.9
Closeness to CT Friends		
2	1	5.9
4	2	11.8
5	2	11.8
6	1	5.9
7	2	11.8
8	4	23.5
9	3	17.6
10	2	11.8

The statistical break down of responses in this table shows that most participants spend slightly more time in face to face interactions with friends than via CT. This is supported by data indicating that most close friendships are not maintained online. In fact, every participant asserted having three or more close in person

friendships, while nearly 6 share that they have two or fewer close friends online. Furthermore, the relative perceived closeness seems to favor face to face interaction.

The third section contains data concerning family relationships. Again, the questions were very clear and focused on the closeness of family relationships and the use of ICT in communication with them.

Table 3.

Family Relationships

Variable	Frequency(N)	Percentage(%)
Face Time (hrs/day)		
< 1	1	5.9
1 - 4	8	47.1
4 - 8	1	5.9
> 8	7	41.2
CT Time (hrs/day)		
< 1	5	29.4
1 - 4	6	35.5
4 - 8	4	23.5
> 8	2	11.8
Number of Close Family		
0 - 2	1	5.9
3 - 5	10	58.8
6 - 8	4	23.5
> 9	2	11.8
Closeness to Family		
7	1	5.9
8	5	29.4
9	3	17.6
10	8	47.1

Number of CT Close Family		
0 - 2	8	47.1
3 - 5	7	41.2
6 - 8	2	11.8
Closeness to CT Family		
1	1	5.9
3	1	5.9
5	3	17.6
6	2	11.8
7	2	11.8
8	2	11.8
9	2	11.8
10	4	23.5

A couple of things stand out in this frequency distribution. An examination of time reveals there are equivalent amounts of time being spent communicating face to face and via CT. These numbers do not seem to influence the amount or quality of relationships. Almost all participants reported having more than two close family members that they see regularly, at the same time almost half have fewer than two which they only communicate with via technological sources. When examining the reported bonds felt in these two groups the former is comprised exclusively of the higher end of the measurement tool, while the latter runs the gamut from one to ten.

The last section of data ran was a Pearson Correlation table (Appendix D), which analyzed all the data for significance when examined with cross tabulations. All of the previously mentioned independent variables were run against the dependent variables to determine what, if any, correlations existed. Since the sample size was only 17 it is important to not overstress the importance of any noteworthy associations. There were a number of expected significant correlations due to the interrelations of questions within each category. However, these were mostly independent variables linking with each other, and will be disregarded for the purposes of this study. Two scaled down versions of the full table are included below, which show the significant correlations from both the friends and family categories.

Table 4.

Friend Correlations

Measure	Perceived CT Expertise	Cell Phone Use	Number of Internet Types	Internet Use
Friend Face Time	0.426	0.478	0.219	0.549*
Friend CT Time	0.594*	0.648**	0.195	0.826**

Number of Close Friends	0.225	0.013	-0.573*	-0.036

Note *p<.05, **p<.01

Looking at the stated research hypothesis, the most salient information presented above would deal with the number of close friendships and how it interacts with the independent variables. According to the data, this was only correlated with the number of internet types used, and even then it was negative. This is difficult to interpret, as the actual use of internet communication does not hold the same effect comparatively. This is most likely a fluke of the data and, as such, will be disregarded for significance.

Surprisingly, the amount of face to face time spent with friends was positively correlated with the amount of time spent on the internet. This would seem to be counterintuitive, due to the restrictions on hours in the day. A possible interpretation of this could be that friendships are strengthened via online communication and thus lead to more time spent together in person. This idea is corroborated by another positive correlation between the amount of time spent using communication

technology to talk with friends and the amount of time spent on cell phones or online.

The last correlation presented is between the length of time spent using CT to communicate with friends and the perceived level of CT expertise. This is most likely due to the simple fact that the more time a person spends using a certain tool, the more familiar they will be with it. In other words, more time using CT to talk with people will eventually lead to greater expertise with that form of communication.

Table 5.

Family Correlations

Measure	Number of CT Types	Perceived CT Expertise	Video Game Use	Internet Use
Family Face Time	-.0245	-.0135	0.588*	0.294
Family CT Time	-0.157	-0.139	0.684**	0.536*
Number of Close Family	-0.569*	0.258	-0.179	0.059
Closeness to Family	-0.149	-0.510*	-0.089	-0.070

Note *p<.05, **p<.01

Some interesting interrelations were seen between CT and family relationships. Again, the most important data is concerned with family closeness. A negative effect exists between the responses for perceived expertise in CT and how close participants feel to their family members. This may be related to the point made earlier about CT being used primarily for communication with friends and thus building expertise. If a teen were spending a lot of their time talking with friends, no matter the format, then it would be expected that family cohesiveness might suffer. However, this idea is not supported by the responses on amount of time spent using CT or internet. In fact, internet use was only correlated with family CT time, and that was positively. This leaves the association without much evidence for support other than circumstantial.

There was a negative correlation between the number of internet technologies used regularly and the number of close family relationships. This was something that was hypothesized before sampling, yet would need further study to prove. For instance, a larger sample might show a similar correlation with overall CT use. Another interpretation is that an increase in the number of CT

types being used is how smaller families cope with the lack of members present in a teens life.

The most unanticipated correlation was between video game use and the increase in face to face and CT times with families. Both of these factors were unexpected due to the idea that most video game use is seen as being in the realm of adolescents. It could be reasonably inferred that families are playing some video games together, both at home and on the web. It should be pointed out that this was in a category where only one quarter of participants responded with regular use.

Summary

The data appears to show that the more adolescents use, and are familiar with, internet communicating technologies one can anticipate a marked effect on their relationships. That is to say, the more prevalent CT is in youths' lives the more likely their interaction and attachment with family and friends will see some negative and positive shifts, respectively. Expected outcomes between questions pertaining to CT use and relationship closeness were not observed. However, CT use does seem

to correlate to more of an influence on familial bonding than friendship ties.

CHAPTER FIVE

DISCUSSION

Introduction

In this chapter the project's results and findings will be addressed, with possible limitations of the research discussed. This will be followed by some recommendations for social work practice based on an interpretation of the data, and what conclusions the researcher has drawn from the study.

Discussion

The question presented for this study is concerned with the effect increased communication technology (CT) use has on adolescent relationships. There was a hypothesis which anticipated research would show that increasing CT use with teens would result in worse family and better friend relationships. The survey instrument was designed to ascertain how much CT use a person has as well as what their relationships look like. The data presented in the previous chapter, while lacking in sample size, does provide a baseline for examining the original research question.

Looking at the frequencies for each response, a comprehensible picture of communication technology (CT) use by the participants is available. The respondents indicated they are using multiple types of communication technologies and are using them regularly. When trying to understand what regular use looks like to a teen we can break down what a typical day might be.

Assuming that with about eight hours of sleep, nine hours of school, and one hour of homework, a teen would have between six and nine hours of free time per day. Referencing the data we can see that most teens are reporting more than 4 hours of CT use in a given week. This leads to a reasonable assumption that this time is not all in one day but broken into chunks of use throughout the week. If that is the case then CT use can be seen as a daily activity, much like homework or taking a shower. The point of making this argument is to show that the prevalence of CT use is far greater than just a now and then phenomena for the respondents. In fact, it is possible that they are underreporting their usage, based on the discrepancy between the number of respondents who say they use the internet more than one

hour per day and the number who report overall CT usage as greater than eight hours per week.

A closer examination of the trends pointed out in chapter four reveals some gaps on knowledge that could use further study. For instance, the fact that respondents are either spending low or high amounts of time using cell phones or the internet is puzzling. A significant correlation exists between cell and internet use, signifying the possible use of cell phones to access the internet. The lack of a middle ground could be linked to parental restrictions or accessibility, but it is unknown why a more even distribution was not seen.

Turning to the observed frequencies with friends and family, one area where the numbers show equal weight is in the closeness of relationships online with both friends and family. Almost two thirds of participants stated that the closeness of the entirety of their online relationships stand above average on a Likert scale. Since these frequencies are equal, this could point to participants' increased interactions online shaping the way they bond with everyone in their life.

We can see that almost every participant reports spending four or more hours per day face to face with

their friends while only half say the same for their family. This is very likely a result of students spending so much time together at school, and then possibly going out together afterward, while the parents may only have a chance to interact with their children before and after work. Based on the amount of CT use that adolescents have it is no surprise that we see a similar trend in the amount of time spent communicating with friends online versus communicating with family. Again, this could be a result of parents being at work and unable to spend time speaking with their children until they get home. Because of these factors, there is an expectation that a positive correlation should exist between the CT use and friendship ties.

Of the few correlations among communication technology and friendship the majority seem to revolve around the amount of time spent using these devices. The data shows that the more a respondent uses any of the proposed forms of CT the more they will use it to interact with their friends. Interestingly, this increase in CT time is also linked to an increase in time spent with friends face to face. Yet, no association exists between the closeness of friend bonds and the

amount of time spent using communication technology. Furthermore, CT use across all categories only significantly affects the amount of time spent with friends, and not how close they are. This would appear to refute the hypothesis that more time spent using CT would encourage closer ties with friends.

Switching gears to correlations with the family, there are two significant variables which affect the reported closeness. To begin with, the closeness of family seems to be negatively correlated with perceived expertise in CT. As students become more versed in communication technology their relationships with their families lose strength. The correlation could be causative from either direction since it is plausible that families who do not form close bonds may use more CT and thus become more familiar with its functionality. The only way to understand which variable is the direct or indirect would be to initiate further questioning concerning the family structure and CT use.

All of this supposition and analyzation must be tempered with basic details from the study. According to the data, the participants spend the majority of their time communicating through technology with peers and not

relatives. However, they also spend the majority of their face to face time with friends and not family. From this survey, it is impossible to know if CT is just taking the place of what would normally be face to face time with friends.

The most important reality is that of all respondents, only one reported their closeness with family to be under eight on a Likert scale. In fact, that one person placed their closeness at seven. So, it is clearly seen that family relationships, while being negatively correlated with certain factors of CT use, do not appear to be overly impacted.

Limitations

There were a number of limitations apparent in this study which could serve to guide further study in this area should it be sought. The first and most obvious of these limitations is the sample size. The original plan was to survey more than 50 students from multiple schools. Due to time constraints from scheduling and a lack of willing endorsements from private institutions the number was substantially deflated.

A major issue this study encountered was resistance to having minors take part. There are necessary precautions in place which made finding cooperation difficult. University and college institutional review boards, school principals, and parents all have reasons to prevent studies which may be psychologically or emotionally damaging to children. The researcher ran into many problems in all of these areas before finally being able to administer the survey. Unfortunately, it was limited to one classroom in which only two thirds of the students were allowed to participate. Even with all of these factors working against the research methods, it was determined that the questionnaire would not be as valid if it were presented to a less restrictive sample of adults. The types of responses needed were based on adolescent activity and feeling, which parents and guardians may not understand the extent of. Thus, a sample was sought from a vulnerable population with the understanding that it may not yield the numbers desired.

Another limitation of the study is the questionnaire itself. After examining the data a number of other questions came up which could not be answered due to the construction of the survey instrument. For instance,

high frequencies existed, in some categories, which could not distinguish between a few and none. An example of this is seen in the responses to the number of close online friendships. Nearly two thirds of respondents indicated that they had two or fewer close friendships online, but the survey did not account for how many might have said they had none.

The survey was intended to establish a baseline for how much and how often communication technology (CT) was being used by adolescents. Unfortunately, the necessity of keeping the instrument short, in order to ensure the fewest number of resistant participants, led to some questions being reworked or omitted completely. It would have been ideal to break down each category with further questioning about how and when the participants were making use of each technology type. Supplementary questions related to family size, parental CT usage, and cultural identification may have shed some light on family dynamics and the influence it has on the answers provided.

The final limitation to be discussed is the sample itself. Since the study was about the effects of CT use, a decision was made to seek out respondents who would

have a better than average chance at being familiar with the technology presented. To the detriment of the study, this eliminates a whole subset of population which could have acted as the control group. It is possible that surveying adolescents without CT access could have yielded similar results in the pattern of responses.

By focusing on students who most likely come from a higher median income, it did not address communication technology's effects on the wider populace of teenagers. Were this study to be performed again, with the backing of a school district superintendent of schools, it is possible that public school students could provide a wholly different set of data.

Recommendations for Social Work Practice, Policy and Research

Social work practice involves a number of different specialties across multiple disciplines. Often, what one social worker does in their agency is very different from what their peers may do. That being said, social workers who work with children, adolescents, and families would stand to gain the most from this research.

Beginning with practice, LCSWs who have been in the field for a while have probably already seen the shift in how teens communicate. While this movement does not prevent them from providing services as needed, it can cause further problems that may have been unexpected. This research could help workers in schools identify further areas of study regarding the pros and cons of students using their cell phones on campus. Adolescent behavior should be better understood within the context of CT use, because it is a new norm in communication. These school social workers may find that it is detrimental to recommend disconnecting teens, and may favor instead limiting use to outside the classroom. Again, it is important to note that the limited findings presented here do not indicate a positive or negative correlation between relationship quality and CT use. Further observation may either refute or support this assertion.

Other professionals working with families will be able to more fully understand what barriers to family cohesion may exist from CT use at home. They could look at the types and rate of CT use from everyone in the family and make suggestions to bring everyone together

using technology. For instance, recommending a family video game night, or having the teens and parents use Skype together to talk with out of state relatives. Also, parents becoming more versed in texting with their teenager may find a better route to keep abreast of where their child is.

All social workers should already have at least a passing familiarity with the forms of communication technology mentioned in this study. As a profession they should be striving to stay ahead of the curve in this area, since it has the potential to shape interaction even at their level. LCSWs may find that doing an impromptu therapy session over webcam with a teen, works better than trying to get that same person in the room of an office. Knowing how to text a client when an appointment is running late or needs to be changed will prevent miscommunication. New tools in family therapy which involve time on a computer may bridge the gap between the established form of therapy in an office and trends in online communication.

With policy in mind there are is one area where this study could be very helpful. Social policy advocates, working against online predators, could use data like

those presented to make recommendations for the safety of youth. Students may be duped into believing they are speaking with a peer online, creating bonds of friendship and then having that trust stripped away when they find out the person was an adult predator. The psychological damage this could do is frightening and may cause further degradation of family ties. Understanding how and how often teens are using CT could help to prevent adults, looking to exploit these young people, from doing damage. Stricter enforcement of sexual predator laws are starting to include online interactions, but new forms of cyber security could be implemented to keep teens safe. As CT use continues to increase in prevalence, social workers in particular should stand at the forefront of advocacy for youth, fighting to make communication technology safer for vulnerable minors.

Further research in this area would be incredibly helpful for informing new trends and adjusting social work practice. A larger sample size that is more encompassing of various socio-economic levels, regional differences, and cultural norms would make for a far more generalizable data set. Additional research could also be done on how parents would respond to the same set of

questions. Understanding more about how communication technology is changing the fabric of daily interaction across generations will assist future social workers in providing services to families. Finally, qualitative studies would allow researchers to clarify the data which is being collected, by either corroborating the lack of effect or proving further associations between CT use and relationship quality.

Conclusions

In the grand scheme of teens interacting with parents, there will always be a modicum of resistance involved. Rebellion by an adolescent is somewhat expected and often lampooned in the United States. With that in mind it may be possible for parents to stem the tide of teens moving away from the family unit. More technology use within the family could help to institute some new communication patterns. They can work on replacing the family time lost to persistent online interaction.

Hopefully, more research like that presented here, could begin a trend of new evidence based practices for family therapy, combating teen depression, and creating

new applications for social work. Moving forward, there does not appear to be any reduction in the amount of time children, teens, and adults use communication technology in their daily lives. If social workers can get a pulse on the potential issues extensive CT use may cause, then they will be in a position to combat the problems before they have a chance to get out of hand.

APPENDIX A

QUESTIONNAIRE

Please select any and all of the five item types you have used in the last 6 months.

PC/Mac Xbox 360/PS3/Wii DS/3DS/PSP Cell Phone iPad/Tablet

On a scale of 1-10, 1 being "not at all" and 10 being "very", how expert do you consider yourself in these types of technology?

1 2 3 4 5 6 7 8 9 10

How many total hours in a week do you typically spend using the items you selected?

less than 1 1 to 4 4 to 8 8 or more

What things do you normally use your cell phone for? (Select all that apply)

Texting Mobile Web Gaming Apps

Social Media Apps (MySpace/Facebook) Phone Calls

How many total hours a week do you normally spend on each of the items selected?

less than 1 1 to 4 4 to 8 8 or more

How many total hours a week do you play games online with other players?

less than 1 1 to 4 4 to 8 8 or more

Which of these functions do you normally use on the internet? (Select all that apply)

Social Media (MySpace/Facebook) Chat Rooms

Instant Messaging Webcaming (Skype)

How many total hours a day do you normally spend on each of the items selected?

less than 1 1 to 4 4 to 8 8 or more

How many total hours a day do you spend, face to face, with your friends?

less than 1 1 to 4 4 to 8 8 or more

How many total hours a day do you spend communicating with your friends either through the internet, videogames or cell phones?

less than 1 1 to 4 4 to 8 8 or more

How many people would you consider "close friends"?

0 to 2 3 to 5 6 to 8 9 or more

On a scale of 1-10, 1 being "not at all" and 10 being "very", how close do you feel to your "close friends"?

1 2 3 4 5 6 7 8 9 10

How many "close friends" do you mostly interact with using technology? (Usually these are people who do not live close enough to spend time face to face)

0 to 2 3 to 5 6 to 8 9 or more

On a scale of 1-10, 1 being "not at all" and 10 being "very", how close do you feel to your "close friends" that you mostly interact with using technology? (Usually these are people who do not live close enough to spend time face to face)

1 2 3 4 5 6 7 8 9 10

How many total hours a day do you spend, face to face, with your immediate family (those living in the same location)?

less than 1 1 to 4 4 to 8 8 or more

How many total hours a day do you spend communicating with your immediate family (those living in the same location) either through the internet, videogames or cell phones?

less than 1 1 to 4 4 to 8 8 or more

How many immediate family members (those living in the same location) would you consider yourself "close" to?

0 to 2 3 to 5 6 to 8 9 or more

On a scale of 1-10, 1 being "not at all" and 10 being "very", how "close" do you feel to your immediate family (those living in the same location)?

1 2 3 4 5 6 7 8 9 10

How many family members do you mostly interact with using technology? (Usually these are people who do not live close enough to spend time face to face)

0 to 2 3 to 5 6 to 8 9 or more

On a scale of 1-10, 1 being "not at all" and 10 being "very", how close do you feel to your family that you mostly interact with using technology? (Usually these are people who do not live close enough to spend time face to face)

1 2 3 4 5 6 7 8 9 10

Developed by: Fabian Valdez Jr

APPENDIX B

INFORMED CONSENT

Parent/Guardian Informed Consent

I agree to allow my child to participate in the study, "Internet Communicating Technologies and Their Effect on Adolescents." This study is being conducted by a graduate student, Fabian Valdez Jr, at California State University, San Bernardino under the supervision of Rosemary McCaslin, PhD. and has been approved by the University's Institutional Review Board. Loma Linda Academy has no involvement other than providing this opportunity for research. The benefits of this study include helping researchers, educators and families understand how adolescents use communication technologies and what effect, if any, it has on their relationships with families and peers. The study is not a test and will not influence my child's grade in any way. The study will take my child less than 15 minutes to complete. My child will be asked to fill out questionnaires about family and peer relationships and how close they perceive them to be. If at any time my child wants to discontinue his/her participation, it can be done without penalty.

I understand that by participating in this study, my student will not encounter any more stress or harm than he/she would during the performance of routine physical or psychological tests. I also understand that the information my child provides will be held in strict confidence by the researcher. At no time will my name or my student's name be reported along with his or her responses. All data collected by the researcher will be reported in group form only. The researcher will be responsible for providing the survey to my child and for collecting it when they have finished. At the conclusion of the study, I may review a report of the results at the school's administration office. If I have any questions or concerns, I am aware that I can contact Rosemary McCaslin (909-537-5507). I acknowledge that I and my child have been informed about and understand the purpose of the "Internet Communicating Technologies and Their Effect on Adolescents" study. I freely consent to allow my child to participate and acknowledge that I am the parent/guardian.

Student and Parent/Guardian Informed Consent
Internet Communicating Technologies and Their Effect on Adolescents Study

Student Name (Please Print) _____

Parent/Guardian Signature _____

APPENDIX C

DEBRIEFING STATEMENT

Student Assent Script

Hello,

My name is Fabian Valdez Jr and I am a student at California State University, San Bernardino and am working on my Masters Degree in Social Work. I am interested in finding out about any issues students like yourselves and families may be experiencing at home and in their daily life as they are continue to use new technologies to communicate with each other. I have with me a short survey which should take no longer than 15 minutes to complete. I will be asking about how many types of technology you use and how often, as well as how close you feel your relationships are with friends and family.

I want to be clear that no one, including myself, will know which responses belong to which person, because there is no location on the survey for you to put your name. At no time will your name or your family's name be given to anyone as a part of this survey. This survey is not a test and will not influence your grade in any way. If you decide you would not like to participate you will be allowed to stay in the room, but you will be seated on the other side of room from those who are taking the survey and be given free time to work on homework or reading. If you choose to participate, when you are finished taking the survey you can bring it to the front of the room where I will collect it. I want to thank you for your time. Now before we begin, does anyone have any questions?

APPENDIX D

PEARSON CORRELATIONS

		ICT Types																			
ICT Expertise	Pearson Correlation	-0.237	ICT Expertise																		
	Sig. (2-tailed)	0.361																			
ICT Use	Pearson Correlation	-0.075	0.216	ICT Use																	
	Sig. (2-tailed)	0.776	0.404																		
Cell Types	Pearson Correlation	0.12	0.245	0.039	Cell Types																
	Sig. (2-tailed)	0.645	0.342	0.882																	
Cell Use	Pearson Correlation	-0.188	0.238	0.433	.542*	Cell Use															
	Sig. (2-tailed)	0.448	0.358	0.083	0.025																
Games Use	Pearson Correlation	-0.17	0.412	0.322	-0.234	0.087	Games Use														
	Sig. (2-tailed)	0.513	0.1	0.207	0.366	0.739															
Internet Types	Pearson Correlation	-0.263	0.156	0.307	-0.023	0.079	0.129	Internet Types													
	Sig. (2-tailed)	0.271	0.55	0.23	0.929	0.764	0.621														
Internet Use	Pearson Correlation	-0.392	0.336	.603*	0.221	.613**	0.464	0.321	Internet Use												
	Sig. (2-tailed)	0.12	0.187	0.01	0.395	0.009	0.061	0.209													
(Frnd) Face Time	Pearson Correlation	-0.394	0.426	0.048	0.371	0.478	0.239	0.219	.549*	(Frnd) Face Time											
	Sig. (2-tailed)	0.118	0.088	0.855	0.143	0.052	0.355	0.397	0.022												
(Frnd) ICT Time	Pearson Correlation	-0.399	.594*	0.422	0.271	.648**	.528*	0.195	.828**	.828**	(Frnd) ICT Time										
	Sig. (2-tailed)	0.113	0.012	0.092	0.292	0.005	0.029	0.453	0	0.007											
Close Friends	Pearson Correlation	-0.275	0.225	-0.262	0.38	0.013	-0.122	-.573*	-0.036	0.088	0.179	Close Friends									
	Sig. (2-tailed)	0.265	0.386	0.31	0.165	0.962	0.641	0.016	0.891	0.704	0.493										
(Frnd) Closeness	Pearson Correlation	-0.131	0.453	-0.097	0.088	0.044	0.254	-0.022	0.185	0.225	.484*	0.247	(Frnd) Closeness								
	Sig. (2-tailed)	0.817	0.088	0.711	0.736	0.868	0.328	0.932	0.478	0.385	0.049	0.339									
ICT Close Friends	Pearson Correlation	-0.13	0.394	0.023	0.204	0.24	0.472	0.072	0.375	0.288	0.435	0.029	0.268	ICT Close Friends							
	Sig. (2-tailed)	0.819	0.118	0.931	0.433	0.353	0.058	0.782	0.138	0.268	0.081	0.911	0.302								
(Frnd) Closeness ICT	Pearson Correlation	0.08	0.47	-0.173	0.257	-0.05	0.375	-0.06	-0.186	0.198	0.233	0.2	0.39	0.305	(Frnd) Closeness ICT						
	Sig. (2-tailed)	0.759	0.057	0.508	0.32	0.85	0.138	0.82	0.475	0.45	0.368	0.442	0.122	0.234							
(Fam) Face Time	Pearson Correlation	-0.245	-0.135	0.385	-.559*	-0.142	.586*	0.052	0.264	-0.072	0.221	-0.227	-0.076	0.16	0.115	(Fam) Face Time					
	Sig. (2-tailed)	0.343	0.607	0.127	0.02	0.586	0.013	0.842	0.252	0.784	0.385	0.38	0.773	0.54	0.66						
(Fam) ICT Time	Pearson Correlation	-0.157	-0.139	0.48	-0.323	0.054	.684**	0.149	.536*	-0.057	0.419	-0.171	0.122	0.305	0	.822**	(Fam) ICT Time				
	Sig. (2-tailed)	0.548	0.595	0.051	0.206	0.838	0.002	0.569	0.027	0.829	0.064	0.511	0.64	0.234	1	0					
Close Family	Pearson Correlation	-.569*	0.306	-0.183	0.258	0.331	-0.179	-0.205	0.059	0.108	0.338	.806**	0.261	0.269	0.136	-0.164	-0.18	Close Family			
	Sig. (2-tailed)	0.017	0.232	0.481	0.317	0.194	0.492	0.431	0.821	0.68	0.184	0.01	0.312	0.296	0.684	0.53	0.49				
(Fam) Closeness	Pearson Correlation	-0.149	-.510*	-0.009	-0.467	-0.338	-0.089	-0.32	-0.07	-0.026	-0.222	0.088	-0.204	-.532*	-0.341	0.443	0.236	-0.164	(Fam) Closeness		
	Sig. (2-tailed)	0.688	0.036	0.972	0.059	0.184	0.735	0.21	0.788	0.921	0.392	0.736	0.432	0.028	0.181	0.075	0.382	0.479			
ICT Close Family	Pearson Correlation	-0.016	0.208	-0.034	0.268	0.111	0.073	-0.338	0.093	0.229	0.342	0.434	.508*	0.356	0.23	-0.035	0.077	0.368	0.031	ICT Close Family	
	Sig. (2-tailed)	0.953	0.423	0.898	0.302	0.672	0.781	0.187	0.723	0.376	0.179	0.082	0.037	0.181	0.374	0.893	0.769	0.123	0.907		
(Fam) Closeness ICT	Pearson Correlation	-0.188	0.382	-0.333	-0.12	-0.347	0.258	0.157	-0.188	0.275	0.093	0.058	.602*	0.229	.550*	0.029	-0.014	0.119	-0.023	0.202	(Fam) Closeness ICT
	Sig. (2-tailed)	0.471	0.153	0.192	0.647	0.172	0.317	0.545	0.474	0.285	0.723	0.824	0.011	0.376	0.022	0.913	0.958	0.65	0.93	0.437	

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