SOCIAL ISOLATION AND CELL PHONE USE BY COLLEGE STUDENTS

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ABSTRACT

Social Isolation and Cell Phone Use by College Students

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In our technologically ever-advancing world, cell phones can either help us remain socially connected or can contribute to social isolation by substituting for face-to-face contact. This study examines the levels of social isolation in terms of the state of loneliness and trait of shyness and their correlations with academic achievement in 206 community college and university students to examine the connection between social isolation, GPA and cell phone use in college students. Two instruments used in the collection of data were the *Revised Cheek and Buss Shyness Scale (RCBS)* and the *DeJong Gierveld Loneliness Scale*. Correlational analysis was used to examine the relationships between variables. Hypothesis 1 proposed a significant negative relationship between higher levels of cell phone use and academic achievement as measured by self-reported GPA. This was partially supported by the research findings. Hypothesis 2 proposed a significant negative relationship between shyness and higher levels of cell phone use. This was also partially supported by the research findings. Hypothesis 3 proposed a significant positive relationship between loneliness and higher levels of cell phone use. This was not supported by research findings. Implications for further research include examining non-college populations for greater generalization of results and examining additional personality traits.

Keywords: *Cheek and Buss Shyness Scale*, *DeJong Gierveld Loneliness Scale*, social isolation, shyness, loneliness, GPA, cell phone use, academic achievement

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CHAPTER 1

Introduction

The rapid increase of technological advances has changed the ways in which people interact with their environment. This has been a positive force insofar as it has made it possible to rapidly obtain information, goods and services and communicate our thoughts to people, both professionally and personally. However, technology also produces changes that may result in the excessive and sometimes almost exclusive use of technological products at the cost of establishing interpersonal relationships.

Previous research has investigated the relationship between excessive Internet and video game use and problems for the user (Block, 2008; King, Delfabbro, & Griffiths, 2012). Research generally defines problematic use of the Internet or video games as a "persistent and very high level of involvement in internet and game-related activities that results in detrimental emotional and social consequences for the user" (King, Delfabbro, & Griffiths, 2012). Block (2008) identified three subtypes of internet addiction: "excessive gaming, sexual preoccupations, and email/text messaging."   He noted that symptoms of addiction reported in the literature included excessive use, withdrawal, tolerance, and negative consequences (e.g., arguments, lying, poor achievement, social isolation, and fatigue).

Hertlein and Webster (2008) reported that internet-based relationships may have a detrimental effect upon interpersonal relationships as a whole in that many internet-based relationships are sexual and secretive in nature and detract from intimacy between face-

to-face partners. Boies, Cooper and Osborne (2004) found that dependence on online interaction resulted in "lower offline functioning" or a lowered level of social functioning while not online. The authors concluded that the use of computer interaction as a sole means of interpersonal satisfaction may result in an inability to establish normal interpersonal relationships.

University students have also been found to be at risk for manifesting technology related issues such as "problematic internet use" and an "emotional dependence" on the cell phone (Jenaro, Flores, Gomez-Vela, Gonzalez-Gil, & Caballo, 2007). This was hypothesized to be the result of university students' high number of stressors, the adjustable nature of their schedules and their connection to technologically advanced (in speed) connections to the Internet (Young, 1998).

Problems Related to Cell Phone Technology

Social Problems

Cell phones play an important role in the lives of Americans. They provide us with a method to connect to important others in our lives. Cell phones not only provide a social outlet, but are a means to engage oneself in interesting activities such as surfing the internet, playing games, conducting research and taking and sharing photographs. They provide us with more flexibility compared to home telephones as they allow the user to leave home and remain connected (Lesitaokana, 2012). Cell phones also enable us to seek help in case of an emergency and enable parents to keep an "eye" on their children (Lesitaokana, 2012).

On the other hand cell phone use can present a problem for the user, e.g., texting while driving or walking while using cell phones. According to Merriam-Webster, a text message is defined as "a message consisting of words that are typed or entered on a keypad and sent electronically to a cell phone."

Very serious problems have arisen specifically due to the use of cellular telephones by young people. These include sexting and cyberbullying (Horrey & Wickens, 2006; Stavrinos, Byington, & Schwebel, 2011). Sexting is a term that refers to "the delivery of sexually explicit text messages. Sexting between teens can be harmful in that it exposes a teen in a very personal way. This has regularly occurred in young persons, resulting in extreme distress. Because the transmission of sexual images of minors is defined as child pornography, it is a very serious crime (Ostrager, 2010). If caught delivering sexually explicit text messages to one another, teens can face having to register as sex offenders for a period of many years (Ostrager, 2010) and up to a lifetime in some states. California Penal Code 288.2 prohibits anyone from sending sexual text messages to a minor, which is punishable by jail or prison. Conviction for a sex crime could permanently affect the sexting individual's personal and professional life (Ostrager, 2010). The proliferation of sexual images of someone who may have initially been a willing participant (to friends or accidentally) can cause that person to feel unsafe and exposed.

Cyber-bullying is a technological form of bullying employed by people (and common in younger students) to wield power over one another (Pyżalski, 2012). The

bully can hide behind the anonymity of the internet while spreading hurtful information throughout the victim's community, or can make threats without the victim being able to respond. Cyber-bullying can instill fear in those who are its victims and is more of a problem than regular bullying in that it is not bound by face-to-face interactions; anyone can be a victim of cyber-bullying nearly anywhere there is cell phone service (Pyżalski, 2012).

Link To Existing Psychological Problems

It has not been clearly established whether some of the social problems associated with internet use are the result of the nature of the technological products, or are principally a reflection of psychological problems already present in the user. For example, an antisocial or socially insecure individual may find that is a safer and therefore more desirable to interact with a computer than directly with people (King, Delfabbro, & Griffiths, 2012). There is some support for this in the findings of Cao and Su (2007) that those who tend to score higher on measures of problematic Internet use, which they labeled "addiction" also tend to score higher on measures of neuroticism and psychoticism.   Morahan-Martin and Schumacher (as cited in King, Delfabbro, & Griffiths, 2012) state that "problematic Internet users tend to be technologically sophisticated but socially lonely individuals who tend to feel more competent and disinhibited when online." With regard to the relationship between age and gender and problematic Internet use, adolescent males have been found to be connected with the highest number of problems with video game and internet use (King, Delfabbro, &

Griffiths, 2012). However, females show a higher rate of cell phone addiction (Billieux, Van Der Linden, & Rochat, 2008).

A number of studies have examined the relationship between cell phone use, personality traits and psychopathology. Butt and Phillips (2008) administered the *NEO Five-Factor Inventory* (NEO-FFI), a measure designed as an adaptation of the *Revised NEO Personality Inventory* (NEO-PI-R) to 112 participants (Costa & McCrae as cited in Butt & Phillips, 2008). Participants ranged in age from 18 to 59 years and most were university graduates. Participants responded to questions regarding their cell phone use (e.g., average amount of time spent each week receiving and calling and creating and receiving SMS (text) messages). Results showed that participants labeled as "disagreeable extraverts" spent more time on their cell phones. With regard to text messages: participants with higher messaging rates (both incoming and outgoing) were labeled as "extraverted, neurotic, disagreeable, and unconscientious" (Butt & Phillips, 2008).

Bianchi and Phillips (2005), found the trait extraversion to be associated with problem use of cell phones. The authors concluded that individuals with high levels of extraversion use cell phones as means of seeking out stimulation via changing wallpapers and ringtones on the device (Bianchi & Phillips, 2005). This also indicates that "problem" cell phone use is not limited issues related to interacting with others. Siddiqui (2011) found that extraversion was also linked to addictive (defined as "heavy usage regardless of trends and associated costs") use of cell phones. A study by Augner and

Hacker (2012) found extraversion to be linked to Problem Mobile Phone Use (PU) as measured by cell phone dependence, a tendency to favor phone contact over face-to-face contact.

College age students are among the heaviest users of mobile phones. Harman & Sato (2011) conducted a study to examine the effect of cell phone use on academic performance. Participants were 38 male and 80 female university students who were asked to respond to a cell phone use survey and provide an estimate of their GPA. Survey questions included the number of mobile phone calls and SMS text messages sent and received daily, the number of times their cell phone was checked for messages daily (assumed, since all the others were specified as daily) and the average number of people called on a daily basis. Results showed a negative correlation between number of SMS text messages both sent and received daily and GPA ($r = -.21$). The authors purport that higher messaging rates and incoming calls may interfere with learning (Harman & Sato, 2011).

Junco and Cotten (2012) examined the relationship between multitasking, studying and academic performance. Their sample included 1774 university students, 88% of whom were between the ages of 18 and 22, who were asked to approximate times they combined studying and SMS texting instead of doing each activity independent of one another. Results showed participants sent an average number of 97 SMS texts per day and 51% of these participants reported multitasking texting with schoolwork; additionally participants stated they sent an average of 71 texts daily while performing

schoolwork tasks. Regression analysis showed that texting while studying was negatively correlated with college GPA (r = -.088) while using Facebook while studying revealed an even higher negative correlation (r = -.113)

Shyness

Wei and Lo (2006) examined the relationship between shyness, loneliness and cell phone use. Together, Loneliness and Shyness were considered by the authors to be a measure of a lack of "Social Connectedness", a term defined as a lack of "interpersonal, community, and general social ties." Loneliness was defined as "a self-perceived state that a person's network of relationships is either smaller or less satisfying than desired", and shyness as "discomfort and inhibition that may occur in the presence of others." Results found significant negative correlations between shyness and total use of cell phone daily (r = -.29), number of social uses (r = -.29), average call time (r = -.12), number of owned mobile phones (r = -.11), and length of time of cell phone ownership (r = -.24). Further, loneliness was negatively correlated to "frequency of social-oriented use" (r = -.21), total use daily (r = -.15), and length of cell phone ownership (r = -.14).

Summary

Previous research has identified both social and psychological issues associated with the use of electronic/digital technology, particularly cell phone use. In addition, several personality traits including neuroticism, disagreeableness, and extraversion have been found to be associated with excessive cell phone use. Further, two studies have found negative correlations between the amount of cell phone use and academic

performance. Only one study has examined the relationship between the trait of shyness and state of loneliness and cell phone use.

Purpose Of The Study

The purpose of this study is to further examine the relationship between cell phone use, academic performance and social connectedness as measured by loneliness and shyness.

Hypothesis 1: There will be a significant negative relationship between higher levels of cell phone use and academic performance

Hypothesis 2: There will be a significant negative relationship between shyness and higher levels of cell phone use

Hypothesis 3: There will be a significant positive relationship between loneliness and higher levels of cell phone use

CHAPTER 2

Methods and Materials

Method

Participants

All participants were 18+ years of age and all were either community college or

university students. All participants were recruited via convenience sampling. They were

taken from Allan Hancock College in Santa Maria, CA and California Polytechnic State

University, San Luis Obispo. Participants were made available by three different

instructors at both institutions. Student participation was voluntary and extra credit was

given for participation in one of the classes. Participation was obtained with the

community college's Applied Social Science Department Program Director's approval

since there was no Human Subjects Committee at that college; participation was obtained

with Human Subjects Committee approval from the university.

Measures

Revised Cheek and Buss Shyness Scale (RCBS). The *Revised Cheek and Buss

Shyness Scale* (RCBS) is a scale designed to measure the trait of shyness. There are five

versions of this scale differentiated by the number of items on the scale (8-20). The 13-

item Likert scale was selected because it is one of the most commonly used to measure

shyness in research (Ryan & Xenos, 2011). The *Revised Cheek and Buss Shyness Scale*

(RCBS) items are arranged on a 5-point, Likert scale ranging from "Very characteristic" to "Very uncharacteristic." The *Revised Cheek and Buss Shyness Scale* (RCBS) 13-item scale is considered to be psychometrically sound: it has strong internal consistency ($\alpha = .90$) and test-retest reliability ($r = .88$, 45-day test-retest). It was also found to have good convergent validity ($r = .79$) via the *Social Reticence Scale* (SRS–II; Jones & Briggs as cited in Hopko, Stowell, Jones, Armento, & Cheek, 2005); good convergent validity ($r = .77$) via the *Social Avoidance and Distress Scale* (SADS; Watson & Friend as cited in Hopko, Stowell, Jones, Armento, & Cheek, 2005); good convergent validity ($r = .74$) the *Shyness Questionnaire* (SQ; Bortnik, Henderson, & Zimbardo as cited in Hopko, Stowell, Jones, Armento, & Cheek, 2005); and good convergent validity ($r = .68$) via responses to the question "How much of a problem is shyness for you?" (Hopko et al, 2005). Discriminant validity of the *Cheek and Buss Shyness Scale* original and revised versions had not been established at the time of publication of the article (Hopko et al, 2005).

De Jong Gierveld Loneliness Scale (JGLS). The *De Jong Gierveld Loneliness Scale* (De Jong Gierveld & Van Tilburg, 2006) is an 11-item scale designed to measure social and emotional loneliness. It consists of two subscales: a six-item scale measuring emotional loneliness and a five-item scale measuring social loneliness. Total scores for the 11-item scale range from 0 (not lonely) to 11 (extremely lonely) ($\alpha = .84$). Individual items are arranged on a Likert-type scale with responses ranging from "no!", "no," "more or less," to"yes," and "yes!" (De Jong Gierveld & Van Tilburg, 2006).

Among the findings from a meta-analysis conducted by the authors, the combination of 10 studies (n = 7,444) using the *De Jong Gierveld Loneliness Scale* revealed negative correlations between the scale and quantity of social interactions (r = -.08) and the quality of the interactions (r = -.35). Internal reliability coefficients of each of the two subscales measuring emotional loneliness (r = .81) and social loneliness (r = .85) have also been reported (De Jong Gierveld & Van Tilburg, 2010).

Procedure

The researcher obtained participants from a community college located in Santa Maria, CA. This college had no Human Subjects Committee. The participants were recruited via a professor teaching three separate addiction studies/psychology classes over the course of two semesters, Summer and Fall, 2012. Additionally, the researcher collected data at Cal Poly San Luis Obispo from two introductory psychology classes and two biopsychology classes held by two instructors; all Cal Poly San Luis Obispo data were collected in Winter 2013. The researcher used a demographic information form and two instruments measuring shyness and loneliness. The researcher streamlined the process of data collection by eliminating, via verbal screening, those participants who declined to complete the surveys. Thus, all participation was voluntary. Additionally, duplicate admissions (possible due to participants being able to take more than one class at a time or sequentially) were eliminated via a verbal screening process. The researcher reviewed the informed consent form verbally and gave a copy of the form to each

remaining participant along with a copy of the survey. The demographic information form and instruments were self-administered by the participants and hand collected by the researcher. After the surveys were collected each participant was debriefed due to deception being used by the researcher; specifically, the title of each scale was changed to Mood Scale 1 and Mood Scale 2 to avoid biased answers due to the descriptive titles of the original scales ("loneliness" and "shyness" were included in the original titles of each scale respectively). The data was collected and analyzed anonymously. There was no identifiable information on the demographic form leading to the identity of any subject.

Data Analysis

Correlational analyses were conducted to examine the relationship between amount of cell phone use and academic performance, shyness, and loneliness. A similar correlational analysis was also conducted for male and female participants.

CHAPTER 3

Results

There were 210 subjects total. Forty-seven participants chose not to disclose their

GPA, which is roughly 22% of the sample. This portion of the overall sample was

comprised mostly of 18 to 21-year-olds and those who listed themselves as 33 or over;

both groups accounted for 72.4% of those who declined to list their GPA. Freshmen

accounted for 43.2% of the GPA non-disclosing group and sophomores accounted for

22.7%, the two largest categories within this group.

Sixty percent of subjects were between the ages of 18 and 21, the largest category.

Of the subjects reporting gender, 38.5% were male and 61.5% were female. See Table 1

for further information.

Loneliness, Shyness and Cell Phone Use

The participants' mean score on the *De Jong Gierveld Loneliness Scale* was 3.37

when rounded to the nearest hundredth. The range of scores possible on this instrument

was zero to 11; zero indicates complete "social embededness" and absence of loneliness

and 11 refers to "complete loneliness."

The participants' mean score on the *Revised Cheek and Buss Shyness Scale* was

32.19 when rounded to the nearest hundredth. The maximum value is 65. For college

students, the *Revised Cheek and Buss Shyness Scale* lists a mean of 33.3 for men and 32.4

for women. The mean derived from this study was just slightly below the standard mean for either gender on this measure. Means and standard deviations for the predictor and criterion variables are provided in Table 2.

Table 3 Presents correlations between predictor and criterion variables. One item worthy of note is that the correlation between shyness and loneliness ($r = .317$, $p < .01$) was significant and positive. Other significant correlations are demarcated by asterisks and expounded upon as applicable within the scope of each hypothesis. It is important to keep the following in mind for all three hypotheses: Though there were some significant correlations found between predictor and criterion variables, clinical significance was not found.

Hypothesis 1

It was hypothesized that a significant negative correlation would be found between higher levels of cell phone use and academic performance, as measured by GPA. Results showed significant negative correlations between number of calls to family per day ($r = -.16$) and number of calls received from family ($r = -.20$) and GPA. The number of daily text messages to family ($r = -.24$) and from family ($r = -.24$) was found to be significantly and negatively correlated with GPA.

In sum, all results were in the expected direction, but magnitude of effect was low or nonexistent. These correlations were statistically significant but the size of the correlation was low. Results indicated that a maximum of 4.4% of the variance for any correlation was accounted for in this way.

Hypothesis 2

It was hypothesized that there would be a significant negative relationship between shyness scores and higher levels of cell phone use. Significant negative correlations were found between shyness and number of calls to friends ($r = -.18$) and number of calls received from friends ($r = -.18$). This explains 3.2% of the variance. Also, calls received from family ($r = -.13$) and calls to family ($r = .13$) approached significance. This accounted for 1.7% of the variance within the scope of studying these two variables' relationship to one another.

In summary, the findings showed some evidence to support this hypothesis, but effect sizes were so small as to be clinically insignificant.

Hypothesis 3

It was hypothesized that there would be a significant positive relationship between loneliness and higher levels of cell phone use. Results showed no significant relationships with regard to amount of calls/texts made or received, but there was some evidence for a negative relationship between the number of calls received by friends ($r = -.12$) and interestingly a positive relationship between levels of loneliness and communication with family ($r = .13$) However, both correlational values were not significant.

CHAPTER 4

Discussion

The present study sought to examine the relationship between levels of cell phone

use and loneliness, shyness, and academic performance as measured by GPA. Of the

overall sample, a portion chose not to disclose their GPA. The majority of this portion of

the overall sample was comprised of 18 to 21-year-olds and those who listed themselves

as 33 or over. Their omission of GPA could be due to factors such as attending as

incoming freshman at the community college or university, which would mean each of

these participants didn't have a GPA for the previous semester or quarter to report;

however, a small percentage of this portion indicated they were freshmen. It is unclear

from the results whether GPA was omitted for other reasons such as not wanting to report

a low GPA or not knowing what one's GPA was.

Much of the literature to date supports that higher cell phone use is negatively

associated with academic performance and may interfere with learning (Harman & Sato,

2011). However, Harman and Sato's study only accounted for a very small percentage of

the variance when reporting negative correlations between texting behavior and GPA.

Higher use of cell phones while studying has also been found to be negatively associated

with GPA (Junco & Cotten, 2012). But Junco and Cotten's study was unable to isolate

texting and using Facebook as the cause for the negative effect on GPA; simply stated,

the study accounted for too many other factors that could contribute to a negative effect on GPA. The present study supports previous research findings: GPA is negatively correlated with higher use of cell phones with regard to communication between students and their families. But the significance of this may not be as impactful as previous studies have asserted.

Shyness and total use of cell phones has been found in previous studies to be negatively correlated (Wei & Lo, 2006). However, a small percentage of the variance was accounted for in Wei and Lo's study and may not be as significant as the authors may have purported. The current study supports previous research in that shyness and calls to and from friends are negatively correlated with one another. The current results indicate that a small percentage of variance was accounted for within the scope of the relationship between these two variables and the correlation may be clinically insignificant.

The current study did not support previous findings that loneliness was negatively correlated to higher rates of cell phone use (Wei & Lo, 2006) and instead found both positive and negative correlations between texting and calling, friends and family, and scores on loneliness.

The current study found that the number of calls and texts to and from family was significantly and negatively associated with academic performance; however, significance levels were relatively low. Two things could be surmised from the results: Texts and calls between friends included a higher percentage of communication between students concerning class assignments and tests which enhanced their performance, or

calls and texts to and from family were distracting to the students and thus negatively influenced their academic performance. Due to clinically insignificant findings, many other factors could be involved between the predictor and criterion variables.

With regard to the relationship between shyness and cell phone use the present study showed significant negative relationships between calls to and from friends daily and the trait of shyness; the significance levels were low. However, the correlations may indicate that the students use phone calls to avoid interpersonal interactions in social situations or that those with higher shyness scores tend to include friends more often than family within their inner group of trusted others.

No significant association was found between loneliness and levels of cell phone use in college students and no pattern of association was found between calls, texts, and levels of loneliness in the participants. There was a significant and positive correlation between shyness and loneliness which may be indicative of participants with higher shyness scores having fewer and less frequent social interactions which contributes to their loneliness.

Limitations of the current study include the fact that the participants self-reported all information. This contributed to a fairly significant number of participants omitting GPA on their surveys. Another limitation is that this study was limited to the college student population; it would be interesting to find out whether non-student populations have the same results in patterns of cell phone use and associated measurements of the trait of shyness and state of loneliness.

In consideration of the recent criticisms of the DSM-V, it is important to note that a new "internet addiction" diagnosis may be questionable in light of the results of this study and subsequent comparison to results from other studies. Previous research indicates that effect sizes may be insignificant and do not strongly support the cell phone's contribution to pathological levels of technology use. Social connectedness via the use of cell phones may be technologically advanced, but people may feel more isolated as a result of relying on technology at the expense of face-to-face interactions. This does not necessarily equate with pathology.

Directions for Future Research

This study examined the effects of loneliness, shyness, and cell phone use on academic performance within college and university populations. A limitation of this study was the fact that GPA was self-reported which could be corrected for in future studies by collecting this information from the college or university to avoid reporting errors or omissions. As results indicated small or non-existent relationships among variables, an important direction for future research would be to incorporate other or additional measures of personality traits to determine if more significant relationships exist between other traits or a combination of traits, cell phone use and academic performance.

This study researched students at only one university as well. Future research could include those outside the college setting or to include students from several universities across the United States to obtain a more comprehensive representation of the

college student population of the United States. Further, participants could be garnered from other countries to examine how cell phone use and shyness and loneliness are related in areas outside the U.S. This would heighten the transferability of research findings across cultures.

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Tables

Table 1

Frequency Distributions for Demographic Variables

	Category	N	%
Age	18-21	125	59.5
	21-24	35	16.7
	25-28	11	5.2
	29-32	7	3.3
	33 or over	30	14.3
	Not specified	2	1
	Total	210	100
Gender	Male	80	38.1
	Female	128	61
	Not specified	2	1
	Total	210	100
Year in school	Freshman	61	29
	Sophomore	63	30
	Junior	42	20
	Senior	29	13.8
	Graduate Student	8	3.8
	Not specified	7	3.3
	Total	210	100
Employment status	Full-time	19	9
	Part-time	74	35.2
	Unemployed	13	6.2
	Student	93	44.3
	Homemaker	5	2.4
	Retired	3	1.4
	Not specified	3	1.4
	Total	210	100

Table 2

Means and Standard Deviations for Shyness, Loneliness, GPA and Cell Phone Use

	N	Minimum	Maximum	Mean	SD
shyness	209	13	55	32.19	8.72
loneliness	205	0	15	3.37	2.90
GPA	162	1.5	4	3.15	0.50
number phones owned	209	0	5	1.06	0.38
cell years owned	206	0	25	7.48	3.53
average call length in minutes	207	0	200	10.29	17.04
calls to family/day	206	0	25	1.72	2.85
calls received from family/day	206	0	25	1.68	3.22
calls to friend/day	207	0	15	1.59	2.17
calls received friend/day	206	0	20	1.72	2.60
texts to family daily	206	0	100	6.85	11.27
texts received family daily	206	0	75	6.80	10.67
texts to friends daily	205	0	200	32.01	36.11
texts received from friends daily	205	0	200	34.33	39.26

Table 3

Correlations Between Predictor and Criterion Variables

	Shyness	Loneliness	GPA
shyness	1	.317[**]	0.099
loneliness	.317[**]	1	-0.048
GPA	0.099	-0.048	1
number phones owned	-0.062	-0.082	-0.001
cell years owned	-0.115	-0.058	0.043
average call length in minutes	0.085	0.057	-0.018
calls to family/day	-0.131	-0.003	-.162[*]
calls received from family/day	-0.128	-0.055	-.198[*]
calls to friend/day	-.180[**]	-0.082	-0.073
calls received friend/day	-.180[**]	-0.117	-0.073
texts to family daily	-0.072	0.037	-.242[**]
texts received family daily	-0.069	0.132	-.245[**]
texts to friends daily	-0.092	0.02	-0.058
texts received from friends daily	-0.075	0.059	-0.096

** P< 0.01
* < 0.05

Appendices

A. Informed Consent Form

B. Demographic Form

C. The *Revised Cheek and Buss Shyness Scale* (RCBS)

D. *DeJong Gierveld Loneliness Scale* (JGLS)

APPENDIX A

Informed Consent Form

   A research project on social isolation is being conducted by Nichol Myers, a student in the Department of Psychology at California Polytechnic State University, San Luis Obispo. The purpose of the study is to examine the correlation between student's cell phone use and social isolation.

    You are being asked to take part in this study by completing the attached/enclosed questionnaire. You will receive a questionnaire with 24 questions for which you will circle the number corresponding to your assessment of the question and several demographic questions which will provide the researcher with information essential to the analysis of the results of the questionnaire. Your participation will take approximately 20 minutes or less. Please be aware that you are not required to participate in this research and you may discontinue your participation at any time without penalty. You may also omit any items on the questionnaire you prefer not to answer.

    The possible risk associated with participation in this study includes emotional and/or psychological distress associated with answering the type of questions listed on the questionnaire. If you should experience any emotional and/or psychological distress, please be aware that you may contact the Cal Poly Health and Counseling Office at (805) 756-6181. You may also go into their office, located at Building 27 on the Cal Poly, San Luis Obispo Campus for assistance. At Allan Hancock College, you may go to Student Health Services located at: Santa Maria campus, Bldg. W-12, or by dialing (805) 922-6966, extension 3212.

    Your responses will be provided anonymously to protect your privacy. Potential benefits associated with the study include the modification of existing student assistance programs, the development of new programs to create environments that would be helpful in mitigating student isolation and the provision of valuable research information to be used in further studies on the factors affecting students' social isolation.

    If you have questions regarding this study or would like to be informed of the results when the study is completed, please feel free to contact Nichol Myers and/or Michael Selby at (805) 756-1617. If you have concerns regarding the manner in which the study is conducted, you may contact Steve Davis, Chair of the Cal Poly Human Subjects Committee, at (805) 756-2754, or Susan Opava, Dean of Research and Graduate Programs, at (805) 756-1508.

    If you agree to voluntarily participate in this research project as described, please indicate your agreement by completing and returning the attached questionnaire. Please retain this consent cover form for your reference, and thank you for your participation in this research.

APPENDIX B

Demographic Form

<u>Please Provide the following information</u>:

Age:

☐ under 18

☐ 18-21

☐ 21-24

☐ 25-28

☐ 29-32

☐ 33 or over

Gender:

☐ Male

☐ Female

Year in School:

☐ Freshman

☐ Sophomore

☐ Junior

☐ Senior

☐ Graduate Student

Current GPA

_____

Cell Phone Usage (conversations or texting only)

How many cell phones do you own? _____

How long have you been a cell phone owner? _____ years

What is the average call time for each phone call you make or receive? _____ minutes

How many phone calls do you make to family per day?   _____

How many phone calls do you receive from family per day?   _____

How many phone calls do you make to friends per day?   _____

How many phone calls do you receive from friends per day?   _____

How many texts do you send to family each day?   _____

How many texts do you receive from family each day?   _____

How many texts do you send to friends each day?   _____

How many texts do you receive from friends each day?   _____

Which do you prefer, to talk on the phone or to text? talk/text (circle one).

     Why? (check one)

        ☐ Convenience

        ☐ Time issue

        ☐ Being able to make emotional connection with the person on the other end

        ☐ Better able to comprehend what's being communicated

        ☐ Other _____

APPENDIX C

The Revised Cheek and Buss Shyness Scale (RCBS)

Cheek, J.M. (1983). Unpublished, Wellesley College, Wellesley MA 02181

INSTRUCTIONS: Please read each item carefully and decide to what extent it is characteristic of your feelings and behavior. Fill in the blank next to each item by choosing a number from the scale printed below.

1= Very uncharacteristic or untrue, strongly disagree

2= Uncharacteristic

3= Neutral

4= Characteristic

5= Very characteristic or true, strongly agree

_____ 1. I feel tense when I'm with people I don't know well.

_____ 2. I am socially somewhat awkward.

_____ 3. I do not find it difficult to ask other people for information.

_____ 4. I am often uncomfortable at parties and other social functions.

_____ 5. When in a group of people, I have trouble thinking of the right things to talk about.

_____ 6. It does not take me long to overcome my shyness in new situations.

_____ 7. It is hard for me to act natural when I am meeting new people.

_____ 8. I feel nervous when speaking to someone in authority.

_____ 9. I have no doubts about my social competence.

_____ 10. I have trouble looking someone right in the eye.

_____ 11. I feel inhibited in social situations.

_____ 12. I do not find it hard to talk to strangers.

_____ 13. I am more shy with members of the opposite sex.

APPENDIX D

De Jong Gierveld Loneliness Scale (JGLS)

DeJong Gierveld, J.

INSTRUCTIONS: Please indicate for each of the statements, the extent to which they apply to your situation, the way you feel now. Please circle the appropriate answer.

no! / no / more or less / yes /yes! 1. There is always someone I can talk to about my day-to-day problems

no! / no / more or less / yes /yes! 2. I miss having a really close friend

no! / no / more or less / yes /yes! 3. I experience a general sense of emptiness.

no! / no / more or less / yes /yes! 4. There are plenty of people I can rely on when I have problems

no! / no / more or less / yes /yes! 5. I miss the pleasure of the company of others

no! / no / more or less / yes /yes! 6. I find my circle of friends and acquaintances too limited

no! / no / more or less / yes /yes! 7. There are many people I can trust completely

no! / no / more or less / yes /yes! 8. There are enough people I feel close to

no! / no / more or less / yes /yes! 9. I miss having people around

no! / no / more or less / yes /yes! 10. I often feel rejected

no! / no / more or less / yes /yes! 11. I can call on my friends whenever I need them