

The Application of Maslow's Hierarchy of Needs to College Student Cell Phone Use

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Abstract

A survey was conducted to examine the correlation between college students' cell phone use and words describing the different categories of Maslow's hierarchy of needs. Participants included the general student body of students at Central Michigan University. The survey was distributed using Survey Monkey and the participants were asked about cell phone use, and their emotions using the PANAS-X. Results suggested that students' self-reported feelings of fatigue are positively related to their frequency of calling and texting. Students' self-reported feelings of fear are positively related to their frequency of overall calling, and specifically texting a parent. Students' self-reported feelings of belonging and frequency of overall calling and texting are not related, but feelings of belonging and texting a parent are positively related. Students' feelings of esteem are positively related to their frequency of calling and texting.

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The cell phone was originally created to connect one person to another when face-to-face communication was not easily accessible. Cell phone use in the United States is widespread with 83% of adults reporting that they have a cell phone of some kind (Pew Internet Research Center, 2011) up from 36% in 1998 (U.S. Census Bureau, 2009). Cell phones are now capable of many other functions and can meet varied needs in addition to communication. Thirty-five percent of American adults report owning phones with advanced functions such as, picture taking, playing games and music, and even video chatting (Pew Internet Research Center). However, the type of cell phone use may differ depending on the age of the individual.

Older adults tend to use cell phones for purposes such as security and usefulness (Kubik, 2009), whereas younger adults, in particular, college students, frequently use phones for alarm clocks, calendars, calculators, search engines, email, and communication. The many functions of cell phones may serve to motivate individuals to use their phones more frequently. According to Maslow's Hierarchy of Needs (1943), every motivation is based on the fundamental needs of an individual. The purpose of this study is to explore the relationship between emotions defined by Maslow's hierarchy of needs and the types and quantities of college students' cell phone use.

Maslow's Hierarchy of Needs

The Hierarchy of Needs is introduced in Abraham Maslow's theory of motivation. Any motivated behavior, either preparatory or a response to another action, is a channel through which many basic needs may be simultaneously expressed (Maslow, 1943).

Maslow identified five categories of hierarchical needs ranging from basic to higher order: physiological, safety, belonging, esteem, and self-actualization. Maslow defines physiological needs as the most basic immediate needs that people require for survival. When physiological needs are unmet, the individual cannot devote attention to needs in higher levels. When physiological needs are fulfilled, safety needs become most important and one focuses their attention on keeping his or herself safe from harm.

The next two levels of needs are belonging, and self-esteem (Maslow, 1943). Belonging needs are defined by the longing for affectionate intimate relationships; they are fundamental needs that people might overlook, but it is important for everyday functioning and health. Belonging, the desire to form interpersonal attachments is argued to be a fundamental motive with important consequences for social functioning (Baumeister & Leary, 1995).

Esteem needs are defined as the need or desire for a stable, high evaluation of oneself, for self-respect, or self-esteem, and for the esteem of others. It is the desire for strength, achievement, self-confidence, and prestige (Maslow, 1943). The final higher-order need is self-actualization, which is the need for purpose, and doing what one is fitted to do.

Motivation for Cell Phone Use

Recent research suggests that there are extensive reasons for using and owning a cell phone (Leung & Wei, 2000). Across the spectrum of different motives, Leung and Wei found that each reason for use could fit into a hierarchical category in Maslow's hierarchy of needs based on the definitions of each category. In a study looking at the motivation for cell phone use across the life span, Morner and Mack (2003) explain how

Maslow's hierarchy of needs is associated with the way people use their telephones. Telephones themselves do not fulfill needs; however, they can be used as tools to meet needs. For example, using your phone to order food may fulfill physiological needs and safety needs can be met by dialing an emergency contact. People born later in the 20th century are more likely to use telephones for more social reasons. If one loses the ability to use the telephone due to conditions such as hearing loss, it could negatively impact the individual's perception of their overall quality of life. Self-actualization needs are not directly related to using telephones, because telephones do not make people feel as though they are better people, which is a characteristic that defines self-actualization (Mormer & Mack).

In a recent study the relationships between interpersonal motives for cell phone use, face-to-face communication, and loneliness were examined. Jin and Park (2010) hypothesized that higher levels of interpersonal motives for calling would predict an increased frequency of voice calls and higher levels of interpersonal motives for texting would predict an increased frequency of texting. For example, if people used texting most for building relationships, rather than texting for directions, they would text much more. They also hypothesized that a greater amount of face-to-face communication would predict a greater amount of cell phone use and higher levels of motivation for cell phone use, including both calling and texting.

The results from this study suggest that cell phone use is strongly related to the degree to which an individual is motivated by interpersonal reasons for face-to-face interaction. There was not a direct relationship between loneliness and cell phone use, the relationship was mediated by interpersonal motivation for face-to-face interaction.

Jin and Park (2010) applied Maslow's hierarchy of needs to maintaining relationships and concluded that cell phones are tools, which individuals use to fulfill belonging needs.

The relationship between esteem and cell phone use has also been examined. Katz & Sugiyama (2006) found that people use cell phones as a fashion statement or a portrayal of higher social status. According to Maslow's definition of esteem, cell phones for fashion could be included in the esteem category, and many people use cell phones to communicate or appear more fashionable (Reid, & Reid, 2007).

A recent study examined whether videogame playing, Internet use, and cell phone use is related to children's body mass index (BMI), academic performance, social self-esteem and overall self-esteem when socio-demographic characteristics are taken into account (Jackson, Eye, Fitzgerald, Witt, & Zhao, 2011) The study surveyed middle school children who differed in socio-demographic characteristics, such as race and family income level. Participants were asked how many hours they spent playing video games, using the Internet, and using cell phones and how well they performed in school. Rosenberg's self-esteem scale was used to measure overall self-esteem, and Harter's Self-competence scale was used to measure social esteem. Results from this study did not show a significant relationship between these technologies and BMI, however, the results indicated that children who use the Internet more frequently also scored higher on standardized tests, and had higher overall self-esteem. In addition, there was a significant positive relationship between cell phone use and social-esteem and overall self-esteem. The study also indicated that cell phone use increases as children transition from adolescence to young adults. Jackson and colleagues (2011)

suggest that future research should address the motivation for cell phone use in young adults.

College students own more communication devices and use their cell phones more often than adolescents. They engage in 5.5 hours of technological communication, two-thirds of which is via cell phone (Diamonduros, Jenkins, & Downs, 2007). College students are significantly more likely to use their cell phones to send or receive text messages (95%), take pictures (97%), access the internet (64%), send pictures or videos (72%) and access social networks (50%) than any other group, ages 30-65 and over (Pew Internet Research Center).

Reid and Reid (2007) provide us with an extensive list of why people use their cell phones, but the list has not been comprehensively applied to Maslow's hierarchy. This information is helpful in understanding how cell phones play a role in everyday needs. Establishing a relationship between Maslow's hierarchy of needs and socio-emotional development can provide us with insight into emerging trends in technology that can assist us with enhancing college students' well being.

The Current Study

The current study is focused on finding out what cell phones do for peoples' needs. This study examined the relationship between emotions defined by Maslow's hierarchy of needs and the frequency of calling and text messaging to test the following hypotheses.

Hypothesis 1: Students who report higher levels of fatigue will also report lower frequencies of calling and texting because according to Maslow (1943), if basic needs

aren't being met, then it is unlikely that individuals will seek to fulfill safety, belonging and esteem needs, which are more directly associated with cell phone use.

Hypothesis 2: Students who report a greater frequency of texting and calling will also identify with feelings of fear and lack of safety. According to Mormer and Mack (2003), cell phones provide people with a sense of safety in emergency situations.

Hypothesis 3: Students who report a greater frequency of texting and calling will also endorse fewer feelings of loneliness.

Hypothesis 4: Based on the study about BMI and self esteem by Jackson and colleagues (2011) it is predicted that individuals who call and text more frequently will also endorse feeling of high esteem. High esteem is positively related to cell phone use.

Method

Participants

The general body of students from Central Michigan University was invited to participate in an online survey and a short answer questionnaire on SurveyMonkey.com. Those who did not complete the survey or reported not having a cell phone were excluded, leaving a sample size of 251. Of the sample, 223 were female (89.2%) and 27 were male (10.8%) with a mean age of 21.5. The sample consisted of 12.8% of first year students, 21.2% of second year students, 23.6% of third year students, 26.4% of fourth year students, and 16% of fifth year students or greater.

Measures

To measure frequency of cell phone use, there were questions in the survey that asked participants to identify how often they used their cell phones in terms of talking, texting, and using social networks.

Six scales were created to measure emotions experienced in the past two weeks, using the PANAS-X as a guideline. The PANAS-X is a 60-item questionnaire designed to measure emotion. There are sub-scales within the PANAS-X measuring more specific groups of emotion such as positive affect, negative affect, and fear. The scales created for the current study corresponded to words that represent the different levels of Maslow's hierarchy of needs. Each scale required students to respond using a 5-pt Likert scale ranging from 1 ("very slightly" or "not at all") to 5 ("extremely").

The fatigue scale, which is related to physiological needs included: sluggish, tired, sleepy, and drowsy. The fear scale, which is related to safety needs included: afraid, scared, frightened, nervous, jittery, and shaky. The loneliness scale, which is related to belonging needs included: alone and lonely. The high esteem scale, which is related to esteem needs, included: daring, strong, fearless, bold, proud, and confident.

Results

A series of bivariate Pearson correlations were conducted to examine the relationships between the fatigue, fear, loneliness, and high esteem scales and the frequency of calls and text messages students send and receive on a regular basis.

The results showed that self-reported feelings of fatigue were significantly related to overall use of cell phones for making calls, $r = .17$, $p = .009$. The relationship between feelings of fatigue and overall texting (sending and receiving) was significant $r = .20$, $p = .002$. Further analysis examined the relationships between the feelings of fatigue and texts made to specific people. The relationships between feelings of fatigue and texting a friend, $r = .17$, $p = .012$, and texting a spouse or partner, $r = .16$, $p = .014$, were statistically significant.

Students' self-reported feelings of fear were significantly related to overall use of cell phones for making calls, $r = .14$, $p = .030$. The relationship between feelings of fear and calling a family member other than a parent was statistically significant, $r = .16$, $p = .016$. The relationship between feelings of fear and overall texting was not significant, however, the relationship between feelings of fear and texting a parent, $r = .197$, $p = .003$, was statistically significant.

Results indicated that students' self-reported feelings of belonging were not significantly related to overall use of cell phones for making calls or text messages. Although the relationship between overall calling and texting and self-reported feelings of belonging was not significant, the relationship between feelings of belonging and texting a parent, $r = .15$, $p = .025$, was statistically significant.

Regarding feelings of esteem, the results showed that they were significantly related to overall use of cell phones for making calls, $r = .17$, $p = .010$. Further analysis examined the relationships between the feelings of esteem and calling and showed that the relationships between feelings of esteem and calling a family member other than a parent, $r = .17$, $p = .011$, and calling a friend, $r = .17$, $p = .009$, were statistically significant. The relationship between feelings of esteem and overall texting was significant $r = .22$, $p = .001$. A closer examination showed that the relationships between feelings of esteem and texting a parent, $r = .17$, $p = .011$, texting a family member other than a parent, $r = .23$, $p = .000$, and texting a friend, $r = .18$, $p = .008$, were statistically significant.

Discussion

This study explored the relationship between frequency of calling and texting and college students' emotions related to four of the five categories of Maslow's Hierarchy of needs, physiological, safety, belonging, and esteem. The key findings of this study are that students' self-reported feelings of fatigue are positively related to their frequency of calling and texting. Students' self-reported feelings of fear are positively related to their frequency of overall calling, and specifically texting a parent. Students' self-reported feelings of belonging and frequency of overall calling and texting are not related, but feelings of belonging and texting a parent are positively related. Students' feelings of esteem are positively related to their frequency of calling and texting.

The first hypothesis addressing the physiological category of needs identified in Maslow's hierarchy was not supported by the results. It stated that students who report higher levels of fatigue will also report lower frequencies of calling and texting. The results did not support the hypothesis and showed that students who call and text more frequently also identify with feelings of fatigue. Although it is unlikely that individuals will seek to fulfill higher order needs if basic needs aren't met, all physiological needs do not need to be met in order to seek higher order needs. Maslow (1943) says that when needs are partially met, individuals may begin to focus on fulfilling higher order needs. It could be that fatigue is not a sufficient deterrent to suppress the individuals' motivation to fulfill higher order needs.

The data showed that 83.7% of participants call and receive calls less than six times daily, 43.1% of the students send and receive more than sixty text messages daily and 86.9% of participants reported feelings of extreme and moderate fatigue. There are

many different assumptions that can be made from this data. Students may choose to call less frequently due to fatigue or it might be that students feel fatigued due to how much time they spend texting. Because this is correlational research, the cause and effect relationship cannot be assumed, but it is important to know that these variables are related. Further research can now examine this relationship, and find whether there is a causal relationship between fatigue and how much students call and text message.

The second hypothesis stated that students who report a greater frequency of texting and calling would also endorse feelings of fear and lack of safety; this hypothesis was partially supported. Students (84.7%) reported extremely low feelings of fear and 68.2% of students reported texting their parents two times or less daily. The results indicate that as students' feelings of fear increased, so did the number of overall calls and specific text messages to parents. It was expected that as feelings of fear increased so would the frequency of calls (Morner & Mack, 2003), but it was interesting to find that the overall frequency of text messages did not increase, while the frequency of text messages made to parents did.

When Maslow (1943) explains the safety category of needs, it includes immediate physical safety and safety of property as well as resources. While there are no implications for a causal relationship, it is possible that the results indicate calls are made in more immediate fear situations such as feeling physically unsafe. It is also possible that text messages to parents are made in less urgent circumstances such as, financial concerns, for example, not having enough money to pay bills.

The third hypothesis, which represents the belonging category of Maslow's hierarchy, stated that students who report a greater frequency of texting and calling

would also endorse fewer feelings of loneliness; this hypothesis was not supported. The variables, students' self reported feeling of loneliness and the frequency of calling and texting were not related. This absence of this relationship makes sense because in Jin and Park's (2010) study, loneliness and the frequency of calling and texting are mediated by other factors such as, face-to-face communication. However, it was interesting to find another relationship that involves texting a parent. The results showed that there was a positive relationship between loneliness and texting a parent. Students who endorsed more feelings of loneliness also reported a higher frequency of texting a parent. While these findings are not implications to a causal relationship, it may be that students who feel lonelier also feel homesick and therefore call parents more often (Hofer, 2008).

The fourth hypothesis addressing esteem needs was supported; it stated that students who call and text more frequently will also endorse feeling of high esteem. The results showed that students who call and text more frequently also endorse feelings of high esteem; this is a positive relationship. The findings are consistent with the literature; High esteem is related to cell phone use (Jackson, Eye, Fitzgerald, Witt, & Zhao, 2011), thus it was expected that students would have reported feelings of high esteem as well as a high frequency of calls and text messages. Although the results were expected and could have been an assumption from the literature, the current study examined whom the individuals called and text messaged. Those students who reported feeling of high esteem also report calling and text messaging family members (other than parents) and friends more frequently, as well as texting parents more frequently. It may be that students acquire higher esteem after communicating or that

because they already have high esteem, they call and text more frequently, however the cause cannot be assumed.

Conclusion

To conclude, the findings indicate the frequency of either calling, texting or both is related to emotions that describe Maslow's physiological, safety, and esteem needs of his motivation theory. Although causal relationships cannot be assumed, there are many hypotheses that can be formed from this correlational research; these findings give future researchers the opportunity to develop experiments to determine a causal relationship among the variables.

There are a few limitations to this study, which may be a threat to the reliability and validity of research. One limitation is that this is newer research, and there have not been previous studies with the measures this study involved, such as, the scales representing Maslow's hierarchy of needs. The scales were formed using words from a previously established scale, and have not been replicated to test the reliability and validity of them. The scales were created with the assumption that the words were directly related to Maslow's hierarchy of needs by definition; this is another challenge for future researchers, to test whether the scales measure what they are supposed to, whether that are consistent over time, and whether they are generalizable and replicable for other research studies.

Despite these limitations, this research makes a contribution to the knowledge of cell phone use among the college student population, especially how that cell phone use is related to basic human needs, more specifically Maslow's theory of motivation. It helps create an awareness of the importance of cell phones and what role they play in

college students' daily lives. This study addresses important information for a society that is constantly developing new technology; these findings answer the question that everyone subconsciously asks before doing anything "What does this do for me"? What is the motivation?

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