The purposes of this study were to explore the extent to which technology disrupts and occupies the time of a college student and to determine the degree to which these disruptions contribute to perceived stress. A 71-item survey to assess perceived stress, technology use and disruptions, and social support was administered to 299 undergraduate students. The results indicate 25% of participants have problems with disruptions from technology, and more disruptions from technology are related to higher levels of perceived stress. Experiencing disruptions from technology is a significant problem among college students and needs to be addressed by student affairs professionals.

Stress is a key issue facing college students as they grapple with a host of academic, personal, and social pressures (Bray & Born, 2004; Hughes, 2004). While it is normal for college students to endure some stress, “excessive” levels of stress can have negative physical health effects (Cohen, Tyrrell, & Smith, 1991; Kivimaki et al., 2002; Lillberg et al., 2003; Nahit et al., 2003; Takkouche, Regueria, & Gestal-Otero, 2001; Verthein & Kohler, 1997). According to Deckro and colleagues

Erin Gemmill is a graduate student researcher at the University of Pittsburgh. Michael Peterson is a professor at the University of Delaware.
over two-thirds of a sample of traditional-age college students experienced “excessive” levels of stress.

Relationships with family and friends have a large influence on the health and well-being of college students (Weber, 2003), and the social support college students obtain from family and friends can help diminish the negative effects of stressful life events (Pearlin, 1989). Because they are more socially isolated, college students tend to rely on technology to obtain social support (LaRose, Eastin, & Gregg, 2001). The generation of students attending colleges today, known as the “Millennials,” have been exposed to technology from an early age and are, as a group, technologically savvy (Jonas-Dwyer & Pospisil, 2004). Twenty percent of the students attending college today began using computers when they were between 5 and 8 years old, and all had begun using computers by the time they were between 16 and 18 years old (Pew Internet & American Life Project, 2002). Given that most traditional-age college students own a cell phone and have access to the Internet (Harris Interactive, 2004), it is possible that these technologies might play a large role in keeping college students connected to family and friends to obtain social support as a buffer to “excessive” stress.

Technology in general and Internet use specifically by college students has been associated with more frequent communication with friends and family members (Clark, Frith, & Demi, 2004). The Internet facilitates communication and helps students maintain close ties between family and friends, especially those too far away to visit in person on a regular basis (Bargh & McKenna, 2004; Hampton & Wellman, 2001). College students can also build social networks through Internet communication by extending relationships with family and friends (Howard, Rainie, & Jones, 2001). Internet communication has been shown to increase measures of social support (LaRose et al., 2001) and perceived social support (Shaw & Gant, 2002), and may help college students buffer the effects of stressful life circumstances in the same fashion as non-Internet forms of communication (Cotten, 2001).

According to a number of researchers, the primary use of the Internet for college students is interpersonal communication through email, instant messaging, and chat programs (Hampton & Wellman, 2001;
Howard et al., 2001; Kraut et al., 1998; McKenna & Bargh, 2000; Pew Internet & American Life Project, 2002). While three-quarters of college students spend between 1 and 3 hours per week using the Internet for social communication, the remaining one-quarter spend 3 or more hours per week communicating socially online (Pew Internet & American Life Project, 2002). College students use the Internet to communicate most frequently with friends and family, with email and instant messaging being the preferred mediums (Pew Internet & American Life Project, 2002). Female college students in particular are more likely to use email compared to male college students, while males and females are equally as likely to use instant messaging (Harris Interactive, 2004) and chat programs (Odell, Korgen, Schumacher, & Delucchi, 2000).

One of the most common reasons for high-use of the Internet in traditional-age college students is communicating with friends (Anderson, 2001). In a study conducted over a decade ago it was reported that many college students who use the Internet “excessively” experienced a decline in study habits and grades, and an increase in missed classes and academic probation (Young, 1996). In more recent studies, excessive Internet use was linked to a loss of sleep (Anderson, 2001; Nalwa & Anand, 2003), delaying work to spend time online, feeling that life without the Internet would be boring, feeling upset or irritated when the Internet cannot be used at a predetermined time, and feeling lonelier compared with peers who do not “excessively” use the Internet (Nalwa & Anand, 2003). A study of 1,300 traditional-age college students also found that at least 10% used the Internet so much that it interfered with their grades, their health, or their social lives (Anderson, 2001). However, few college students who use the Internet perceive their Internet use to have a negative impact on their lives (Scherer, 1997).

The Internet is a source of coping to escape from problems or stressors (Anderson, 2001; Rotunda, Kass, Sutton, & Leon, 2003). However, research also suggests that stressful interactions with the Internet itself may negate the benefits of social support received online, regardless of the quality of the online interactions (LaRose et al., 2001). While technology provides college students with constant access to family and friends to obtain social support, technology may be increasing stress via a preponderance of electronic images and
information. Although previous research has addressed student technology use and its impact if that use is excessive, the focus of that research has assumed a unidirectional behavior pattern (i.e., self-initiated behavior). The reality, however, is that technology use is multidirectional—initiated internally by the student and externally by family and friends. Based on the high level of accessibility college students have to a variety of communication mediums (i.e., Internet, cell phones, land phones), the purposes of this study were to explore the extent to which technology disrupts and occupies the time of a college student, and to determine the degree to which these disruptions contribute to perceived stress.

Methods

Procedures and Participants
A 71-item survey to assess perceived stress, technology use and disruptions, and social support was developed by the authors to be administered to a convenience sample of 4-year, traditional age college students at a mid-Atlantic university with approval from the institutional review board. Since no valid and reliable survey related to technology use and disruptions was available in the literature, 35 items were developed and were reviewed for face validity by a panel of six individuals with expertise in student life, health behavior, and technology. An initial test was conducted to determine the reliability of the survey items used in the data analysis via a test-retest protocol one-week apart among undergraduates in general health and exercise courses open to all students at the university (N = 47). After most of the reliabilities were determined acceptable (r values ranged from .589 to .822), the anonymous survey was administered to another convenience sample of 350 undergraduate in 10 general health and exercise courses. The response rate was 85% (N = 299).

Survey Measures
Technology Use Patterns and Behavior
Participants were asked to self-report duration in hours per day and frequency in times per day they checked their email, communicated via instant messenger, used the Internet for school-related work, used the Internet for leisure, talked on a cell phone, and talked on a regu-
lar phone during the last week. Total hours and times per day using technology were determined by the sum of the hours and times per day, respectively, for each of these technological mediums.

**Technology as a Source of Coping**

Based on a five-point Likert-type scale ranging from never to very often, participants were asked how often they did certain activities to cope with a stressful day during the last month. Questions (Appendix) were divided into 6 scales: Used technology to communicate with family (Items 1–3; \( r = .679 \)) and friends (Items 5–7; \( r = .663 \)); talked in person with family (Item 4; \( r = .668 \)) and friends (Item 8; \( r = .637 \)); and felt less stressed after confiding in family (Item 9; \( r = .710 \)) and friends (Item 10; \( r = .756 \)).

**Technology as a Source of Stress and Disruptions**

Based on a five-point Likert-type scale ranging from never to very often, participants were asked how often they experienced disruptions from technology during the last month. Questions (Appendix) were divided into 9 scales and subscales: Total disruptions from technology (Items 11–28; \( r = .821 \)); total schoolwork disruptions from technology (Items 11–20; \( r = .790 \)); used technology to delay doing schoolwork (Items 11–13; \( r = .739 \)); technology caused interruptions while doing schoolwork (Items 14–17; \( r = .670 \)); technology interfered with completing schoolwork (Items 18–20; \( r = .623 \)); total sleep disruptions from technology (Items 21–26; \( r = .822 \)); lost sleep because of using technology (Items 21–23; \( r = .772 \)); woke up because of technology disruptions (Items 24–26; \( r = .722 \)); and using technology caused tardiness to class (Items 27–29; \( r = .679 \)).

Based on a four-point Likert-type scale ranging from strongly disagree to strongly agree, participants were asked about their perceptions of stress and disruptions caused by technology. Questions (Appendix) were divided into 4 scales: Cell phone perceived stress (Item 30; \( r = .589 \)); cell phone perceived disruptions (Items 31–33; \( r = .693 \)); Internet perceived stress (Item 34; \( r = .673 \)); and Internet perceived disruptions (Items 35–37, \( r = .750 \)). As a result of the low reliability of the cell phone perceived stress scale (Item 30; \( r = .589 \)), the item was not included in the data analysis.
**Perceived Stress**

The 10-item version of the Perceived Stress Scale was used to measure participants’ general perception of stress, and it is the most widely used psychological instrument for this purpose (Cohen, Kamarck, & Mermelstein, 1983). The Perceived Stress Scale has well-documented reliability and validity (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Based on a five-point Likert-type scale ranging from never to very often, participants were asked to report how often they felt or thought a certain way in the last month, such as feeling upset because of something that happened unexpectedly or feeling unable to control the important things in their lives.

**Treatment of Data**

Analysis of data was performed using SPSS software. Descriptive statistics were used to determine the frequencies of responses to the survey scales and questions. Categories were formed for technology use patterns and behavior, technology as a source of coping, technology as a source of stress and disruptions, and perceived stress. For individual technologies, low use was defined as 1 hour or less per day, medium use was between 1 and 2 hours per day, and high use was more than 2 hours per day. For total hours per day using technology, low use was defined as 6 hours or less, medium use was between 6 and 12 hours, and high use was more than 12 hours. Statistical groupings for individual and total technology use were based on health concerns associated with sedentary lifestyles. Use of technology is primarily a sedentary activity, and 6 or more waking hours per day was considered problematic—12 or more hours per day a serious health concern. For technology as a source of coping, rarely indicates never or almost never, sometimes indicates itself, and often indicates fairly often or very often. For technology as a source of stress, no problem indicates never or almost never, problem indicates sometimes, and severe problem indicates fairly often or very often. For perceived stress, low stress was defined as scores of 10 or less, moderate stress as scores between 11 and 19, and high stress as scores of 20 or greater.

T tests were used to compare differences in responses to the survey questions and scales between males and females, and a one-way analysis of variance was used to compare differences in responses to the survey questions and scales between participants based on their collegiate year. Pearson-product correlations were used to analyze the relation-
ship between technology as a source of coping, technology as a source of stress and disruptions, and the perceived stress score. In addition, stepwise regression analyses were performed to determine the best models for predicting perceived stress score and disruptions from technology.

Results

Slightly more than half of the participants were female (55.2%, \( n = 165 \)), while 34.4% (\( n = 103 \)) were seniors, 30.8% (\( n = 92 \)) were juniors, 18.1% (\( n = 54 \)) were sophomores, and 16.4% (\( n = 49 \)) were freshmen. The mean age of the participants was 20.5 years.

Technology Use Patterns and Behavior

Nearly all participants have a cell phone (97%, \( n = 290 \)), personal computer (97.3%, \( n = 291 \)), and Internet access at their residence at school (98%, \( n = 292 \)). As shown in Table 1, more than half are medium or high users of technology based on total hours per day using technology. Instant messenger, the Internet, and cell phones are the most heavily used technologies. There appears to be a steady reduction in technology use as students go through college: Freshman spend an average of 10.20 hours per day using technology (\( SD = 5.52 \)), sophomores 8.99 hours per day (\( SD = 5.78 \)), juniors 7.97 hours per day (\( SD = 4.62 \)), and seniors 7.51 hours per day (\( SD = 4.06 \)). Data shows a significant difference in technology use per day between freshman and both juniors (\( p < .012 \)) and seniors (\( p < .002 \)), while technology use by sophomores is not significantly different than any other grade classification (\( F (1,251) = 3.62, p < .014 \)). No gender differences in total hours per day using technology were found.

Survey results suggest that participants use technology to communicate with family an average of 4.72 times per day (\( SD = 4.67 \)) and with friends an average of 19.32 times per day (\( SD = 22.15 \)), while participants communicate in person with family an average of 1.31 times per day (\( SD = 2.69 \)) and with friends an average of 9.94 times per day (\( SD = 10.16 \)) (Table 2). Data shows several significant gender differences in communication with family and friends: Female participants use technology to communicate with family (\( M = 5.48, SD = 5.48 \)) more times per day than males (\( M = 3.81, SD = 3.26 \)) (\( t = 7.83, p < \)
females talk with family in person ($M = 1.49$, $SD = 3.24$) more times per day than males ($M = 1.08$, $SD = 1.80$) ($t = 4.46$, $p < .007$); and females communicate with friends in person ($M = 9.07$, $SD = 7.41$) less times per day than males ($M = 10.96$, $SD = 12.65$) ($t = 6.99$, $p < .009$). Further, there appears to be a reduction in face-to-face contact with friends as students go through college: Freshman talk to friends in person an average of 12.28 times per day ($SD = 7.91$), sophomores 13.28 times ($SD = 17.65$), juniors 8.64 times ($SD = 8.19$), and seniors 8.52 times ($SD = 7.35$). Data shows differences in face-to-face communication are significant between sophomores and both juniors and seniors, while freshman are not significantly different than any other grade classification ($F (3,243) = 3.22; p < .023$).

Technology as a Source of Coping
Survey results indicated that participants rarely use technology and face-to-face contact to communicate with family on a stressful day,
while they sometimes use technology and often use face-to-face contact to communicate with friends on a stressful day (Table 3). Over half of all participants often feel less stressed after confiding in both family and friends. Furthermore, female participants are significantly more likely than males to feel less stressed after confiding in both family ($t = 4.71, p < .031$) and friends ($t = 13.30, p < .001$).

### Technology as a Source of Stress and Disruptions

Twenty-five percent of participants have problems with disruptions from technology (Table 4). Areas in which most participants experience problems include using technology to delay doing schoolwork, technology causing interruptions while doing schoolwork, and technology interfering with completing schoolwork. The greatest number of participants have problems with disruptions from instant messen-
ger (26.3%, n = 76). Fewer participants have problems with disruptions from email (13.9%, n = 41) and cell and regular phones (13.5%, n = 39). There are no gender differences in disruptions from technology.

Most participants do not feel that using the Internet or having a cell phone disrupts schoolwork and sleep, contributes to class tardiness, or that having a cell phone and using the Internet can be stressful. Results suggest that disruptions from technology may be related to using technology more often to contact friends ($r = .581$, $p < .001$) and family ($r = .391$, $p < .001$) on a stressful day, higher perceived stress scores ($r = .188$, $p < .001$), and higher total hours per day using technology ($r = .176$, $p < .001$). Twenty-eight percent of the variance in disruptions from technology in this sample is accounted for by using technology more often to communicate with friends on a stressful day ($F (1,229) = 89.22$, $p < .001$).
### Table 4
Impact of Technology Use on Student Health and Academics

<table>
<thead>
<tr>
<th></th>
<th>No Problem % (n)</th>
<th>Problem % (n)</th>
<th>Severe Problem % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total technology disruptions</td>
<td>75.0% (210)</td>
<td>23.8% (67)</td>
<td>1.2% (3)</td>
</tr>
<tr>
<td>Schoolwork disruptions</td>
<td>43.7% (124)</td>
<td>49.7% (141)</td>
<td>6.6% (21)</td>
</tr>
<tr>
<td>Sleep disruptions</td>
<td>88.3% (257)</td>
<td>11.7% (34)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Using technology caused tardiness to class</td>
<td>93.0% (274)</td>
<td>4.7% (14)</td>
<td>2.3% (7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strongly Disagree % (n)</th>
<th>Disagree % (n)</th>
<th>Agree % (n)</th>
<th>Strongly Agree % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking on a cell phone impedes schoolwork</td>
<td>30.6% (90)</td>
<td>49.0% (144)</td>
<td>17.7% (52)</td>
</tr>
<tr>
<td>Talking on a cell phone impedes sleep</td>
<td>41.7% (123)</td>
<td>48.1% (142)</td>
<td>8.1% (24)</td>
</tr>
<tr>
<td>Talking on a cell phone causes tardiness to class</td>
<td>50.5% (149)</td>
<td>42.7% (126)</td>
<td>5.4% (16)</td>
</tr>
<tr>
<td>Using the Internet impedes schoolwork</td>
<td>21.8% (64)</td>
<td>39.1% (115)</td>
<td>30.6% (90)</td>
</tr>
<tr>
<td>Using the Internet impedes sleep</td>
<td>37.5% (110)</td>
<td>38.6% (113)</td>
<td>19.1% (56)</td>
</tr>
<tr>
<td>Using the Internet causes tardiness to class</td>
<td>52.0% (153)</td>
<td>38.4% (113)</td>
<td>6.8% (20)</td>
</tr>
<tr>
<td>Using the Internet can be stressful</td>
<td>25.9% (76)</td>
<td>37.8% (111)</td>
<td>28.9% (85)</td>
</tr>
</tbody>
</table>

*Note.* Technology includes email, instant messenger, cell phones, and regular phones.
Perceived Stress

Although almost half of all participants have moderate levels of stress (Table 5), stress levels in this sample are higher than the age and gender norms (Cohen et al., 1985). Seniors in this sample are significantly less stressed than both freshmen and juniors ($F (1,290) = 4.998; p < .002$). There was no gender difference in perceived stress levels. Survey data indicated that higher perceived stress scores are related to the perception that the Internet ($r = .306, p < .001$) and cell phones ($r = .254, p < .001$) disrupt schoolwork and sleep and contribute to class tardiness, disruptions from technology ($r = .188, p < .001$), and the perception that using the Internet can be stressful ($r = .188, p < .001$). Twelve percent of the variance in the perceived stress score in this sample is accounted for by a model that includes the perception that using the Internet disrupts schoolwork and sleep and contributes to class tardiness, and using technology more often to communicate with friends on a stressful day ($F (2,274) = 18.24, p < .001$).

Implications

Overall, this exploratory study supported previous research findings that cell phones and the Internet are widely used by college students to obtain social support. Instant messenger and cell phones appear to be the most heavily used technologies for social communication. These mediums provide students with instant access to and interaction with family and friends. Given the recent explosion of weblogs and other social networking technologies such as “thefacebook.com,” use of technology may only increase among college-aged students. On a stressful day, however, the study found that students are still more likely to seek face-to-face interaction with friends than use technology. One possible explanation for the possible preference for face-to-face interaction is that intimate contact with friends in person may provide more of a stress-relieving benefit than the less intimate contact that occurs when using technology to obtain social support. However, technology appears to be an excellent alternative medium for communication when face-to-face contact with family and friends is not feasible.

The finding that 25% of students have a problem with disruptions from technology in general could mean that these technologies may
### Table 5
Perceived Stress

<table>
<thead>
<tr>
<th></th>
<th>Sample Mean</th>
<th>Sample SD</th>
<th>Sample Median</th>
<th>Norm Mean</th>
<th>Norm SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>16.05</td>
<td>6.58</td>
<td>16.0</td>
<td>14.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15.27</td>
<td>6.49</td>
<td>16.0</td>
<td>12.1</td>
<td>5.9</td>
</tr>
<tr>
<td>Female</td>
<td>16.66</td>
<td>6.61</td>
<td>16.0</td>
<td>13.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td>17.15</td>
<td>6.50</td>
<td>17.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>15.70</td>
<td>7.41</td>
<td>16.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>17.71</td>
<td>6.23</td>
<td>17.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>14.29</td>
<td>6.05</td>
<td>14.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Low Stress % (n)</th>
<th>Moderate Stress % (n)</th>
<th>High Stress % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>21.2% (62)</td>
<td>47.6% (139)</td>
<td>31.2% (91)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24.8% (33)</td>
<td>44.4% (59)</td>
<td>30.8% (41)</td>
</tr>
<tr>
<td>Female</td>
<td>18.2% (29)</td>
<td>50.4% (80)</td>
<td>31.4% (50)</td>
</tr>
<tr>
<td>Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td>14.9% (7)</td>
<td>46.8% (22)</td>
<td>38.3% (18)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>24.5% (13)</td>
<td>47.2% (25)</td>
<td>28.3% (15)</td>
</tr>
<tr>
<td>Junior</td>
<td>12.4% (11)</td>
<td>43.8% (39)</td>
<td>43.8% (39)</td>
</tr>
<tr>
<td>Senior</td>
<td>29.4% (30)</td>
<td>52.0% (53)</td>
<td>18.6% (19)</td>
</tr>
</tbody>
</table>

*Note.* Scores range 0–40 with higher scores indicating more distress.
have detrimental side effects. In the context of an academic setting, it is especially important to note that students in this sample experienced the most disruptions from using technology to delay doing schoolwork, technology causing interruptions while doing schoolwork, and technology interfering with completing schoolwork. The relationship between higher perceived stress and more disruptions from technology could mean that the positive effects of social support may be negated by the disruptions caused by technology.

It could also be possible that technology and the social support it provides may become a burden due to its constant availability to students. The constant accessibility of students via the Internet and cell phones to others who are also in need of social support may be a significant contributor to technology-related disruptions, regardless of the technology use patterns and behavior of the student. That is, student technology use may be increased by the needs of others who contact students via technology to receive social support.

Data suggested that the best predictor of problems with technology-related disruptions and perceived stress in this sample was using technology to communicate with friends on a stressful day. These findings could suggest the perception of disruptions may be more significant in causing increases in stress than the actual frequency of the disruptions themselves. When stress levels are higher, it may be that disruptions are perceived as more stressful than when stress levels are lower.

Based on our finding that technology use is highest among freshmen and lowest among seniors, new student orientations may be an excellent opportunity for student affairs professionals to address the role of technology in the transition to college life. While the importance of technology in keeping students connected to family and friends to obtain social support during stressful times should not be disregarded, it should be emphasized that higher levels of technology use may be related to more problems with disruptions. Offering suggestions of alternative ways to obtain social support, such as through residence hall leaders or peer mentors, may encourage students to rely less on technology to obtain social support and possibly reduce the number of students who experience problems with disruptions. Also, it is important for academic advisors, residence hall, and counseling center staff to be informed about the potential relationship between high-
er levels of technology use, disruptions from technology, and perceived stress because of their role as a mentor for students.

Limitations
As with all survey research, results should be interpreted with caution. Although the reliabilities were acceptable for an exploratory study of this nature, the variables measured are prone to variation over time. Subsequently, results only provide a snapshot of technology use, and they should not be viewed as a constant. Self-reported use of certain technologies, particularly instant messenger, was high and may have been exaggerated. In the future, it may be important to distinguish between the amount of time instant messenger is running on the desktop of the computer versus the amount of time spent actually communicating with others. While total hours per day using technology was additive among the individual technologies and did not take into account the possibility students were multitasking, the data reveal important trends in patterns of technology use. Also, the measurement of disruptions from technology using a Likert-type scale as opposed to a quantitative measure of disruptions is less accurate and may not take into account the duration of disruptions. Overall, the limited research and overall lack of available references related to technology use on college campuses necessitated an exploratory study of this nature. This study was the first attempt to examine the relationship between technology use and stress among college students, and provides a starting point and a basis for further exploration.

Programmatic Considerations
Stress is a key issue affecting college students, and student affairs professionals need to be aware of the potential relationship between disruptions from technology and perceived stress. As technology plays a more predominant role in the lives of college students, it is important to acknowledge and understand its effects. Encouraging students to “unplug” themselves from the Internet and cell phones in order to decrease the number of disruptions that occur should be a programmatic consideration. Stress management programs could incorporate the concept of unplugging from technology, while counseling services could assist students in becoming less dependent on technology to obtain social support and more confident in their ability to solve their
own problems when stressed. Educational materials such as posters could be placed in areas with large volumes of student traffic to raise awareness among students about the relationship between disruptions from technology and perceived stress. While more research is clearly needed, the role of technology in the perceived stress of college students is an issue that warrants the attention of student affairs professionals concerned with the health and well-being of college students. Future research should investigate the relationship between total hours per day using technology and measures of social support: Specifically, whether or not a threshold level of using technology to communicate socially exists at which gains in measures of social support are no longer seen, and at which detrimental side effects such as disruptions begin to negate the positive effects of social support. Investigating the impact of technology usage on other areas of importance to college students, such as social activities, is also warranted. It would also be interesting to investigate whether technology impacts a student’s transition to college by maintaining precollege social links.

Another area of future interest is the relationship between the use of technology for social support and the perceived ability of college students to solve their own problems to determine whether students have become too dependent on family and friends as a result of the constant accessibility technology provides. Furthermore, future research should address the impact of technology on usage of professional health services on campus, such as psychologists and counselors, by students. This study was exploratory in nature and should serve as the basis for future investigations into a causal relationship between technology and perceived stress.
Appendix

Sample Survey Items

How often have you experienced or done the following during the last month?

1. When I had a stressful day, I emailed my family.
2. When I had a stressful day, I instant messaged my family.
3. When I had a stressful day, I called my family.
4. When I had a stressful day, I talked to my family in person.
5. When I had a stressful day, I emailed my friends.
6. When I had a stressful day, I instant messaged my friends.
7. When I had a stressful day, I called my friends.
8. When I had a stressful day, I talked to my friends in person.
9. When I confided in my family, I felt less stressed.
10. When I confided in my friends, I felt less stressed.
11. Talked on my cell phone to delay schoolwork.
12. Checked email to delay schoolwork.
13. Used instant messenger to delay schoolwork.
15. Email interrupted my schoolwork.
17. Regular phone call interrupted my schoolwork.
18. Talking on my cell phone interfered with my schoolwork.
19. Checking email interfered with my schoolwork.
20. Using instant messenger interfered with my schoolwork.
21. Lost sleep because of talking on my cell phone.
22. Lost sleep because of checking email.
23. Lost sleep because of using instant messenger.
24. Cell phone call woke me up at night.
25. Instant message woke me up at night.
26. Regular phone call woke me up at night.
27. Was late to class because of talking on my cell phone.
28. Was late to class because of checking email.
29. Was late to class because of using instant messenger.
How much do you agree or disagree with the following statements based on the last month?

30. Having a cell phone can be stressful.
31. Talking on a cell phone prevents me from doing schoolwork.
32. Talking on a cell phone impedes me from obtaining enough sleep.
33. Talking on a cell phone causes me to be late for class.
34. Using the Internet can be stressful.
35. Using the Internet impedes me from doing schoolwork.
36. Using the Internet impedes me from obtaining enough sleep.
37. Using the Internet causes me to be late for class.
References


