

Chapter 11

**CHATTING AND ITS RELATIONSHIP TO DEPRESSION
AND LONELINESS AMONG UNDERGRADUATE
PHYSICAL EDUCATION STUDENTS**

*Nikolaos Vernadakis, Eleni Zetou, Maria Giannousi, Panagiotis
Antoniou and Efthimis Kioumourtzoglou*

Democritus University of Thrace,
Department of Physical Education and Sport Science

ABSTRACT

The introduction of the Internet has given rise to a debate on whether online communication impacts positively or negatively on social adjustment and psychological well-being. Subjective well-being, whose assessments include both cognitive and affective components, refers to how people experience their lives in regard to dimensions of life satisfaction and positive emotions. However, two of the conditions affecting a person's well-being are being associated with negative emotions: these are loneliness and depression. Therefore, the purpose of this study was to investigate if depression and loneliness differed in relation to chatting habits among undergraduate students. Special focus was also on motivation behind, and time spent on chatting. Two hundred and twenty three undergraduate Physical Education students aged 18-22 years completed a self-report questionnaire, using 3 factors (Contacting friends, Social Compensation, Social Entertainment) for motivation and 2 items to measure time (how often, how long). Following, loneliness was measured with the UCLA Loneliness Scale developed by Russell (1996), whereas Depression was assessed with the Child Depression scale (Schoenbach, Kaplan, Grimson, and Wagner, 1982). Person correlation analyses were used for calculating associations among the variables examined. The results indicated that depression was significantly related to loneliness. Further, depression seems to be related to all three motivational factors while loneliness only seems to be related to social compensation. This supports the idea that different motivations for chatting have different relations to well-being depending on what aspects of well-being is being tested (at least for loneliness and depression). Regarding the time spent, only depression had a significant relationship with chatting in general. Students who felt more depressed used chatting both more often and longer than students who were less depressed. Students,

who felt lonelier, used chatting neither more nor less often or longer than students who did feel less lonely.

Keywords: Internet, loneliness, motives, online communication, relationships, depression, well-being, instant messaging, chatting.

INTRODUCTION

The integration of Information and Communication Technologies in everyday social interaction of people, has given rise to a debate on whether online communication impacts positively or negatively on social adjustment and psychological well-being (Engelberg and Sjöberg, 2004). Subjective well-being, whose assessments include both cognitive and affective components, refers to how people experience their lives in regard to dimensions of life satisfaction and positive emotions (Diener, Suh, and Oishi, 1997). However, two of the conditions affecting a person's well-being are being associated with negative emotions: these are loneliness and depression.

Davis (2001) proposed psychosocial problems such as loneliness and depression as one of distal antecedents to problematic Internet use. Lonely and depressed individuals turn out to have higher preference for online interaction, since they perceive that online communication might be the "Prozac of social communication" (Morahan-Martin, Schumacher, 2000, p25) relatively less risky and easier than face-to-face communication because of its greater anonymity. According to this pattern, individuals who have deficient self-presentational skills might prefer online communication to face-to-face communication. As they devote more time and attention to their online social interaction, some of them have a hard time regulating their Internet use, which is termed compulsive use (Caplan, 2005). Compulsive use in turn leads to negative life outcomes such as lower academic grades, missing class or work, and missing a social engagement. Quite a few studies have found a negative relationship between Internet use and different aspects of psychological well-being, but most of these used small, non-representative samples. In studies with undergraduate students, loneliness increased with overall time spent using the Internet (Matsuba, 2006) and with time spent using the Internet for entertainment and obtaining information (Whitty and McLaughlin, 2007). Time spent online shopping, doing research, and playing games was associated with increased depression, and Internet surfing was associated with increased sleep disturbances (Morgan and Cotten, 2003; Thomée, Eklöf, Gustafsson, Nilsson, and Hagberg, 2007).

Other studies have indicated mixed results or no significant differences between Internet users and non-users on various aspects of mental health and sociability measures. Thomée et al. (2007) reported that depression increased with emailing, while Morgan and Cotten (2003) found that depression decreased with email use. Findings regarding online chatting have been similarly contradictory; some researchers reported negative effects, such as increased depression and loneliness (Carden and Rettew, 2006; Thomée et al., 2007) for time spent in chat rooms, but others found that chat room use was related to positive effects like decreased loneliness and depression and increased self-esteem (Morgan and Cotten, 2003; Shaw and Gant, 2002). Most of the studies mentioned above were interested in the relationship between chatting and well-being, but they used different constructs of well-being including loneliness,

depression, anxiety, shyness, self-consciousness, self-esteem, and perceived social support. With different operationalizations of well-being, it is not strange that different studies have found different results. Very few studies have reviewed the literature of these constructs carefully in terms of their nature, mechanism, causes, consequences, and furthermore, how they are related to communication. Lack of necessary exploration of these concepts restricts the further development of computer-mediated communication research. This may be due to the borders of different research disciplines. However, "studies of behavioral and social processes in computer-mediated communication (indeed of all computing) will be carried out best as an interdisciplinary effort" (Kiesler, Siegel, and McGuire, 1984, p.1132). Instead of examining the general psychological well-being consisting of a number of psychosocial aspects, the present study focuses on loneliness and depression, two widely studied concepts in social psychology area. Therefore, the purpose of this study was to investigate if depression and loneliness differed in relation to chatting habits among undergraduate students. Special focus was also on motivation behind, and time spent on chatting. Specifically, this study has one major hypothesis. Even though loneliness and depression can be expected to be related, there will be differences between how depressed and lonely undergraduate students relate to different aspects of chatting. To examine this hypothesis, this study focuses on two aspects of chatting. The first aspect to be examined is motivation for chatting. For depressed undergraduate students the main motive should be social support (contacting friends) and social compensation. For lonely undergraduate students it should be spending time with others (social entertainment) and social compensation. The motive social compensation, hence, should be salient for both the depressed and the lonely youths. The second aspect to be examined is the amount of time spent on chatting. Undergraduate students who feel more depressed should spend more time with chatting in general. Similar, undergraduate students who feel lonelier should spend more time chatting in general.

METHOD

Participants

Data were gathered from a convenience sample of two hundred and twenty three undergraduate Physical Education students ($n = 223$) ranging in age from 18 to 22 years old ($M = 20.05$, $SD = 1.92$). Participants were 52.5% males ($n = 117$) and 47.5% females ($n = 106$). The sample included 89 (39.9%) freshmen, 66 (29.6%) sophomores, 41 (18.4%) juniors, and 27 (12.1%) seniors. The students' participation was voluntary, and the anonymity of students' responses and their confidentiality as participants were explained before distributing the instruments.

Instrumentation

Loneliness Scale. The items about loneliness were from the UCLA loneliness scale (Russel, 1996). An earlier study (Valkenburg and Peter, 2007) analyzed that scale for the eight items with highest item-total correlation. In that study they only used five of the items,

since negative or positive wording of the questions could be divided into different factors. This study used all eight items. Examples of items are: I often feel lonely, I often feel close to people etc. The response scale was 1 (Never), 2 (Seldom), 3 (Sometimes), 4 (Always).

Depression Scale. The 20 items about depression were taken from the Child Depression scale from the Center of Epidemiological Studies (Schoenbach, Kaplan, Grimson, and Wagner, 1982). The participants were asked about their mood during the last week (e.g. During last week I have; felt sad, thought that I'm not as good as everyone else, etc).

Motivation for Chatting. The 11 items about motivation were from the Motivation for Instant Messaging scale (Westholm, 2008). The participants were asked why they used chatting. All motivation items were measured on a scale from 1 (does not describe me at all) to 7 (describes me perfectly). The items were divided into three factors:

1. Contacting friends consisted of three items and were supposed to measure chatting to get into contact with friends. The items were, I use chatting because; I can talk more with my friends online, I can spend more time with my friends online, and I can have more contact with my friends online.
2. Social entertainment consisted of four items: I use chatting because; it's something to do, it's a way to get more friends, it's a way to spend time, and it's a way to meet new people.
3. Social compensation consisted of four items: I use chatting because; I feel less shy online, I feel more comfortable to express myself online, I'm less ashamed of myself when I am online, and it's easier for me to talk online.

Time Spent Chatting. Time spent chatting was measured with two kinds of questions. The first asked about how often students spent time chatting, measured in amount of days spent on the activity within the last week. The alternative answers were 1 (None of the days), 2 (1 to 2 days), 3 (3 to 4 days), 4 (5 to 6 days) and, 5 (every day). The second asked about how long they spent time on chatting, measuring the amount of time spent on the activity the last time spent online. The alternative answers were 1 (I did not use instant messaging (specific way) last time I was online), 2 (Up to half an hour), 3 (Between half an hour and one hour) 4 (between one and one and a half hour) 5 (Between one and a half and two hours), 6 (Between two and two and a half hour), 7 (Between two and a half and three hours) and, 8 (more than three hours).

Data Collection

Data for this research was collected using an online survey. The online survey was designed in such a way that when participants first clicked on the link to the survey, they were shown an informed consent letter explaining the purpose and structure of the survey, their rights as participants, as well as any possible risk involved in participation of this research. In the letter, participants were also given the email address of the researcher in case there were other questions regarding the research that a participant wished to clarify. The email could also be used if a participant was interested in knowing the results of the research study.

The online survey was divided into five different sections (a. demographic information, b. loneliness, c. depression, d. motivation for chatting and e. time spent chatting). After

reading the informed consent letter, the participants completed the survey in a section-by-section manner, that is, after the completion of one section, the participant was asked to click a next button to go to the next section, until all sections were completed. The survey was also designed with an embedded program so that if a participant chose to skip any item, a remark designed using JavaScript appeared requiring the participant to complete the missing item before he or she proceeded to the next section. After completion of the entire survey, the participant clicked on a submit button, which sent the completed questionnaires to a secure server accessible only by the researcher. It was determined that participants would need approximately 50 minutes to complete all sections of this instrument. No technical errors were encountered during the completion of the online questionnaire. Data were analyzed using SPSS 17 statistical software.

Design

Using a cross-sectional survey approach, data were collected on specific demographic characteristics; patterns of online communication such as frequency, duration, possible topics, types of partners, and purposes for communicating online; and a self-assessment of loneliness and depression. This non-experimental study focused on synchronous ways of communicating online including Instant Messaging applications, social networking websites, chat programs and social chat rooms. Usage of an asynchronous method of online communication such as e-mail was not investigated.

RESULTS

Reliability analyses were applied to verify the reliability of the loneliness, depression and motivation for chatting scales. Furthermore, correlational analyses were used to determine the significance and direction of relationships among the variables examined. The Pearson product-moment correlation was used to calculate the associations between loneliness, depression and motivation for chatting factors (contacting friends, social compensation, and social entertainment). Similar, correlations between loneliness, depression and time spent chatting factors (how often, and how long) were examined with Pearson's correlation coefficients. Each variable was tested using an alpha level of significance .05. The results of each analysis are presented separately below.

Reliability of the Loneliness, Depression and Motivation for Chatting Scales

Reliability measures for loneliness, depression and motivation for chatting survey were assessed. An alpha reliability coefficient .79 was computed based on the inter-item correlation coefficients of the loneliness scale. While the Cronbach a coefficients of the depression scale was .87. Furthermore, the alpha reliability for the three factors of the motivation for chatting scale was: contacting friends .78, social compensation .89 and social entertainment .80, respectively. According to Green, and Salkind (2007), the reliability coefficient should be at

least .70 for the test to be considered reliable. Thus, the determination was made that the loneliness, the depression and the motivation for chatting survey were reliable measurement instruments.

Correlation between Loneliness, Depression and Motivation for Chatting

Initially, it should be mentioned that loneliness was significantly related to depression, ($r = .44$, $p < .001$). This was in accordance with the expectations. However, the main hypothesis of this research was that even though loneliness and depression were related, there would be difference between how they related to different aspects of chatting.

The first aspect to be considered was motivation for chatting. The hypothesis was that the chatting motivation for students with high loneliness should be social entertainment. The motivation behind depression should be contacting friends. Both students high on loneliness and depression should score higher than other students on social compensation. The results are presented in table 1.

The results indicated that only depression had a significant relationship with chatting to contact friends. Students who felt more depressed used chatting more to contact friends than less depressed students, ($r = .21$, $p < .01$). Students who felt more lonely, used chatting neither more nor less to contact friends than less lonely students, ($r = .08$, $p > .05$).

Similar, only depression had a significant relationship with chatting for social entertainment. Students who felt more depressed, used chatting more for social entertainment than less depressed students, ($r = .30$, $p < .001$). Students who felt more lonely, used chatting neither more nor less to contact friends than less lonely students, ($r = .10$, $p > .05$).

Furthermore, both loneliness and depression had significant relationship to chatting for social compensation. Students who felt more lonely, used chatting more to compensate socially than less lonely students, ($r = .27$, $p < .001$). Students who felt more depressed, used chatting more to compensate socially than less depressed, ($r = .25$, $p < .001$).

To summarize, loneliness only seems to be related to social compensation while depression seems to be related to all three motivational factors. These findings support the belief that different motivations for chatting have different relations to well-being depending on what aspects of well-being are being examined (at least for loneliness and depression). Nevertheless, these findings does not fully support the hypothesis put forward in this study.

Table 1. Pearson product-moment correlation between motivational factors and loneliness or depression

	Loneliness	Depression
Contacting Friends	.08	.21 **
Social Entertainment	.10	.30 ***
Social Compensation	.27 ***	.25 ***

* $p < .05$, ** $p < .01$, *** $p < .001$.

Correlation between Loneliness, Depression and Time Spent Chatting

Only depression had a significant relationship with chatting. Students who felt more depressed used chatting both more often ($r = .21, p < .01$), and longer ($r = .20, p < .01$), than students who were less depressed. Students who felt more lonely, used chatting neither more nor less often ($r = .07, p > .05$), or longer ($r = .05, p > .05$), than students who did feel less lonely.

As shown in table 2, the depression was related both to how often and how long one spent time on chatting, while loneliness didn't seem to be affected by how often or how long one spent time on chatting.

Table 2. Pearson product-moment correlation between time spent chatting and loneliness or depression

Time Spent Chatting	Loneliness	Depression
How often	.07	.21 **
How long	.05	.20 **

* $p < .05$, ** $p < .01$, *** $p < .001$.

CONCLUSION

The main hypothesis of this study was that there will be differences between depressed and lonely undergraduate students on how they relate to various aspects of chatting. The results indicated that this hypothesis was mainly wrong, only social compensation was correctly predicted to be related to both depression and loneliness. However the main idea that depending on what measurement of wellbeing being used, there will be different results in relationship with chatting was supported in other ways. Some students seem to use chatting for social entertainment (at least more depressed students) and not only for social compensation or to contact already existing friends. Finally, when it comes to time spent on chatting there might be a difference between how long and how often someone use instant message (dependent on aspect of well-being).

Specifically, when it comes to loneliness, this study found two major findings. The first was that the only motivational factor that was related to loneliness was social compensation. According to Suler (2004), people who are mainly lonely have an individual predisposition of having problems with self-disclosure and intimacy and feeling isolated from others. Like shy individuals, they have poor interpersonal competencies, so they manifest conversational difficulties, less enjoyment, or feelings of awkwardness and rejection in real-life social interactions (Ward and Tracey, 2004). Therefore, they typically engage in fewer social situations and have fewer close friends than their normatively adjusted peers, the non-lonely and non-socially anxious.

As a consequence, lonely people may have a stronger motivation to replace face-to-face communication with computer-mediated communication (Valkenburg and Peter, 2007). They are highly attracted to it because they perceive benefits from its usage (Morahan-Martin and Schumacher, 2003). Due to the relative anonymity and the reduced auditory and visual cues

of the Internet (Peter, Valkenburg and Schouten, 2007), they can practice their weaker social skills and find it even easier online to meet similar others compared to face-to-face settings (Mesch and Talmud, 2007). Due to the reduced role constraints and social status cues compared to face-to-face communication, people reporting this condition can also alter their presentation online by presenting more idealised versions of self as well as role-playing different online personalities (Kiesler et al., 1984; Valkenburg and Peter, 2008).

The second finding was that students, who felt lonely, used chatting neither more nor less often, or longer, than students, who did feel less lonely. A possible explanation for this results could be that the measurement of loneliness is a measurement of feeling lonely, that does not necessary imply being actually lonely. One could spend time with a lot of people and still feel lonely, or spend time alone without feeling lonely at all (other combinations are possible). Researchers could not find any previous research along that line though, so maybe it might be worth researching in the future.

Depression was more complex than loneliness and researchers are not sure how to best explain those findings. When it came to motivational factors all had a role to play, so probably, the next step is to research if any of them is more important. One plausible explanation could be that when someone feels depressed it's easier to go online and use instant messaging to fulfill ones social needs than it is to seek friends or other social activities outside ones home. This could also explain why people who feel more depressed seem to chatting more in general.

Finally, the most interesting finding was that social entertainment played a major role in depression but not in loneliness. This was interesting as it indicated that both depression and loneliness differed (well-being in all honors), and that there was more to chatting than social compensation and maintaining friendships. It seemed that students, at least depressed students, use chatting because it's a way to spend time and meet new people.

There are some limitations that should be considered when drawing conclusions from this study and be addressed in future research. These pertain to the procedure, research methodology and sample.

First, this study measured only the "last week" and "last time" of the participants' chatting and it's hard to draw any real conclusions. The participants' last time chatting could have been significantly different from their normal patterns of chatting. In other words, it cannot not be said that these conditions caused students to turn to online communication, because it is not possible to determine whether these were long-term or transient problems (Ybarra, Alexander, and Mitchell, 2005). Therefore, future longitudinal studies would be better equipped to address this important cause-and-effect (or, rather, causal-correlational) issue.

Second, quantitative survey methodology was used. This approach allowed investigating general patterns of online communication used by participants with self-reported loneliness and depression. However, a mixed-method approach incorporating both quantitative and qualitative methods is likely to be more appropriate for studying the multifaceted relationship between chatting and wellbeing. Future research, therefore, could consider using an in-depth interview to complement survey data. For example, in order to draw inferences of their psychosocial well-being, participants could be asked open-ended questions about their life situations such as education, family, and personal relationships. Participants, however, should be asked whether they seek out relationships online to enhance, help to create, or in

preference to/substitute their offline networks, that is, to isolate themselves (Scealy, Phillips and Stevenson, 2002).

Third, a non-probabilistic convenience sample limited to undergraduate Physical Education students at Democritus University of Thrace was used. Applications or generalisability of the results from this study to the whole population of Greek students communicating online and/or other populations may not be justified. Therefore, future research should replicate the present study and/or focus on cross-national comparisons.

In conclusion, the current study used entirely self-reported data from respondents. Because of the need to preserve their anonymity, it was not possible to compare participants' actual characteristics with their reported characteristics. Consequently, it can only be assumed that most participants were candid and provided truthful responses (Wolak, Mitchell and Finkelhor, 2003).

REFERENCES

- Caplan, S. E. (2005). A social skill account of problematic Internet use. *Journal of Communication, 55*(4), 721-736.
- Carden, R., and Rettew, S. (2006). Internet chat room use, life satisfaction with life, and loneliness. *Psychological Reports, 98*(1), 121-122.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior, 17*(2), 187-195.
- Diener, E., Suh, E., and Oishi, S. (1997). Recent findings on subjective well-being. *Indian Journal of Clinical Psychology, 24*(1), 25-41.
- Engelberg, E., and Sjöberg, L. (2004). *Internet use, social skills, and adjustment. CyberPsychology and Behavior, 7*(1), 41-47.
- Green, B. S., and Salkind, J. N. (2007). *Using SPSS for Windows and Macintosh* (5th ed.). New Jersey: Prentice Hall.
- Kiesler, S., Siegel, J., and McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist, 39*, 1123-1134.
- Matsuba, K. (2006). Searching for self and relationships online. *CyberPsychology and Behavior, 9*(3), 275-284.
- Mesch, G. S., and Talmud, I. (2007). Similarity and the quality of online and offline social relationships among adolescents in Israel. *Journal of Research on Adolescence, 17*, 455-466.
- Morahan-Martin, J. M., and Schumacher, P. (2000). Incidence and correlates of pathological Internet use among college students. *Computers in Human Behavior, 16*(1), 13-29.
- Morahan-Martin, J. M., and Schumacher, P. (2003). Loneliness and social uses of the Internet. *Computers in Human Behavior, 19*, 659-671.
- Morgan, C., and Cotten, S. (2003). The relationship between internet activities and depressive symptoms in a sample of college freshmen. *CyberPsychology and Behavior, 6*(2), 133-142.
- Peter, J., Valkenburg, P. M., and Schouten, A. P. (2007). Precursors of adolescents' use of visual and audio devices during online communication. *Computers in Human Behavior, 23*, 2473-2487.

- Russell, D. W. (1996). UCLA loneliness scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66, 20-40.
- Scealy, M., Phillips, J. G., and Stevenson, R. (2002). Shyness and anxiety as predictors of patterns of Internet usage. *CyberPsychology and Behavior*, 5, 507-515.
- Schoenbach, V.J., Kaplan, B.H., Grimson, R.C., and Wagner, E.H. (1982). Use of a symptom scale to study prevalence of depressive syndrome in young adolescents. *American Journal of Epidemiology*, 116, 791-800.
- Shaw, Lindsay H., and Gant, Larry M. (2002). In defense of the Internet: the relationship between internet communication and depression, loneliness, self-esteem, and perceived social support. *CyberPsychology and Behavior*, 5(2), 157-171.
- Suler, J. (2004). The online disinhibition effect. *CyberPsychology and Behavior*, 7, 321-326.
- Thomé, S., Eklöf, M., Gustafsson, E., Nilsson, R., and Hagberg, M. (2007). Prevalence of perceived stress, symptoms of depression and sleep disturbances in relation to information and communication technology (ICT) use among young adults: an explorative prospective study. *Computers in Human Behavior*, 23(3), 1300-1321.
- Valkenburg, P. M., and Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, 43, 267-277.
- Valkenburg, P. M., and Peter, J. (2008). Adolescents' identity experiments on the Internet: Consequences for social competence and self-concept unity. *Communication Research*, 35, 208-231.
- Ward, C., and Tracey, T. (2004). Relation of shyness with aspects of online relationship involvement. *Journal of Social and Personal Relationships*, 21, 611-623.
- Westholm, E. (2008). Instant Messaging and its Relationship to Depression and Loneliness among Young Adolescence. Retrieved December 21, 2010, from <http://oru.diva-portal.org/smash/record.jsf?pid=diva2:159679>.
- Whitty, M., and McLaughlin, D. (2007). Online recreation: the relationship between loneliness, internet self-efficacy and the use of the Internet for entertainment purposes. *Computers in Human Behavior*, 23(3), 1435-1446.
- Wolak, J., Mitchell, K. J., and Finkelhor, D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence*, 26, 105-119.
- Ybarra, M. L., Alexander, C., and Mitchell, K. J. (2005). Depressive symptomatology, youth Internet use, and online interactions: A national survey. *Journal of Adolescent Health*, 36(1), 9-18.