Prevalence, associated factors and impact of loneliness and interpersonal problems on internet addiction: A study in Chiang Mai medical students

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ABSTRACT

Introduction: Internet addiction is common among medical students, and the prevalence is higher than the general population. Identifying and creating solutions for this problem is important. The aim of this study was to examine the prevalence and associated factors, particularly loneliness and interpersonal problems among Chiang Mai medical students.

Materials and methods: Of 324 first to sixth year medical students, 56.8% comprised females with a mean age of 20.88 (SD 1.8). All completed questionnaires related to the objectives and activities of internet use, the Young Internet Addiction Test, the UCLA loneliness scale, and the Interpersonal Problems Inventory were employed to identify internet addiction.

Results: In all, 36.7% of the subjects exhibited internet addiction, mostly at mild level. Amount of time used daily, loneliness and interpersonal problems were strong predictors (beta = 0.441, p < 0.05, beta = 0.219, p < 0.001 and beta = 0.203 p < 0.001, respectively), whereas age and sex were not. All objectives of using internet contributed to the variance of internet addiction score. For internet activities, only non-academic or studying contributed. The final model accounted for 42.8% of total variance of the internet addiction score.

Conclusion: Even though most addiction was at a mild level, careful strategies should be applied to better understand the situation. Along with a screening for potential internet addiction among medical students, attention should be paid to identifying those who experience loneliness and interpersonal problems, because both are strong predictors that can be improved by a variety of appropriate intervention.

1. Introduction

As the internet has become widespread and easily accessible, it impacts our daily life including education (Mythily et al., 2008; Walsh et al., 2013). Internet addiction, also known as pathological internet use or problematic internet use, is defined as an inability to control one's use of the internet leading to negative consequences in daily life." (Young, 1998). Having been a new issue worldwide over the last decade, internet addiction; however, has not yet been listed as a disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). The solely behavioral addiction included in the DSM-5 is gambling disorder, which was listed in a section recommending further study.

The characteristics of internet addiction suggested by Block are 1) loss of control of the impulse of using the internet, 2) excessive time use beyond necessity and initial intention, 3) withdrawal symptoms when the internet is unavailable and 4) negative life impacts (Block, 2008).

The prevalence rate of internet addiction varies across countries. Data from 11 countries from the US, Europe and Asia, showed the prevalence of internet addiction among adolescents, college students and in the general population to be from 0.7 to 25% (Mihajlov and Vejmelka, 2017). Medical students, as active learners, also have freely accessed the internet for academic purposes and for recreation. Likewise, the prevalence of internet addiction among medical students varied across countries. The prevalence rate among medical students was higher than in the general population (Zhang et al., 2017). Studies from Iran reported 5.2 to 28.7%, India, 46.8 to 58.9%, Chile, 11.5%, Nepal, 21% and in Thailand, 24.4% (Berner et al., 2014; Boonvisudhi and Kuladee, 2017; Nath et al., 2016; Salehi et al., 2014; Upadhayay and Guragain, 2017). Internet addiction among medical students leads to poor academic performance and psychosocial problems (Usman et al., 2014).

In terms of factors associated with internet addiction among medical students. Salehi et al. (2014) found male sex, stage of education, daily time spent using the internet, most frequent time of internet use, monthly cost of use and tea consumption were risk factors. Chaudhari et al. (2015) also found male sex, staying in private accommodation, low age of first internet use, using mobile phones for internet access, higher expenditure on internet, staying online for lengthy time and using internet for social networking, online videos, and viewing websites with sexual content were risk factors. Asiri et al. (2013) found that age, sex, marital status, major, grade point average (GPA), semester of studying and student residence place were associated with internet addiction score. However, no significant relationship was observed between the internet addiction score and level of discipline, parental job status and education level or student accommodation. In terms of mental health problems related to internet addiction, depression was common (Berner et al., 2014). Other psychosocial factors studied for problematic internet use included attachment, personality traits (Kaewpradub et al., 2017; Monacis et al., 2017; Weinstein and Lejoyeux, 2010), interpersonal relationship (Dowling and Brown, 2010; Eichenberg et al., 2017; Weinstein et al., 2016), interpersonal problems (Seo et al., 2009) and loneliness (Fioravanti et al., 2012; He et al., 2014; Shettar et al., 2017). However, little is known regarding these associated factors among medical students.

Loneliness, a subjective state of distress between actual and perceived relationships (Peplau and Perlman, 1982), has interested the authors as it could bring about subsequent depression. Loneliness can be found across the life span (Heinrich and Gullone, 2006), and is very common among university students (Ozdemir and Tuncay, 2008). Research has shown loneliness was associated with interpersonal problems (Weeks et al., 1980; Horowitz and de Sales French, 1979a), mental health problems (Heinrich and Gullone, 2006), and internet addiction (Caplan, 2007; Fioravanti et al., 2012; Li et al., 2016). However, studies regarding loneliness, interpersonal problems and internet addiction among medical students are still lacking.

In this present study, the authors have attempted to investigate the clinical and epidemiological profiles of individuals with internet addiction, for example, whether internet addiction is associated with age, sex, daily internet time spent, types of internet activity as well as objectives for using the internet. We also would like to explore the relationship between internet addiction, interpersonal problems and loneliness among medical students.

2. Materials and methods

2.1. Participants and procedure

Participants came from a sample of 330 out of entire 1230 of first to sixth year medical students in Chiang Mai University, Thailand. Fifty-five participants were a representing sample for each year. All were recruited cross-sectionally in the same period in 2015 using convenience sampling. Each participant received and completed the questionnaire consisting of five parts: 1) demographic data, 2) questionnaires concerning objectives and activities of internet use, 3) the 20-item Young Internet Addiction Test, 4) the UCLA loneliness scale and 5) the Inventory of Interpersonal Problems-32. Of 330 sample data sets, 6 were incomplete; thus, 324 samples were used for all analyses.

All volunteers gave informed consent for their participation in this research. Ethics approval was obtained from the Faculty of Medicine, Chiang Mai University, before taking any further step in research.

2.2. Instruments

2.2.1. Questionnaires concerning objectives and activities of internet use

Ten items regarding objectives of using the internet, asking how much the respondent agree to respective objectives, such as for recreation and business transaction. For activities of using the internet, 14 items were used to ask how often the respondents used regarding their respective activities, such as facebook/twitter, chat and downloading music. A five-item Likert rating scale was used for each item.

2.2.2. Are you addicted? (AUA) questionnaire

A direct question asking the respondents how they perceived their internet use involved the question, are you addicted? The optional responses were no, not at all, maybe and yes, definitely. No validation was made for this single item questionnaire; however, this type of question was tested and validated in Lai et al.'s study (Lai et al., 2013).

2.2.3. Internet Addiction Test (IAT)

The IAT was developed by Young (1998), and comprises a 20-item questionnaire answered using a five-point Likert scale. (0 = not applicable, 5 = always). The Thai version was developed by Wongpakaran and Wongpakaran (2016). The study sample showed a Cronbach's alpha of 0.90.

2.2.4. UCLA Loneliness Scale

The UCLA Loneliness Scale was developed by Russell (1996). The original questionnaire had 20 questions scored one to four (1 = never, 4 = often). The Thai version demonstrated good internal consistency and validity (Wongpakaran and Wongpakaran, 2012). The present study used the short version (UCLA-7) which yielded a Cronbach's alpha of 0.82.

2.2.5. Inventory of Interpersonal Problems-32 (IIP-32)

The IIP-32 was developed by Horowitz et al. (2000). It measured the interpersonal problems according to the interpersonal circumplex comprising eight different interpersonal problems. It consisted of 32 items; all items were rated on a five-point Likert scale ranging from 0 (not at all) to 4 (extremely). The Thai version demonstrated excellent reliability and validity (Wongpakaran et al., 2012). The study sample produced a Cronbach's of 0.88.

2.3. Data analysis

Descriptive analyses were carried out with sociodemographic, internet-related and all clinical variables by frequency, percentage and mean standard deviation. Chi-square test was used to compare nominal and categorical variables among groups. In the case of non-normal distribution, the equivalent non-parametric test, e.g., the Mann-Whitney and Kruskal-Wallis tests were used. Correlation among variables was calculated by Pearson's product moment, biserial or Spearman's rank correlation depending on type of variable. To find predictors of the internet addiction score, hierarchical regression was performed. For all the analyses, level of significance was set at $P < 0.05$. IBM SPSS, version 22 was used for all analyses.

3. Results

Table 1 shows that of 324 participants, 56.8% were female. The mean age of the sample was 20.88 (SD 1.8). The average time spent for internet was 4.9 h (SD = 2.7), min-max = 1–20, median = 4.0 h. Participants used the internet almost every day. The average number of days using the internet was 6.9 days weekly. Most used Smart phone, iPhone or iPad as their first choice, then laptop/netbook and desktop computer for the last choice.

The internet addiction level according to Young's score was as follows: none, 205 (63.3%); mild, 100 (30.9%); moderate, 17 (5.2%) and severe, 2 (0.6%). Second year students had the highest prevalence in addiction. The most frequent activities were Facebook and Twitter (mean = 4.52, SD = 0.692), whereas the highest level of agreement with regard to the objectives was to relax (mean 4.49, SD 0.622). Principal component analysis was used to reduce ten objectives to three components including 1) negative coping, i.e., avoiding real life