

## Boredom and Distress Tolerance on Problematic Internet Use Among Public University Students

Ayleah Paz Sim Aquino<sup>1</sup>, Patricia Joseph Kimong<sup>2\*</sup>

<sup>1</sup>Faculty of Psychology and Education, University Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu Sabah, Malaysia.

Email: [ayleahpsaquino@gmail.com](mailto:ayleahpsaquino@gmail.com)

<sup>2</sup>Faculty of Psychology and Education, University Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia.

Email: [patricia@ums.edu.my](mailto:patricia@ums.edu.my)

### CORRESPONDING AUTHOR (\*):

Patricia Joseph Kimong  
([patricia@ums.edu.my](mailto:patricia@ums.edu.my))

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### ABSTRACT

The COVID-19 pandemic has been linked to increased psychological distress. To cope with this distress and boredom, individuals spend more time on the internet, especially university students who are at a greater risk for problematic Internet use (PIU). Therefore, this study investigates the relationship between boredom, distress tolerance, and problematic internet use. This study employed a qualitative approach using a survey. A self-administered questionnaire was designed to collect data. This study involved 363 participants among public university students. Three instruments used to measure the research variables are the Boredom Proneness Scale (BPS), Distress Tolerance Scale (DTS), and the Problematic Internet Use Questionnaire (PIUQ). Descriptive analysis and Pearson Correlation tests were conducted using Statistical Package for Social Science (SPSS). The findings showed that boredom is significantly correlated with problematic internet use. However, there was no significant correlation between distress tolerance and problematic internet use.

**Contribution/Originality:** This study contributes to the existing literature on Boredom, Distress Tolerance, and problematic Internet Use. Additionally, Problematic Internet Use may indicate poor self-regulation skills among university students, which in turn may have detrimental effects on how well students cope with aversive emotional states.

## 1. Introduction

Boredom is an emotion and a common problem experienced daily (Eastwood et al., 2012). However, its influential role in signaling the need for change and its power in steering human behavior towards engagement and enjoyable activities have been largely overlooked (Westgate & Steidle, 2020). Boredom seeking stimulation in negative behaviors such as problematic Internet use (PIU) (Lin et al., 2009; Pempek et al., 2009; Skues et al., 2015).

To cope with negative mood states, individuals may engage in specific online behaviors such as streaming films and television shows, video gaming, and social media use, as these behaviors may help to cope the stress resulting from these mood states (Blasi et al., 2019; Saiful Islam et al., 2020). Tendency to engage in such behaviors as coping mechanisms in emergencies, such as the recent pandemic, can develop into patterns that are difficult to stop (King et al., 2020). Internet use is increasing during the pandemic to cope with psychological stressors and mood states – this includes boredom, which has been identified as a critical negative psychological stressor in COVID-19 (Brooks et al., 2020).

The current pandemic saw a surge in demand for bandwidth or the maximum capacity for data transfer due to the implementation the Movement Control Order (MCO). This can be due to the increased use of video conferencing, learning, and online shopping (Malaysian Communications and Multimedia Commission [MCMC], 2020). As a result, adherence to the MCO by remaining indoors saw 23.5% higher Internet traffic nationwide during the first week, while the second week saw a further increase of 8.6% (MCMC, 2020). There is an existing gap in the mechanisms that can potentially reduce this problem of Internet behavior. For example, suppose the Internet is habitually used to alleviate boredom. The restrictions during the pandemic and the inevitability of university students being on their devices more often than when classes were taught face-to-face have led to an increasing number of university students being more likely to turn to their devices to escape this distressing state of boredom as a self-regulation strategy (Simons & Gaher, 2005; Skues et al., 2015). University students report having to cope with academic and social stressors while completing their studies (Bitsika et al., 2010). Therefore, this study will focus on one such stressor as a possible predictor, namely boredom and distress tolerance, which may reduce the likelihood of university students falling into PIU.

### 1.1. Problem Statement

Malaysia is seeing a growth in Internet users, with 88.7% of the population being Internet users as of 2020, increasing 1.3% from 87.4% of the population in 2018 (MCMC, 2020). In addition, Internet users in Malaysia were also spending more hours online in 2020 as compared to 2018, with half of the Internet users (50%) in Malaysia having spent 5 to 12 hours per day on the Internet, an increase of 13% from the 2018 observation of 37% of Internet users spending 5 to 12 hours per day on the Internet (MCMC, 2020).

The study conducted by Rosliza et al. (2018) on Internet addiction among undergraduate students in a public university found that out of the 322 participants, 56.5% (182 persons) of the participants were categorized as problematic Internet users, which was a higher prevalence compared to previous research among Malaysian adolescents. The findings support the notion that university students are at a higher risk of developing PIU (Saiful Islam et al., 2020). Previous research also showed that university students spend more time on the Internet than the typical Internet user (Derbyshire et al., 2013). they were searching for information related to their studies, browsing the Internet generally, and using social networking sites (SNSs) and other communication tools, which can place them at greater risk of developing problem Internet behaviors (Kittinger et al., 2012; Kuss et al., 2013).

However, much less is known about boredom in the context of PIU (Skues et al., 2015). Earlier work has focused on certain psychological well-being constructs, such as anxiety, social interaction, loneliness, level of autonomy, and environmental mastery, to be significant predictors of PIU (Casale et al., 2014; Akhter & Khalek, 2020).

## 1.2. Research Objective

The objectives of the study are:

- i. To identify the profile of problematic Internet use (PIU) among public university students
- ii. To investigate the relationship between boredom, distress tolerance, and problematic Internet use (PIU) among public university students

## 2. Literature Review

### 2.1. Problematic Internet Use (PIU)

Previous studies have shown that individual differences such as extraversion (Kuss et al., 2013; Mottram & Fleming, 2009), neuroticism (Kuss et al., 2013; Tsai et al., 2009), openness to experience (Kuss et al., 2013), agreeableness (Kuss et al., 2013; van der Aa et al., 2008), sensation seeking (Shi et al., 2011), self-efficacy (Shi et al., 2011; Whitty & McLaughlin, 2007), impulsivity (Mottram & Fleming, 2009; Shi et al., 2011), hostility (Fumero et al., 2018) and shyness (Caplan, 2002; Chak & Leung, 2004) are associated with Problematic Internet Use.

Other psychological factors such as loneliness (Caplan, 2002), depression (Caplan, 2002; 2013; Dowling & Brown, 2010), and social anxiety (De Leo & Wulfert, 2013; Lee & Stapinski, 2012; Park et al., 2013; Tokunaga & Rains, 2010) have also been recognized as risk factors for PIU. In terms of gender differences, large-scale studies have found males to be more likely to experience PIU than females, leading researchers to believe that gender differences might influence PIU (Ko et al., 2009; Laconi et al., 2015; Laconi et al., 2018; Morahan-Martin & Schumacher, 2000; Su et al., 2019). This pattern is further supported by research that suggests males have higher tendencies to use applications that put them at higher risk for developing PIU, such as online games, cybersexual activities, and online gambling (Lin et al., 2011). PIU can be a risk factor for decreased quality of life, with research in the area stretching back over 20 years (Saiful Islam et al., 2020). Most research that centers on PIU agree that associations do exist between PIU and its negative outcomes. However, there is a lack of evidence for cause-effect relationships between PIU and these negative outcomes (Kubey et al., 2001; Skues et al., 2015). Research continues to suggest that university students who spend longer times on the Internet have been associated with poor academic performance (Caplan, 2002; Niemz et al., 2005; Rahman et al., 2020) and are a group in whom problematic Internet use may manifest as having a direct and quantifiable impact on academic performance (Skues et al., 2015).

### 2.2. Boredom

Struk et al. (2020) conducted a study on the influence of behavioral restrictions on boredom among 121 undergraduates students. The study found that participants were surrounded by objects such as a computer, a puzzle to be completed) reported greater boredom than the control group, with about a quarter of the participants (30 out of 121)

choosing to break the rules by engaging in restricted objects. The researchers concluded that in-the-moment feelings of boredom could contribute to rule-breaking behavior (Struk et al., 2020).

Similarly, and more recently, another study on boredom in the COVID-19 pandemic and the desire to break the rules (Boylan et al., 2020) discovered that under the constraints imposed by social distancing, those highly prone to boredom tended to break the rules more frequently. The results of this study further indicate that boredom proneness may represent a strong risk factor for low self-control, as the urge to act, when driven by boredom, seems to be so powerful that people may even be willing to act against their self-interest and the interests of others by breaking existing social distancing protocols (Boylan et al., 2020).

### **2.3. Distress tolerance (DT)**

Perspectives on distress tolerance (DT) continue to suggest that persons with lower DT (perceived and/or behavioral) may be prone to maladaptively responding (avoidance-oriented coping) to distress or distress-eliciting contexts in the present or future (Leyro, et al., 2010). Consequently, distress “intolerance” may affect various processes across many aspects of behavior and affect regulation, including attentional regulation, distress appraisal, and response to distress (Simons & Gaher, 2005). Therefore, the growing research interest in DT has been coupled with the proliferation of psychological interventions designed to promote tolerance for psychological disorders. Empirical research has consistently shown that DT is associated with psychological disorders and is an emerging risk factor for psychopathology, such as anxiety, mood-related problems, substance use, and personality disorders (Leyro, et al., 2010).

Using the Distress Tolerance Scale (DTS) (Simons & Gaher, 2005), an investigation among 116 HIV-positive patients (O’Cleirigh et al., 2007) found that under conditions of higher degrees of life stress, low levels of DT were related to outcomes of depressive symptoms, substance use (alcohol and cocaine, in particular), and reasons for missing HIV medication dosages. Another study on DT and impulsivity in predicting bulimic symptoms among 200 undergraduate students from an American university found that students low in DT and high in impulsivity were most likely to report high bulimic symptoms when experiencing negative affect (Anestis et al., 2007).

## **3. Methodology**

### **3.1. Research Design**

This study is a quantitative research design in which survey data were collected via web-based or Internet-based mode of administration. A google form questionnaire was distributed using WhatsApp, telegram, and Facebook. For the study, simple random sampling was used by allowing each person in the population to have an equal probability of being selected for the study, which can provide generalizations to the broader population (Creswell, 2014).

### **3.2. Participants and Locations**

This study involved 363 university students, including undergraduates and postgraduates who are taking either their bachelor’s degree, master’s degree, or doctoral degree at the University Malaysia Sabah.

### 3.3. Research instrument

Three established scale were use in this study which are Boredom Proneness Scale (BPS), Distress Tolerance Scale (DTS) and Problematic Internet Use Questionnaire.

#### 3.3.1. Boredom Proneness Scale (BPS)

The Boredom Proneness Scale (BPS) is a 28-item scale designed to assess one's proneness toward experiencing boredom and is reliable and valid in samples of university students (Farmer & Sundberg, 1986; Skues et al., 2015). As compared to other boredom measures, scores on the BPS have been found to relate to an array of variables that are relevant to the validity of the measure, most notably in the categories of work, risky behavior, personality, negative affect, and attention-cognition (Vodanovich & Watt, 2015).

#### 3.3.2. Distress Tolerance Scale (DTS)

The four factors of the DTS are the ability to tolerate distress (the Tolerance subscale), subjective appraisal of distress (the Appraisal subscale), absorption in negative emotions (the Absorption subscale), and regulation efforts to alleviate distress (the Regulation subscale) (Simons & Gaher, 2005). The internal consistency estimates also indicate high Cronbach's alpha coefficients for the DTS is .70 to .79 (Azizi, 2010; Sandín et al., 2017).

#### 3.3.3. Problematic Internet Use Questionnaire

The Problematic Internet Use Questionnaire (PIUQ) (Demetrovics et al., 2008) is a self-report, 18-item survey that assesses three factors related to problematic Internet use. The first factor is an obsession, which measures mental engagement with the Internet and anxiety, worry, and depression caused by lack of Internet use. Reliability analyses have demonstrated the high Cronbach's alpha coefficients of the PIUQ (.87 to .91) (Demetrovics et al., 2008; Kelley & Gruber, 2010).

### 3.4. Data Analysis Procedure

The data collected were analyzed using IBM SPSS Statistics Version 28.0. Descriptive statistics were also used to provide PIU profiles among university students. In addition, a pilot study comprising 10% of the study sample, as suggested by Connelly (2008), was carried out. The pilot study found the internal consistency reliability estimates of all three scales above .70.

## 4. Result

### 4.1. Demographic Profile

Participants' demographics were analyzed. The mean age for this study is 22.05 (SD=3.44). Based on gender, females predominated at 78.0% (n =283), males at 21.2% (n=77), and the remaining 0.8% (n=3) preferred not to state their gender.

Most of the participants in this study are students studying at the bachelor's degree level at 93.9% (n=341). Of the 363 participants, 27.3% (n=99) spent seven to nine hours on the Internet per day, 26.2% (n=95) spent more than 12 hours per day, and 25.6% (n=93) spent 10 to 12 hours per day on the Internet.

The top three most popular online activities chosen by the participants were social communication, such as WhatsApp and Telegram at 83.5% (n=303), followed by educational purposes, for example, doing coursework and academic reading at 83.2% (n=302), and social networking, using Facebook and Instagram at 66.7% (n=242). Based on cumulative grade point average (CGPA), the majority of the participants achieved 3.00 to 3.66 at 63.4% (n=230). [Table 1](#) shows details of the participants' demographic profiles.

Table 1: Demographic profile

| Participants' demographic    | n   | %     |
|------------------------------|-----|-------|
| Gender                       |     |       |
| Male                         | 77  | 21.20 |
| Female                       | 283 | 78.00 |
| Prefer not to say            | 3   | 0.80  |
| Age                          |     |       |
| 19                           | 22  | 6.10  |
| 20                           | 71  | 19.60 |
| 21                           | 99  | 27.30 |
| 22                           | 81  | 22.30 |
| 23                           | 49  | 13.50 |
| 24                           | 23  | 6.30  |
| 25                           | 2   | 0.60  |
| 26                           | 1   | 0.30  |
| 31                           | 2   | 0.60  |
| 32                           | 1   | 0.30  |
| 33                           | 2   | 0.60  |
| 35                           | 1   | 0.30  |
| 36                           | 2   | 0.60  |
| 37                           | 1   | 0.30  |
| 38                           | 2   | 0.60  |
| 39                           | 1   | 0.30  |
| 40                           | 1   | 0.30  |
| 44                           | 1   | 0.30  |
| 47                           | 1   | 0.30  |
| Level of tertiary education  |     |       |
| Diploma                      | 13  | 3.60  |
| Bachelor's degree            | 341 | 93.90 |
| Master's degree              | 9   | 2.50  |
| Time spent on Internet daily |     |       |
| 1 to 3 hours                 | 13  | 3.60  |
| 4 to 6 hours                 | 63  | 17.40 |
| 7 to 9 hours                 | 99  | 27.30 |
| 10 to 12 hours               | 93  | 25.60 |
| More than 12 hours           | 95  | 26.20 |
| Types of online activities   |     |       |
| Educational purposes         | 302 | 83.20 |
| Social networking            | 242 | 66.70 |
| Entertainment purposes       | 196 | 54.00 |
| Social communication         | 303 | 83.50 |



|                    |     |       |
|--------------------|-----|-------|
| Online services    | 43  | 11.80 |
| Business purposes  | 2   | 0.60  |
| Working purposes   | 2   | 0.60  |
| All                | 2   | 0.60  |
| Work and education | 2   | 0.60  |
| Latest CGPA        |     |       |
| 3.67 and above     | 88  | 24.20 |
| 3.00 to 3.66       | 230 | 63.40 |
| 2.50 to 2.99       | 40  | 11.00 |
| 2.00 to 2.49       | 2   | 0.60  |
| 0.00 to 1.99       | 3   | 0.80  |

Note. N=363

An independent T-test also revealed that the majority of the participants were categorised as Problematic Internet users (scoring 41 and above in the PIUQ). Of 363 participants 307 participants (84.6%) were categorised as Problematic whereas the remaining 56 participants (15.4%) were categorised as Normal Internet users. The independent T-test also revealed that there were no significant differences in the BPS scores and DTS scores between Problematic and Normal Internet users. These results are detailed in [Table 2](#).

Table 2: Independent T-test of Problematic and Normal Internet Users

| Internet users     | N   | Mean | SD   | Sig.  |
|--------------------|-----|------|------|-------|
| <b>BPS</b>         |     |      |      | 0.059 |
| <b>Problematic</b> | 307 | 3.83 | 0.54 |       |
| <b>Normal</b>      | 56  | 3.52 | 0.65 |       |
| <b>DTS</b>         |     |      |      | 0.740 |
| <b>Problematic</b> | 307 | 2.95 | 0.74 |       |
| <b>Normal</b>      | 56  | 3.24 | 0.75 |       |

Pearson correlation coefficient matrix was used to investigate the relationship between the three variables for this study. Boredom was expected to correlate significantly and positively with PIU while distress tolerance was expected to correlate significantly but negatively with PIU.

[Table 3](#) demonstrates the relationship between boredom and PIU among university students.

Table 3: Relationship between boredom and PIU

| Variables           | BPS_Total | PIUQ_Total |
|---------------------|-----------|------------|
| BPS_Total           |           |            |
| Pearson Correlation | 1         | .327**     |
| Sig. (2-tailed)     |           | <.001      |
| N                   | 363       | 363        |
| PIUQ_Total          |           |            |
| Pearson Correlation | .327**    | 1          |
| Sig. (2-tailed)     | <.001     |            |
| N                   | 363       | 363        |

Pearson's correlation coefficient matrix showed a positive and significant relationship between boredom and problematic Internet use,  $r = .327$ ,  $p < .001$ . According to Cohen (Pallant, 2016), the correlation coefficient matrix of .327 indicates a moderate level of correlation (medium strength) between boredom and PIU. Therefore, the first hypothesis of the study is accepted as there is a significant relationship between boredom and PIU. The positive correlation indicates that the higher the boredom proneness among university students, the higher the level of PIU among them.

Table 4 shows the relationship between distress tolerance and PIU among university students. Pearson's correlation coefficient matrix showed a negative, but not significant relationship between distress tolerance and problematic Internet use,  $r = -.097$ ,  $p < .001$ . According to Cohen (Pallant, 2016), the correlation coefficient matrix of less than .10 indicates no level of correlation (below small strength) between distress tolerance and PIU. Therefore, the second hypothesis of the study is rejected as there is no significant relationship between distress tolerance and PIU. The negative correlation, although insignificant, indicates that the higher the distress tolerance among university students, the lower the level of PIU among them.

Table 4: Relationship between distress tolerance and PIU

| Variables           | DTS_Total | PIUQ_Total |
|---------------------|-----------|------------|
| DTS_Total           |           |            |
| Pearson Correlation | 1         | -.097      |
| Sig. (2-tailed)     |           | .065       |
| N                   | 363       | 363        |
| PIUQ_Total          |           |            |
| Pearson Correlation | -.097     | 1          |
| Sig. (2-tailed)     | .065      |            |
| N                   | 363       | 363        |

## 5. Discussion

The current study investigated the relationship between boredom, distress tolerance, and problematic Internet use (PIU) among public university students. The current study found a positive and significant relationship between boredom and PIU. In other words, the higher the degree of boredom proneness, the higher the level of problematic Internet use among university students. The positive correlation between boredom and PIU suggests that university students prone to feeling bored will more likely find themselves preoccupied with the Internet. However, this also means that it is possible for students, who are more prone to boredom, to neglect other aspects of their lives by using the Internet excessively and could experience problems controlling their level of Internet use (Skues et al., 2015).

The finding is also supported by previous research, which has linked boredom to general Internet use (Davis, 2001; LaRose et al., 2003), the use of social networking sites (SNSs) (Pempek et al., 2009), and media use (Chao et al., 2020). Similar to this research, one study into the person-to-person experience of unpleasant excitation levels and seeking the Internet environment to terminate aversive states (Mastro et al., 2002) found that boredom did indeed motivate selective Internet use, with participants who experienced boredom choosing highly interactive sessions on the Internet. Another study into deficient self-regulation and unregulated internet usage (LaRose et al., 2003) concluded that boredom is one of the diagnostic criteria for pathological internet usage.



On the other hand, the present study found no significant relationship between distress tolerance and PIU, although a negative relationship was detected. This finding is in line with previous research that found distress tolerance to not moderate the relationship between boredom proneness and PIU (Skues et al., 2015).

The present study also holds important practical implications for reducing psychological distress in times of crisis. For university students who are faced with the challenges of online learning, for instance, it is necessary to cope with boredom in various ways and reduce excessive use of the Internet, especially among those who are more prone to boredom. Previous research has also pointed out that decreasing individuals' perceptions of boredom in leisure time and adequately managing leisure activities can help avoid Internet use problems (Lin et al., 2009).

Future research should consider employing multiple methods to test research questions and hypotheses that revolve around boredom, distress tolerance, and PIU. For example, studies like the current one can be strengthened by including observational measures (such as daily logs describing Internet usage) or experimental steps (conducting laboratory research in which participants are given different means of coping with boring conditions) into the questionnaire data.

## 6. Conclusion

In conclusion, university students who are prone to experiencing boredom tend to use the Internet to seek out more stimulating and satisfying activities. The higher the degree of boredom proneness, the higher the level of problematic Internet use (PIU). The current study did not find any associations between distress tolerance and PIU.

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## Conflict of Interests

The authors declare no conflict of interest in this study.

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