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"Mental Well-Being at Risk": Are Internet Usage and Impulsivity Warning Signs?

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Abstract

Excessive internet usage negatively affects the mental well-being of university students, particularly when coupled with poor self-control and impulsivity, disrupting inner harmony. While this relationship has been empirically tested in other cultural contexts, related discourse in Sri Lanka remains limited. This cross-sectional survey examined the impact of internet use and impulsivity on the mental well-being of undergraduates at state and private universities in Sri Lanka's Western Province. The survey, disseminated via WhatsApp and Instagram, employed Young's Internet Addiction Test (IAT), Barratt's Impulsiveness Scale (BIS), and the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). Data from 260 participants were cleaned and analysed using SPSS (version 25). A two-way ANOVA revealed that both internet use and impulsivity had significant, independent negative effects on mental well-being, though their interaction was not significant. These findings underscore a critical concern in higher education and call for universities to promote healthy digital habits. It is recommended that institutions implement evidence-based support systems to encourage balanced internet use that fosters both academic performance and psychological well-being.

Keywords: Internet addiction, impulsivity, mental well-being, higher education, compulsive internet use

Introduction

The internet has become a crucial part of day-to-day life, offering abundant benefits for people, such as instant access to knowledge, communication, and entertainment. In 2023, 67% of the world's population was internet users. However, extreme use of the internet has led to an emerging threat: internet addiction (Young, 1998). This condition has become a major global mental health hazard, particularly among the undergraduate population who are supposedly benefiting from the active use of the internet for learning purposes. A recent national survey by LIRNEasia (2021) reported that 44% of the population in Sri Lanka aged 15 and above browse the internet, and 27.6% of Sri Lankan undergraduates report internet addiction-related health issues (Rodrigo et al., 2012). The transition to online learning platforms during the COVID-19 pandemic and the advent of generative AI companions like ChatGPT have further amplified internet use among students, potentially threatening their mental well-being. Moreover, a lack of self-control and impulsiveness could make students more vulnerable to experiencing difficulties when using the internet

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for daily tasks. Impulsiveness is characterized by repetitive and unrestrained behaviors that often could precipitate stress, anxiety, and low mood (Salvi et al., 2021). Impulsivity is also found to be more vital to internet overuse, especially Facebook, Instagram, and WhatsApp platforms (Kuss & Griffiths, 2011). As per Cheever et al., (2014), improper planning and decision-making could further contribute to one's impulsiveness. Simultaneously, the release of dopamine and other reward-related neurotransmitters may reinforce compulsive internet use, rendering internet addiction an increasingly prevalent concern.

Mental well-being, which incorporates emotional, psychological, and social health, is integral for undergraduates as poor mental health is linked to weak academic performance, poor sleep, and frayed social relationships (Naseri et al., 2015; Kuss et al., 2016). Excessive use of the internet may also encourage heightened social media activity, which is strongly connected to low self-esteem, anxiety, depression, and poor academic achievement. Over the past decade, scholarly articles on internet addiction and impulsivity with mental well-being have proliferated; however, there is a lack of literature from Sri Lanka examining their combined impact. Thus, the present study addresses this literature gap by recruiting a sample of 260 undergraduates from Colombo, Gampaha, and Kalutara districts in the Western Province. Utilizing standardized tools, including Young's Internet Addiction Test (IAT), the Barratt Impulsiveness Scale (BIS), and a Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), the researchers conducted a two-way ANOVA to assess how internet addiction and impulsiveness interact to influence the mental well-being of undergraduates.

Materials and methods

Design

The quantitative study used a 3 X 2 factorial design (Table 1) to analyse how internet addiction (discretized as low, moderate, high) and impulsivity (discretized as low, high) impact mental well-being. The objective was to explore the interaction between the independent variables and their impact on mental health. The following hypotheses have been established based on the literature and theoretical framework.

H_1: Internet addiction has a statistically significant effect on mental well-being.
H_2: Impulsiveness has a statistically significant effect on mental well-being.
H_3: Internet addiction and impulsiveness interact significantly in their effect on mental well-being

Table 1: 3 X 2 factorial design layout

		Factor B: Internet Addiction (IA)			
		Low IA	Moderate IA	High IA	
Factor A: Impulsivity (I)	Low (L) Impulsivity	Mean MW	Mean MW	Mean MW	The main effect of factor A $M_{LI} \neq M_{HI}$
	High (H) Impulsivity	Mean MW	Mean MW	Mean MW	
		The main effect of factor B $M_{LIA} \neq M_{MIA} \neq M_{HIA}$			

Note. MW – mental wellbeing

Participants

The sample size was calculated using the statistical G*power tool, and it was 260. The study involved a convenience sample; however, to enhance the generalizability of the findings, data were collected from both state and non-state university students residing in Colombo, Gampaha, and Kalutara districts of the Western Province of Sri Lanka. The sample was selected via their respective course coordinators through personal contacts. A Google form, which includes Young's Internet Addiction Test (IAT), the Barratt Impulsiveness Scale (BIS), and a Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), was shared with coordinators, and the student batch representatives distributed the Google form within their cohorts' WhatsApp groups. The final sample generated a diverse group from different social backgrounds, although the data collection was limited to the Western Province.

Measures

Internet addiction was operationalized using the Internet Addiction Test (IAT; Young, 1995), which includes 20 items. Scores of 20–49 imply average use, 50–79 suggest problematic use, and 80–100 exhibit a high level of addiction. Impulsivity, the second independent variable, was assessed using the Barratt Impulsiveness Scale (1995), consisting of 30 items rated on a 4-point Likert scale. Scores of 72 or higher suggest high impulsivity, while scores between 52 and 71 reflect the normal range. Mental well-being, the dependent variable, was assessed using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS, 2006), which comprises 14 items rated on a 5-point Likert scale. Scores of 0–32 reflect very low well-being, 32–40 below average, 40–59 average, and 59–70 above average. The variables other than the WEMWBS were categorized as per the study design (Table 1).

Procedure

The data collected via a Google form was converted into an Excel sheet. First, the data was cleaned, and secondly, the data was analyzed using SPSS version 25. A two-way ANOVA and a post-hoc analysis (Tukey's HSD) were conducted to assess the identified hypotheses. The study received approval from the Ethics Panel of the Faculty of Humanities and Science at SLIIT.

Results

Participants with low impulsivity had a higher mental well-being score ($M = 50.20$, $SD = 10.513$) as opposed to individuals with high impulsivity ($M = 45.11$, $SD = 13.872$).

Table 2: Descriptive statistics of mental well-being split by impulsive categories

	Impulsivity		Statistic
Mental wellbeing	Low	Mean	50.20
		Std. Deviation	10.513
		Skewness	-.245
		Kurtosis	-.059
	High	Mean	45.11
		Std. Deviation	13.872
		Minimum	14

	Maximum	70
	Skewness	-.372
	Kurtosis	-.823

Unlike impulsivity, low internet addiction did not seem to guarantee the highest mental well-being. As per the results obtained, the highest score of well-being was reported by individuals with a moderate level of internet addiction (M = 50.16, SD = 11.661). The lowest score was reported by the high internet addiction group (Table 3).

Table 3: Descriptive statistics of mental well-being split by impulsivity categories

	Internet addiction		
			Statistic
Mental wellbeing	Low	Mean	46.46
		Median	48.00
		Std. Deviation	11.552
	Moderate	Mean	50.16
		Median	52.00
		Std. Deviation	11.661
	High	Mean	45.63
		Median	53.00
		Std. Deviation	17.426

The two-way ANOVA (Table 4) further revealed a significant main effect of internet addiction on mental well-being, F (2, 254) = 5.784, p = 0.003, in support of H_1. The analysis also discovered a significant main effect of impulsivity on mental well-being, F (1, 254) = 8.234, p = 0.004, in support of H_2. The interaction effect between Internet addiction and impulsivity on mental well-being was not statistically significant, F (1, 254) = 2.358, p = 0.097, Adjusted R^2 = .08. Therefore, H_3 was rejected. The results imply that while Internet addiction and impulsivity individually impact mental well-being, they together do not significantly influence it. The two-way ANOVA established that impulsivity and Internet addiction, along with the model, justified 8% of the variance in mental well-being (R^2 = .097, Adjusted R^2 = .080).

Table 4: Two-Way ANOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4011.816[a]	5	802.363	5.484	.000
Intercept	142921.592	1	142921.592	976.905	.000
Internet addiction	1692.435	2	846.217	5.784	.003
Impulsivity	1204.654	1	1204.654	8.234	.004
Internet addiction * Impulsivity	690.030	2	345.015	2.358	.097
Error	37160.319	254	146.300		
Total	629223.000	260			
Corrected Total	41172.135	259			

a. R Squared = .097 (Adjusted R Squared = .080)

Table 5: Post hoc analysis

	(I) Internet addiction	(J) Internet addiction	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Low	Moderate	-3.71	1.663	.068
		High	.83	2.286	.930
	Moderate	Low	3.71	1.663	.068
		High	4.54	2.429	.150
	High	Low	-.83	2.286	.930
		Moderate	-4.54	2.429	.150

Tukey HSD post hoc analysis showed no statistically significant differences in mental well-being scores throughout the three levels of Internet addiction. The difference between low and Moderate levels of internet addiction approached significance (p = .068), with moderate demonstrating slightly higher well-being than low internet addiction (Mean Difference = -3.71). Other comparisons were non-significant.

Discussion

The research investigated the impact of internet addiction (IA) and impulsivity on the mental well-being of undergraduates in the Western Province of Sri Lanka. Descriptive statistics revealed that undergraduates with low impulsivity exhibited higher mental well-being (M = 50.20, SD = 10.51), whereas those with high impulsivity reported lower well-being (M = 45.11, SD = 13.87), supporting the findings of Diotaiuti et al. (2022). For internet addiction, undergraduates were clustered into three levels: low, moderate, and high addiction. More interestingly, those with moderate internet addiction reported the highest mental well-being (M = 50.16, SD = 11.66), while both low (M = 46.46, SD = 11.55) and high internet addiction (M = 45.63, SD = 17.42) reported substantially lower scores, showing a non-linear relationship. Results illustrated significant main effects: Internet addiction (F = 5.784, p = 0.003) prophesied lower mental well-being, confirming previous relations between excessive internet use, stress, anxiety, and depression (Naseri et al., 2015; Sayed et al., 2022); impulsivity (F = 8.234, p = 0.004) correlated with lower well-being, aligning with the study showing impulsivity's role in poor emotional regulation and decision-making (Cheever et al., 2014; Rodrigo et al., 2012; Diotaiuti et al., 2022). However, the interaction effect between internet addiction and impulsivity was not significant (p = 0.097), signifying they act independently rather than additively, contrasting with Diotaiuti et al. (2022) and Kuss & Griffiths (2011), but aligning with Dalbudak et al. (2013) and Salehi et al. (2023).

This study highlights how local cultural and societal factors impact digital performance and mental health. By inspecting the linked effects of these variables, the research offers a comprehensive understanding of undergraduates' mental health challenges. It provides valuable insights for universities, mental health professionals, and policymakers, while highlighting a regional gap in global literature. This is a cross-sectional study design that restricts causal inferences, indicating that future research should embrace longitudinal methods to measure changes over time. The sample was limited to undergraduates in Sri Lanka's Western Province, involving generalizability to other regions. Faith in self-report questionnaires may have introduced bias, highlighting the need for objective measures like digital tracking or clinical assessments. The findings highlight the requirement for university interventions to address internet addiction and impulsivity. Key suggestions include including digital literacy, self-regulation, and impulse control into mental health programs, beside with regular screenings. Future studies should explore

targeted psychological interventions such as cognitive behavioral therapy (CBT) and digital detox, while also considering gender-sensitive and culturally appropriate approaches.

Conclusion

This study offers important insights into the independent effects of internet addiction and impulsivity on the mental well-being of undergraduate students in Sri Lanka. Despite certain methodological limitations, the observed relationships point to the need for comprehensive preventive and therapeutic strategies. The findings emphasize the importance of coordinated efforts among educational institutions, policymakers, and mental health professionals to develop targeted interventions that address problematic internet use and impulsivity, ultimately promoting student mental well-being.

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