

Trait Anxiety and Internet Addiction as Correlates of Psychological Well-Being among College Students

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Abstract

This study examined the relationships of trait anxiety and internet addiction with psychological well-being (PWB) among college students, a group for whom heavy, often poorly regulated internet use coexists with the ordinary pressures of academic life. Although trait anxiety and internet addiction have each been linked to reduced well-being in prior research, comparatively few studies have examined both variables together within the same sample of Indian college students, leaving open questions about their relative importance for student well-being. To address this gap, a correlational research design was employed with a convenience sample of 110 college students (aged 18–23) from the Jaipur district. Participants completed the State-Trait Anxiety Inventory (short form, STAI-T5), the Internet Addiction Test (IAT), and Ryff and Keyes' (1995) Measures of Psychological Well-Being. Pearson correlation analysis revealed that both trait anxiety ($r = -.38, p < .001$) and internet addiction ($r = -.30, p < .001$) were significantly and negatively associated with psychological well-being. A simple linear regression further showed that trait anxiety significantly predicted PWB, $F(1,108) = 19.00, p < .001$, accounting for approximately 15% of the variance. These findings suggest that college students who report higher trait anxiety and heavier patterns of problematic internet use tend to report poorer psychological well-being, with trait anxiety emerging as the stronger of the two correlates in this sample. The implications, limitations, and directions for future research — including the value of testing trait anxiety and internet addiction as simultaneous predictors of well-being — are discussed, along with practical suggestions for campus-based counselling and student-support services.

Keywords: Internet Addiction, Trait Anxiety, Psychological Well-Being, College Students, Compensatory Internet Use

Introduction

The internet has become an inseparable part of daily life for young adults, and nowhere is this more evident than on college campuses, where academic work, socialising, and leisure are all increasingly mediated by connected devices. Global internet penetration has climbed past two-thirds of the world's population, and India alone counts several hundred million users. For college students in particular, the internet is simultaneously a study tool and a source of distraction, and for a subset of users this heavy reliance shades

into what researchers term internet addiction (IA) — a pattern of excessive, poorly controlled online engagement that persists despite negative consequences (Young & Abreu, 2011).

Alongside changes in how students spend their time, psychological well-being (PWB) has drawn growing research attention as a broad indicator of positive functioning that goes beyond the mere absence of illness. Ryff and Keyes (1995) conceptualised PWB across six dimensions — self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth — offering a more holistic lens than symptom-focused measures alone.

A separate but related line of research has examined trait anxiety, a relatively stable personality disposition toward experiencing anxious affect across situations (Spielberger, 1966). Unlike state anxiety, which fluctuates with immediate circumstances, trait anxiety reflects an enduring vulnerability that has been linked to poorer academic performance, strained social functioning, and reduced overall well-being (Frataea, Ciucurel, & Cucu Ciuhan, 2024).

While internet addiction and trait anxiety have each been studied in relation to student well-being, fewer studies examine them together within the same sample of Indian college students. This paper addresses that gap by asking: how are trait anxiety and internet addiction, respectively, related to psychological well-being among college students, and to what extent does trait anxiety predict well-being once considered as a formal regression model?

Addressing this question matters beyond academic interest. College is a period during which patterns of emotional regulation and digital habit formation can consolidate into more enduring traits, shaping mental health well past graduation. If trait anxiety and internet addiction both erode well-being independently, then campus counselling and wellness services stand to gain from screening for both rather than addressing either in isolation. Furthermore, because well-being is a multidimensional construct spanning self-acceptance, purpose, and social connection rather than merely the absence of distress, understanding which risk factors most strongly predict its decline can help institutions prioritise limited support resources where they are likely to have the greatest impact. Given the scale of internet use among Indian college students, findings from this context also carry practical value for designing regionally appropriate digital-wellness and mental-health initiatives.

Review of Literature

Internet addiction was first conceptualised by Young (1998) as an impulse-control disorder, drawing diagnostic criteria by analogy from pathological gambling because internet-related disorders had no formal recognition at the time. Subsequent research has linked problematic internet use to a range of negative outcomes; in a cross-lagged study, Xie, Cheng, and Chen (2023) found that anxiety significantly predicted subsequent internet addiction, which in turn predicted depressive symptoms among college students, and, more directly relevant to the present study, Shouman, Abo Elez, Ibrahim, and Elwasify (2023) found a significant negative correlation between problematic internet use and psychological well-being (assessed with Ryff's scale) among university students in Egypt. Kardefelt-Winther's (2014) compensatory internet use model offers a complementary explanation, proposing that individuals with underlying psychosocial vulnerabilities — such as loneliness or social anxiety — may turn to the internet to compensate for unmet needs, which can in turn erode well-being when the pattern becomes excessive. Trait anxiety has an equally well-established association with diminished well-being. Anxiety is linked to academic performance, social interaction, and retention in college courses (Frataea et al., 2024), and the dual-factor model of mental health holds that well-being and anxiety, while related, occupy distinct

dimensions that can be assessed and targeted separately — a pattern Carver et al. (2021) confirmed directly in college students, finding that many students reporting high anxiety nonetheless reported meaningfully different levels of psychological well-being depending on their life satisfaction. Because trait anxiety reflects a stable disposition rather than a transient reaction, its effects on well-being tend to be persistent rather than situation-bound (Pacesova et al., 2019).

A smaller body of work has begun to connect internet use patterns with anxiety directly. Hernández et al. (2024), for example, found that day-to-day increases in internet addiction were frequently followed by transient increases in social anxiety symptoms, with avoidance of social interaction acting as a precursor to problematic use. This suggests that anxiety and internet addiction may be intertwined in ways that jointly shape well-being outcomes, motivating the present study's focus on examining both variables in relation to PWB within the same sample.

Taken together, this literature suggests two broad, complementary pathways by which digital and dispositional factors might erode student well-being. The first centres on trait anxiety as a relatively stable vulnerability that colours how students interpret and respond to everyday academic and social demands, with consequences for well-being that persist independently of any particular stressor. The second centres on internet addiction as a behavioural pattern that may develop, in part, as a maladaptive attempt to manage that same underlying anxiety, potentially compounding rather than resolving it over time. Because these two pathways are conceptually distinct yet plausibly related, examining trait anxiety and internet addiction together, rather than in isolation, offers a more complete picture of the psychological landscape shaping college students' well-being than either variable alone.

Objectives and Hypotheses

Objectives

- To examine the relationship between trait anxiety and psychological well-being among college students.
- To examine the relationship between internet addiction and psychological well-being among college students.
- To determine whether trait anxiety significantly predicts psychological well-being.

Hypotheses

H1: There is a significant negative relationship between trait anxiety and psychological well-being among college students.

H2: There is a significant negative relationship between internet addiction and psychological well-being among college students.

H3: Trait anxiety significantly predicts psychological well-being among college students.

Methodology

Research Design

A non-experimental, descriptive correlational design was used to assess the strength and direction of association between the study variables.

Sample

Data were collected from 110 college students aged 18 to 30 years in the Jaipur district using convenience

sampling. Inclusion criteria required participants to be enrolled college students within the specified age range who provided informed consent; individuals experiencing psychological distress or lacking proficiency in English were excluded.

Note on shared data source: This paper draws on the same participant sample and data-collection procedure as a companion paper from the same project, “Internet Addiction among College Students: Roles of Trait Anxiety and Academic Procrastination,” which examines trait anxiety and academic procrastination as predictors of internet addiction. The two papers address distinct research questions — the companion paper treats internet addiction as the outcome variable, while the present paper treats psychological well-being as the outcome — but both are based on the single 110-participant dataset described here.

Measures

Internet Addiction Test (IAT): Young’s 20-item self-report measure assessing the degree of internet addiction, with items rated from 0 to 5 and summed scores classifying use as within normal range, mild, moderate, or severe.

State-Trait Anxiety Inventory, short form (STAI-T5): A 5-item trait-anxiety subscale rated on a 4-point scale (1 = not at all to 4 = very much so), derived from the full 40-item STAI.

Psychological Well-Being Scale (Ryff & Keyes, 1995): An 18-item scale (three items per dimension) assessing self-acceptance, positive relations with others, environmental mastery, personal growth, autonomy, and purpose in life, rated on a 6-point Likert scale. Reported subscale alphas in the current sample ranged from .69 to .81.

Procedure

After providing informed consent, participants completed a socio-demographic sheet followed by the IAT, STAI-T5, and PWB scale. Participants were informed of their right to withdraw at any point during data collection.

Data Analysis

Data were analysed using SPSS 16.0. Pearson correlation coefficients were computed to assess the bivariate relationships between trait anxiety, internet addiction, and psychological well-being. Simple linear regression was used to evaluate trait anxiety as a predictor of psychological well-being.

Ethical Considerations

Formal consent was obtained from all participants. Confidentiality was assured, participants were informed of the study’s purpose, procedures, potential risks and benefits, and their right to withdraw at any time, and all data were anonymised and stored securely.

Results

Table 1 Correlation between Trait Anxiety and Psychological Well-Being

Variable	PWB (r)	Significance
STAI-T5 (Trait Anxiety)	-0.387**	p < .001

*Note. ** Correlation is significant at the .001 level.*

Table 2 *Correlation between Internet Addiction and Psychological Well-Being*

Variable	PWB (r)	Significance
IAT (Internet Addiction)	-0.299**	p < .001

Note. ** Correlation is significant at the .001 level.

Table 1 shows a significant negative correlation between trait anxiety and psychological well-being ($r = -.38$, $p < .001$), and Table 2 shows a significant negative correlation between internet addiction and psychological well-being ($r = -.30$, $p < .001$). Both H1 and H2 were therefore supported.

Table 3

Summary of Linear Regression of Psychological Well-Being on Trait Anxiety

Variable	R	R ²	β	F	Significance
Trait Anxiety (STAI-T5)	.387	.150	-.387	19.001	p < .001

Table 3 shows that trait anxiety significantly predicted psychological well-being, $F(1,108) = 19.00$, $p < .001$, accounting for approximately 15% of the variance in PWB scores ($\beta = -.387$). H3 was therefore supported.

A parallel regression model formally testing internet addiction alongside trait anxiety as simultaneous predictors of PWB was not run as part of the original analysis plan; only the bivariate correlation is reported here (Table 2). Given the moderate, significant correlation observed, a multiple regression combining both predictors is a natural next step and is noted under Suggestions for Further Research below.

Discussion

The present findings show that both trait anxiety and internet addiction are significantly and negatively associated with psychological well-being among college students, consistent with a growing body of literature linking each variable independently to poorer functioning. The negative correlation between trait anxiety and PWB ($r = -.38$) supports H1 and the broader characterisation of trait anxiety as a stable personality disposition that predisposes individuals to experience anxious affect across situations, with corresponding costs to overall well-being (Spielberger, 1966; Fratea et al., 2024). The regression analysis reinforces this pattern, confirming H3 by showing that trait anxiety alone accounts for a meaningful share of the variance in PWB, underscoring the value of anxiety-focused interventions on campus.

The negative correlation between internet addiction and PWB ($r = -.30$) supports H2 and is consistent with prior findings that heavier, less controlled internet use is associated with poorer psychological outcomes among students (Shouman et al., 2023). This aligns with Kardefelt-Winther's (2014) compensatory internet use model, which frames excessive online engagement as, in part, a maladaptive coping response to underlying vulnerabilities — a response that, left unaddressed, may further erode well-being rather than resolve the difficulties that prompted it.

Taken together, the results suggest that trait anxiety and internet addiction represent two separate but co-occurring risk factors for reduced psychological well-being in college populations. Because trait anxiety

showed the stronger association and the only formally tested regression effect in this dataset, it may represent a particularly important target for early identification and support services, without discounting the smaller but still meaningful role of problematic internet use.

Practical Implications

These findings point to several concrete directions for campus-based practice. Because trait anxiety showed the strongest and most reliably predictive relationship with well-being, counselling centres may benefit from prioritising anxiety-focused support — such as brief cognitive-behavioural interventions, mindfulness training, or peer-support groups — as a first line of response for students presenting with reduced well-being, rather than treating anxiety as a secondary concern. At the same time, the meaningful negative correlation between internet addiction and well-being suggests that digital-wellness programming, including structured guidance on healthy internet use and screen-time habits, remains a worthwhile complementary component of student support rather than a stand-alone solution. Embedding brief screening for both trait anxiety and problematic internet use within routine student wellness check-ins could help institutions identify at-risk students earlier, before declines in well-being become more entrenched, and could inform referral pathways that address the underlying anxiety driving excessive online engagement rather than the online behaviour alone.

Conclusion

This study found that trait anxiety and internet addiction are each significantly related to reduced psychological well-being among college students, and that trait anxiety significantly predicts well-being on its own. All three hypotheses — H1, H2, and H3 — were supported by the data. These findings point to the importance of addressing both anxiety and digital-use patterns within student support and counselling services, and they add to a small but growing literature examining these variables jointly within Indian college samples. Viewed together with Kardefelt-Winther's (2014) compensatory internet use model, the results are consistent with the possibility that excessive internet engagement functions, for some students, as an attempted coping response to underlying anxiety — a response that, left unaddressed, may do more to sustain reduced well-being than to relieve it. Future work that formally tests trait anxiety and internet addiction as simultaneous predictors of well-being, ideally using longitudinal data, would help clarify the extent to which these two pathways operate independently, sequentially, or interactively over the course of a student's college experience.

Limitations

- Sample size and diversity: The convenience sample of 110 students from a single district limits generalisability, and diversity across institutions and disciplines was not assessed.
- Cross-sectional design: The correlational, cross-sectional design precludes causal inference; longitudinal designs would better clarify directionality between anxiety, internet use, and well-being over time.
- Self-report measures: All variables were assessed via self-report, which is subject to social desirability and recall biases, particularly for a sensitive topic such as internet use.
- No combined regression model: Internet addiction and trait anxiety were not entered into a single multiple regression predicting PWB in the present analysis, so their independent, simultaneous contributions to well-being remain untested here.

Suggestions for Further Research

- Future analyses of this dataset, or replications with new samples, should test trait anxiety and internet addiction as simultaneous predictors of psychological well-being in a single multiple regression model to clarify their unique and shared contributions.
- Larger, more demographically balanced samples across age, gender, and education level would strengthen generalisability.
- Longitudinal designs would help establish whether trait anxiety and internet addiction precede declines in well-being or instead follow from them.

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