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Stress on the Edge: The Hidden Catalyst of Substance Use among Youths

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Abstract: This study explores the association between perceived stress and substance use among college students, emphasising distinctions between those enrolled in professional and non-professional programs. A total of 147 students were selected via random selection, comprising 85 in professional courses and 62 in non-professional courses. The Perceived Stress Scale and the NIDA-Modified ASSIST V2 Screening Test were employed to evaluate perceived stress levels and substance utilisation. The findings indicated that students enrolled in professional courses had markedly elevated levels of perceived stress and substance use in comparison to their non-professional counterparts. A strong positive connection was identified between perceived stress and drug usage. Furthermore, regression analysis indicated that felt stress accounted for 83.2% of the variation in substance use behaviour. The findings reveal a significant relationship between heightened stress levels and increased substance use, illustrating the importance of implementing stress management and substance misuse prevention programs for college students.

Keywords: Perceived Stress, Substance Use, College Students, Young Adults

Introduction

Substance use among college students is a growing concern, particularly due to its potential to impair academic performance, health, and overall well-being. Late adolescence and young adulthood represent pivotal stages of human development, characterized by substantial physical, emotional, and social transitions (Arnett, 2000; Shanahan, 2000). These periods are marked by heightened stress levels as individuals navigate challenges such as identity formation, independence, and academic or vocational pressures (Hogan & Astone, 1986; Romeo et al., 2016). Physiological changes, including shifts in brain structure and hormonal regulation, particularly in the prefrontal cortex and limbic system, amplify susceptibility to stress during these stages (Spear, 2000; Barbayannis et al., 2017).

This pattern is particularly evident among college students. Surveys such as the American College Health Association-National College Health Assessment (2015) reveal that approximately 75% of students report feeling stressed, and 20% admit to experiencing stress-related suicidal ideation (Liu et al., 2019; APA, 2020). Academic demands, financial concerns, and social pressures contribute significantly to these statistics.

Longitudinal studies have found that stressors experienced during college can act as precursors to mental health issues, including depression, anxiety, and substance use disorders (Pedrelli et al., 2015; Liu et al., 2019). Stress exposure during these formative years is closely linked to the onset of mental health diagnoses, as many psychological disorders, such as major depressive disorder and generalized anxiety disorder, typically manifest during this life stage (Blanco et al., 2008; Saleh et al., 2017). Furthermore, the co-occurrence of stress and substance use highlights maladaptive coping mechanisms adopted by some individuals, exacerbating long-term health risks (Reddy et al., 2018). Elevated stress levels are strongly associated with increased vulnerability to maladaptive coping

mechanisms, including substance use such as alcohol and drugs, which may serve as self-medication for stress relief Boke et al., (2019).

Professional course students, such as those enrolled in medical or engineering programs, often experience intense academic demands, including rigorous curricula, competitive environments, and high expectations from both institutions and family members. This heightened stress can lead to increased substance use as a coping mechanism, as highlighted by Candido et al. (2018), who noted the prevalence of drug use among medical students, including alcohol, tobacco, cannabis, and prescription medications. Peer pressure, a common factor in college settings, further exacerbates this issue by normalizing substance use as a social activity or stress-relief strategy.

Students in non-professional courses face distinct challenges, including unstructured schedules, limited academic rigor, and differing career prospects. These factors may create environments with increased exposure to peer dynamics and leisure activities, which can contribute to substance use. Papazisis et al. (2018) noted a notable prevalence of cannabis use among medical students and found gender differences, with male students consuming more frequently than females. Gupta et al. (2013) conducted a cross-sectional community-based study and reported that 76.2% of professional course students engaged in substance use compared to 62.5% of their counterparts in non-professional courses. These findings highlight a higher prevalence among professional course students, possibly due to intense academic pressure and stress. While their study focused on professional courses, the findings underscore the broader gender and contextual variations in substance use that warrant attention across all academic streams.

Significance of the study

The intersection of perceived stress, academic environment, and substance use is a critical area of exploration. Understanding these dynamics can provide insights into the factors that make students in professional and non-professional courses susceptible to substance use and guide the development of targeted interventions. Understanding these stressors is essential for identifying their role in substance use, which is often employed as a coping mechanism. This research contributes to developing tailored interventions, such as stress management and substance abuse prevention programs, and informs public health policies aimed at fostering healthier academic environments.

Objectives of the Study

1. To compare perceived stress levels and substance use behaviour between students pursuing professional and non-professional courses.
2. To examine the relationship between perceived stress and substance use among college students.
3. To explore the role of perceived stressin predicting substance use in different academic environments.

Hypotheses

H_o1: There is no significant difference in perceived levels between students pursuing professional and non-professional courses.

H_o2: There is no significant difference in substance between students pursuing professional and non-professional courses.

H_o3: There is no significant relationship between perceived stress and substance use among college students.

H_o4: Perceived stress does not significantly predict the substance use among college students.

Sample

The study was carried out with college students aged 19 to 21 years living in Tripura. A total of 147 participants (Professional=85, non professional= 62) were selected using random sampling technique.

Tools Used

1. **NIDA - Modified ASSIST V2 Screening Test:** This assessment is often referred to as the NIDA Quick Screen. This assessment, conducted by the National Institute on Drug Abuse (NIDA), includes enquiries regarding the frequency of an individual's use of prescribed medications, illicit substances, tobacco, and alcohol. Each substance has one corresponding multiple-choice question. The responses vary from "never" to "daily." If an individual uses any substances more frequently than never, it may indicate a substance abuse issue.

2. Perceived Stress Scale (Cohen et al., 1983) is frequently used to assess life stress. The 10 items on the scale reflect stress-related sensations and thoughts over the previous month. Each item is rated on a 5-point Likert scale from 0 (never) to 4 (frequently). Greater perceived stress is indicated by higher scores. Cronbach's alpha ranges from 0.70 to 0.85, indicating strong internal consistency in the PSS. The PSS has good construct validity, correlating positively with other stress, anxiety, and depression measures, and it has been widely utilised in numerous populations, demonstrating its robustness across cultural contexts and settings.

Procedure

Authorisation from the college administration was initially requested. The participants were solicited for their consent and provided with pertinent information regarding the study's objective. Data was randomly collected from students enrolled in various colleges in Tripura. A total of 250 young adults were approached for this investigation. 103 students were disqualified following the screening test due to their abstention from substance use. Consequently, 147 college students were chosen for the final study, comprising 85 students enrolled in professional courses and 62 students engaged in non-professional courses.

Result& Discussion

H_o1: There is no significant difference in perceived stress levels between students pursuing professional and non-professional courses.

Table -1show the Mean, SD & t-value of students pursuing professional and non professional courses with regard to their perceived stress level.

Variable	Courses	Mean	SD	t-value
Perceived Stress	Professional	33.77	5.92	19.700**
	Non professional	14.11	6.05	

****Significant at the 0.01 level**

Table 1 reveals that students in professional courses reported significantly higher perceived stress levels (Mean = 33.77, SD = 5.92) compared to their counterparts in non-professional courses, with the t-value of 19.700 being statistically significant at **$p < 0.01$**. This finding indicates that the null hypothesis (Ho1) is rejected, confirming that a significant difference exists in perceived stress levels between the two groups. This result is supported by the earlier research work done by Kumar and Bhukar (2013) discovered that medical and engineering students often endure elevated stress levels owing to rigorous workloads and the competitive dynamics of their academic pursuits. Kumar et al.,(2024) found that the prevalence of stress among professional college students ranged from 65.33% to 87.10%, significantly higher than the 30% observed among non-professional controls. Key

stressors included demanding syllabus, examination patterns, and a lack of counselling and extracurricular activities, highlighting the need for systemic interventions to improve student well-being.

H_o2: There is no significant difference in substance between students pursuing professional and non-professional courses.

Table -2 shows the Mean, SD & t-value of students pursuing professional and non professional courses with regard to their substance use.

Variable	Courses	Mean	SD	t-value
Substance use	Professional	33.94	8.13	18.737**
	Non professional	9.66	7.20	

****Significant at the 0.01 level**

Table 2 demonstrate a significant difference in substance use between students pursuing professional and non-professional courses. Professional course students exhibited a substantially higher mean score for substance use (Mean = 33.94, SD = 8.13) compared to non-professional course students (Mean = 9.66, SD = 7.20), with a highly significant t-value of 18.737 (**$p < 0.01$**). Consequently, the null hypothesis (Ho2) is rejected, confirming that there is a significant difference in substance use between the two groups. A study done by (Arora et al., 2016) in North India they found a 20.43% prevalence of substance abuse among medical students, primarily due to psychological stress (72.4%) and social factors like celebrations (72.4%), despite awareness of adverse effects. Over half (59.6%) had attempted to quit, emphasizing the need for stress management and awareness programs.

H_o3: There is no significant relationship between perceived stress and substance use among college students.

Table -3shows the relationship between perceived stress and substance use among college students.

Correlations

		PS	SU
PS	Pearson Correlation	1	.912**
			0.000
	N	147	147

**** Correlation is significant at the 0.01 level (2-tailed).**

SU: Substance Use, PS: Perceived Stress

Table 3 presents the correlation analysis between perceived stress and substance use among college students. The results reveal a strong positive correlation ($r = 0.912$, $p < 0.01$), indicating a significant and substantial relationship between the two variables. This finding rejects the null hypothesis (Ho3), confirming that higher levels of perceived stress are significantly associated with increased substance use among college students. The strong positive correlation between perceived stress and substance use among college students aligns with existing research done by **Sinha (2008)** emphasizes that stress significantly influences substance use, as individuals often resort to substances as a coping mechanism for stress and negative emotions. Similarly, **Cohen et al. (1995)** found that perceived stress increases the likelihood of engaging in maladaptive behaviours, including substance use, to manage emotional discomfort.

H_o4: Perceived stress does not significantly predict the substance use behaviour among college students.

Table -4 regression analysis indicating the role of perceived stress in predicting substance use.

Predictor Variables	R	R^2	Adjusted R^2	β	F Change
Perceived stress	.912	.832	.831	.912	717.616**

**** Significant at the 0.01 level (2-tailed).**
Dependent Variable: Substance Use

Table 4 presents the results of the regression analysis, which examines the predictive role of perceived stress in substance use behaviour among college students. The analysis reveals a strong and significant relationship, with a high R-value of 0.912, indicating that perceived stress is a powerful predictor of substance use. The R^2 value of 0.832 shows that 83.2% of the variance in substance use can be explained by perceived stress. The adjusted R^2 of 0.831 further supports this strong predictive relationship, accounting for the number of predictors in the model. The β coefficient of 0.912 suggests that for each unit increase in perceived stress, substance use increases significantly. The F-change statistic (717.616, **$p < 0.01$**) confirms that the model as a whole is statistically significant, rejecting the null hypothesis (Ho4) and supporting the conclusion that perceived stress significantly predicts substance use behaviour among college students. **Sinha (2001)** highlights that stress directly impacts vulnerability to substance use by altering emotional regulation and increasing reliance on maladaptive coping strategies.

Conclusion

The study reveals that a statistically significant difference exists in perceived stress levels and substance usage between the two groups of college students. Elevated levels of perceived stress are significantly correlated with heightened substance use, suggesting that stress is a pivotal factor in shaping substance use behaviour. The results support the proposed model, affirming its statistical significance and reinforcing the conclusion that perceived stress is a strong predictor of substance use behaviour in college students.

Conflict of Interests

The authors assert that no conflicts of interest are present.

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