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Academic procrastination and anxiety in graduate nursing education in India: A mixed-methods inquiry into perceived learning disturbances

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Abstract:

Academic procrastination and anxiety are significant issues that negatively affect the well-being, learning and performance of graduate nursing students, yet their combined impact on learning disturbances remains underexplored. Therefore, it is of interest to assess the levels of academic procrastination and anxiety among nursing students, examined their correlation and explored student perceptions of learning disturbances. The findings revealed moderate levels of procrastination and anxiety, with a significant positive correlation between the two. Demographic factors such as gender, study hours and family income were associated with these issues. Thus, data shows the combined effects of academic procrastination and anxiety on nursing students, highlighting the need for targeted interventions such as stress-management and time-management programs.

Keywords: Academic procrastination; academic anxiety; learning disturbances; nursing students; mixed-methods; graduate education

Background:

Academic procrastination and academic anxiety are closely intertwined psycho-behavioural phenomena that shape the learning trajectories, emotional well-being and professional identity formation of graduate students. A meta-analysis reported a pooled anxiety prevalence of approximately 34.8%, with mild, moderate and severe anxiety affecting 19.1%, 15.1% and 10.3% of students, respectively and higher rates observed after the COVID-19 pandemic [1]. In nursing students, clinical immersion adds a layer of emotional labour on top of academic load, which has been consistently associated with elevated stress and state-trait anxiety [2]. Procrastination is not simply a time-management failure; it is increasingly understood as a short-term emotion-regulation strategy in which unpleasant tasks are avoided to briefly relieve negative affect, only to amplify stress and anxiety as deadlines approach [3]. Longitudinal evidence from shows that unmet basic psychological needs predict procrastination through the sequential mediation of state anxiety and eroded self-control, with psychological resilience buffering this pathway [4]. Similarly, regression modelling has showed that anxiety is a robust predictor of procrastination (standardized $\beta = 0.40$) even after adjustment for gender and semester [5-8]. Qualitative inquiry complements these quantitative signals. A descriptive study of nursing students showed that procrastination often stems from poor concentration, lack of interest, faculty-related stress and digital distractions ,factors that students themselves describe as "learning disturbances" [9-11]. More recently, participatory approaches such as negotiated syllabus have shown promise in reducing both engagement deficits and procrastination, pointing to the importance of contextual interventions [12]. Despite this

expanding evidence base, most studies rely exclusively on quantitative designs, privilege undergraduate cohorts and examine anxiety or procrastination in isolation. Nursing students in India, especially those at state medical colleges serving lower-income families, remain under-represented. Moreover, post-pandemic shifts in teaching modalities, social-media use and hostel living have created new contextual disruptions whose subjective experience has not been adequately captured. Combining validated questionnaires with phenomenological interviewing is therefore essential to understand not only "how much" procrastination and anxiety graduate nursing students experience, but also "how" these experiences disturb their learning in real time [13, 14]. Therefore, it is of interest to report on the combined effects of academic procrastination and anxiety, emphasizing the need for targeted interventions to address these issues.

Materials and Methods:

An explanatory sequential mixed-methods design was used. The quantitative phase followed a descriptive survey design; the qualitative phase used a phenomenological approach. The study was conducted at the College of Nursing, Madras Medical College, Chennai, India, for a period of weeks. For the quantitative phase, 100 students were recruited through convenience sampling. Sample size was calculated using the proportion formula $n = Z^2 \times p \times (1-p) / e^2$, based on a previous prevalence of 38.8%, a 95% confidence interval and an acceptable error of 24% of p, yielding $n \approx 97$, rounded to 100. Seven students were purposively selected for the qualitative phase to ensure rich informational diversity. Students aged ≥ 18 years, of either sex, who were enrolled in the programme and willing to

participate, were included. Students with diagnosed mental or medical illness, those critically ill at data collection, or participating in other research were excluded. Data was collected using a socio-demographic questionnaire, Lay's 20-item Procrastination Scale, Cassady's 11-item Academic Anxiety Scale and a researcher-developed, semi-structured open-ended interview schedule covering sources, impacts and coping strategies for learning disturbances. Content validity was established through expert review by nursing academics. Cronbach's α value were 0.82 for the socio-demographic tool, 0.86 for the Procrastination Scale and 0.84 for the Academic Anxiety Scale and inter-rater reliability of 0.80 for the interview guide. Approval was obtained from the Institutional Ethics Committee of Madras Medical College and the Principal of the College of Nursing. A pilot study was conducted on 10% of the intended sample to test feasibility; participants in the pilot were excluded from the main analysis. After written informed consent, questionnaires were self-administered in a quiet classroom (≈ 10 minutes per participant). Qualitative interviews were audio-recorded with permission, transcribed verbatim and translated into English where needed. Confidentiality was preserved through numeric participant coding. Quantitative data were entered into Microsoft Excel and analysed using SPSS version 26. Descriptive statistics (frequency, mean, standard deviation) summarised scores. Karl Pearson's correlation coefficient tested the association between procrastination and anxiety; Chi-square tests examined associations with demographic variables. Statistical significance was set at $p \leq 0.05$. Qualitative data were analysed thematically using Braun and Clarke's six-phase approach, moving from familiarisation and coding through theme development and refinement. Rigour was ensured through methodological triangulation, expert peer review and data saturation.

Results:

Karl Pearson's correlation analysis revealed a statistically significant positive correlation between academic procrastination and academic anxiety ($r = 0.43$, $p = 0.01$). Students with higher anxiety scores also recorded higher procrastination scores. Chi-square analysis showed that gender

($\chi^2 = 5.22$, $p = 0.05$) and weekly study hours ($\chi^2 = 11.91$, $p = 0.05$) were significantly associated with academic anxiety. Gender ($\chi^2 = 6.13$, $p = 0.01$) and monthly family income ($\chi^2 = 10.56$, $p = 0.01$) were significantly associated with procrastination (**Table 1**). Thematic analysis of seven in-depth interviews yielded four overarching themes. Theme 1, cognitive and emotional challenges, captured difficulty concentrating beyond 45 minutes, memory lapses, performance-related anxiety, fear of disappointing parents and overthinking about family and future responsibilities. Next theme was procrastination and time-management issues, reflected postponement driven by post-college fatigue, smartphone use and low intrinsic motivation; students often required external cues such as peers, music, or prayer to begin studying. Theme 3, social and environmental disturbances, highlighted noisy hostel rooms, absence of private study space and a clear preference for individual over group study owing to off-topic conversations. The fourth one is coping strategies and institutional support, which revealed the use of meditation, scheduled breaks (a Pomodoro-like "25 minutes study, 2–5 minutes break" pattern), music, dance, prayer and strong appreciation of empathic faculty mentoring. Integration of the two data strands confirmed that the significant quantitative correlation ($r = 0.43$) was mirrored experientially - anxiety fed avoidance, which in turn intensified guilt and anxiety. Half of the participants (50%) were 20–21 years old and 94% were female. Most students (85%) resided with roommates and 43% came from families earning less than ₹20,000 per month. Mothers with primary education accounted for 30% and fathers with primary education for 27%. Nearly half (47%) were second-year students, 31% studied 11–20 hours per week, 57% used social media for 1–2 hours daily and 53% did not participate in extracurricular activities. The mean academic anxiety score was 20.94 ± 5.63 out of 44 (47.59% of the maximum), indicating moderate anxiety overall. When categorized, 9% of students reported no anxiety, 46% mild anxiety, 36% moderate anxiety and 9% high anxiety. The mean procrastination score was 61.46 ± 9.75 out of 100 (61.46%), reflecting a moderate level of delay. Low delay was reported by 9% of students, moderate delay by 74% and high delay by 15% (**Figure 1**).

Table 1: Association of academic anxiety and academic procrastination with selected demographic variables among graduate BSc Nursing students ($n = 100$).

Demographic variable	Category (n)	No / mild anxiety n (%)	Moderate / high anxiety n (%)	χ^2 (p-value)
Gender	Male (6)	6 (100.0)	0 (0.0)	5.22 (0.05)*
	Female (94)	49 (52.13)	45 (47.87)	
Weekly study hours	<5 h (22)	7 (31.82)	15 (68.18)	11.91 (0.05)*
	11–20 h (31)	24 (77.42)	7 (22.58)	
Demographic variable	Category (n)	Low / moderate delay n (%)	High delay n (%)	χ^2 (p-value)
Gender	Male (6)	3 (50.00)	3 (50.00)	6.13 (0.01)**
	Female (94)	82 (87.23)	12 (12.77)	
Family income (₹/month)	<20,000 (43)	31 (72.09)	12 (27.91)	10.56 (0.01)**
	40,000–59,999 (20)	20 (100.0)	0 (0.00)	

Note: * $p \leq 0.05$, Significance: ** $p \leq 0.01$ highly significance

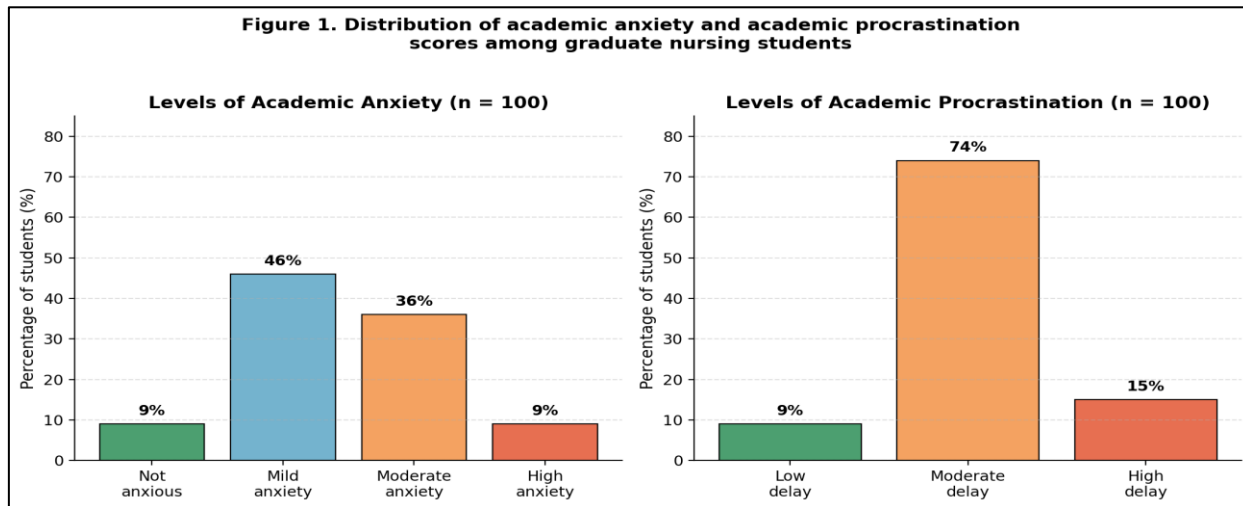


Figure 1: Distribution of academic anxiety and academic procrastination levels among graduate BSc nursing students (n = 100).

Discussion:

This mixed-methods study revealed a substantial burden of academic procrastination (89% low-moderate, 15% high) and academic anxiety (91% anxious to some degree, 9% high) among graduate B.Sc. Nursing students, together with a moderate positive correlation between the two ($r = 0.43$, $p = 0.01$). These findings align closely with the large Chi *et al.* (2023) [15] meta-analysis (34.8% overall anxiety in postgraduates) and with Onieva-Zafra *et al.* (2020) [16] who documented elevated anxiety and stress in Spanish nursing students during clinical training. The higher "mild" anxiety proportion (46%) in our sample may reflect the heavier academic-plus-clinical load unique to B.Sc. Nursing programmes in tertiary Indian government colleges. The positive correlation between procrastination and anxiety supports the longitudinal findings of Jochmann *et al.* (2024) [17] who showed that procrastination predicts downstream anxiety through perceived stress. The effect size reported here ($r = 0.43$) is stronger than the 0.26 observed by Goninan *et al.* (2024) [18] in Indian graduate students using the Hamilton Anxiety Rating Scale probably because we measured academic (rather than clinical) anxiety and weaker than the standardized $\beta = 0.40$ documented by Rezaei-Gazki *et al.* (2024) [19] in medical and dental cohorts. Qualitatively, students identified themes such as poor concentration, digital distraction, noisy hostile environments and reliance on external motivation as key factors affecting their learning. These findings aligned with the rumination-procrastination pathway and latent profile analysis, emphasizing the role of cognitive and emotional challenges. On a positive note, students highlighted that empathic faculty interactions and personal coping strategies such as meditation, music, prayer and scheduled breaks helped mitigate these disturbances [20]. This reflected the benefits of personal engagement and participatory approaches in enhancing learning outcomes. Furthermore, recent studies have linked academic anxiety, loneliness and procrastination with suicidality, highlighting the urgent need for early screening and structured mental health support in nursing programs. Limitations include

the single-centre design, modest male representation, convenience sampling for the quantitative phase and reliance on self-report. Nonetheless, the triangulated design, validated tools and integration of quantitative and qualitative data strengthen the credibility of the findings [21, 22].

Conclusion:

We show a significant association between academic procrastination and academic anxiety among graduate B.Sc. Nursing students. Early identification of students at risk may help facilitate timely academic and psychological support. Targeted interventions addressing procrastination and anxiety may promote academic performance, well-being, and future clinical competence.

Ethics approval:

Institutional Ethics Committee, Madras Medical College, Chennai, India. Written informed consent was obtained from all participants.

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Conflict of interest:

The authors declare no conflict of interest.

Data availability:

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

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