

Original Research Article

Intolerance of uncertainty and adjustment among paramedical students: a cross-sectional study

Putusenla^{1*}, Swati¹, Brijesh Saran², Debapriya¹

¹Department of Clinical Psychology, Santosh Deemed to be University, Ghaziabad, Uttar Pradesh, India

²Department of Psychiatry, Santosh Deemed to be University, Ghaziabad, Uttar Pradesh, India

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*Correspondence:

Putusenla,

E-mail: jputusenlawork@gmail.com

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ABSTRACT

Background: Working in the healthcare settings can be complex and ever-changing requiring adaptability and ability to manage stress in unclear circumstances. Paramedical students enter a field with a demanding nature of training and future professional responsibilities, needing high tolerance for uncertainty. As well as students may struggle to balance their studies with personal responsibilities and social life which can impact their ability to adjust. Therefore, the study is aimed to assess the relationship between intolerance of uncertainty (IU) and adjustment among paramedical students.

Methods: A cross-sectional study was conducted among 287 paramedical students from Santosh Deemed to be University in Ghaziabad, Uttar Pradesh, India. Data were collected using validated tools to measure their IU and adjustment. Analysis was done using SPSS and MS excel.

Results: The findings revealed that a considerable proportion (64.1%) of paramedical students exhibited high levels of IU. Analysis of adjustment levels showed that among males, the majority (62%) had overall unsatisfactory adjustment, while similar patterns were observed among females (50.3%). Chi-square analysis demonstrated a statistically significant relationship between IU scale (IUS) and adjustment levels in both genders. Chi-Square values for females ($\chi^2=132.957$) and males ($\chi^2=110.467$) were highly significant ($p<0.01$).

Conclusions: The findings highlight that a significant number of paramedical students experience high IU, which is strongly associated with poor adjustment to college life. These results emphasize the need to incorporate psychological support, uncertainty tolerance training, and adjustment strategies into paramedical education. Enhancing these areas may improve students' well-being, academic performance, and future professional competence.

Keywords: Intolerance of uncertainty, Adjustment, Paramedical students

INTRODUCTION

Intolerance of uncertainty (IU) is defined as “a cognitive bias that affects how a person perceives, interprets, and responds to uncertain situations on a cognitive, emotional, and behavioral level”.¹ Originally proposed by Freeston and colleagues, the concept of IU introduced the idea that individuals who have difficulty tolerating the possibility of a future occurrence (i.e., uncertainty) and, more specifically, have greater difficulty coexisting with the cognitive and emotional unpleasantness that accompanies

uncertainty may experience worse psychological outcomes.² Having a high IU may impair problem-solving skills, leading to inaction and avoidance of ambiguous situations and it is associated with worse psychological well-being outcomes and poorer quality of life.^{3,4}

Adjustment refers to a continuous process in which a person varies his behaviour to produce a more harmonious relationship between himself and his environment. As environmental conditions continuously change, each person must adapt or adjust oneself to their surroundings. According to Arkoff the definition of college adjustment

reflects on how much an individual achieves through it and its effect on his personal growth. In terms of how adjusted he also depends on his capability of getting grades and eventually achieving the degree.⁵ The transition into college involves interaction with peers from diverse geographical and sometimes more diverse ethnic backgrounds; and increased focus on achievement and its assessment.⁶ It requires making of new friends, modifying existing relationships with family members, and adjusting to the new academic environment.⁷

Paramedicine is an essential component of the healthcare profession that specialises across a range of settings i.e., emergency, and primary care.⁸ Paramedic students are trained to assess and treat a wide range of medical emergencies, their training typically includes advanced life support skills, patient assessment, and emergency response techniques. Their education typically includes a combination of classroom instruction and hands-on clinical experience. As medical school training involves academics and clinical rotations for both medical and paramedical courses, stress becomes a perceived imbalance between the demands and capability to respond. Students also experience stress and pressure to outperform their peers when they are abruptly exposed to the extensive medical curriculum.⁹ During college, students deal with a unique number of stressors specifically a significant transition where students experience many firsts, including new lifestyle, friends, roommates, exposure to new cultures and alternate ways of thinking. During this period of time there are several adjustment issues which are faced by the students that affects their daily functioning and overall lifestyle. In a study conducted by Kale to assess the problems faced by first year basic b.sc nursing students (n=150), it was found that the students had moderate as well as severe adjustment problems and faced frequent headaches, appetite loss, and sleeplessness due to changing environments and stress. They lost weight within four months from food issues and had insufficient study time because of increased assignments, resulting in anxiety about the study medium. Many struggled to focus and couldn't communicate their concerns to professors or peers. Financial difficulties with pocket money led some to take educational loans to buy books and uniforms. These led to stress and impacted their overall well-being.¹⁰

Paramedical programs, often place students in situations where uncertainty is inherent whether it's in unpredictable patient outcomes or dynamic healthcare settings. Students with high IU tend to experience greater anxiety and stress in such situations, making it harder for them to adjust effectively. This inability to cope with uncertainty can hinder their academic performance, social integration, and professional development. The paramedical students also have a demanding nature of training and future professional responsibilities, which needs to be carried out. The inability to cope with uncertainty may affect their well-being and professional development. Lopez in his study found that nursing students find themselves in a situation of great uncertainty before finishing their studies,

anticipating a future with great stress and even frustration as a result of unemployment and job insecurity.¹¹ Till date, in the Indian context there has been limited research specifically exploring IU and adjustment problem among paramedical students, highlighting a significant gap in the literature. By addressing this gap, the present study aims to contribute valuable new insights and advance understanding in this area.

METHODS

We conducted a cross-sectional study within the period of January-June 2025, among paramedical students at Santosh Deemed to be University in Ghaziabad, Uttar Pradesh, India. The survey was conducted anonymously, and no identifying information was collected. The study received ethical clearance from the Institutional Ethics committee.

Study procedure and selection criteria

Data was collected from 287 paramedical students. The participants were asked to read and sign a consent form before answering the questionnaire. The study included both male and female participants who were 18 years of age or older and currently enrolled as paramedic students. However, individuals who had previously received psychiatric treatment were excluded from participation.

Questionnaires

The questionnaires used for this study were IUS and adjustment inventory for college students (AICS). The IUS was developed by Freeston, Rhéaume, Letarte, Dugas, and Ladouceur. It assesses emotional, cognitive, and behavioral reactions to ambiguous situations, implications of being uncertain, and attempts to control the future. The IUS has 27 items- none reversed scored. The IUS may be used as a unifactorial or a bifactorial assessment tool. Participants rate items on a 5-point Likert scale ranging from 1="not at all characteristic of me" to 5="entirely characteristic of me."¹²

AICS, psychological test is developed by Prof. A. K. P. Singh and Dr R. P. Singh. This test is used to measure the adjustment level of the college going student. There are 102 items related to five adjustment areas (Home 16, health-15, social-19, emotional-31 and educational-21). There is no time limit but the subject has to try to finish it as early as possible. Coefficient of reliability was determined by split half method, Hoyt's analysis of variance method and k-r formula-20.¹³

Statistical analysis

The data were entered in Microsoft excel, and analysis was done using SPSS 23. Descriptive statistics including frequency tables and test findings of Chi square was used to assess the relationship between intolerance of uncertainty and adjustment.

RESULTS

The study involved 287 paramedical students (54% female and 46% male), averaging 18-20 years old (52.3%), with ages ranging from 18 years and above. The research was conducted with the aim of assessing the relationship between intolerance of uncertainty and adjustment among paramedical students. The relationship between intolerance of uncertainty and adjustment were analysed using the chi square test and a $p < 0.05$ was considered statistically significant.

Table 1: Demographic data of the paramedic students.

Characteristics	N	Percentages (%)
Age (in years)	18-20	150
	21-22	99
	>22	38
	23	15
	24	13
	25	7
Gender	Male	132
	Female	155

Table 2: Frequency distribution table of paramedic students by their level of IUS.

Level of IUS	N	Percentages (%)
<67	103	35.9
≥67	184	64.1
Total	287	100

Table 2, shows the distribution of paramedic students based on their level of IUS. The majority of students (64.1%) scored 67 or above, indicating a high level of intolerance, while (35.9%) scored below 67, suggesting a lower level.

Table 3: Frequency distribution of paramedic students by their level of AICS.

Level of AICS	Male		Female	
	N	%	N	%
Good	27	20.5	12	7.7
Average	33	25	34	21.9
Unsatisfactory	62	47	78	50.3
Very unsatisfactory	10	7.6	31	20

Table 3, presents the adjustment levels of paramedic students based on gender. Among male students, the majority (47%) had unsatisfactory adjustment, followed by (25%) with average, (20.5%) with good, and (7.6%) with very unsatisfactory adjustment. Similarly, most female students (50.3%) also showed unsatisfactory adjustment, with (21.9%) average, (7.7%) good, and (20%) in the very unsatisfactory category.

Table 4: Relationship between IU and adjustment among female paramedical students.

Chi-square tests	Value	Df	P value
Pearson chi-square	132.957	3	<0.01
Likelihood ratio	152.837	3	<0.01

Table 4, shows the Pearson chi-square value ($\chi^2=132.957$, $df=3$, $p < 0.01$) indicating a statistically significant relationship. The Likelihood ratio test further supports this association ($\chi^2=152.837$, $df=3$, $p < 0.01$), suggesting that higher levels of intolerance of uncertainty are meaningfully linked with differences in adjustment levels among the female cohort.

Table 5: Relationship between IUS and adjustment among male paramedical students.

Chi-square tests	Value	Df	P value
Pearson chi-square	110.467	3	<0.01
Likelihood ratio	141.977	3	<0.01

Table 5, shows the Pearson chi-square test ($\chi^2=110.467$, $df=3$, $p < 0.01$) which reveals a statistically significant association. This finding is further supported by the Likelihood ratio test ($\chi^2=141.977$, $df=3$, $p < 0.01$), indicating that levels of uncertainty intolerance are significantly related to variations in adjustment within the male student group.

DISCUSSION

Paramedical students enter a field that requires a high level of tolerance for uncertainty. Their training is intensive, and their future professional roles entail significant responsibilities. An inability to effectively cope with uncertainty may adversely impact their psychological well-being and hinder their professional development. Moreover, these students often face challenges in balancing academic obligations with personal and social responsibilities, which can further affect their adjustment. Therefore, the study aimed to assess the relationship between intolerance of uncertainty and adjustment among paramedical students. To meet the purpose of the study descriptive cross-sectional design was used, data were collected from 287 participants using appropriate statistical tools, and statistical analysis was performed. Descriptive statistics summarized participant characteristics, while Pearson chi square was employed to assess the relationship between the variables.

Table 1, presents the demographic details of the participants. Most of the participants are within the 18-20 age group (52.3%), followed by those aged 21-22 (34.5%), and those older than 22 years (13.2%). The study comprised of both male and female participants from different paramedical programs.

In Table 2, the frequency distribution is categorized to check the level of IUS using a threshold score of 67, which divides students into two groups: those with lower and higher intolerance of uncertainty. A total of (64.1%) students scored 67 or above, indicating a high level of intolerance of uncertainty, while (35.9%) students scored below 67, suggesting a lower intolerance. This significant proportion of students with high IU is notable, especially considering the nature of paramedic work, which often involves unpredictable, high-stress environments. These findings underscore the importance of integrating psychological preparedness and uncertainty management training into paramedic education.

Tables 3, provide a comprehensive analysis of the adjustment levels among paramedic students, as measured by the AICS. It illustrates the frequency distribution of students' adjustment levels, categorized by gender. Among male students, the majority (62%) fell into the "unsatisfactory" category, followed by (33%) with "average" adjustment, (27%) with "good" adjustment, and (10%) classified as "very unsatisfactory." A similar trend is observed among female students, with the highest proportion (50.3%) also reporting "unsatisfactory" adjustment. Additionally, among females (21.9%) fell into the "average" category, (7.7%) were rated as having "good" adjustment, and a slightly higher number of females (20%) were categorized as "very unsatisfactory" compared to males. These results suggest that a significant portion of both male and female paramedic students are experiencing difficulties in adjusting to college life. This research finding is supported by a study done by Boruah to examine the levels of adjustment among the college students of Assam and also the differences in the level of adjustment with respect to gender (n=100). The study indicated that over all the college students have unsatisfactory levels of adjustment. Further the results stated that there lies no significant difference in the level of adjustment among college students with respect to gender.¹⁴ Similarly, this research finding is supported by a study done by Kaur et al to assess the level of adjustment problems faced by students in college of nursing, Punjab (n=80), the study revealed that the students had severe as well as moderate level of adjustment problems. There was significant association between adjustment problems with their related socio demographic variable such as sex.¹⁵ In line with these findings Kale assessed problems faced by first-year basic B. Sc. nursing students (n=150) and reported that they, too, encountered moderate and severe adjustment problems.¹⁰

The data presented in Table 4 and 5, highlights a significant relationship between IUS and adjustment levels among paramedical students, analysed separately for females and males. The chi-square test results reinforce the strength of this association. For both genders, the Pearson chi-square values (132.957 for females and 110.467 for males) are highly significant ($p < 0.01$), indicating a strong statistical relationship between IU levels and adjustment. Similarly, the Likelihood Ratio further support this

finding, with $p < 0.01$, confirming the strength and reliability of the association. These results imply that higher intolerance of uncertainty is significantly associated with poorer adjustment among paramedical students, and this is consistent across both female and male groups. This research finding is supported by a study done by Qiang et al to assess the association between intolerance of uncertainty and academic burnout among university students (n=1,022). The findings demonstrated that intolerance of uncertainty significantly influenced university students' academic burnout with self-regulatory fatigue serving as a key mediator.¹⁶

Limitations

The data for this study were collected solely through self-report measures, which may be subject to socially desirable bias, potentially influencing the accuracy of responses. Additionally, the study adopted a descriptive cross-sectional design, capturing data at a single point in time. While this approach provides valuable insights into the relationship between intolerance of uncertainty and adjustment among paramedical students, it limits the ability to infer causal relationships between the variables studied.

CONCLUSION

This study highlights a significant association between intolerance of uncertainty and poor adjustment among paramedical students. Given the inherently unpredictable and high-stress nature of paramedical professions, these findings underscore the urgent need for institutional interventions. Educational institutions should prioritize the integration of resilience-building and uncertainty management programs; alongside accessible mental health services and proactive staff training to identify and support students in distress. Furthermore, the limited existing research in this area calls for more in-depth, longitudinal studies to examine the lasting effects of intolerance of uncertainty on student well-being and to assess the long-term effectiveness of support initiatives. Such efforts are crucial not only for students' personal and academic success but also to ensure their preparedness for future professional demands.

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REFERENCES

1. Dugas M, Schwartz A, Francis K. Intolerance of uncertainty, worry, and depression. *Cognit Ther Res.* 2004;28(6):835-42.
2. Dugas MJ, Freeston MH, Ladouceur R. Intolerance of uncertainty and problem orientation in worry. *Cognitive Therapy Res.* 1997;21:593-606.

3. Freeston M, Rhe'aume J, Letarte H, Dugas MJ, Ladouceur R. Why do people worry? *Personality Individual Differences.* 1994;17(6):791-802.
4. Gibson B, Rosser BA, Schneider J, Forshaw MJ. The role of uncertainty intolerance in adjusting to long-term physical health conditions: A systematic review. *PLoS ONE.* 2023;18(6):e0286198.
5. Arkoff A. *Adjustment and mental health.* New York: McGraw-Hill. 1968
6. Santrock JW. *Child Development.* 10th Ed. New York: McGraw-Hill. 2004.
7. Parker JDA, Summerfeldt LJ, Hogan MJ, Majeski SA. Emotional intelligence and academic success: examining the transition from high school to university. *Personality Individual Differences.* 2004;36(1):163-72.
8. Williams B, Beovich B, Olausson A. The definition of paramedicine: an international delphi study. *J Multidisciplinary Healthc.* 2021;14:3561-70.
9. Gabal HA, Wahdan MM, Gamal Eldin DA. Prevalence of anxiety, depression and stress among medical students, and associated factors. *Egypt J Occup Med.* 2022;46(1):55-74.
10. Kale PY. A descriptive study: problems faced by first year basic B. Sc nursing students. *Sinhgad e-J Nursing.* 2011;1(2):18-20.
11. Acea López L, Del Mar Pastor-Bravo M, Rubinat-Arnaldo E, Bellon F, Blanco-Blanco J, Gea-Sanchez M, et al. Job expectations and intolerance to uncertainty of nursing students: Results from a multicentre, mixed-methods study in Spain. *Nurse Educat Pract.* 2022;62:103337.
12. Buhr K, Dugas MJ. The intolerance of uncertainty scale: Psychometric Properties of the English version. *Behaviour Res Therapy.* 2002;40(8):931-45.
13. Sinha AKP. *Manual for Adjustment Inventory for College Students (AICS),* Patna University, Patna. 1995.
14. Boruah L. A study on the adjustment and academic achievement of college students. *MSSV J Humanities Social Sci.* 2018;3(1):57-65.
15. Kaur K, Kaur S, Kaur N. A study to assess the level of adjustment problems faced by first year B.SC. nursing students in college of nursing, Adesh university, Bathinda, Punjab. *Int J Applied Res.* 2022;8(2):161-4.
16. Qiang J, He X, Xia Z, Huang J, Xu C. The association between intolerance of uncertainty and academic burnout among university students: the role of self-regulatory fatigue and self-compassion. *Front Publ Heal.* 2024;12:144146.

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