DEVELOPMENT AND VALIDATION OF ACADEMIC STRESS SCALE

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Abstract

The importance of grades in society is increasing rapidly, worth of a person is being calculated by their academic performance, this leads to insecurity and lack of self-confidence in students which causes stress. The previous studies show that stress is a prevalent experience that most individuals encounter, and this includes college students. The stress levels of college students are influenced by a range of factors, resulting in different levels of stress experienced during their time in college. This study aims to develop a tool and analyse the academic stress among university students. The sample of this research was 502 students of Lovely Professional University Punjab.

Keywords: Stress, Academic stress, students, university

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Introduction

The development and validation of research on academic stress holds immense importance as it provides a deeper understanding of the impact it has on student well-being, educational outcomes, and long-term consequences. By conducting rigorous studies in this area, we can identify the factors that contribute to academic stress, explore its effects on mental health, and determine its influence on students' overall quality of life. This research enables us to develop evidence-based interventions and strategies to effectively manage and reduce academic stress, promoting positive student well-being and creating conducive learning environments. Validated research findings on academic stress play a vital role in informing educational policies and practices. Policymakers, educators, and administrators can utilize this knowledge to implement appropriate support systems, design student-centered curricula, and allocate resources to effectively address and mitigate academic stress. Ultimately, by prioritizing the development and validation of research on academic stress, we can enhance students' educational experiences, optimize their learning outcomes, and contribute to their long-term success and happiness.

Stress is a condition that arises when an individual is subjected to any form of alteration or demand that results in physical, emotional, or mental tension. It is a natural reaction of the body towards any situation that requires attention or reaction. Research has shown that students, regardless of whether they are enrolled in professional or non-professional courses, experience stress in different ways.

"The physiological or psychological response to internal or external stressors. Stress involves changes affecting nearly every system of the body, influencing how people feel and behave. For example, it may be manifested by palpitations, sweating, dry mouth, shortness of breath, fidgeting, accelerated speech, augmentation of negative emotions (if already being experienced), and longer duration of stress fatigue." (*APA Dictionary of Psychology*, n.d.)

By causing mind–body changes, stress contributes directly to psychological and physiological disorder and disease and affects mental and physical health, reducing quality of life.

Stress in college can arise from various factors, such as the sudden transition from high school or the separation from home, and it can have a significant impact on a student's ability to cope. While some level of stress is necessary for personal growth, excessive stress can overwhelm students. The difficulty in achieving social intimacy and the fear of academic failure are additional stressors that students may experience (Spielberger, 1983; Kendall et al., 1965; Kumarswamy, 1989).

Medical students are known to experience high levels of stress. For first-year medical students, the amount and complexity of the material they need to learn can be a major stressor. They may also feel academic pressure due to comparing themselves to their high-achieving classmates. Fatigue is often cited as a stressor in the second year, and a phenomenon known as medical student hypochondria, where students imagine having the diseases they are studying, can contribute to their stress levels. The third year brings the challenge of patient care, and the acceptance of death and dying becomes an important issue in coping with stress. (Spielberger, 1983; Kendall et al., 1965; Kumarswamy, 1989).

Numerous studies have reported on the psychological distress experienced by college students. This distress can manifest in various emotional and psychological problems, including anxieties related to exams and presentations, general stress and anxiety, depression, relationship difficulties, eating disorders, bereavement, loneliness, low self-confidence, managing transitions, decision-making challenges, traumatic experiences, substance abuse, issues regarding sex and sexuality, self-injury, suicidal thoughts, anger management, and concerns about appearance.

According to a cross-institutional study, stress ranked as the top health problem that worried students, followed by body image concerns, AIDS, physical fitness, and cancer (Delene & Brogowich, 1990). The Stanford Survey found that psychological distress was highly prevalent among students, with a significant number reporting feelings of anxiety, tiredness without apparent reason, depression, and thoughts that life is not worth living (Martinez & Fabiano, 1992).

Considering the findings of multiple articles on the psychological distress of college students, it can be concluded that approximately 20 to 25 percent of the student population worldwide suffers from psychological distress.

Stress can be defined as any situation that elicits negative thoughts and feelings in an individual. How individuals appraise stressful events as either "challenging" or "threatening" plays a crucial role in determining their responses to stress (Lazarus, 1966). The Yerkes-Dodson Law suggests that individuals learn the least under low and high levels of stress and learn the most under moderate stress (Yerkes & Dodson, 1908).

The APA classifies stress into two major types, acute and chronic stress, which differ in terms of duration, symptoms, and treatment approaches.

Acute stress is the more common and short-term form, typically triggered by recent or anticipated pressures and demands. On the other hand, chronic stress is a persistent and long-term form of stress that can lead to feelings of hopelessness and despair (Selye, 1955). The physiological stress response is a natural reaction of our body to any external or internal change, threat, or pressure. Its main purpose is to protect us from potential harm and help us regain our normal state. This response was crucial for human survival thousands of years ago when individuals had to combat physical threats like animals, other humans, flood, and fire. Nowadays, stress is still important for our survival as it helps us stay alert and respond effectively to different challenges (Selye, 1956).

Academic stress is characterized by psychological discomfort that arises from expectations or fears of encountering academic obstacles or not meeting academic standards (Verma & Gupta, 1990).

Dimensions

Physical: The physical dimension of stress refers to the physiological changes and bodily responses that occur in response to stressful situations. When an individual experiences stress, their body undergoes a series of physical changes as part of the body's natural stress response.

The physical dimension of stress involves the activation of the sympathetic nervous system and the release of stress hormones, such as adrenaline and cortisol. These physiological responses prepare the body for the "fight-or-flight" response, enabling it to respond to perceived threats or challenges.

Affective: The affective dimension of stress refers to the emotional and subjective experiences that individuals undergo when they encounter stressful situations. It involves the feelings, moods, and emotional responses that arise as a result of stressors and the individual's appraisal of those stressors.

When faced with stress, individuals may experience a range of emotions, including anxiety, fear, frustration, irritability, sadness, and even anger. These emotions can vary in intensity and duration depending on the perceived level of threat or challenge posed by the stressor.

The affective dimension of stress is closely linked to the individual's perception and interpretation of the stressor. The appraisal of a situation as stressful can trigger emotional responses. For example, a student may feel anxious and overwhelmed when confronted with a heavy workload and tight deadlines.

The affective dimension of stress also includes physiological responses that are closely intertwined with emotions. Stress can activate the body's stress response, leading to physiological changes such as increased heart rate, elevated blood pressure, and the release of stress hormones like cortisol. These physiological responses can further influence and interact with the emotional experiences during times of stress.

Behavioral: The behavioral dimension refers to the observable actions, responses, and conduct of an individual in different situations. It focuses on the outward manifestations of behavior and how individuals interact with their environment, including other people, objects, and events.

Behavioral dimension encompasses a wide range of actions, including verbal and non-verbal behaviors, physical movements, gestures, facial expressions, and reactions to stimuli. It also involves the patterns, habits, and routines that individuals develop over time.

Behaviors can be influenced by various factors, including personal traits, emotions, social norms, cultural expectations, and environmental conditions. They can be intentional or unintentional, conscious or unconscious, and can vary in their frequency, intensity, and duration.

Cognitive: The cognitive dimension of behavior refers to the mental processes and activities that underlie our thoughts, perceptions, reasoning, and decision-making. It encompasses the ways in which we process information, interpret experiences, and generate internal mental representations of the world around us.

Cognitive processes involve various functions, including attention, memory, problem-solving, critical thinking, and learning. These processes influence how we perceive and understand information, how we make judgments and decisions, and how we engage in problem-solving tasks.

For example, in the context of academic performance, the cognitive dimension plays a crucial role. It involves how students process and retain information, how they organize and integrate new knowledge with existing knowledge, and how they apply their understanding to solve problems or complete tasks.

Academic stress is a type of stress that arises from the expectations placed on students by parents and teachers regarding academic performance. The academic demands placed on students, both from within themselves and from external sources, have

made stress a common and regular part of their lives. Stress is now understood as a lifestyle crisis (Masih & Gulrez, 2006) during exams and other high-pressure academic situations, some students may experience a significant increase in stress levels, leading to anxiety symptoms.

Academic stress can have a significant impact, affecting various aspects of a student's life. It can lead to poor outcomes in areas such as exercise, nutrition, substance use, and self-care (Weidner et al., 1996).

Research done by Hystad, et al., (2009), suggests that students who were concerned about how their grades would affect their future academic and career aspirations also reported experiencing more health issues. This indicates that attending university can be a challenging experience for many students. (Hystad et al., 2009).

Academic stress can also increase the risk of major mental health issues and physical and mental stress-related illnesses. It is a significant predictor of subsequent academic performance, with high levels of stress having a negative impact on academic achievement in students.

College can be a challenging period for numerous students as they navigate the transition into unfamiliar educational and social settings. International students, in particular, may experience heightened stress due to the additional pressures of adapting to new cultural values and language while also preparing for their academic pursuits. (Essandoh, 1995; Mori, 2000).

International students who struggle academically often experience psychological distress (Essandoh, 1995). Many of these students have achieved high rankings in their home country's schools, leading to unrealistically high expectations for their academic performance in a new educational environment (Mori, 2000). Moreover, the added pressure to secure limited financial support further contributes to their stress (Mori, 2000). As a result, international students face significant stressors such as a lack of traditional social support, the pressure to excel academically, and restrictions on financial aid.

Operational Definition of Academic Stress
Academic stress is mental distress with respect to some anticipated frustration associated with academic failure or even unawareness to the possibility of such failure. It is a state of psycho physical disturbance caused by the excessive demands in academic environment.

Causes of Academic Stress
1. **Overwhelming school assignments:** Assignments given by faculty in the short span of time, deadlines, and higher expectations from them can lead to academic stress.
2. **Role conflict:** Role conflict takes place when the teachers give wrong tasks to the student in which he is incompatible, it can be a factor for causing academic stress in the student.
3. **Financial issues:** Students might be facing financial or money related issues like paying their tuition fee, room rent and the deadlines for those payments can lead to less concentration and focus which can cause academic stress.
4. **Pressure from parents:** Parents always tend to expect high academic performance from their children and when their do not reach expectations they try to demotivate them instead of saying failures are part of life, this can cause so much stress in students.
5. **Uncooperative classmates:** Sometimes it is hard to communicate with your classmates due to different ideologies and interests which leads to less cooperation in between them during academic tasks which can cause stress in students.

Stress is a common experience for almost everyone, including college students. Numerous factors contribute to the stress levels of college students, leading to varying degrees of stress throughout their college years. The growing list of responsibilities, difficulties in managing time effectively, disrupted eating and sleeping patterns, and neglecting self-care breaks are some of the reasons why college students frequently find themselves feeling stressed. Situations like preparing for exams, applying for admissions, and searching for internships are particularly known to induce stress. The consequences of chronic stress can be detrimental, potentially affecting learning and college attendance, impairing cognitive abilities such as concentration and attention, and even leading to serious health issues.

The primary causes of stress among college students include the heavy study load and the pressure of meeting deadlines. Additionally, financial difficulties contribute to stress, as well as parental concerns and unrealistic expectations. The educational system itself can also be a source of stress, with overcrowded lecture halls, semester-based grading systems, extensive syllabus, and long hours of study. Both parents and institutions often impose a fear of failure on students, which can undermine their self-esteem and independence.

Juggling exams, socializing, and adjusting to new life experiences can further complicate the task of finding balance.

Review of Literature

According to several studies, extensive course loads, lack of physical exercise, and long duration of exams are the most frequently reported factors contributing to stress and anxiety among students during examination periods (Harikiran et al., 2012; Hashmat et al., 2008; Sansgiry and Sail, 2006; Shah et al., 2010). Hashmat et al. (2008) found that extensive course loads, lack of physical exercise, and long duration of exams were the most important sources of test anxiety among medical students. Additionally, students often report higher levels of anxiety from the objective structured clinical examination (OSCE) than from written examinations (Furlong et al., 2005).

Several other sources of stress were also identified among students. For example, excessive school work, congested classrooms, strikes by faculty, and lack of laboratory equipment were identified as sources of stress (Omigbodun et al., 2006; Polychronopoulou and Divaris, 2005). Fear of course failure, uncertainty about the future, clinical training difficulties, and work overload were among the perceived sources of stress among dental students (Acharya, 2003; Polychronopoulou and Divaris, 2005).

Morse and Dravo (2007) used a modified version of the Dental Environment Stress questionnaire to assess stress levels among undergraduate students. The authors reported that there was slight to moderate stress, with sources of stress being more prominent among female students. These sources of stress included a full loaded day, criticism from clinical supervisors in front of patients, amount of assigned work, fear of failing a course or year, examination and grades, financial resources, fear of employment after graduation, and fear of facing parents after failure.

In addition, Sansgiry and Sail (2006) found that test anxiety among pharmacology students was positively correlated with their perceptions of course load and negatively related to their ability to manage time with course work. Finally, Bedewy and Gabriel (2013) reported that 16.2 percent of the variance in excessive cognitive, somatic, and emotional responses on the Examination Anxiety Scale scores was accounted for by test anxiety.

Despite substantial investments in education, research has consistently shown that a considerable percentage of the student population experiences psychological issues such as stress, anxiety, and depression. Bhujade, (2017) highlights the significant concerns surrounding depression, anxiety, and academic stress among college students. The study provides a brief overview of research conducted over the past three decades, emphasizing the prevalence of stress among college students, the nature of psychiatric morbidity, emotional problems, and the adjustment challenges they face. The study suggests that recognizing and addressing these psychological problems is crucial for promoting the well-being and academic success of college students.

The research conducted by Bataineh, (2013) on academic stress among students identified several factors contributing to student stress, including academic overloads, course difficulties, inadequate study time, exam pressures, low motivation, high family expectations, and fear of failure. It also found a positive correlation between religiosity sources and academic stress.

A study done by Crego et al., (2016) on 201 participated dental students indicated that rational coping strategies were associated with lower perceived stress and higher exam-related self-efficacy, while emotional coping strategies were linked to increased academic stress. Perceived stress partially mediated the relationship between coping strategies and exam-related self-efficacy. Higher exam stress was associated with poorer grades, but exam-related self-efficacy partially mediated this relationship.

Research has been done to identify several common stressors experienced by students, including final grades, excessive homework, term papers, examinations, and studying for examinations(Kohn & Frazer, 1986). These findings emphasize the importance of recognizing and addressing the specific stressors faced by students in order to effectively support their well-being and academic success.

Pandey & Chalise, (2015) performed a study on 190 nursing students in Kathmandu University that found a considerable number of students reported low self-esteem and high levels of academic stress. Notably, age, education level, and perceived family support were identified as influential variables in relation to academic stress and self-esteem. These results shed light on the importance of addressing these issues to promote the overall well-being of college students.

Some researchers suggest that developing and nurturing personality traits like hardiness could potentially help individuals better cope with academic stress and maintain better overall health.

The findings based on the study done by Hystad et al., (2009) demonstrated that individuals with higher levels of hardiness experienced lower levels of academic stress and reported fewer health complaints. Furthermore, the study revealed that hardiness played a moderating role in the relationship between academic stress and health.

Ashraf et al., (2019) conducted a study on the effect of academic procrastination in predicting academic stress among young adults. Ashraf et al., (2019) found a significant positive association between academic procrastination and academic stress. Gender differences were also identified with males exhibiting greater tendencies to procrastinate.

Weidner et al., (1996) studied the impact of academic stress on health behaviors among college students. The findings revealed that during high-stress periods characterized by academic demands, there was a significant increase in negative affect and a decrease in positive affect. Moreover, health behaviors were found to deteriorate during these periods. These results emphasize the importance of recognizing the influence of academic stress on students' emotional well-being and their ability to maintain healthy behaviors.

Objectives

1. To identify different dimensions of academic stress experienced by students, such as cognitive, affective, physical and behavioral.
2. To provide insights into the specific factors that contribute to academic stress.
3. To provide a standardized and reliable tool for researchers and practitioners to use in studying and addressing academic stress.

Methodology

The objective of this study was to construct a valid tool to measure to measure academic stress. This study executes a four phased tool development process:

Planning

To fully establish the research questions and objectives addressed by the tool, the initial step was to analyse and assess the current research and tools relevant to the topic. It involved a comprehensive examination and evaluation of existing literature and related tools.

Variables: Variables include Physical, Affective, Behavioral, and Cognitive.

Physical dimension of the stress refers to the bodily changes and physiological responses that occur in response to the stressors related to academic performance, such as exams, deadlines, and academic workload. These physical responses may include increased heart rate, rapid breathing, muscle tension, and other physical sensations. In some cases, these physical responses can become chronic and may lead to health problems if left unaddressed.

Affective dimension of stress refers to the emotional and subjective experiences that undergo when they encounter academic stressors, such as anxiety, fear, frustration, and disappointment. These emotional reactions can impact an individual's motivation, self-esteem, and confidence, and may lead to negative coping behaviors if not managed effectively.

Behavioral dimension refers to the observable actions, responses, and conduct of an individual in response to academic stressors. These behaviors may include avoidance of academic tasks, procrastination, withdrawal from social activities, and substance use as negative coping behaviors. Alternatively, positive coping behaviors may include seeking academic support, engaging in relaxation techniques, and developing time-management strategies.
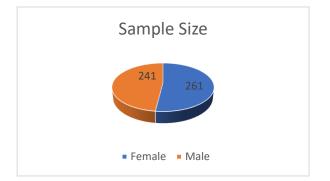
Cognitive dimension refers to the mental processes and activities that underlie an individual's thoughts, perceptions, reasoning, and decision-making related to academic stressors. These mental activities may include negative self-talk, worry, and rumination, which can impact an individual's ability to concentrate, retain information, and problem-solve.

Construction

The second step aimed to create a pool of items for the questionnaire and ensure its reliability and validity. An item pool consisting of 45 questions, covering all four dimensions, was formulated. At least 11 questions were designed for each dimension. After a panel of experts reviewed and a pilot study was conducted, 21 questions were selected from the initial pool of 45. Grammatical errors in the selected questions were rectified.

Quantitative Evaluations

The third step was centred on gathering data for the study. The research subjects were undergraduate and graduate students enrolled at Lovely Professional University, aged between 18-28 years old. The sample of students, hailing from diverse cultural backgrounds, was chosen through a random sampling method, resulting in a total of 502 participants for data collection purposes. The data was collected through offline forms and online google forms.

Sample Size

241   261

■ Female ■ Male

Validation

The fourth step involved the standardization of the tool, including the assessment of its validity and

reliability. In other words, this step aimed to establish a set of standard procedures to ensure the accuracy and consistency of the tool's results. The validity of the test was evaluated to determine whether it measures what it intends to measure, while its reliability was assessed to ensure the consistency and stability of the test results.

Tool designed and used

A self-constructed tool to measure academic stress, LASS (Lovely Academic Stress Scale), was used in the study. The LASS consists of 21 items, responses of the items are in terms of 5-Likert scale choices Never, Almost Never, Sometimes, Fairly Often, Very Often respectively.

Tool Design

Table-1: *Item total Statistics*

1st Draft					
Item No	Item Selection	Item No	Item Selection	Item No	Item Selection
Item 1	Taken	Item 10	Taken	Item 19	Taken
Item 2	Deleted	Item 11	Taken	Item 20	Taken
Item 3	Taken	Item 12	Taken	Item 21	Taken
Item 4	Deleted	Item 13	Taken	Item 22	Taken
Item 5	Taken	Item 14	Deleted	Item 23	Taken
Item 6	Taken	Item 15	Taken	Item 24	Taken
Item 7	Taken	Item 16	Taken	Item 25	Deleted
Item 8	Taken	Item 17	Taken	Item 26	Deleted
Item 9	Taken	Item 18	Taken		

Reliability

Reliability refers to how consistently a test or measurement tool generates dependable and consistent outcomes over time and when administered by different individuals. It plays a crucial role in determining the validity of a test, as a reliable test is more likely to accurately assess the intended construct. Evaluating reliability can be done through different statistical techniques, including test-retest reliability, inter-rater reliability, and internal consistency reliability. Cronbach's alpha is a statistical measure

commonly employed to assess the internal consistency reliability of a scale.

Table-2: *Reliability of the Assessment Lovely Academic Stress Scale*

Cronbach's Alpha	N of Items
.910	21

According to the table provided above, the result of .910 indicates a high level of reliability, which can be considered excellent with an accuracy rate of 91%.

Table-3: *Final list of Items*

Item No	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	63.8028	227.536	0.45413	0.90736
Item 3	63.5976	226.097	0.46129	0.90719
Item 5	63.4163	218.683	0.52726	0.90587
Item 6	63.5159	223.811	0.50786	0.90622
Item 7	63.5319	224.018	0.47862	0.90684
Item 8	63.6474	223.394	0.46665	0.90716
Item 9	63.2032	226.937	0.37866	0.90906
Item 10	63.4841	217.117	0.63963	0.90313
Item 11	63.6892	218.901	0.59416	0.90422
Item 12	62.7709	218.919	0.56618	0.90484
Item 13	63.2968	213.375	0.70285	0.90141
Item 15	63.1494	215.281	0.66025	0.90252
Item 16	63.243	217.809	0.58837	0.9043
Item 17	63.4641	217.842	0.5999	0.90403
Item 18	62.9104	218.513	0.51833	0.90616
Item 19	62.7291	218.573	0.56369	0.9049
Item 20	62.5916	219.164	0.55818	0.90504
Item 21	64.1036	223.422	0.46361	0.90723
Item 22	63.3785	216.942	0.6072	0.90383
Item 23	63.0598	219.322	0.55671	0.90507
Item 24	62.9363	221.174	0.47249	0.90723

Table 3 presents the item statistics, and based on the Cronbach's alpha value, it is recommended that questions number 2, 4, 14, 25, and 26 should be removed.

Validity

Validity pertains to how well a test accurately measures the specific construct it aims to assess. It is a crucial factor in evaluating any assessment tool as it determines the accuracy and meaningfulness of the test results. Psychological testing commonly examines various types of validity, such as content validity, criterion-related validity, and construct validity. These different validity types assess distinct aspects, such as the representativeness of test content, the relationship between test scores and external criteria, and the underlying theoretical constructs being measured.

Table-3: *Relationship of items*

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16	Item 17	Item 18	Item 19	Item 20	Item 21	Lovely Academic Stress Scale
Item 1	1	.514**	.314**	.391**	.315**	.292**	.208**	.363**	.320**	.219**	.323**	.298**	.249**	.222**	.139**	.172**	.203**	.185**	.269**	.269**	.279**	.503**
Item 2		1	.316**	.346**	.372**	.318**	.287**	.361**	.316**	.224**	.317**	.282**	.230**	.235**	.105**	.182**	.192**	.231**	.265**	.279**	.285**	.514**
Item 3			1	.396**	.334**	.276**	.153**	.382**	.310**	.355**	.359**	.334**	.315**	.271**	.285**	.324**	.289**	.305**	.356**	.448**	.219**	.589**
Item 4				1	.369**	.281**	.212**	.392**	.344**	.272**	.331**	.309**	.293**	.299**	.208**	.278**	.214**	.258**	.308**	.299**	.338**	.560**
Item 5					1	.358**	.299**	.402**	.413**	.303**	.339**	.288**	.241**	.212**	.164**	.168**	.214**	.304**	.238**	.215**	.278**	.535**
Item 6						1	.493**	.381**	.360**	.238**	.346**	.261**	.238**	.265**	.169**	.182**	.174**	.230**	.297**	.297**	.227**	.527**
Item 7							1	.309**	.261**	.228**	.237**	.238**	.185**	.210**	.203**	.178**	.200**	.181**	.220**	.163**	.170**	.443**
Item 8								1	.535**	.410**	.501**	.463**	.390**	.393**	.323**	.322**	.313**	.295**	.377**	.367**	.335**	.685**
Item 9									1	.420**	.497**	.439**	.345**	.387**	.238**	.313**	.299**	.321**	.367**	.326**	.293**	.644**
Item 10										1	.486**	.480**	.353**	.363**	.363**	.411**	.472**	.208**	.334**	.289**	.276**	.620**
Item 11											1	.585**	.473**	.481**	.366**	.400**	.434**	.386**	.556**	.419**	.420**	.744**
Item 12												1	.537**	.456**	.395**	.415**	.474**	.316**	.477**	.396**	.324**	.706**
Item 13													1	.484**	.430**	.394**	.375**	.292**	.407**	.371**	.339**	.641**
Item 14														1	.445**	.416**	.386**	.443**	.482**	.350**	.274**	.651**
Item 15															1	.552**	.530**	.257**	.369**	.323**	.242**	.582**
Item 16																1	.596**	.304**	.344**	.427**	.246**	.619**

	Item 17	Item 18	Item 19	Item 20	Item 21	Lovely Academic Stress Scale
Item 17	1	.246**	.349**	.379**	.226**	.613**
Item 18		1	.425**	.190**	.182**	.524**
Item 19			1	.390**	.345**	.659**
Item 20				1	.400**	.612**
Item 21					1	.538**
Lovely Academic Stress Scale						1

Data Analysis

A total of 502 participants were included in the sample. The statistical analysis of the collected data was performed with the assistance of the SPSS 20.0 version software. During the analysis, the reliability of the questionnaire was measured using the Cronbach's Alpha, and the results were interpreted accordingly. An Item-Total Statistics Table was created, which included the Cronbach's alpha score and corrected item correlation values for each item. Items with low corrected item correlation or low Cronbach's alpha score were identified for possible removal from the instrument.

The following table displays the descriptive statistics of the sample, including measures such as mean and standard deviation for the collected data.

Table-4: *Descriptive Statistics of Lovely Academic Stress Scale*

N	Range	Minimum	Maximum	Mean	Std. Deviation
502	84.00	21.00	105.00	66.4761	15.55040

The table presented below provides item statistics for all 21 questions. Since a 5-point Likert scale was used, a mean score of approximately 3.2 is considered acceptable. The table also indicates a slight positive or negative deviation from this mean score of 3.2 for all 21 items, which is relatively small.

Table-5: *Descriptive Statistics of scale items*

Items	Mean	Std. Deviation	Analysis N
I lack concentration during study hours	2.673	.9731	502
I get distracted in class	2.878	1.0531	502
I experience racing heart and sweating during presentations in class	3.060	1.3641	502
I find it difficult to remember all the things I studied	2.960	1.1045	502
I feel lazy when it comes to college/university work	2.944	1.1499	502
I feel like teachers make too many extra demands on students	2.829	1.2147	502
I think teachers do not listen to our ideas	3.273	1.1817	502
I find it difficult to balance my academic work and personal life	2.992	1.2300	502
I feel under pressure from the deadlines of academic tasks	2.787	1.2188	502
I experience shortness of breath due to academic work	3.705	1.2702	502
I have negative thoughts about my academic performance	3.179	1.3024	502
I tend to engage in negative self-talk when dealing with academic tasks	3.327	1.2843	502
I tend to rethink about past academic failures, which affects my ability to think clearly in the present	3.233	1.2869	502

I keep worrying about the examinations	3.012	1.2636	502
I feel like not eating during exams	3.566	1.3938	502
I experience digestive issues during exams	3.747	1.2940	502
I experience fainting or light-headedness during exams	3.884	1.2725	502
I worry about the future	2.373	1.2197	502
I feel like I am lacking behind my peers	3.098	1.2966	502
I find it hard to communicate with my teachers/peers in class	3.416	1.2668	502
I do not like showing my progress reports to parent	3.540	1.3408	502

Discussion:

The Cronbach's alpha coefficient is a measure of internal consistency that assesses the degree to which items in a research tool are related to one another. Our research tool has demonstrated a high level of internal consistency, with a Cronbach's alpha coefficient of 0.85, indicating that the items in the tool are strongly correlated and measure the same underlying construct. A high correlation between the items of the research tool indicates that it measures what it intends to measure. Our tool has a strong correlation between its items, indicating that the tool is measuring the intended construct accurately. This supports the validity of our tool, as it indicates that the tool is measuring what it intends to measure, rather than measuring some unrelated factor. We have tested the overall validity of our research tool by examining its ability to predict outcome of stress. We found that the tool significantly predicted stress, indicating that the tool is valid and can be used to measure the intended construct.

Conclusion:

This study aimed to develop and validate a tool that measures academic stress in university students, based on the identification of research gaps through an extensive literature review. A pool of 45 questions was created for four dimensions and eventually reduced to 21 items. The data was analysed using SPSS version 20.0.

The development of a psychometric tool for measuring academic stress has the potential to yield important insights into the educational experiences of students. A reliable and valid tool was generated which measured the various dimensions of academic stress like workload, academic pressure, and academic satisfaction. The use of the tool in research and practice can help identify individuals who are at risk for experiencing academic stress and provide insights into potential interventions to mitigate the negative effects of academic stress. In addition, the development of a standardised tool can enable comparisons across diverse educational contexts and populations, ultimately leading to a greater understanding of the intricate relationship between academic stress and student wellbeing. Counselling services, mental health education and campus policies that promote positive mental health can be introduced with the information provided by this tool. However, the study has certain limitations, such as the small sample size used, which could be improved by including a more diverse sample with a greater number of participants.

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