

## Psychometric Assessment of Competitive State Anxiety before Exam of Physical Education Students

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**Abstract:** The purpose of this study was to evaluate the psychometric assessment of competitive state anxiety before the final exam of physical education students of BS 1<sup>st</sup>, BS 5<sup>th</sup> ADP and M.Sc.4<sup>th</sup> students of Sport Sciences and Physical Education. For this purpose, a total no. of 150 students aged 19-27 years were selected randomly for this study. A developed questionnaire by Bedewy and Gabriel (2013) on the Examination Anxiety Scale contained 12 items to measure the anxiety scores of students before their final term exam. Students were asked to respond on 5 points Likert scale by choosing the appropriate option. The data were analyzed through SPSS version 22 by applying the Chi-square test. Result concluded that a little nervousness before a test is normal and can help sharpen your mind and focus your attention. But with test anxiety, feelings of worry and self-doubt can interfere with your test-taking performance and make you miserable.

**Keywords:** Anxiety, students, Psychometric assessment, Final exams.

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### Introduction

The root of the word anxiety is coming from the ancient Greek "anxieties", which means worry, fear, and curiosity (Kelly, 2021). It is a universal feeling and experience one goes through in certain states of his life (Barrett et al., 2019). In general meaning, anxiety is defined by experts as the fear or unsettling feeling one experience in a wake of a threatening event (Bremer et al., 2019). The reaction one gives against a future unwanted event and an unconfident time expresses future anxiety, instability, chaos, fear, pessimism and hopelessness; therefore it fails (Chirumbolo et al., 2021).

Anxiety is described in the "state-trait" model. State anxiety derives from a time when one views or interprets a situation as threatening and dangerous (Umuzdas et al., 2019). This situation results in an unsettling, unwanted state. When people view a situation as threatening they feel anxiety if someone feels anxious as a result of a threatening situation that worry is considered normal and temporary (Dalton et al., 2019). On the contrary trait anxiety is not directly related to a certain situation, but it reasons from one's personality, especially when the stress is intense, and the anxiety level is getting high (Smirni et al., 2020). The reactions to state anxiety are listed as negative feelings such as; excitement, wakefulness, fear, misgiving, confusion, and lack of self-confidence (Mendi et al., 2020). Duration and

intensity of the trait anxiety differ depending on personality structure if someone tends towards being anxious the level of trait anxiety increases when faced with a situation that is threatening to one's self-confidence, people with higher trait anxiety levels compared to people with lower ones show much more trait anxiety reactions (Grežo and Sarmány-Schuller., 2018).

The anxiety of the exams in school is a feeling students experience throughout all their school lives this feeling brings out situations such as; the inability to get ready for an exam, excessive physical reactions because of lack of knowledge on efficient work tips, and brain activity unrelated to the exam. If someone experiences high anxiety, the person is on the edge and tension causes veins to shrink and prevents blood from properly flowing into the cells. The adrenalin that is released under tension and anxiety prevents the protein chain needed for learning from being established (Househam et al., 2017). During tension and anxiety, cells are not able to use up the oxygen they need, therefore are unable to reach their full capacity (Korte et al., 2005).

A student's academic achievements are important for himself, his family, or the society he lives in. Unexpected academic failures, dropping out of school and the inability of reaching one's potential in contrast to his abilities lead to preventing the needed amount and quality of labor force from joining society (Yang et al., 2019). While teacher candidates are preparing for the 'Public Staff Selection Exam' (KPSS), they go through more anxiety than their first year when they reach their last year. KPSS is an exam that was first introduced as a civil service examination in 1999 and it is set to recruit public staff such as teachers, officers, police, soldier, doctor, engineer, etc. As in most public establishments, when the ministry of education assigns the teachers they take this exam as standard. Meanwhile, teacher candidates are trying to finish up" their majors, they also are desperately, anxiously and intensively getting ready for KPSS. This situation puts very negative pressure on teacher candidates. Especially, teacher candidates who graduated or are just about to be graduated have a higher level of anxiety because KPSS is the final step for candidates to be recruited for the job they have been trained for (Bulgan et al., 2017). Therefore, candidates are under a lot of pressure and suffer from high anxiety. The reason why the study was done on this group was to learn how these students in the physical education and sports faculties (as regularly sporting individuals) were concerned about their state and trait concerns during their education. The present study was conducted on the students of BS and M.Sc. programs at the Department of Sport Sciences and Physical Education, University of the Punjab, Lahore, Pakistan to assess their anxiety levels before exams.

### **Review of Literature**

Test anxiety is defined as a special form of anxiety, which is characterized by somatic, cognitive and behavioral symptoms of anxiety in situations of preparing and performing examinations. The fear of negative evaluation may lead to poor study skills and poor test performance (Ugur et al., 2019).

Bedewy and Gabriel (2013) also defined test anxiety as an individual's physiological, cognitive, and behavioral responses that stimulate negative feelings about an evaluation. When an individual becomes anxious, the physiological system becomes aroused, such as the heart beating faster or the sweat glands producing more perspiration. At the same time, the individual may experience apprehension and a higher sense of inadequacy. When an individual experiences test anxiety, these physical and cognitive responses may lead to negative feelings and cognitions about testing situations.

Many college students experience anxiety during their examinations, and in fact, previous research suggests a modest prevalence rate of 10-35% of college students experience functionally impairing levels of test anxiety (Gerwing et al., 2015). The severity of anxiety symptoms and the associated academic impairments were found to be higher in females, than in males, in the younger age groups, and higher prevalence rates were reported in medical students who presented moderate levels of test anxiety. In several studies, female students had statistically significantly more intense symptoms of test

anxiety than male students. For example, a recent study by Xie(2013) examined changes in the Test Anxiety Inventory (TAI) scores in college undergraduates (n=437). Authors reported significant increases in TAI scores for females while the same remained constant for males (Szafranski et al., 2012). In a larger study by Abbas (2020), it was reported that about 10 % of students (n=945) suffer from test anxiety to such an extent that treatment is warranted. The correlation of high test anxiety with other mental disorders and study success is rarely investigated.

Those undergraduate college students, who experience functionally impairing levels of test anxiety, may suffer from poor academic performance. Empirical findings have consistently reported that high levels of cognitive test anxiety were negatively correlated to global indices for academic performance, such as scores on standardized achievement tests, grades, and overall grade point average (GPA) and it was concluded that cognitively test-anxious persons might have greater abilities than they commonly show (Putwain et al., 2021).

#### **Components of test anxiety**

Within the test anxiety literature, it is a widely held belief that test anxiety is comprised of two main common components: “worry” or aversive cognitions related to testing stimuli, and “emotionality” or physical symptoms of anxiety while in testing situations (Shen et al., 2018).

#### **Cognitive features**

It is emphasized that anxiety is a response to the perceived inability to handle a challenge in a satisfactory manner. Also among the characteristics of cognitive anxiety responses are the following; The situation is seen as difficult, challenging, and threatening the individual sees himself or herself as ineffective in handling, or inadequate to do the task at hand the individual focuses on undesirable consequences of personal adequacy self-depreciatory preoccupations are strong and interferes with task-relevant cognitive activity and the individual expects and anticipates failure and loss of regard by others (Gross et al., 2019). These negative cognitions often lead to students’ inability to concentrate on the immediate task, thus making it more likely for them to encounter negative outcomes (e.g., poor test performance).

Some types of examination formats were associated with more anxiety than others. For example, it was demonstrated that state anxiety during the Observed Structured Clinical Examinations (OSCE) was associated with the level of preparation for the examination, which suggests that an appropriate level of arousal might be necessary for optimal performance. Conversely, excessive cognitive test anxiety was found to be inversely associated with performance indicators, and positively associated with maladaptive perfectionism. Hancock (2011) reported that negative cognitions related to examinations, when such students underestimate their abilities or overestimate the consequences related to their failure, are often accompanied by higher anxiety levels, and poor performance (Sharma, 2021).

#### **Somatic and psycho-physiological features**

Physical symptoms associated with test anxiety can be as intrusive as the negative cognitions the somatic presentations of test anxiety may include many autonomic responses and bio-physiological changes which essentially are transient. Evidence for stressful situations such as test situations and examinations was investigated extensively in research. For example, it was confirmed in several studies that routine academic events may cause stress and produce temporary elevations in pulse, and blood pressure and that there are strong positive correlations between the self-rating anxiety score and the blood pressure and heart rate increase amplitudes (Stawicki et al., 2020).

Also, it was demonstrated that there was a statistically significant decrease in auditory reaction time, galvanic skin resistance and eosinophil count (eosinophils are components of white blood cells (Thakare, 2021). They make up about 1-6% of white blood cells, they help fight infections, and they tend to increase in number as a result of allergic reactions, parasitic infections, and certain autoimmune diseases), before the examination as compared to the control readings, in 30 male and 25 female medical students appearing for their Bachelor of Medicine final examinations (MBBS) viva-voce examination (Marrero et al., 2021).

**Research Methodology**

In this research, the survey method was selected by the researchers to collect the data from the Department of Sport Sciences and Physical Education, University of the Punjab, Lahore. The survey method is used to get the possible response of students against each statement of the questionnaire by using Likert scale options. The population area of this study was the students of the Department of Sport Sciences and Physical Education, University of the Punjab, Lahore. There was a total of (n= 259) students enrolled in the following programs; BS 1<sup>st</sup> Semester Morning n= 50, Replica n=58, BS ADP 5<sup>th</sup> Semester Morning n= 42, Replica n= 28 and M.Sc. 4<sup>th</sup> Morning n= 41 and Evening (n=40). It was difficult to enroll all students in the study. So, the researchers selected a total no. of (n=150) students ages 19-27 years old through the random sampling technique which is a type of probability method for this study.

The selection of a research tool for data collection is depended on the nature of the problem to be studied. The researchers adopted a questionnaire, developed by Bedewy and Gabriel (2013) on the Examination Anxiety Scale that contained 12 items was used to measure the anxiety scores of students before their final term exam. The 5-point Likert Scale (1. Strongly Disagree SD, 2. Disagree D, 3. Undecided UD, 4. Strongly Agree SA, 5. Agree to A) was used to get possible responses by students on statements. The collected data was analyzed and tabulated by the software SPSS 22. The Chi-Square was used to check the opinion of students on anxiety before their final term exam.

**Results**

**Table 4.1: Distribution of demographic variables of respondents**

Variable	Frequency	Percent
<b>Gender</b>		
Male	68	68%
Female	82	82%
<b>Age</b>		
19 to 21	28	28%
21 to 24	88	88%
24 to 27	33	33%

Table 4.1 shows the frequency of participants’ demographic data. The overall number of respondents 150, male and female were included. The respondents were from different age groups (18to 20 years) frequency was 28(28.0%), (21 to 23 years) frequency was 88 (88.05), (24 to 26 years) frequency was 33(33.0%).

Statement	Observed Number					X <sup>2</sup>	P
	SD	D	UD	A	SA		
I am afraid of failure when I go the exam.	11	15	9	71	44	1.712	.000
I do not have the confidence in myself to pass.	7	15	18	56	54	71.667	.000
Even when I’m well-prepared for the exam, I feel.	4	5	6	82	53	1.703	.000
anxiety interferes with my performance in the.	4	5	12	68	61	1.343	.000
I am preoccupied with failure just before exams.	0	7	9	71	63	3.733	.000
I experience an upset stomach during exam days.	3	9	21	58	59	95.867	.000
My sleep is disturbed during exams.	3	12	10	64	61	1.190	.000
Exams make me feel shaky.	2	2	15	66	65	1.438	.000
Exams make me unable to relax.	2	10	11	67	60	1.271	.000
My heart beats fast (races) during exams.	8	38	15	52	37	43.533	.000
I tend to have breathing difficulty on exam day.	3	4	18	76	49	1.342	.000
I develop diarrhea during the exams.	4	10	14	69	53	1.127	.000

## Findings

The findings of this study extend the opinion of students on their anxiety levels before the final term exam. The Majority of the students agreed on the following statements;

- “Am afraid of failure when I go to the exam”.
- “I do not have the confidence in myself to pass”.
- “I am well prepared for the exam, but I feel anxious about it”.
- “My anxiety interferes with my performance on the exam”.
- “I am preoccupied with failure just before exams”.
- “I experience an upset stomach during exam days”.
- “My sleep is disturbed during exams”.
- “Exams make me feel shaky”.
- Exams make me unable to relax.
- “My heart beats fast (races) during exams”.
- “I tend to have breathing difficulty on exam day”.
- “I develop diarrhea around the exams”.

## Future Recommendation

The present study suggests some recommendations.

- Several strategies can reduce test anxiety and increase your performance on exam day.
- A little nervousness before a test is normal and can help sharpen your mind and focus your attention. But with test anxiety, feelings of worry and self-doubt can interfere with your test-taking performance and make you miserable. Test anxiety can affect anyone, whether you are a university student, a college student, or an employee who has to take tests for career advancement or certification.
- Learn how to study efficiently.
- Study early and in similar places.
- Establish a consistent pretest routine.
- Talk to your teacher.
- Learn relaxation techniques.
- Do not forget to eat and drink.
- Get some exercise.
- Get plenty of sleep.

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