



THE EFFECTS OF TEST ANXIETY ON STUDENT PERFORMANCE AND MENTAL HEALTH

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Abstract

Test anxiety is uniquely focused anxiety that is characterized by the feelings of being overwhelmed with worry, physical tension, and fear of failure prior to, during or following the test. One of the most frequent emotional learning blocks in school and colleges where exams have binding consequences to your future career in work or education.

This paper aims to be a critical qualitative review of literature, with the objective of examining the impact of test anxiety on performance of students and their mental health. It explores the cognitive, emotional and physiological elements of test anxiety, theories underlying the effects of test anxiety on test performance, relationships between test anxiety and depression, test anxiety and general anxiety, test anxiety and sleep disturbance and test anxiety and poor test taker well-being. The review indicates that high levels of test anxiety generally have been found to be related to poorer academic achievement; the link is not always strong, but is moderate overall; and test anxiety is a risk factor for and as well contributes to more general mental-health problems. It concludes that unnecessary assessment threat should be minimized in institutions and that they should provide early screening, skills training/counselling support.

Keywords: Test Anxiety, Academic Performance, Mental Health, Cognitive Interference, Self-Efficacy and Examination Stress and Coping.

1. Introduction

Examinations continue to be the predominant method for assessing learning and determining promotion, admission and certification in educational institutions. Mark without exception plays a significant role in determining one's entry into higher education and to the profession in many education systems, including India's where the mark in board examinations and competitive entrance tests is a key determinant of access. Assessment is therefore a key component and important part of student life often stressful for students.

Anxiety prior to examination is a normal and acceptable amount and can actually be helpful in preparing for an exam. But for other students, the anxiety intensifies and can be regularly experienced. Difficulty paying attention, forgetting something they've learned with ease, feeling their heart beat, feeling unwell, making something an assessment of their worth. This syndrome is called test anxiety.

The factors of attention, memory and study and confidence are three ways in which test anxiety can affect student's performance. It has also been shown to have a negative impact on mental health, as chronic exposure to evaluative threat leads to depressive symptoms, sleep disorder and overall anxiety. It is necessary to comprehend both effects to enhance educational outcomes and student well-being.

The purpose of the present study is to examine the association between test anxiety and student performance and mental health as well as to provide an explanation of how test anxiety could impair learning.

2. Research Gap

There is abundant literature on test anxiety; however, a few gaps exist.

First, there have been various definitions and measures of test anxiety. Some studies utilize a worry index, others an emotionality index, others a Physiological index, and some studies find a single total worry index to be most useful.



Cover Page



Secondly, there is a lack of integration of research on performance and mental health. Very few reviews address the two issues combined and few ask if test anxiety leads to mental health problems which then lead to diminished performance.

Third, much of the evidence is from western school and undergraduate populations. There have been fewer studies on students in more competitive and examination-oriented learning systems and fewer studies on students at postgraduate and professional levels where pressure and expectations would vary.

Fourthly, the majority of studies are of a correlational nature. The relationship is likely to be reciprocal because, like many things, poor performance can increase anxieties while anxieties can decrease performance; poor performance does not inevitably lead to anxieties.

Lastly, there is a need to bring together the causes, effects and remedies of test anxiety in one framework. In order to meet this challenge, the present research provides a conceptual and analysis review of the literature.

3. Problem Statement

Schools must be places of learning, success and well-being all at the same time. However, assessment systems using a limited number of high-stakes assessments may conflict with both goals.

Very test anxious students might be performing below their actual ability, steer clear of challenging courses, and leave the exam hall with some of them thinking they're not doing well. Students' emotional responses to these experiences may also be overlooked as normal examination anxiety and marks may also underestimate what students know.

While the issue is understood, institutions tend to focus on 'covering the syllabus and outcome of exams' instead of 'the emotional experience of assessment'. The challenges of the large classes are compounded by the shortage of counselling facilities and by mental health stigma.

Therefore, this study addresses the main research question as of how test anxiety affects student performance and mental health, and how the institutions may counteract the negative effect of test anxiety.

4. Research Questions

The main purpose of the present study is to answer the following questions:

- i) What are the salient features of test anxiety and its appearance?
- ii) What does test anxiety do to students' performance?
- iii) Is there a correlation between test anxiety and students' mental health?
- iv) What is the relationship between this and attention, working memory, self-efficacy and study habits?
- v) What makes people feel anxious or not anxious while taking tests?
- vi) What steps can be taken by schools/ colleges to alleviate test anxiety and help affected students?

5. Hypotheses

The following hypotheses are developed based on aims and questions of research:

H1 – Alternative Hypothesis

Academic achievement and mental health of pupils is highly significantly related to high test anxiety.



Cover Page



H0 – Null Hypothesis

The notions that test anxiety relates to students' academic performance or mental health are found untrue.

In the alternative hypothesis, anxiety prior to evaluation is hypothesized to negatively impact concentration and memory, promote avoidance, and over time lead to emotional distress that, in combination with lower concentration and memory, results in lower performance and well-being.

6. Literature Review

6.1 Concept and Nature of Test Anxiety.

Test anxiety is the blend of cognitive, emotional and physiological reaction to a fear of failure on an examination. It is different from anxiety which occurs in non-evaluative situations, and is strongest when the outcome is significant to the student.

Initial studies identified two aspects – worrying, which is negative thoughts regarding performance and consequences, and emotionality, which is the physical and emotional response to the stress. In subsequent studies, it is worry or cognitive test anxiety that is the more reliable yield of poor performance.

Test anxiety can be manifest in four different ways:

- Cognitive: concerns, fear of failure, self-doubt, and comparisons with others.
- Emotional: fear, tension, panic and a feeling of helplessness.
- Physiological: faster pulse rate, sweating, headache, nausea and shaking.
- Behavioral: a failure to do well on the readings or study, inability to blank out, failure to arrive at exams on time, or missing exams.

Test anxiety can also drop grades – when the students are very well prepared.

6.2 Theoretical Foundations

Yerkes–Dodson Law. The moderate arousal theory from one of the oldest explanations about the state of arousal is that both low and high levels result in poor performance, and moderate is best. It explains why moderate nervousness can be beneficial and a high level of anxiety can be detrimental.

Cognitive Interference Theory. There are competing thoughts, such as worry, for the focus of limited attention. I will fail' thinking mouse leaves less capacity for reading the questions, recalling facts, and planning answers.

The Theory of Processing Efficiency and Attentional Control. Anxiety takes attention away from the task and reduces one's ability to pay attention to the task and ignore threat. Students have to work hard to arrive at their correct answers and this effort is lost on complex or timed tasks.

Skills-Deficit View. Poor performance is seen by some students as result of a lack of study skills and test taking ability, thus increasing their level of anxiety when taking the test. Anxiety is, in turn, partly due to lack of preparation and not the sole determinant of poor results.

Control-Value Theory. Achievement emotions are rooted in a student's feeling of control over a task and the worth of it. When success is important and control is perceived as lacking, anxiety is greatest.



6.3 Test Anxiety and Academic Performance

The correlation analysis of the meta-analytic evidence shows a negative correlation between test anxiety and achievement. The tests for the highly anxious students correlated with lower scores than the less anxious students, and the scores correlated with the treatments used to decrease students' anxiety.

Three decades on, a later review reaffirming a definite, small-to-moderate negative correlation with performance.

This association is not shared. It is generally stronger for the worrying aspect than the physiological aspects of pain and stronger on difficult or timed or high value tests than it is on routine tests. A pupil with high ability or good preparation may still attain a satisfactory standard, but at a higher personal cost (emotional, personal, etc.).

6.4 Test Anxiety and Mental Health

Positive relationships have been found between test anxiety, depressive symptoms, general anxiety, stress, and decreased life satisfaction.

There is high prevalence: surveys of school pupils have found a significant minority highly report high levels, with boys reporting lower than girls.

Test anxiety may become more severe in students who have previous anxiety or low mood which can affect their resilience and capacity to cope with it. Repeated test anxiety may exacerbate low mood or anxiety. Therefore, it must be seen as a sign of potential psychological problems, rather than the only one related to educational issues.

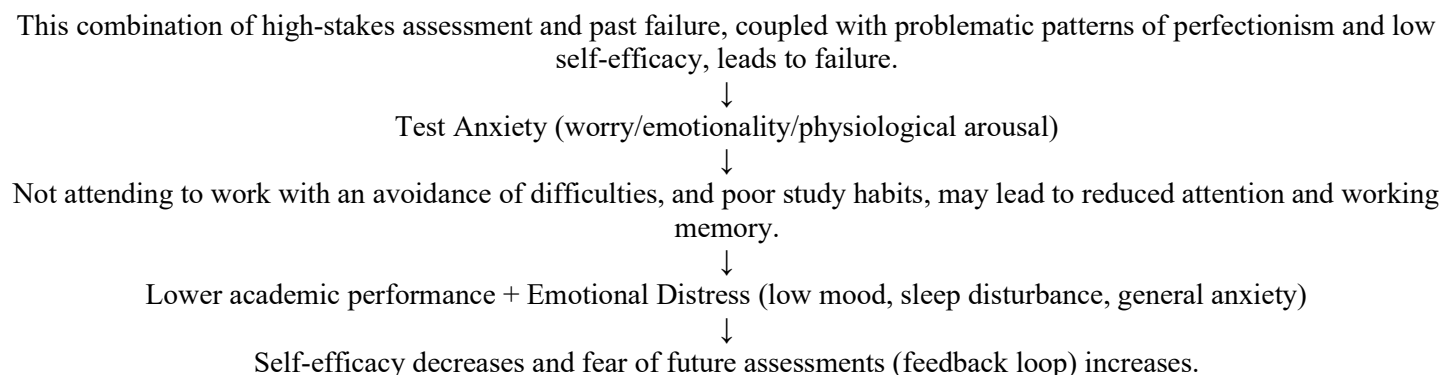
6.5 Interventions

Studies indicate hope for remedies. Meta-analyses of intervention studies, however, showed that anxiety reduction and gains were greatest with cognitive and behavioral approaches, and with skills training. In a classroom study, students in the worry group did better than the no-worry group—in fact, the students who were most anxious did the best.

7. Conceptual Framework

Test anxiety (IV) correlates negatively with student performance (DV) as well as mental health (DV). It proposes that anxiety has a chain of cognitive, behavioral and emotional linkages to these outcomes and that mental health will impact upon subsequent anxiety.

The framework is thus as follows:





Cover Page



This model has three implications. Anxiety impairs performance in the test, and it also hampers performance in preparation, impossible to do perfectly because of anxiety avoidance. Secondly, when there is poor performance, it reinforces the student's anxiety and fear of failure, creating a cycle. Third, the framework does not state that anxiety is the one and only reason for poor performance – ability and preparation, as well as the quality of the teaching and the home environment all play a role.

8. Methodology

8.1 Research Design

It is a qualitative, descriptive study which is based on the review and analysis of existing literature. Properly uses the approach of understanding about and incorporating knowledge of test anxiety, performance and mental health rather than obtaining new statistical data.

8.2 Data Sources

The study was based on secondary sources namely:

- A variety of peer-reviewed journal articles related to academic achievement and test anxiety;
- Meta-regression;
- Existing studies reported in the field of educational and clinical psychology in the areas of anxiety, depression and well-being;
- Self-efficacy, Coping and intervention programs;
- Typical test anxiety textbooks.

8.3 Data Analysis

Thematic analysis was used. Themes that emerged were the following:

1. What the problem is and what makes up test anxiety,
2. Theoretical explanations;
3. Attention, memory and performance;
4. Taking into account effects on study behavior;
5. Effects on mental health;
6. Things that can aggravate test anxiety;

9. Test Anxiety Messages in the Media

9.1 Attention and Memory

This addresses the effects on learning, concentration, and memory.

Test anxiety's impact on cognition is the primary effect. Working memory is the space in the mind that we can use to hold and manipulate information... worrying thoughts take up space in working memory. The student's may read each question



multiple times without comprehension, not recalling information they are aware of, or getting it wrong. It is most pronounced in the learning of complex questions (where analysis and problem solving requires more working memory capacity as in simple recall).

9.2 Effect on Examination Performance

This would result in extremely anxious students frequently performing below their potential due to this interference. They may not reflect what they have learned, impacting grades, progression and confidence. When under time pressure, anxiety makes it even worse because the anxious student has to check AND re-check and will often miss questions.

Anxiety does not negatively affect performance all the time. Moderate levels of arousal may lead to improved alertness and effort as supported by the Yerkes-Dodson law. The bad effects happen once the fear is intense enough to interfere with thinking.

9.3 Effect on relationships at school

Test anxiety impacts not only on test taking itself, but also on the process of preparing. Some students study too much and not purposefully, others procrastinate and/or are reluctant to rewrite as thinking is painful. Avoidance involves a decrease in preparation, decrease in performance and raise in test anxiety leading up to the next test.

Students can over time either opt not to take demanding courses, opt for less ambitious goals or become uninterested in learning, thus restricting academic and career opportunities.

9.4 Mental Health impact

Some mental-health effects of test anxiety are:

- Ongoing concern and unease that lasts beyond the exam period;
- Low mood, irritability; and in some students, depressive symptoms;
- Lack of sleep and fatigue during exam times;
- Physical complaints – headaches, stomach upset and muscle tension;
- A lack of confidence in oneself and thinking that they are "not able".

In more serious cases, social distancing and maladaptive coping behaviors like increased caffeine intake, substance abuse or excessive self-critic.

Numerous students who are exposed to anxiety or depression already are at risk to become very anxious to take tests, and repeated academic failure can worsen their depression. If symptoms last longer or are severe, seek professional assistance.

9.5 A Two-Way Relationship

There is an interaction between test anxiety, performance and mental health. Anxiety reduces performance which, in turn, increases the likelihood of a negative assessment of personal competence and can reinforce anxiety, and, long-term, anxiety undermines well-being and makes concentration difficult at subsequent assessment. This can lead to a vicious circle that prevents the end of the school's negative behavior without support.

9.6 A Note on Causality

Test anxiety itself does not constitute proof of a mental illness or make for poor performance – this should not mean that the findings are to be interpreted as such. Previously held standards, capacity, study habits, family values, and social and economic status (SES) have an influence, as well. Test anxiety should be viewed as a significant contributing factor in the larger context of other factors.



Cover Page



10. Factors that have an effect on test anxiety

10.1 Individual Factors

Perfectionism, low school self-efficacy, failure to get good backings, anxiety and apprehension about negative evaluation, and a pattern of underperforming all contribute to vulnerability. However, low anxiety is typically reported among students who do well in school and have confidence in their success. In most studies girls report higher scores than boys, but not known why.

10.2 Assessment and Institutional Factors.

Stress levels of examinations stem from high stakes, competitive ranking, limited time, lack of clarity, and an overemphasis on a single final test. It is reduced by regular low stakes assessment, marking criteria and opportunities for improvement are well known.

10.3 Factors that shape family and social factors.

Mark pressure, comparing children to others in the family and others in the community and the fear of disappointing the family can magnify the importance of marks. The burden is compounded in many societies where exam results have a correlation with family status.

10.4 Teacher Behavior

Some teachers may raise anxiety if they emphasize the threat of failure, if they publicly criticize students' performance or make comparisons. Supportive teachers give clear expectations and provide feedback that is positive, helping students to understand that assessment is an opportunity for learning.

11. Recommendations

11.1 Early Identification

Brief screening, along with teacher observation, can be used to identify students with high scores in test anxiety early, and be considered a well-being issue, not a disciplinary or motivational issue.

11.2 Skills Training

Teach students how to plan, manage time and study, how to take tests, and how to revise. Preparation will increase confidence, decreasing skills-related anxiety.

11.3 Cognitive and Relaxation Techniques

The intervention literature documents cognitive restructuring (replacing catastrophic with reasonable thoughts), breathing exercises, progressive muscle relaxation and short expressive writing exercises prior to tests as being helpful.

11.4 Reducing Assessment Threat

Implement regular low-stakes assessments, clearly defined marking scheme, practice assessments and diverse assessment approaches – removing the focus to individual tests and providing them in balanced proportions.



Cover Page



11.5 Counselling and Referral

It is important that colleges make counselling services available and accessible, both personally and confidentially, yet have clear lines of referral to other practitioners working with mental health issues in students should they experience particularly severe or persistent symptoms.

11.6 The teacher provides adequate training and feedback that supports student learning.

Teachers need to be trained to provide constructive feedback and avoid threat-based motivational strategies and respond sensitively to the anxious students.

11.7 Parental and Peer Engagement is part of the group 12. Engagement of parents and peers.

Parents and peers should be made aware, through awareness-based sessions, about the unrealistic expectations and enable them to not feel alone.

12. Scope

The research will cover the relationship between test anxiety, academic performance and mental health of school and college students. It considers:

- The cognitive, emotional and physical factors of test anxiety;
- Change in academic performance and memory; Remembering information; Study habits; Study skills; Exam performance; Exam results; and,
- Relationships with overall anxiety, depression, sleep and well-being;
- Individual, institutional and social factors; and
- Supportive and preventive actions at organizational level.

13. Study Limitations

There are some limitations with the study. Firstly, it is based on secondary literature, no primary data was gathered from students and teachers. Secondly, tests are described and evaluated in various ways and it is hard to compare one test with another. Lastly, much of the evidence available is correlational, and conclusions about causation are not possible. Fourth, the results of one educational system or phase of development may be different from those in other systems and/or phases. Finally, other issues will affect performance or mental health even beyond test anxiety—prior achievement, family context, and the quality of teaching.

14. Conclusion

Student anxiety is very directly involved in learning achievement and mental health. Worry, lack of attention and working memory, and avoidance of preparation can lower examination results below what students can achieve. It can cause feelings of sadness, trouble sleeping, physical complaints and a decrease in self-esteem with repeated stress.

Anxiety and its relationship with performance and well-being is a two-way street and can turn into a vicious circle. Meanwhile, it is not the inevitable. There is some evidence that this is possible through some skills training, cognitive and relaxation techniques as well as supportive teaching, less threatening assessment and accessible counselling to reduce anxiety and improve outcome.

Test anxiety then should be viewed as an issue of academic performance and mental health, therefore, in all institutions. This will give students the opportunity to demonstrate their learning and keep them safe.



Cover Page



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