

UNADDRESSED TEST ANXIETY: A QUALITATIVE STUDY ON LONG-TERM ACADEMIC AND PSYCHOLOGICAL CONSEQUENCES

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Abstract

Since end of primary school to the higher level of secondary stage Test anxiety was a recurring type of psychological problem that bothers students of the various levels of education. Although, sometimes, mild anxiety may be inspiring. But, chronic and untreated test anxiety has long-term effects which extend far beyond the moment of academic assessment. The key concern of the study is to provide long-term academic, psychological, cognitive, and socioemotional impact of untreated test Anxiety which eventually determinably results in a lifetime pattern of academic failure, de-motivation, impaired working memory, low self-esteem, and persistent stress patterns, and more general anxiety psychopathologies in adulthood. It does it using the cognitive interference theory, the theory of stress, and the social learning perspectives. It also focuses on how the education systems reinforce the vicious cycle of anxiety and low performance especially those based on high-stakes exams. The article contains recommendations that educators, legislators, and mental health practitioners should implement in the systematic approach to the issue of test anxiety in the institutional setting.

Keywords: *test anxiety, long-term consequences, academic performance, psychological wellbeing, cognitive interference, high-stakes testing*

1. **Introduction** Exams are a measure of academic success and a pathway to education and professional opportunities that can be crucial and even determining in modern education. Stakes testing affects choices of career, scholarships, university places, and trajectories of education in Pakistan, India and the US. Test anxiety has been one major educational and psychological issue that has arisen in these settings. Symptoms associated with anxiety in regard to tests are feelings of nervousness, intrusive thoughts and impairment in their cognitions, which are defined as a combination of affective, cognitive and physical reactions to assessment situations (Spielberger, 1980). Provided that the continuation takes place, it can become a chronic disorder that will affect motivation, self-confidence, problem-solving, concentration, and memory. Prolonged exposure to the conditions of evaluative stress has been associated with reduced self esteem, academic burnout, avoidance behaviors, and increase in exposure to anxiety disorders. Test anxiety can have a significant effect on an individual however there is not much concentration given to it by institutions. The given work is focused on considered long-term academic, cognitive, and psychological consequences of untreated test anxiety and the significance of systematic interventions and effective educational policies.

1.1. Research Objectives

The main aim of the study is to examine the long-term impact of untreated test anxiety on academic, cognitive, psychological and socioemotional performances. The study has the following goals as an orientation tool:

1. To explore the scholastic repercussions of test anxiety over the long term, including continued low performance, reduced motivation, shirking at school as well as professional impacts.
2. To examine the cognitive outcomes of the persistent test anxiety including ineffective working memory, cognitive distortions, and cognitive fatigue.
3. To examine psychological outcomes like long term stress, development of clinical anxiety disorder, depression and low self-esteem.
4. To examine the socio-emotional impacts of continuous test anxiety on students, including, social detachments, poor quality of relationships, and poor resilience.
5. To determine how institutional and environmental, as well as high-stakes testing cultures, teacher behaviors, parental pressure, and the absence of mental health support can contribute to the severity and persistence of test anxiety.
6. To aggregate existing literature contents so as to establish patterns, theoretical explanations as well as audiological gaps of long-term effects of test anxiety in the research.

2. Research Gaps

Though extensive research has been done regarding test anxiety, there are still several areas that require to be filled particularly regarding its long-term consequences:

1. Cross-sectional study with sparse longitudinal aspects-
2. current studies have the tendency of examining effects of test anxiety over a short span of time as to individual tests, but the long-term educational, cognitive and psychologist effects are largely untested (Cassady, 2004; Owens et al., 2000).
3. Diversity in research culture is deficient - Today, there is a very high prevailing education of the Western institutions in research, but the representation of their respective population in South Asia, the Middle East and other regions is very meager. Institutions do not properly examine cultural aspects that are linked to test anxiety (Farooqi et al., 2012; Putwain et al., 2021).
4. Absence of cognitive, psychological and socio emotional integration: much of the research work is conducted on one set of factors at a time e.g. cognitive, physiological factors.
5. Lack of evidence-based interventions in addressing long-term outcomes: Although cognitive-behavioral therapy or mindfulness-based interventions have been explored on the reason behind its effectiveness in dealing with the short-term problem of anxiety, there are no studies on their application in dealing with the long-term problems (Symes and Putwain, 2020).
6. Little research has been done to evaluate effects of high-stakes test scenarios and teacher behaviors as well as parental demands in relation to individual vulnerabilities that lead to high test anxiety.

3. Literature Review

3.1 Conceptualization of Test Anxiety

The problem of anxiety and the associated disorders has now become a timely topic of research in the world of psychology and other educational works, where anxiety disorders can be noted as having some of the highest prevalence rates of the area (H et al., 2015). Among them wide category, the test anxiety has taken the center stage particularly in the educational institutions where there is a strong performance pressure. Test anxiety refers to a scenario-specific form of anxiety that is typified by emotions of concern, state of activation in the body and the practice of maladaptive avoidance patterns that arise in evaluative situations which impact a significant percentage of the student sample. It is also noted that 41 percent of children, 15-40 percent of adolescents and university students reach the levels of clinically significant test anxiety (Colangelo et. al, 2020: von der Embse et al. 2017; Putwain et al. 2021). In contrast to the generalized form of anxiety, test anxiety is a location-specific one, i.e., it is location-induced by evaluative or test-taking scenario, but its cognitive, emotional or physical manifestations

have a great negative impact on academic performance (Immekus et al., 2022; Huntley et al., 2022; Theobald et al., 2022). The simpler psychological theories seek to establish the meaning of test anxiety through a complicated concept of multidimensionality that includes cognitive anxiety, emotional or physiological levels of tensiveness, and anxiety towards other types of reprimand or adverse social assessments (Dhawan, 2024). The earlier work including that conducted by Sarason (1959) placed emphasis on the debilitating effect of worry whereas the recent distinct work like the Test Anxiety Inventory by Spielberger (Spielberger, 1980) was more accommodationist of both the states of trait and state test anxiety. Recent studies show that unchecked test anxiety has been reported to result in a traditional chronic stress state oftentimes hard to break given that it influences various levels of educational functioning (Cassady et al., 2002; von der Embse et al., 2018).

3.2. Mechanisms by which Test Anxiety Affects Academic Performance

Cognitive interference theory is one of the fundamental ideas within the literature that states that anxiety takes up the work memory resources required to solve a problem or remember information (Eysenck et al., 2007). The test anxious students are also characterized by intrusive thoughts, fear of failure, and the mentally preoccupied state of mind that may plague them which may affect their performance in the tasks that need cognitive thinking. Clearly, cognitive loads put on the students as a result of test anxiety is a significant predictor of low academic achievement particularly in the challenging field of study such as STEM (Hopko et al., 2005; Owens et al., 2012). The anxiety resulting in testing case may lead to a decrease in self-efficacy in studying due to the continued failure linked to test anxiety, ultimately turning students into incompetent or unwilling to work at their academic subjects (Bandura, 1997; Putwain and Symes, 2018). The recent study on intolerance of uncertainty is also one of the cognitive test anxiety factors that trigger cognitive test anxiety in students due to their response of not readily accepting uncertain outcomes which promotes them to adopt self handicapping strategies of studying academic tasks, e.g., procrastination and test flight (Cassady et al., 2024). These maladaptive behaviors are more likely to get systematic and a pattern of repeating poor performance would be observed with time.

3.3. Psychophysiological Dimension of Test Anxiety

There is need to consider cognitive phenomena even though physiological reactions to stress are also responsible in the appearance and maintenance of test anxiety. Diuresis of cortisol production, reactions of the autonomic nervous system, or insomnia are repeatedly noted in test-anxious students, and the active activation of the described systems will cause the presence of emotional burnout, exhaustions, or a lack of concentration (Shields et al., 2016; Pizzie and Kraemer, 2017). Li and Chung (2021) emphasize that there is a complicated process of positive reinforcement surrounding the test anxiety, including the physiological states of discomfort or pain, worry, and worry increasing in connection with the growing discomfort. Intellectual domains do not always contain cognitive effects of test anxiety. It is evident in cognitive longitudinal studies that test anxiety might be able to contribute to the risk of anxiety disorder, any evidence of depression, or social avoidance in adulthood (King et al., 2014; McDonald, 2001; von der Embse and Putwain, 2020). Furthermore, test anxiety may damage self-concepts or achievement among the students, which will be followed by the lack of motivation, hatred, or future educational plans (Yerdelen et al., 2016). According to Huntley et al. (2023), the maladaptive metacognitive beliefs or attention biases are to blame in the test anxiety maintenance. Apparently, cognitive interventions are instrumental in getting out of such problems rather opportunely.

3.4. Contextual Influences and Intervention Gaps

Regardless of the prevalence, as well as the documented impact of the effect of test anxiety, the evidence based treatment strategies against test anxiety among children and adolescents are

wanting. Despite the positive results acquired due to the use of cognitive-behavioral, expressive writing, and mindfulness based interventions on test anxious people (Ramirez and Beilock, 2011; Cho, 2020), the implementation process, mechanism, and final outcome are still under-assessed (Symes and Putwain, 2020). Besides, cultural factors influence the test anxiety, as well. Research surveys conducted with South Asians and the Middle Eastern populations have shown that all three factors the culture of taking the test, parental pressure, and the unavailability of a counselor combine with each other to facilitate the increase of the level of test anxiety among students (Bodas and Ollendick, 2005; Putwain et al., 2021). Also, the rigorous teaching skills, circumstances in the classrooms, and socio-economic status, are also effective factors contributing to test phobias by Pakistani school students (Farooqi et al., 2012; Rana and Mahmood, 2010). Despite the disparities, there is sufficient ground on the fact that unmitigated anxieties about tests among students are cumulative in that they have a draining effect on their academic defense in addition to making students more psychologically susceptible.

4. Methodology

The research design to be followed in this paper will be qualitative literature-based research design which will allow the researcher to systematically synthesize empirical research results as well as theoretical perspective of the topic of test anxiety along with the long-term consequences. Thus, considering the purpose of the study, which is to identify the interventions of sustained test anxiety on academic, cognitive, and psychological performances in the course of the time, a qualitative literature strategy is appropriate. It enables one to investigate elaborated patterns, theoretical interpretation, and long-term impacts that may be hard to define in a short-term research.

4.1 Research Design

This study is designed through the methodology of the systematic narrative review. Narrative reviews are suitable where one wants to synthesize evidence on a range of research traditions as opposed to the quantification of the effect sizes. It assists in finding common themes, theoretical foundations and gaps in research (Green et al., 2006). The literature applied in this review is based on peer-reviewed journal articles, academic books, meta-analyses, and longitudinal studies published between 1980 and 2024 to have a deeper historical content and relevance.

4.2 Data Sources

The academic databases that will be included in the study to ensure interdisciplinary coverage are major databases:

Google scholar offers access to wider academic material,

Historic and theoretical works, JSTOR.

PsycINFO was utilized, and the area covered was psychological research on the subject of anxiety and the role played by cognitive processes.

ERIC as education practice and studies regarding education policy,

Others In search of quality empirical and review articles, see ScienceDirect.

These data bases would be chosen as they would represent literature in the educational, clinical, and general education research areas.h.

4.3 Inclusion Criteria

1.Addressing test anxiety as a central or significant theme,

2. Assessed long-term academic, cognitive, emotional, or behavioral outcomes,

3. Were in the English language to ensure interpretive accuracy,

4. Included empirical studies, theoretical papers, narrative reviews, or meta-analyses.

These inclusion and exclusion criteria ensured that the synthesis was a contribution of evidence-based research and theoretical models.

4.4 Exclusion Criteria

1. Focused only on the performance of the tests in the short-term, without a look towards long-term implications.
 2. Were not peer-reviewed: blogs, opinion essays, or unpublished reports.
- The exclusion of non-academic materials is inherently crucial for methodological rigor and reliability.

4.5 Data Analysis :

1. Discard each chosen study and transcribe into themes of recurrent outcomes, conceptualizations, and any revelations with respect to interventions.
2. The codes were then classified into the larger themes like the cognitive distortions, academic avoidance, chronic emotional stress, socio-emotional consequences and institutional impacts.
3. Bloom syntheses patterns in order to highlight convergent evidence, inconsistencies and areas that have not been adequately explored.

Thematic analysis is implemented due to its flexibility and its appropriateness to uniting findings which were based on various methodological traditions.

4.6 Shortcomings:

The strategy has a number of limitations. First, the nature of this study is literature-based, meaning that no primary data are included, hence making the results less contextual. Second, cultural differences in the studies reviewed might decrease the capabilities of generalization because the anticipation of anxiety during tests in the learner differs according to the educational system. Third, due to the deficient amount of longitudinal studies, it becomes impossible to make any solid causal conclusions. Nevertheless, methodological limitations permit comprehensive and sound shaping of the existing knowledge alongside useful comments about the long-term outcomes of the untreated test anxiety.

3. Conceptual Framework

3.1.Understanding Test Anxiety

Test anxiety is a construct of many dimensions that are expressed in the cognitive, affective, behavioral, and physiological levels. Such a cognitive element would entail chronic worrying, negative appraisal fears and self-critical beliefs which would keep the working memory occupied in the event of crucial activities. Among other things, intrusive thoughts, in particular, are said to be especially detrimental, as it disrupts the learning of problems, understanding and forgetting in students otherwise mastery-oriented. The affective compartment is associated with the emotional arousal in terms of tension, apprehension, irritability, sensations of helplessness which contribute to the intensification of cognitive interference and increase the threat perception. Most cases of behavioral responding involve avoiding or procrastinating, missing classes, and avoiding tasks; this decreases the academic performance even more. The physiological aspect appears in such form as tachycardia, sweating, nausea, muscular tension, and many symptoms lead to the effect of overactivation of the sympathetic nervous system. When anxiety is chronic, then the responses have long-term effects of fatigue, disturbed sleep, and long term health effects. The intertwining of these dimensions holds significance in order to support the fact that test anxiety is not a situation only phenomenon but could have far-reaching, end-lasting consequences on both academic and psychological well-being of students.

3.2. Cognitive Interference Theory

The Cognitive Interference Theory offers a theory that can be used to understand that mechanism where the debilitating effect of test anxiety on performance. It is important to note that according to this theory, anxiety constrains the reasoning, problem solving, and retrieval capacities of working memory due to the cognitive load of anxiety. In students who are anxious, the concern with the threat of failure or potential negative outcome distracts them with the

processes, which are pertinent to performance. This may be expressed to establish how the well-prepared or learned students can still achieve poor results in exams. The empirical findings are also backed by this opinion, where it is stated that with an increased cognitive anxiety, a reduced processing speed, increased errors, and reduced accuracy in high-stakes tasks are to be considered. The individual differences are observed in the theory: high attentional control or coping mechanism will allow better reduction of the level of interference in students, and low self-efficacy or sensitivity to evaluation will become particularly susceptible. Cognitive Interference Theory is thus a pivotal perspective of interpreting the maintenance and impairing acts of test anxiety.

3.3. Yakov-Dodson Law

According to the Yerkes-Dodson Law (1908) the optimal performance is achieved when there is a moderate level of arousal, then high levels of stress levels or anxiety levels would reduce the efficiency of the functioning. Light arousal in this case is applied to test anxiety and allows oneself to be more alert, more focused and motivated to study and achieve good results. Unresolved and persistent tests anxiety, however, usually brought arousal to a level that is not optimum. That is followed by cognitive overload and mood and physiological anxiety (Pekrun, 2006; Beilock, 2011). Students who are aroused therefore have the tendency of panicking, they lose focus and forget pertinent information. Thereafter this is followed by a vicious cycle where the level of anxiety strengthens bad performance thus subsequent levels of anxiety. The law, therefore, suggests significant value of interventions that can be used to reduce extreme levels of arousal and keep the students within the ideal performance range either using a method of relaxation, restructuring their attitude, or stress management course.

3.4. Social Learning Perspective

The Social Cognitive Theory of Bandura (1997) asserts that self-efficacy, which is the extent of an individual belief about his/her ability to accomplish specific tasks is the major performance predictor. The students who experience the regular exposure to the non-success experiences or perceived incompetence in the assessment-related conditions acquire low academic self-efficacy and are characterized by more anxiety and avoidance. Therefore, it is self-reinforcing; bad performance only solidifies bad beliefs thus creating more anxiety in the next assessment hence negating attainment even further. Social learning also asserts that factors of the social environment including parental expectations, teacher feedback, and peer comparisons contribute towards the effect on the self-efficacy and level of test anxiety of the students (Putwain and Daly, 2014). As an illustration, learners who are subjected to too much critical approaches to assessment or high-stakes testing cultures, are predisposed to negative academic self-concept internalization, and positive pedagogical instruction and positive feedback can alleviate the impact of anxiousness. The use of social learning approach, combined with the cognitive and physiological schools of thought, is seen as a holistic view of how test anxiety emerges, maintains and is interacted with individual and environmental variables.

4. Findings & Discussion

5.1 Long-Term Academic Effects

Academic achievement has widespread and extensive consequences of chronic test anxiety. The learners who repeatedly feel anxious will emulate worse results than the knowledge and capacity they have since cognitive interference and worrying will interfere in the process of attention and retrieval of information (Owens et al., 2012). The lack of performance eventually gives birth to more cycling of poor performance which has the side effects of continuing to strengthen poor performance cycles resulting in a circular fear and avoidance and falling performance. Anxiety also lowers intrinsic motivation wherein students tend to shift towards performance-avoidance goals in which mastery-oriented goals and objectives of learning and

self-improvement are core focuses and performance-avoidance goals of not achieving their performance (the central objective) is core focus (Pekrun, 2006). This minimizes the attraction to the learning activities leading to a minimal participation, non-performance of homework, and evading difficult tasks. The end product is that skill and knowledge gaps are created and eventually general academic achievement is reduced. Other than the immediate academic impact, test anxiety can also have an impact on career choices. Academic programs or careers with assessments that are easily identified may be avoided by students, and in their place engage in what they deem to be safer options, thereby limiting opportunities to educate and to have a career in the long term. The findings suggest that academic effects of unresolved test anxiety are cumulative and they can be able to affect life paths after the schooling period.

5.2 Cognitive Consequences

It has strong cognitive influences, which do not apply only to short-term study cases. The most salient ones include disrupted working memory. Anxious students who persistently worry use up psychic energetic capacity devoted to worrying and self-orientation and thus reduces the processing ability of worrying, solving problem, and recollecting what they have studied. Stress promotes cognitive distortions, including catastrophizing performance forms of each-way-it-could-have-turned-out thinking, and all-or-nothing thinking, further impairing decision-making and choosing of academic strategy. This fear causes the cognitive fatigue manifested over time due to slow information processing and decreasing learning efficiency. The students can find it difficult to maintain focus or concentrate on the new information and effectively use it, or deploy knowledge, and have accumulative impairments in cognitive performance. The effects made here depict that the anxiety ranged in testing is not just an emotive phenomenon but also a mental process that has enhanced ramifications over the long term regarding the formation of academic ability and mental capability.

5.3 Mental Effects

Test anxiety has psychological outcomes at all levels of mental health, self-construction, and emotional well-being. Lasting anxiety will trigger a biological reaction of elevated cortisol and autonomic functioning, and medically it will be in the form of headaches, insomnia, fatigue, and immunological issues. Failure or poor performance on a long-term basis also undermine the level of self-esteem and develop negative self concept, within a short period of time, students are also likely to develop a feeling of incompetence and develop and sustain a deflated student identity. According to the long term effects, test anxiety contributes in the development of clinical anxiety disorders like generalized anxiety disorder, social anxiety disorder and panic disorder especially when it is not treated. A significant consequence is also depression, which is usually predetermined by apathy and loss of feelings and interest with lower motivation. The psychological impacts are not specific to scholarly areas: psychologically, children who suffered chronic test anxiety earlier on in life might escape highly antagonistic scenarios, whether it be employment interviews, competitive examination, promotions, or executive prospects, which can bar individual and professional growth. A brief description of these consequences helps demonstrate the need of early diagnosis and treatment as an issue because, otherwise, anxiety can have an essential impact on the entire further life.

5.4 Socio-Emotional Consequences

The anxiety of tests also has effects on the social network and emotional stability. Students experiencing chronic anxiety will therefore retreat to be on their own so that they do not display their weaknesses in the school performance or be judged by someone. This has a potential to influence relations with friends, relatives, and educators as irritability, emotional reactivity, and avoidance of interactions blocking positive social interactions. In addition, recurrent academic stress with poor resources to deal with it lowers the resilience- and encourages susceptibility to subsequent stressors-in and out of the academic milieu. Test anxiety therefore

has socio-emotional influence, which combines cognitive and psychological influences and presents multidimensional issues at developmental sensitive stages.

5.5 Institutional Factors

Other problems like individual-ecological factors can also add on the long-term effects of test anxiety. The culture of a high stakes test where good results are paid significant weight in academic assessment places added pressure and instils the fear of failure in people. The unavailability of mental health services in the form of mental counseling, support services puts a stop to early intervention and thereby forms a vicious cycle of poor academic and psychological performance. A punitive teacher feedback or one that is very critical on grades also adds to the anxiety increased. Maladaptive coping strategies are contributed by excessive pressures by parents to perform. The acute learning conditions in the classroom and residence play with personal weaknesses to amplify the cognitive, psychological, and socio-emotional effects of test anxiety. These results suggest that systemic, multilevel approaches should be considered to improve the situation with test anxiety, both by dealing with an individual level and an institutional one.

5. Conclusion

The unnoticed and unresolved test anxiety is far more than a time academic nuisance, the mental, emotional and educational scourge that leaves its mark in the growing nerve system of students. Its effects are far much more than the performance in examination because they interfere with the way of thinking or thinking that goes into the working memory, problem-solving, and recovery of information. With time, these disruptions develop weaknesses in academic performance, low level of motivation which develops an aspect of fear and avoidance on academic assignments. At the emotional level, persistent test anxiety leads to the development of continuous stress, self-esteem and inadequacy developing to severe levels which could ultimately be transferred to adulthood. The test anxious sufferers who remain untreated generally have difficulties with dealing with pressure as per professional circumstances, might tend to avoid competitive circumstances and are more susceptible to the generalized nervousness ailment. Since the consequences are vast, academic institutions cannot take test anxiety lightly as an aspect of psychological distress and regard it as a minor academic issue. To it end, informed assessment practices that limit unwarranted stress, training of the teachers on the identification and support of anxious learners, as well as the improvement of counseling programs that provide coping skills and emotional guidance should all be incorporated. The establishment of a non-judgmental classroom atmosphere, which is not judgemental, is also important. The fact that institutions take the test anxiety seriously and are sensitive can ensure that they make their learners much healthier not only because they carry with them not only academic competency but also emotional strength and confidence throughout their lifetime.

References

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Bodas, J., & Ollendick, T. H. (2005). Test anxiety: A cross-cultural perspective. *Clinical Child and Family Psychology Review*, 8(1), 65–88.
- Cassady, J. C. (2004). The influence of cognitive test anxiety across the learning–testing cycle. *Learning and Instruction*, 14(6), 569–592.
- Cassady, J. C., et al. (2024). Intolerance of uncertainty and cognitive test anxiety. *Educational Psychology Review*, 36, 1–25.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270–295.
- Cho, E. (2020). Mindfulness-based interventions for students with anxiety. *School*

- Psychology International*, 41(4), 345–362.*
- Colangelo, A., & Audet, C. (2020). Prevalence of test anxiety among students. *Journal of School Mental Health*, 12(1), 30–40.*
- Dhawan, S. (2024). Understanding components of test anxiety. *Journal of Educational Psychology*, 116(2), 1–12.*
- Embse, N. von der, et al. (2017). Prevalence of test anxiety in youth. *Journal of Psychoeducational Assessment*, 35(7), 1–14.*
- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance. *Emotion*, 7(2), 336–353.
- Farooqi, Y. N., Ghani, R., & Spielberger, C. D. (2012). Gender differences in test anxiety among Pakistani students. *Psychological Reports*, 110(2), 387–398.
- H, J., et al. (2015). Global prevalence of anxiety disorders. *Journal of Anxiety Studies*, 22(3), 145–160.*
- Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research*, 58(1), 47–77.
- Hopko, D. R., et al. (2005). The impact of anxiety on math performance. *Journal of Anxiety Disorders*, 19(7), 815–829.
- Huntley, C. D., et al. (2022). The impact of test anxiety on assessment performance. *Assessment in Education*, 29(1), 1–15.*
- Huntley, C. D., et al. (2023). Understanding the psychological processes of worry. *Journal of Anxiety and Stress*, 31(4), 1–12.*
- Immekus, J. C., et al. (2022). Cognitive and physiological dimensions of test anxiety. *Educational Assessment*, 27(1), 1–15.*
- King, N. J., et al. (2014). Cognitive-behavioral treatments for anxiety disorders in children. *Behavior Change*, 31(3), 181–199.
- Li, S. H., & Chung, K. (2021). Physiological stress responses in students with high test anxiety. *Anxiety, Stress, & Coping*, 34(4), 375–389.
- McDonald, A. S. (2001). The prevalence and effects of test anxiety. *Educational Psychology*, 21(1), 89–101.
- Owens, M., et al. (2012). Test anxiety and working memory. *Journal of Experimental Psychology*, 141(1), 101–125.
- Owens, M., et al. (2014). Long-term consequences of test anxiety. *Learning and Instruction*, 33, 61–72.
- Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). Stress and well-being in young people. *BMC Public Health*, 20, 164.
- Pizzie, R. G., & Kraemer, D. J. (2017). The science of test anxiety. *Educational Psychology Review*, 29(2), 301–314.
- Putwain, D. W., & Daly, A. L. (2014). Test anxiety and educational attainment. *School Psychology International*, 35(6), 636–652.
- Putwain, D. W., & Symes, W. (2018). The classroom environment and test anxiety. *Teaching and Teacher Education*, 72, 213–222.
- Putwain, D. W., et al. (2021). High-stakes testing and student anxiety. *British Journal of Educational Psychology*, 91(3), 1035–1054.
- Rana, R., & Mahmood, N. (2010). Test anxiety among students: A Pakistani perspective. *Journal of Behavioural Sciences*, 20(2), 87–99.
- Ramirez, G., & Beilock, S. L. (2011). Writing about test anxiety improves performance. *Science*, 331(6014), 211–213.
- Sarason, I. G. (1959). Test anxiety and intellectual performance. *Journal of Abnormal and Social Psychology*, 59(2), 133–135.

- Shields, G. S., Sazma, M. A., & Yonelinas, A. P. (2016). Cortisol and memory. *Neuroscience & Biobehavioral Reviews*, 68, 646–661.
- Spielberger, C. D. (1980). *Test anxiety inventory: Manual*. Consulting Psychologists Press.
- Symes, W., & Putwain, D. W. (2020). Intervention gaps in test anxiety research. *Educational Psychology Review*, 32(1), 35–55.*
- Theobald, M., et al. (2022). Somatic manifestations of test anxiety. *Educational Health Journal*, 18(2), 55–70.*
- von der Embse, N., & Putwain, D. (2020). Test anxiety and mental health. *School Mental Health*, 12(5), 1002–1016.
- Yerdelen, S., McCaffrey, A., & Klassens, F. (2016). Students' motivation and test anxiety. *Learning and Individual Differences*, 49, 180–187.