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TEST ANXIETY AND ITS RELATED CONCEPTS: A BRIEF REVIEW

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Abstract
Test anxiety has a significant role in one's educational, professional and emotional life. Therefore, it is not surprising that the testing environment generates anxiety for a number of individuals. The issues provided in this article, present a detailed review of the current literature related to testing, including the conceptualization and components of test anxiety, the prevalence and negative consequences of test anxiety, possible sources of perception, gender differences in test anxiety, and treatment for test anxiety. Applying these contents as a whole with consideration of current views about test anxiety will broaden our knowledge in the field of test anxiety.
Keywords*: test anxiety, components, prevalence, consequences, treatments*

Introduction

Today's society tends to overemphasize the importance of tests and academic achievements. Therefore, this culture pressurizes students to "succeed", resulting in increased anxiety and stress and subsequently affects the individual's academic, vocational and emotional state. There has been extensive literature on test anxiety since the early 1950s and they have set various antecedents, correlations and treatments for 'test anxiety' (Stober & Pekrun, 2004). Test anxiety is a form of social-evaluation anxiety experienced by individuals in an assessment environment (Putwain, 2007).Tests have now become a common occurrence in modern day education programs and , certainly in this day, almost all individuals experience tests at least once in their academic life (Zeidner, 1998; Rothman, 2004). Aysan, Thompson, and Hamarat (2001) stated that experiencing test anxiety has various widespread impacts on a person's performance during the test. It is a modern day condition and explains why educationalists and behaviorists, since the early years of the 20th century, have focused their attention on the inverse relationship between test anxiety and test performance (Zeidner, 1998). Literature has suggested that the relationship between test anxiety and test performance broadens to some factors, such as poor motivation (Elliot & McGregor, 1999), the suppression of immune system function (Keogh & French, 2001), and impaired cognitive activity, which cause poor test results (Eysenck & Calvo, 1992; Sarason, 1988; Zatz & Chassin, 1983; Peleg-Popko, 2004). Therefore, we should regard test anxiety, as a significant problem in students' academic life.

Test Anxiety Conceptualization

The Diagnostic and Statistical Manual-IV states that test anxiety is mainly a concern over negative evaluation (DSM-IV: American Psychiatric Association (APA), 1994) and falls into the classification of "social phobia". Social phobias are defined as "a marked and persistent fear of social or performance situations in which embarrassment may occur". (APA, 1995; McDonald, 2001).

Test anxiety is basically a strong emotional reaction that an individual experiences before and during an examination (Akca, 2011). Usually, situations where individuals are allowed personal evaluation is termed an evaluative situation, which will potentially result in performance efforts geared towards high standards that lead to high levels of performance. On the other hand, when placed in an evaluative situation, distress regarding normative assessment, comparative and competitive behaviors will lead to heightened anxiety and disrupt students from focusing on doing what is necessary to successfully complete the test (Zeidner & Matthews, 2005; Van Yperen, 2007). Therefore, this is detrimental towards the performance and will erode academic achievement by affecting the subject's mental health and academic life (Zeidner, 1998; Rothman, 2004).

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Components of Test Anxiety

The "fear of evaluation" which is important to test anxiety, is defined by Liebert and Morris (1967; McDonald, 2001), as having two distinct components. The first component is the cognitive component, which is the mental activity that revolves around the testing situation and its possible effects on a person. The word "worry", in the context of test anxiety research, is defined as the feeling of distress, concern and anxiety over impending evaluative events (Flett & Blankstein, 1994; Zeidner, 1998). Initially, Liebert and Morris (1967) defined worry as "any cognitive expression of concern about one's own performance", such as pessimistic expectations, obsession with performance, and possible outcomes, including self-criticism, overwhelming fear about failing grades, and absent-mindedness (Hambree, 1988; Berk & Nanda, 2006). As a result, individuals who are test-anxious become more obsessed with the implications and consequences of failure to meet situational challenges rather than rationally focusing on completing the task in an orderly manner (Sarason, 1986; Zeidner, 1998). Another element in test anxiety involves autonomic arousal or "emotionality". Emotionality is seen as a physiological component of test anxiety whereby an individual experiences tense muscles, raised heart rate, the feeling of sickness, dizziness, sweating, and shaking (APA, 1995; McDonald, 2001).

For many years anxiety literature focused on these two components. However, some studies with factor analytic methods have manifested different findings about test anxiety components (Richardson, O'Neil, Whitmore, & Judd, 1977; Zimmer, Hocevar, Bachelor, & Meinke, 1992; Hong, 1999). As a result, current research tried to concentrate on more components of test anxiety. For instance, Putwain, Connors, and Symes, (2010) stated that test anxiety is comprised of several independent cognitive, physiological-affective and behavioural facets. The cognitive facet alludes to the negative thoughts experienced by individuals during tests and other evaluation encounters. These thoughts often involve self-deprecation like "I am going to fail this exam". The individuals' perception of their physiological condition makes up the other component, called the physiological affective component. This component manifests itself by feelings of muscle tension, shaking, feeling sick and etc, and the last one, which is the behavioural component, is expressed by the presence of poor study skills and test-taking behaviors, and inattentiveness or distraction during the examinations.

The Prevalence of Test Anxiety

It is not surprising that test situations evoke anxiety for many when the impact of tests on one's life is considered, including the educational, vocational, emotional and other aspects (Zeidner, 1998; Rothman, 2004). A meta-analytic study that examined "Test Anxiety Inventory" data collected from 14 different countries was conducted by Seipp and Schwarzer in 1996. The findings revealed that youth from Egypt, Jordan and Hungary experienced the highest levels of test anxiety, while youth from China, Italy, Japan, and the Netherlands had the lowest anxiety levels (Bodas & Ollendick, 2005).

Currently, it is rather challenging to estimate the number of students who are faced with test anxiety because of the lack of a large-scale epidemiological study (Zeidner, 1998). Previous studies have reported an anxiety rate of 10% to 25% or 30% among elementary and secondary school students (Hill, 1984; Nottelmann & Hill, 1977), although more recently, the anxiety rates were found to be much higher than 33% among school children and adolescents affected (Methia, 2004; Whitaker Sena, Lowe & Lee, 2007), and lately the approximation of 40% of students have been mentioned (Huberty, 2009; Cassady, 2010; Salend, 2011). In this case, Bradely et al., (2010) mentioned that these are serious information and would be a big challenge for educators to know how to prepare students for examinations properly, which reflect their best academic abilities and capabilities.

Negative Consequences of Test Anxiety

The modern education system heavily utilizes tests as the main means of assessment, evaluation and comparison. This, however, causes some students to be very distressed by the negative experience

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of test taking that they are not able to reach their potentialities. The entire examination experience for these students becomes excruciatingly painful, with their self-esteem and motivation put under threat. Students who repeatedly experience test failures or low-test performances despite putting in much effort commonly feel shame, stupidity, and incompetence (Sarason, 1980; Rothman, 2004).

Majority of research have found that test anxiety involves many negative effects including poor performance, low motivation, negative self-evaluation beliefs, and low concentration, as well as an increase in school dropout rates and general anxiety (Hancock, 2001; Tobias, 1979, King, Mietz, Tinney, & Ollendick, 1995; Whitaker Sena, Lowe & Lee, 2007). The effect of test anxiety on motivation can also influence the success expectancy. Consequently, students with higher test anxiety might minimize the success expectancy's level and relegate significant learning outcomes protectively (Bembennutty, 2008). Other negative connotations include low self-esteem, reading difficulties and low math achievement, failing grades, disruptive classroom behavior, negative thoughts about the school, and feelings of unease and fear, which is the result of an extreme fear of failure (Bryan & Bryan, 1983; Peleg, 2009) as well as memory interruption, particularly concerning phonological processing (Keogh & French, 2001; Peleg, 2009). The experience of test anxiety also slows down the mind by suppressing clear thought and confusing it so that the problem-solving process becomes more complex (Baltaş, 1986; Kutlu, 2001, Akca, 2011). Additionally, anxiety causes detrimental effects to some somatic processes which can lead to tachycardia, sweating, muscle tension, and also affected respiration. Aysan et al., (2001) asserted that stress felt from the test can have negative physiological effects to the body like hypertension, coronary heart disease, respiratory distress syndrome and suppressed immune system functioning.

To sum up, the students' quality of life, whether it is psychological, emotional, physical or academic is adversely affected by test outcomes. For instance, certain studies carried reports that some students even consider suicide due to being preoccupied with the test (Keogh & French, 2001; Rothman, 2004).

Potential Sources of Test Anxiety

Both the test situation and the test-taker can function as the source of test anxiety (Zeidner, 1998; Bonaccio & Reeve, 2010). Several important domains of perceptions in the testing situation that are probably encouraging anxiety have been identified by researchers. The current literature regarding test anxiety suggests that previous experiences of test takers have significantly influence on their perceptions, including the familiarity with the test subject, test difficulty and finally the intention of applying test scores (e.g., the use of the test results to make important decisions like job applications) (Anastasi, 1981; Pekrun et al., 2004; Reeve, Bonaccio, & Charles, 2008; Bonaccio & Reeve, 2010).

Various literatures have found that the self-perception of the test taker is a significant consideration that determines whether individuals who take the tests believe that they are able to pass the standards of the test. For example, the feeling of whether they are adequately prepared for the exam, both perception of low self-efficacy and incompetence (Pekrun, 2006, Chamorro-Premuzic, Ahmetoglu, &Eurnham, 2008; Bonaccio & Reeve, 2010; Putwain, Woods, & Symes, 2010), low competence beliefs that predicting failure on academic evaluations and, therefore, linked to the assessment of evaluations as threatening, and also motivations derived from the fear of failure (Pekrun et al., 2007; Zeidner & Mathews, 2005; Elliot, 2005; Elliot &Pekrun,2007; Putwain & Daniels, 2010). Additionally, the lack of confidence, striving for flawlessness and setting excessively high performance standards or "maladaptive perfectionism" as well as low scores in emotional stability (or neuroticism)(Zohar, 1998; Reeve et al., 2008; Blatt, 1995; Spielberger, Gorsuch, &Lushene, 1970; Bonaccio& Reeve, 2010) are all caused by test anxiety. In this context, people's ideas about "the self" will come into play based on his or her beliefs about their own characteristics, which might be perceived as state-like or trait-like.

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Gender Group Differences

It is widely claimed that gender, which is connected to many developmental trends, affects the growth and exposure of anxiety in evaluative encounters (Basso, Gallagher, Mikusa & Rueter, 2011). In the middle years of elementary school, gender differences in test anxiety start to appear, and constantly female students tend to mention higher test anxiety levels compared to male students since elementary school through high school and college (Hembree, 1988; Hill &Sarason, 1966; Zeidner, 1998). The prevalence of anxiety disorders in women has clearly increased, and compared to men are two times more likely to develop the disease (Kinrys & Wygant, 2005; Pigott, 1999, 2003; Basso et al., 2011).

According to Hodge, McCormic, and Elliot (1997), for instance, explored the level of test anxiety in a large group of adolescents as they approached their last exam. He found that most of the students, especially girls, were encountering a high level of distress during this time, and variables like poor socio-economic condition and the perception of academic competence makes them to be most vulnerable to these negative states. Cole, Truglio, and Peek (1999) in assertion of aforementioned studies, found that female students mentioned elevated levels of anxiety and depression and also devalue their academic competence, while male students showed a reversed trend and overvalued their competency (Locker & Cropley, 2004). Consistent with previous research, some other studies also showed that both female undergraduate and graduate students experience more test anxiety than male counterparts in spite of having higher GPAs than male students (Ginter et al., 1982; Hembree, 1988; Seipp, 1991; Zeidner, 1998; Chapell et al, 2005).

The question as to why females undergo higher test anxiety compared to males remains to be unanswered. It is stated that women may become more concerned about their personal inadequacies than men and as a result, experience more worry and discomfort in evaluative conditions due to the increased degree of public self-consciousness. Furthermore, it has been hypothesized that men and women perceive and react to the assessment in a different mode (Lewis & College, 1987; Zeidner, 1998). However, Basso et al., (2011) have posited some other contributing factors, including neurodevelopment, physiological, hormonal factors, and also personal and societal burden, which seem to increase women's vulnerability to experience higher anxiety than men.

Treatment approaches

One of the important concerns in test anxiety research is the reduction of test anxiety levels. Many ways have been proposed to conceptualize the problem of test anxiety as well as many ways in approaching its treatment. Treatment efforts were aimed at reducing the physiological arousal through behavioral strategies during the early days of understanding test anxiety in terms of a physiological or emotional experience. Subsequent treatments techniques began to move toward the cognitive and combined methods (Ergene, 2003).

Ergene (2003) found that many treatments have been developed over time to treat test anxiety. The treatments he found were categorized to: (1). behavioural approaches, including desensitization procedure, relaxation skills, biofeedback training, modeling skills, anxiety induction, training for how to manage anxiety and so forth; (2). cognitive approaches such as rational emotive therapy, cognitive restructuring methods; (3). cognitive-behavioral approaches like cognitive-behavioral modification, stress-inoculation skills and (4). Skill-deficit methods including training for study skills, training for test-taking skills, and approaches, which have combined both the cognitive and skill-focused methods (Beck et al., 1996; Jones & Petruzzi, 1995; Kondo & Gifu, 1997; Onwuegbuzie & Daley, 1996; Ergene, 2003). More recently, a method known as the Mind-based cognitive therapy (MBCT), which is a clinical intervention program made for groups to lessen cases of deterioration or reappearance of major depressive disorder (MDD) has been utilized for different psychological problems including social phobia and generalized anxiety disorder (Piet & Hougaard, 2011) and It may also possibly be used for the reduction of anxiety.

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Ergene (2003) stated in his study that compound treatments, which combine skills, focused approaches with behaviour or cognitive approaches were the most effective. In the study done by However, Barrett, and Turner (2001; Gregor, 2005) few trials of universal and evidence based programs for preventing anxiety in young people have been found to date. They defined the concept of universal programs as interventions, which can be used for the all population, with their risk status disregarded. The majority of research thus far is focused mainly on adult contributors. Another of Ergene's (2003) assertion is that there is an intense demand for the formation of helpful test anxiety reduction methods for primary, middle and high school students as most of the current programs are designed for college and university students.

Furthermore, another factor that should be considered in the treatment of test anxiety as noted by Zeidner (2007), is that research on anxiety interventions may be considerably benefited by the perception of test-anxious individuals' profile. Indeed, examining the related significant predictors of anxiety make the test anxiety theories and approaches more comprehensible, which probably lead to the development of the best anxiety-reduction methods (Reeve, Bonaccio & Charles, 2008).

Conclusion

Reviews on the issue of test anxiety illustrates that the impacts of test anxiety on students' life could be educational, professional and emotional. The prevailing fact is that test anxiety is a widespread problem for many students around the world, particularly for female students. Therefore, different treatment approaches and techniques should be utilized by psychologists and counselors to reduce test anxiety. However, it should be considered that most of the treatment programs have been designed for college and university students and thus it is essential to develop some universal prevention programs for younger individuals.

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