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ANXIETY AND TEST PERFORMANCE: IMPLICATIONS FOR COUNSELLING

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Abstract

Anxiety as a psychological concept is required at some tolerable level to help students to get revived and perform optimally in learning environment. It becomes catastrophic when its effect is beyond human adaptive level and hence maladaptive effects. The generalized feeling of apprehension usually accompanied by physiological upset is capable to obliterate learner's good academic performance. To ascertain this fact, correlations study of test anxiety and test performance was conducted among senior secondary school students in S.S. III. The results shows that a relationship exists between test anxiety and test performance among subjects that composed the sample of the study. A larger sample of subjects is recommended for further investigation to verify this claim.

The Concept of Anxiety

All of us have experienced anxiety, that state of tension and apprehension that is a natural response to perceived threat. *Memahon (1976)* viewed anxiety as a generalized feeling of apprehension usually accompanied by physiological upset. Anxiety is a diffuse, vague, highly unpleasant feeling of fear and apprehension. People with high levels of anxiety worry a lot (*Santrrock, 2000*). In anxiety disorders, however the frequency and intensity of anxiety responses are out of proportion to the situation that trigger them and the anxiety interferes daily life (*Passer and Smith, 2001*). Facing a crowd, waiting for important news, thinking interview for a job, waiting to take an examination, the individual may feel a bit apprehensive and uncomfortable each of these situations. At moderate levels, anxiety is normal and expected. It often provides the motivation needed to give an outstanding performance in all situations. High levels of anxiety however are distressing and interfere with effective functioning (*Osinowo and Imhonde, 2004*).

There are four types of symptoms that make up anxiety. Firstly is physiological, or somatic, symptoms, including muscle tension, heart palpitations, stomach pain, and the need to urinate. The second is emotional symptoms-primarily a sense of fearfulness and watchfulness. Thirdly, cognitive symptoms, including unrealistic worries that something bad is happening or is about to happen. Finally, behavioural symptoms - causing avoiding situations because of fears (*Nolen-Hoeksema, 2004*).

The physiological and behavioural symptoms make up what is known as the fight-or-flight response (also called the emergency reaction). Evolution has prepared our bodies so that we can fight off or flee from threats to our safety, whether they be saber-toothed tigers (in ancient times) or a robber with a gun. Our heart rate, blood pressure, and breathing rate increase, and our muscles tense. At the same time, certain unessential activities, such as digestion, slow down. Saliva and mucus dry up thereby increasing the size of air passages to our lungs. (This is why we get a dry mouth when we are anxious). The body's natural painkillers, endorphins, are secreted and surface blood vessels constrict to reduce bleeding in case of injury (*Nolen-Hoeksema, 2004*).

These physiological changes begin in the brain when the amygdala recognizes a threat and begins the process of activating the neuro-chemical and neuroanatomical circuitry of fear (*Yehuda, 2000*). The amygdala then signals the hypothalamus to activate two neuro-endocrine systems: the autonomic nervous (especially the sympathetic division) of this system and the adrenal-cortical system. The hypothalamus first activates the sympathetic division of the autonomic nervous system. The sympathetic system acts directly on smooth muscles and internal organs to produce some of the body changes for example, increased heart rate and elevated blood pressure. The sympathetic system also stimulates the release of hormones, including epinephrine (adrenaline) and more epinephrine, which perpetuate a state of physiological arousal (*Nolen-Hoeksema, 2004*).

The hypothalamus activates the "adrenal-cortical system by releasing corticotrophin-release factor, which signals the pituitary gland to secrete Adrenocorticotropic hormone (ACTH), the body's major stress hormone". ACTH stimulates the outer layer of the adrenal glands (the adrenal cortex), resulting in the release of a group of hormones, the major one being cortisol. The amount of cortisol in blood or urine samples is often used as a measure of stress. ACTH also signals the adrenal glands to release about 30 other hormones, each of which plays a role in the body's adjustment to emergency situations. Eventually, the hormone's signal reaches the hippocampus, a part of the brain that helps regulate emotions, to turn off this physiological cascade when the threatening stimulus has passed (*Nolen-Hoeksema, 2004*). A brief discussion of anxiety disorders is pertinent in this research work.

Anxiety Disorders

Factors in anxiety disorders should be reviewed very briefly to provide some insight to enable delineating between adaptive anxiety and anxiety disorders.

Biological Factors: The search for biological processes associated with the anxiety disorders has focused on several neurotransmitters in the brain. One of such transmitters is GABA (gamma-aminobutyric acid). GABA is an inhibitory transmitter that reduces neural activity in the amygdala and other brain structures that stimulate physiological arousal. Some researchers believe that abnormally low levels of inhibitory GABA activity in these arousal areas may cause some people to have highly reactive nervous systems that quickly produce anxiety responses in response to stressors (*Bremner, 2000*).

Psychological Factors: Psychodynamic theorists see anxiety as a central feature of psychoanalytic conceptions of abnormal behaviour. According to Freud, he classified anxiety into three:

- (a) Reality anxiety, arising from dangers or threats in the external world
- (b) Neurotic anxiety, caused by Id's impulses threatening to break through ego's control resulting behaviour that will be punished in some way and
- (c) Moral anxiety arising from a real or contemplated action in conflict with them individual's superego or moral values and arousing feelings of guilt (*Coleman, 1976*).

In Freud's perspective, neurotic anxiety occurs when unacceptable impulses threaten to overwhelm the ego's defenses and explode into action. How the ego's defense mechanisms deal with neurotic anxiety determines the form of the anxiety disorder. Freud believed that in phobic disorders, neurotic anxiety is onto some external stimulus that has symbolic significance in relation to the underlying conflict.

Cognitive Factors

Cognitive theorists stress the role of maladaptive thought patterns and beliefs in anxiety disorders. Anxiety disordered people always think of catastrophe and magnify them into reality. They anticipate that the worst will happen and feel powerless to cope effectively (*Clark, 1988, and Mineka, Watson and Clark, 1998*).

Anxiety as a Learned Response

From the behavioural perspective, anxiety disorders result from emotional conditioning (*Ohman, 2000; Rachman, 1998*). Some fears are acquired as a result of traumatic experiences that produce a classically conditioned fear response. For example, a person who has a traumatic fall from high place may develop a fear of height (a CR) because the high place (CS) becomes associated with the pain and trauma of the fall (UCS).

Apart from classical conditioning, anxiety can develop through observational learning. For example, televised images of air crashes can evoke high levels of fear in some people, what causes anxiety in the learning process of a child. The exact causes of anxiety in the learning process of the child is not fully known, but a number of factors-including genetics, brain chemistry and environmental stress appear to contribute to its development (*D'Arcy, 2004*). A quick look at these factors is important.

Genetics: Some research suggests that family history plays a part in increasing the likelihood that a person will develop Generalized Anxiety Disorders (GAD). It implies that the tendency to develop GAD may be passed on in families i.e. from parents to their offspring.

Brain Chemistry

Generalized Anxiety disorders have been associated with abnormal levels of certain neurotransmitters in the brain. Neurotransmitters are special chemical messengers that help more information from nerve cell to nerve cell. If the neurotransmitters are out of balance, messages cannot get through the brain properly. This can alter the way the brain reacts in certain situations, leading to anxiety.

Environmental Factors

Trauma and stressful events, such as abuse, the death of a loved one, divorce and changing jobs or schools may lead to GAD. GAD also may become worse during periods of stress. The use of and withdrawal from addictive substances, including alcohol, caffeine and nicotine, can also

worsen anxiety (D'Arcy, 2004). Having seen some factors that can predispose learners to anxiety, it is pertinent to discuss test anxiety and test performance.

Anxiety and Test Performance

You have participated in class, done all of your homework, studied hard, and you think you have a grip on the material. But then the day of the test comes. Suddenly, you blank out, freeze up, zone out, or feel so nervous that you cannot get it together to respond to those question you knew the answers to just last night. If this sounds like you, you may have a case of test anxiety - that nervous feeling that people sometimes get when they are about to take a test.

Problem of the Study

It is pretty normal to feel a little nervous and stressed before a test. Just about everyone does. And a touch of nervous anticipation can actually help you get revived and keep you at peak performance while you are taking a test. But for some people, this normal anxiety is more intense. The nervousness they feel before a test can be so strong that it interferes with their concentration or performance. (D'Arcy, 2004).

According to *Seligman et al (2001)* Test anxiety is the uneasiness, apprehension, or nervousness felt by students who have a fear of failing an examination. Students suffering from test anxiety may experience any of the following: the association of grades with personal work, embarrassment by a teacher, taking a class that is beyond their ability, fear of alienation from parents or friends, time pressures, or feeling a loss of control. Emotional, cognitive, behavioural, and physical components can all be present in text anxiety. Sweating dizziness, headache, racing heartbeats, nausea, fidgeting and drumming on a desk are all common.

An optimal level of arousal is necessary to best complete a task such as an examination; however, when the anxiety or level of arousal exceeds that optimum, it results in a decline in performance.

The current literature suggests many techniques for mastering self-regulation to diminish the effects of stress and anxiety. The most widely discussed self-regulation techniques include: progressive muscle relaxation, EMG biofeedback training; finger temperature biofeedback training, and autogenic training (*Lehrer et al, 1994*).

We have seen the debilitating effects of anxiety in human behaviour and researches done in Western countries shows that anxiety has a profound effect on students learning. It is therefore necessary to have a cursory look on how this free floating psychological problem can impinge on student's academic progress.

Purpose of Study

The following are the purpose of the study:

- 1) To ascertain students test anxiety.
- 2) To find out the relationship between students test anxiety and test performance.

Research Questions

1. How do these symptoms affect students before taking a test?
2. How do the symptoms of test anxiety affects students test performance?

Methodology

Population and Sample

The study adopted a survey method. The population consisted of all SS III students in a secondary school in Oredo Local Government, from where a sample of 50 students were

selected using multistage technique. The choice of SS III students was considered appropriate because they have been exposed to series of examinations and tests for many years.

Instrumentation

A modified test Anxiety Inventory (*DSM, 1994*) for children and adolescents was used to gather data for the study. The instrument was designed on Yes and No, the instrument was divided into two sections, namely A and B section was designed to collect demographic data concerning the respondents. While Section B was directed at eliciting information on Test anxiety and test performance. The section B of the instrument had 10 items. The first 5 items are test anxiety and the last 5 items are test performance.

The instrument was given to two testing experts for validation. Their suggestions led to re-wording of the items to suit students understanding. The reliability of the instrument was established through test retest method of two weeks interval administered on students that did not form part of the sample.

The instrument was personally administered to the respondents in their respective classrooms in collaboration with teachers in the school. After responding to the instruments they were carefully arranged for scoring. Data were thereafter analyzed using descriptive statistics- percentages.

Results

Research Question 1: How do these symptoms affect students **Table 1:**
Symptoms manifested by students before taking a test

| S/N | Statement | Test Yes % | Anxiety No% |
|-----|--|------------|-------------|
| 1. | I feel nervous before a test | 17(33%) | 33(66%) |
| 2. | I feel stomach ache before any test | 12(24%) | 38(72%) |
| 3. | I feel shaky, sweaty or feel my heart beating quickly as I wait for a test to be taken | 19(38%) | 31(6%) |
| 4. | You worry a lot when a test is to be given | 10(20%) | 40(80%) |
| 5. | As a student I worry excessively about a number of events or activities | 30(60%) | 20(40%) |

Results on table 1 shows that students experience some level of test anxiety before taking a test. Though the level of responses of Yes to experience of anxiety is not equal or above the no responses, it is very clear that some significant number of students in SS III Class that composed the sample of study experience test-anxiety.

Research question 2:

How symptoms of test anxiety do affects students test performance

Table 2: Effect of Test Anxiety on Students Test Performance

| S/N | Statement | Test Yes % | Performance No% |
|-----|---|------------|-----------------|
| 6. | I worry about my competence and quality of performance? | 24(48%) | 26(52%) |

| | | | |
|-----|---|---------|---------|
| 7. | When I experienced a decline in classroom performance, I refused to go to school, or avoid social activities? | 27(54%) | 23(46%) |
| 8. | I spend too much time each day doing things over and over again (for example, hand washing, checking things or counting)? | 15(30%) | 35(70%) |
| 9. | I avoid tasks because of excessive dissatisfaction with less-than-perfect performance? | 20(40%) | 30(60%) |
| 10. | I feel anxious when interacting with my mates and avoid them? | 18(36%) | 22(44%) |

Results on table 2 shows test anxiety have effects on students test performance. The percentages analysis of subjects' responses shows that their states of anxiety is implicated in their test performance.

Discussion

The study was concerned with examining the relationship between test anxiety and test performance among SS III students. Findings from the study showed that students, experience symptoms of anxiety before a test is taken.

Moreover, a relationship between test anxiety and test performance was also revealed by the results of the study. There are factors that could be responsible for the finding. It could be in line with genetics, brain chemistry, and environmental stress as posited by *Darcy (2004)*. It is an established research finding that high levels of anxiety are distressing and interferes with effective functioning (*Osinowo and Imhonde, 2004*). This fact may be accountable for the significant relationship between test anxiety and test performance as revealed by results in table 1 and 2.

In psychological perspective, an optimal level of arousal is necessary to best complete a task such as examination however, when the anxiety or level of arousal exceeds that optimum, it results in a decline in performance. Current literature suggests many techniques for mastering self-regulation to diminish the effects of stress and anxiety. Recommended control measures include progressive muscle relaxation, EMG biofeedback training, and autogenetic training (*Leherer et al, 1994*).

Conclusion

This study reviewed anxiety, test anxiety, and test performance. An investigation of the relationship between test anxiety and test performance was conducted. Results revealed that a relationship exist to some significant level. This study would have been better conducted experimentally if facilities like standard finger thermometer (*Model 177*), tape for attaching the thermometers, and both oral and written instructions on how to attach the finger thermometer and record hand temperature.

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