

## Examining the Prevalence and Severity of Anxiety, Depression and Stress among Form Four Examination Candidates

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**ABSTRACT** Examination candidates experience stress, anxiety and depression due to fear of failure and its consequences. This paper examines the prevalence and severity of stress, anxiety and depression among form four candidates. The study was conducted in four secondary schools in Kadoma Central District, Zimbabwe. A descriptive cross-sectional design was used. Eighty (80) randomly selected students participated in the study. A questionnaire was used to solicit data on students' levels of anxiety. Data was analysed and presented in the form of descriptive and inferential statistics. Results indicate that the majority (90%) experience varying levels of anxiety, depression, and stress ranging from mild to severe. Results show females suffer examination stress more than males. The paper concludes that candidates experience examination stress due to poor preparation before taking an examination, poor examination taking skills and pressures from multiple sources. The paper recommends candidates to timeously

### INTRODUCTION

Stress, anxiety and depression are common problems experienced by most students during examinations (Rezazadeh and Tavakoliy 2009). Many students' potential to do well in their final examinations is thwarted by high levels of test anxiety. Societal and parental expectations on examination performance are too high and often exaggerated. Failure to pass examinations limit students' educational and vocational opportunities (Sindhu 2015). This results in anxiety. Test anxiety is considered as a situation-specific trait accounting for individual differences in the extent to which people find examinations threatening (Bajjal 2016). Though it is normal to experience some levels of anxiety during examination time, Ann Mary et al. (2014) argued that high levels have detrimental effects on a candidate's performance. In Zimbabwe, students are subjected to a series of closely scheduled examinations at the end of their fourth academic year at secondary school. This exerts pressure on candidates and consequently lead to stress for some students (McMillan 2013). The severity of examination stress is influenced by the amount

of preparation and planning a student has put into studying towards a particular examination and how confident they feel about the subject content they are to be tested on (Saha 2014). A candidate's level of anxiety and stress can result in stress induced disorders such as heart attacks and deteriorating academic performance (Gaurav et al. 2013). Other researchers indicate that examination demands impact negatively on the health and well-being of candidates (Syokwaa et al. 2014; Weinstein et al. 2009). A study conducted by Basols et al. (2014) revealed severe levels of depression, stress and anxiety among candidates.

Examination anxiety contributes to a variety of negative outcomes including psychological distress, academic underachievement, academic failure, and insecurity (Bharathi et al. 2015). Examination anxiety is variously defined in literature. Chapell et al. (2005) defined examination anxiety as the set of phenomenological, psychological, and behavioral responses that accompany concern about possible negative consequences or failure on an examination or similar evaluative situations. Sansgiry and Sail (2006) also defined examination anxiety as the "reaction to stimuli that are associated with an indi-

vidual's experience of testing or evaluative situations" (p. 1). In this paper examination anxiety is defined as 'a psychological condition, in which an examination candidate experiences distress before, during and after examinations which in turn lead to poor performance (Simonton 2009).

Anxiety creates significant barriers to a candidate's performance if it is not properly sustained (Custodero 2013). According to Birjandi and Alemi (2010), there are two broad causes of examination anxiety: poor preparation and worries from past performance. Lack of preparation causes students to memorise concepts a night before the examination. Poor time management, failure to organise text information and poor study habits also contribute to examination stress. The other cause of examination stress is worrying about past performance on examinations and knowledge of how other students are performing and the consequences of failure. Stress, anxiety and depression during the examinations arise from a wide variety of factors. In Zimbabwe, form four results are used as entry requirements to the next level, Advanced level, which in determine entry into competitive tertiary institutions. This scenario presents an anxiety-inducing process for some examination. Putwain et al. (2013) reported that students' anxiety and stress levels students are intensified by the influence of assessments and examinations on career aspirations and future life trajectories. Success in examinations is perceived as having lifelong influence on students' ultimate careers (Hagarty and Currie 2012). Furthermore, the increased study workload, pressure from parents and teachers, and candidates' low self-efficacy have been identified as contributing factors that heightened stress levels during examinations (Xiao 2013).

Other causes of examination anxiety emanate from negative prior experiences with test taking (Onyekuru and Ibegbunam 2014). Students who have experienced blanking out on tests or the inability to perform in testing situations can develop anticipatory anxiety. Worrying about examinations can build as the testing situation approaches, and can interfere with students' ability to prepare adequately (Patience and Chinyere 2014). Candidates who doubt their level of preparedness for examination have a likelihood of experiencing examination anxiety (Nyanjena et al. 2013). Poor time management, study

habits and lack of organization can lead students to feel overwhelmed (Sinha 2014). Students who memorise and design mnemonics to remember facts feel less confident about the subject content are at high risk of experiencing stress (Squires 2013). Furthermore, Behnam et al. (2014) pointed out that being unable to anticipate the content and examination scope can lead students to panic during examinations.

A moderate level of stress is recommended as it sharpens concentration and performance (Tiwari 2011). Examination stress can help to create the energy and motivation that students need to keep studying. However, too much stress can be unhealthy and can hinder students from performing adequately in their exams. Moderate levels of stress can enhance students' memory, attention, motivation, and can lead to improved test performance (Sharma et al. 2016). Teseo (2016) believed mastery could be achieved through sustained focus, even in the midst of stress or anxiety. However, severe levels can be debilitating. Research has consistently shown that examination anxiety correlates with poor academic performance (Karatas et al. 2013; Fulton 2016; Cakici 2016). It is against this background that this paper seeks to investigate the prevalence of depression, anxiety and stress among form four students. The emphasis of the investigation is on students' stress levels specifically during examination period.

### **Problem Statement**

Form four candidates are particularly prone to stress, anxiety and depression due to the importance and impact of examinations in determining career pathways in Zimbabwe. Academic performance in the past three years (2014-2016) was generally low and consistent with pass rates of 22.98 percent, 27.86 percent and 29.96 percent respectively among form four students. This low performance pattern exerts emotional pressure on candidates in the form of stress, anxiety and depression. However severe levels of stress negatively affect learners' performance (Naidoo et al. 2014). There is also a lack of practical support and research available to help students develop 'lifelong', self-help approaches to coping with stress now, and into the future. Very little research has been conducted in Zimbabwe to ascertain students' stress levels during examinations.

### **Purpose of the Study**

The purpose of this study is to gather baseline information on the stress prevalence severity levels among secondary school students in Kadoma central district. The study also sought to provide valuable knowledge and information for helping secondary school teachers and students to understand and manage reasonable levels that do not affect performance.

### **Objectives of the Study**

- The objectives of the study were:
- To determine the prevalence of depression, anxiety and stress among form four examination candidates.
  - To determine the prevalence of depression, anxiety and stress in form four students by age, gender and home language?

### **Research Question**

This study sought to examine the prevalence and severity of stress, anxiety and depression among form four students during the final year examinations period. The following research question was envisaged:

1. What are levels and prevalence of stress, depression and anxiety of form four students' examination candidates?
2. How can schools help examination candidates to remain focused in the face of anxiety?

### **Hypotheses**

To answer the above question the following hypotheses were envisaged:

- $H_1$ : There is a significant difference in examination stress severity between males and females.
- $H_2$ : There is a significant difference in examination stress levels among students based on age cohorts.
- $H_3$ : There is a significant difference in examination stress levels among students from different language backgrounds.

### **Significance of the Study**

The study will lead to a better understanding of anxiety to examination candidates and to

minimise the anxiety disorders that are often associated with extreme levels of anxiety. The study also seeks to make recommendations on good study habits and examination preparation. The study will also add to the existing body of knowledge and literature on anxiety and depression among examination candidates.

### **Theoretical Models**

Papantoniou et al. (2012) describes examination anxiety as a multidimensional construct that consists of cognitive, affective, and behavioral components. These components represent distinct response channels through which test anxiety may be expressed to test taking situations. The study is guided by two theoretical models that provide explanations why students experience stress during examination times namely the cognitive interference model and learning/preparation deficit model. The cognitive interference model postulates that candidates with test anxiety focus on task-irrelevant stimuli which negatively affect their performance (Robinson et al. 2011). This interference can be classified into physical distraction, and inappropriate cognition. The learning-deficit model describes the problems associated with the preparing for the test and not with writing the test (Kleijn et al. 1994). According to this model, the students with high test anxiety tend to use inadequate learning or study skills while preparing for the examination.

### ***Cognitive Interference Model***

The cognitive interference model states that candidates who experience test anxiety perform poorly during evaluative situations largely due to inability to suppress competing thoughts, which are often negative and self-deprecatory (Cassady 2004). The model assumes that high levels of test anxiety block and inhibit one's attention and the ability to recall learned information. It divides learners' cognitive power between focusing on the task and paying attention to irrelevant thoughts (Saha 2014). Cognitive interference has been widely regarded as a traditional interpretation of candidates' low performance in tests and examinations. Interfering thoughts about the consequences of failing the examination can impair knowledge and retrieval of learned concepts, leading to eventual failure in examinations (Cassady and Johnson 2002). In

addition, the model highlights that students with high levels of test anxiety are more likely to worry about their performance and compare their abilities to others (Cassady and Johnson 2002). The cognitive interference model accounts for the detrimental effects of test anxiety (Birjandi and Alemi 2010).

According to the interference model, test anxiety produces responses that are irrelevant to the testing situation, interfering with relevant responses (Shokrpour et al. 2011). Students with high test-anxious levels are characterized by a low response threshold to anxiety in evaluative situation (Cizek and Burg 2006). Such students view evaluative and examination situations as personally threatening or challenging (Javid 2014). The cognitive interference model proposes that distractions from the task at hand lead to test anxiety. According to Birjandi and Alemi (2010), there are two types of distractions: inappropriate cognitions and physical distractions. High test-anxious students may become overly self-focused during testing situations (Thwala 2013). Thinking, for example, that “others are finishing before me; I must not know the material” (Birjandi and Alemi 2010: 47). This extreme self-focus interferes with performance by distracting the student from the task at hand (Schmader et al. 2008). Some learners mentally freeze up during the examination and fail to recall the information from their memory (Brown et al. 2013). To sum up, high test-anxious students are impaired by negative self-evaluative and task-irrelevant thoughts that block from recalling task relevant information (Powell 2004).

### *Preparation Deficit Model*

This model was derived from the work of Hill and Wigfield (1984). According to this model there are two deficits that account for poor academic performance in test anxious students: study skills deficits and test taking deficits. The model proposes that ineffective study habits during test preparation, or poor test taking skills, are critical factors that set in anxiety (Sansgiry and Sail 2006). On the other hand, the study skills explanation assumes that poor test performance is due to lack of thorough initial acquisition, or storage of content because of deficient study skills, rather than interference with retrieving previously learned material. Because the student studied ineffectively, subsequent perfor-

mance deficits are attributed to the retrieval of inadequately learned information (Lowe et al. 2008). Highly test-anxious students face difficulty in learning, storing and organising material. Their test-taking deficits originate from their perceptions about insufficient preparation due to poor study skills. Students’ excessive focus on negative thoughts such as failing and worrying about their level of preparedness for examinations can occupy cognitive processing that would otherwise be utilized for critical thinking and problem solving.

## **RESEARCH METHODOLOGY**

### **Approach**

This study is descriptive and uses a qualitative design to explore students’ experience of examination anxiety. A descriptive research design is one in which the major emphasis is on determining the frequency with which something occurs or the extent to which two variables vary (Merriam and Tisdell 2015). The sole purpose of this design is to describe the behaviour of a phenomenon without looking for any specific relationships. Descriptive studies are usually the best methods for collecting information that describe the world as it exists (Creswell 2013). This approach seems to be suitable for this study due to the nature of this study which begins with a well-defined issue (examination stress and anxiety) and sought to show the basic facts and to create a general picture of its severity among examination candidates

### **Research Instruments**

Nist and Diehl’s (1990) questionnaire was used to determine student’s examination anxiety levels. The questionnaire consisted of 10 items in which participants were asked to indicate how each of the statements describes their experiences or feelings before, during and after examinations: A five –point Likert scale was used to describe anxiety levels: 1: never, 2: rarely, 3: Sometimes, 4: Often, 5: Always.

### **Respondents**

The questionnaire was randomly distributed among 100 form 4 students in Kadoma, Zimbabwe. The response rate for the It was questionnaire 80 percent. The responses were analy-

sed using the Statistical Package for the Social Sciences (SPSS), version 23.0.

### Reliability and Validity

Table 1 shows the Cronbach's coefficient alpha calculated for the 10-item questionnaire. The Cronbach's coefficient alpha was 0.72 which is viable since an acceptable value must lie between 0.70 and 0.90 (Tavakol and Denice 2011). To ensure content validity, the questionnaire was adapted and restructured so that the questions suit participants' cognitive level. Some of the statements were reformulated to eliminate the possibility of misinterpretations. This was followed by a pre-tested administered to 15 students who were excluded from the main study to avoid contamination.

**Table 1: Reliability statistics**

<i>Cronbach's Alpha</i>	<i>Number of items</i>
0.72	10

## RESULTS AND DISCUSSION

### Response Rate

A follow up of the questionnaires showed a good response rate from the research participants. At the end of the data collection phase, the total number of the completed questionnaires was 80. Given that the sample size of the study was 100, from a population of 130, this represented a response rate of 80 percent.

**Table 2: Demographic variables**

<i>Variables</i>	<i>Frequency (f)</i>	<i>Percentage (%)</i>
<i>Gender</i>		
Male	38	47.5
Female	42	52.5
<i>Age</i>		
15-17 years	48	60.0
18-20 years	32	40.0
<i>Language</i>		
Shona	57	71.3
Ndebele	16	20.0
Other	7	8.8

Demographic data about the respondents in Table 2 shows that 38 (47.5%) were males and 42(52.5%) were females. The majority 48 (60%) of the participants were in the 15-17 years ages category. The sample consists of 57(71.25%) Shona speaking students and 16(20%) Ndebele

and the other 7(8.75%) languages were insignificantly represented.

To analyse the data according to the means, the researchers used the following ranks: 3.4 and above as high; 2.5-3.4 as moderate; 2-2.5 as mild and less than 2 as none. The severities of stress caused by the individual descriptions above are recorded in the Table 3. Nervousness before taking an examination, trouble with sleeping the night before the examination and making mistakes while taking the examination caused severe stress among examination candidates. The tendency of panicking before and during a test was observed as a possible cause of moderate stress. Remembering information that was forgotten during the testing situation and stomach pains before the examinations also account for moderate stress. Mild stress was caused by temporary sickness before examination and inability to recall information during the testing situation.

The severity of stress experienced by form four students in Kadoma can also be described using frequencies. Sixty-eight (85%) of the participants indicated that they feel nervous before taking a test. These findings are consistent with the findings of Yahya (2013) who indicated that students fear taking tests. However, some researchers argued that feeling anxiety before taking an examination is normal as it helps the examinee to work, think faster and more effectively, and improve performance (Ohata 2005; Van Blerkom 2011). Another important finding emerging in this study is that participants experienced trouble sleeping the night before the examination. Sixty-one (76.5%) participants indicated that they experience sleepless nights a day before the examination. However, studies indicate that lack of sleep can reduce effectiveness and responsiveness by as much as 25 percent. Another recent study indicates that sleep is a crucial component in memory; that the material one studies must be locked in by a period of sleep. Furthermore, after a certain time with no sleep, no new information can be retained (Smith 2009).

### Gender and Stress Severity

The results for stress levels divided into gender groups are shown in Table 4. Eight (10%) of the participants indicated that they do not

**Table 3: Descriptive statistics: Students' responses to the perceived stress scale**

Itemdescription	Mathematics anxiety levels					Mean $\bar{x}$	Std dev	Rank
	Never	Rarely	Some- times	Often	Always			
	Frequency (f)							
My mind goes blank during a test.	27	18	16	7	12	2.488	1.423	Mild
I feel sick before a test.	25	22	10	13	10	2.437	1.439	
I have difficulty choosing answers.	5	17	35	5	18	3.175	1.188	Moderate
I read through the test and feel that I do not know any of the answers.	13	20	28	10	9	2.775	1.201	
I panic before and during a test.	6	11	35	15	13	3.225	1.114	
I have "butterflies" in my stomach before a test.	33	8	20	9	10	2.512	1.405	
I remember the information that I blanked on once I get out of the testing situation.	15	14	31	11	9	2.813	1.223	
I have trouble sleeping the night before a test.	10	9	22	13	26	3.450	1.377	Severe
I make mistakes on easy questions or put answers in the wrong places.	4	9	32	17	18	3.450	1.113	
I feel nervous before a test.	5	7	31	24	13	3.413	1.064	

**Table 4: Gender and stress severity**

Anxiety level		Frequencies				
		No stress	Mild stress	Moderate stress	Severe stress	Total
Gender	Male	6	21	10	1	38 (47.5%)
	Female	2	24	13	3	42 (52.5%)
	Total	8 (10%)	45 (56.3%)	23 (28.7%)	4 (5%)	80 (100%)

experience stress as a result of examinations. The ratio of males to females in this category is 3:1, implying that males are less pressured by examinations. The mild stress category consists of 21 males and 24 females. Thus, 56.3 percent of the participants experience mild stress during examinations. Twenty-three (28.7%) of the participants experience moderate stress while 4(5%) participants experience severe stress. Another feature emerging from the results is that more females 42(52.5%) participants experience exam stress than their male counterparts 38 (47.5%).

Findings in the present study are consistent with the findings of Rezazadeh and Tavakoli (2009) which revealed that female students have a higher level of test anxiety than male students. The same findings were reported in previous researches on gender effects on test anxiety (Mehregan et al. 2001; Lashkaripour and Forouantania 2006). However, this difference has not been recorded by previous studies (Mousavi et al. 2008). Recent studies showed that young fe-

males are at a high risk of anxiety induced by the pressure they feel to achieve high marks in examinations (Putwain et al. 2013; Deb et al. 2015; Nathaniel et al. 2016). Similarly, Farooqi et al. (2012) revealed that a gene variant is more common amongst females, which produces fewer amounts of the protein that controls levels of serotonin in the brain. Therefore, it may be suggested that genetically, girls could be more prone to anxiety and stress disorders than boys. Another explanation for this difference could be the difference in the socialization patterns of males and females. Parents place more pressure on females to succeed in school than males. This leads to the increase in test anxiety levels because girls essentially are afraid to fail; each testing situation is seen as another possible chance to fail (Farooqi et al. 2012).

#### t-test

Results in Table 5 show that the mean of examination stress score among female students

was higher than the mean of examination stress score among male students. Female students experience more stress during or prior to the final examination period than their male counterparts. Thus female students are more worried, fear examinations and are more concerned about their performance. These findings are consistent with the findings of Bhatt (2013) and Bedewy and Gabriel (2015) who observed female students experience more stress than females during examination period.

**Table 5: Sample mean**

Gender	N	Mean $\bar{x}$	Std. deviation	Std. error mean
Male	42	2.2	.7404	.1142
Female	38	2.4	.6794	.1102

A t-test was conducted to test whether there was a significant difference in examination stress levels between male and female students. The results for the test are shown in Table 6 (df = 79, t = 26.253, p=0.00). Therefore, the null hypothesis was rejected since the p-value is less than 0.05. Hence the researchers concluded that there is a significant difference in the stress levels between male and female examination candidates. These observations are not consistent with Butt et al. (2013) who found that an individual's gender does not have any significant relationship (positive or negative) with his or her level of test anxiety.

A t-test was conducted to test whether there was a significant difference in examination stress levels between the two age cohorts. The results

for the test are shown in Table 6 (df = 79, t = 25.400, p = 0.00). Therefore, the researchers fail to reject the alternative hypothesis since p-value is less than 0.05. Hence the researchers concluded that there is a significant difference in the stress levels between the two age cohorts of examination candidates. This result is consistent with Monteiro et al. (2014) who noted that mature students are more vulnerable to stress than young adults. There are several possible explanations for this result. One such explanation is the need to succeed and satisfy the expectations of parents, teachers and community.

To test if there are significant differences between students from three different language backgrounds, an Analysis of Variance test was conducted to test the following hypothesis.

The results in Table 7 show that (df = 3, df = 76, F= 1.406, p= 0.248). Therefore, the researchers fail to accept the alternative hypothesis since p>0.05 and conclude that there are no significant differences in the levels of examination stress among students from different language backgrounds. This mean that student from different backgrounds are affected by end of year examinations anxiety and stress in the same way. These findings are consistent with Akanbi (2013) who found that students' language backgrounds have no effect on stress levels.

## CONCLUSION

The main purpose of this paper was to describe the severity of stress, anxiety and depression among secondary school examination candidates. The findings of this paper show that

**Table 6: Differences among form four students based on gender and age**

	<i>a</i>					
	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean difference</i>	<i>95% confidence interval of the difference</i>	
					<i>Lower</i>	<i>Upper</i>
Gender	26.253	79	.000	1.4750	1.363	1.587
Age	25.400	79	.000	1.4000	1.290	1.510

**Table 7: Differences among form four students based on language backgrounds**

	<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>Sig.</i>
Between groups	1.721	3	.574	1.406	.248
Within groups	31.029	76	.408		
Total	32.750	79			

the majority of students in sample experience significant examination related stress ranging from mild to severe. The mean of test anxiety score among female students was significantly higher than the mean of test anxiety score among male students. The most common experiences were problems related to sleeping the night before an examination, nervousness before an examination and mistakes on easy questions. Participants reported that they experience high levels of stress in science subjects which have a history of low success rates in the country but lead to better career paths. Hypothesis testing also confirmed that gender differences are significant in explaining the severity of stress levels between male and female examination candidates. Age was another demographic variable that was envisaged in this study. The study found that mature students are vulnerable to stress than young students. Students' language backgrounds were also proved insignificant.

### RECOMMENDATIONS

The study recommends that students should prepare for examinations well in time in order to reduce the level of stress and anxiety. It also recommends that schools should take a lead in equipping students with examination and test taking skills. Schools must provide counseling to students to assist them in managing examination anxiety. Finally, pressure exerted by parents, teachers, community and the candidates themselves should be kept at minimum to allow for a sustainable stress level.

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