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Musical Listening Interest, Socio-Demographic and Socio-Psychological Factors as Predictors of Test Anxiety Among Students of a Christian University in Jamaica

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ABSTRACT

MUSICAL LISTENING INTEREST, SOCIO-DEMOGRAPHIC AND
SOCIO-PSYCHOLOGICAL FACTORS AS PREDICTORS
OF TEST ANXIETY AMONG STUDENTS OF
A CHRISTIAN UNIVERSITY IN JAMAICA

by

Wayne E. N. Ireland-Cleghorne

Chair: Lionel Matthews

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: MUSICAL LISTENING INTEREST, SOCIO- DEMOGRAPHIC AND SOCIO-PSYCHOLOGICAL FACTORS AS PREDICTORS OF TEST ANXIETY AMONG STUDENTS OF A CHRISTIAN UNIVERSITY IN JAMAICA.

Name of researcher: Wayne E. N. Ireland-Cleghorne.

Name and degree of faculty chair: Lionel Matthews, Ph.D.

Date completed: January 2016

Problem

There is an enormous deficit in the literature on the factors associated with test anxiety generally, and test anxiety and music listening interest in particular, in the Caribbean region. This deficit is made even more distinct by the numerous studies that exist on test anxiety elsewhere and the effect it has on students' behavior and performance in the classroom.

Purpose

The purpose of this study was to examine the relationship between musical listening interest and test anxiety, while controlling for variables that are deemed

plausible predictors of test anxiety. Predictor variables utilized include socio-demographic factors such as gender, age, marital status, parental status; socio-economic factors as income, and education, and socio-psychological factors which include parental nurturance, self-efficacy and religiosity.

Method

This study employed ex post facto, correlational cross-sectional, research design in which two strategies were utilized to collect the data. An electronic format using Survey Monkey, an online research tool, as well as a hard copy format in which participants were asked to complete the questionnaire in their classes. The convenience sample, (N = 329) was drawn from both undergraduate and graduate students at a Christian university in Jamaica. Bivariate and Multiple regression techniques were used to gauge the relationships between the identified predictor and outcome variables.

Results

Five null hypotheses were assessed by means of bivariate (BS) and multivariate (MS) statistical procedures in order to determine the relationship between test anxiety (examined as overall test anxiety (OTA) and the subscales ii psychological impairment (PI) and iii emotional impairment (EI) and the various measures of the predictor variables. Several relationships were thus identified between the predictor variables and the three measures of test anxiety/test anxiousness.

At the bivariate level, marital status, parental status, father nurturance, rhythm and blues and religious music were all found to be significantly related to test anxiety. When t-tests were used to assess the relationship between overall test anxiety (OTA), and

psychological impairment (PI), and emotional impairment (EI) and marital status, respondents who were married were found to be less test anxious than those who were not married: OTA ($t = 2.20, p = .030$); PI ($t = 1.94, p = .055$); EI ($t = 2.48, p = .015$).

Similarly, when the three measures of test anxiousness were examined against parental status, participants with children were found to be less test anxious than those without children: OTA ($t = -3.11, p = .002$); PI ($t = -3.25, p = .001$); EI ($t = -2.92, p = .004$). The same three measures were assessed against father nurturance using Pearson r correlation. In each instance, statistically significant inverse relationships were found between each of the three measures when examined against father nurturance: OTA ($r = -.186, p = .01$); PI ($r = -.175, p = .01$); EI ($r = -.183, p = .01$). This suggests that the test anxiety levels of participants were lowered with increased levels of father nurturance.

When the three measures were examined against rhythm and blues, only emotional impairment showed significance. Participants showed less test anxiousness with increased listening to rhythm and blues in one measure of test anxiousness namely emotional impairment ($r = -.145, p = .012$). However, religious music demonstrated positive relationships with two measures of test anxiousness PI ($r = .148, p = .009$); and EI ($r = .129, p = .022$). This indicates that the more participants listened to religious music the more test anxious they were.

At the multivariate level, the three measures of test anxiety were each significantly related to only two predictor variables, religious music and father nurturance. In the case of psychological impairment religious music explained 19% of the variance ($\beta = .191, p < 0.10$). However, for emotional impairment 20% of the variance ($\beta = .203, p < 0.10$) was explained by religious music listening. On the other hand, when the

three measures of test anxiety were regressed on father nurturance inverse relationships resulted. In the instance of overall test anxiety 26 % of the variance was explained by father nurturance ($\beta = -.256, p < 0.01$); for psychological impairment, 25% of the variance was explained ($\beta = .254, p < 0.01$), and for emotional impairment 24% was explained ($\beta = .237, p < 0.01$) by the same variable. It is useful to reiterate here that only father nurturance and religious music maintained a relationship with test anxiousness in the multivariate analysis.

Conclusions

Of the set of musical predictor variables employed in this study, 5 variables reached statistical significance with the three measures of test anxiousness at the bivariate level. These were marital status, parental status, father nurturance, rhythm and blues and religious music. However, at the multivariate level only 2 variables retained significance with the three measures of test anxiety. These were father nurturance and religious music. In terms of policy implication, schools, and education administrators may want to appropriate these findings selectively in addressing the issue of test anxiety.

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School of Education

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A Dissertation

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Doctor of Philosophy

by

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May 2016

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Chair: Lionel Matthews

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Date Approved

Dedication

This dissertation is dedicated to music educators everywhere and to creative students whose love for the art is matched only by the diligence of their passionate instructors; to my loving, patient and helpful husband, Newton for your unwavering support and encouragement and finally to the rich music legacies of the world and the revolutionized tuneful future they will create as new frontiers are made in music education.

This dedication extends to my early beginnings with the late Dr. Stanley Ralph's prayers and musical influence which has impacted my dreams and determination to develop and grow musically and vocally. In reflection, I also applaud Dr. Gregory Hopkins who has continued to encourage, inspire, direct and extend vocal instruction adding depth and allowing growth in this arena to the foundation laid.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF ABBREVIATIONS	ix
ACKNOWLEDGMENTS	x
Chapter	
1. INTRODUCTION AND BACKGROUND OF THE STUDY	1
Statement of the Problem	5
Purpose of the Study	6
Research Questions	6
Conceptual Framework	8
Significance of Study	9
The Analytic Model	10
Delimitations of Study	11
Limitations of Study	11
Definition of Terms	11
Organization of the Study	13
2. LITERATURE REVIEW	14
Test Anxiety: A Historical Overview	15
Factors which Relate to Test Anxiety	19
Socio-demographic Factors and Test Anxiety	23
Socio-psychological Factors and Test Anxiety	26
Parental Nurturance	26
Self-efficacy.	27
Locus of Control	28
Learned Helplessness.....	29
Religious Practice/Affiliation and Test Anxiety	230
Test Anxiety Interventions	31
The Relationship between Music and Cognition	32
The Relationship between Test Anxiety and Music	33
Music as a Neurobiological Phenomenon.	36
Music as a Neurobiological Element of Emotions.	38
Self-Selected Music Experience and Emotions.....	40

	The Effects of Music on the Wellbeing of Humans .	40
	Summary.....	43
3.	METHODOLOGY.....	45
	Research Questions	45
	Research Design.....	46
	Population and Sample.....	46
	Dependent Variables and Instrumentation	47
	Reliability and Validity of the Instrument.....	48
	Parental Nurturing.....	49
	Self-efficacy	50
	Religiosity.....	522
	Musical Genres.....	53
	Procedure of Data Collection	54
	Null Hypotheses	55
	Data Analysis	56
4.	RESULTS OF THE STUDY.....	62
	Univariate Analysis.....	64
	Bivariate Analysis.....	74
	Multivariate Analysis.....	85
5.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	93
	Purpose of the Study	93
	Research Questions.....	94
	Brief Literature Review	94
	Summary of Important Findings.....	96
	Problem.....	96
	Method.....	96
	Important Findings.....	96
	Null Hypotheses Tested.....	98
	Null Hypothesis # 1	99
	Null Hypothesis # 2	100
	Null Hypothesis # 3	101
	Null Hypothesis # 4	101
	Null Hypothesis # 5	102
	Limitations of Study	103
	Significance and Policy Implication of the Study	104
	Recommendations for Future Research	105
	Conclusion	106

Appendix

A. CONSENT FORM	109
B. LETTERS.....	112
C. INSTRUMENTS	114
REFERENCES	122
VITA	146

LIST OF TABLES

1. Statistical Analysis Techniques	57
2. Frequency and Percent Distribution of Gender, Age, and Race/Ethnicity of Sample	65
3. Frequency and Percent Distribution of Marital Status and Children/Dependents of Sample	66
4. Frequency and Percent Distribution of Highest Level of Education Completed of Parents	68
5. Frequency and Percent Distribution of Household Income Levels Among Respondents	69
6. Frequency and Percent Distribution of School and Academic Status of Respondents	70
7. Means, Standard Deviation for Three Units of the Socio-Psychological Variables: Self-Efficacy, Father and Mother Nurturance	71
8. Frequency and Percent Distribution of Musical Genres of Respondents	73
9. Basic Descriptive Statistics and Cronbach Alphas for Dependent Variables	74
10. T-Test for the Relationship between Gender, Marital and Parental Status and Test Anxiety, Psychological and Emotional Impairment	77
11. One Way ANOVA Between Test Anxiety and Subscales and Age Categories.....	79
12. Correlations Between Parent's Education, Household Income and Test Anxiety, Psychological Impairment, and Emotional Impairment.	80
13. Correlations Between Religiosity, Mother and Father Nurturance and Test Anxiety, Psychological Impairment, and Emotional Impairment.....	82

14. Correlations Among Musical Genres, Psychological Impairments, and Emotional Impairments Variables.....	84
15. Regression Coefficients for the Relationship Between Musical Listening Interest and Test Anxiety	87
16. Regression Coefficients for the Relationship Between Musical Listening Interest and Psychological Impairment	89
17. Regression Coefficients for the Relationship Between Musical Listening Interest and Emotional Impairment	90

LIST OF ABBREVIATIONS

AESI	Academic Expectations Stress Inventory
BS	Bivariate Statistic
CD-ROM	Compact Disc Read Only Memory
DV	Dependent Variable
EI	Emotional Impairment
GPA	Grade Point Average
GSAT	Grade Six Achievement Test
GSE	General Self-Efficacy
HTA	High Test Anxious
IDD	Intellectual Disability Disorder
IRB	Institutional Review Board
LTA	Low Test Anxious
MS	Multivariate Statistic
NCEE	National College Entrance Exam
NSSE	National Survey of Student Engagement
OTA	Overall Test Anxiety
PI	Psychological Impairment
R & B	Rhythm and Blues
SAT	Student Aptitude Test

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To my now deceased parents, Colvin & Beryl Ireland; I dedicate this work. I am truly grateful for their love, nurturance, guidance and good humor especially through my formative years to maturity. I especially want to recognize the many miles and frequent trips my mother, Beryl accompanied me to various classes. I am truly grateful for the directions given and the foundation they laid for me.

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

The first empirical investigations of test anxiety appears to have been published early in the last century by Folin, Demis and Smillie (1914), followed by many others during that period. These early and subsequent studies will be expanded on in chapter 2.

Test anxiety, conceptualized in this study as the tension and nervousness that people experience in the testing situation is a universal phenomenon and has greater impact than some generally recognize. It may not appear on the surface to be a very serious issue, but it can cause some students to become unproductive, experience academic setbacks, and fail at life itself. Some researchers have noted that test anxiety is among the most referenced factor associated with multiple unfavorable outcomes and contingencies among which are reduced intellectual performance, educational underachievement, emotional and psychosomatic anguish and poor health (Moore, 2006; Zeidner, 1998).

Mueller (1980) reported that some test anxious students indicated that they experienced difficulty in remembering information in the examination settings. Many students have the capability to successfully perform on tests, but, due to incapacitating levels of anxiety, perform poorly. Consequently, there are vocational and educational limitations experienced by these students, since scores from assessment along with

ranking do impact entrance to many programs in modern society (Chapell et al., 2005; McDonald, 2001; Powell, 2004a, 2004b).

Zeidner (1990) noted that it is not easy communicating the agony, despair, and hopelessness experienced by students who are highly anxious before, throughout, and after major assessments. In this connection he maintained that numerous university students testify to their suffering from intellectual poverty and experience symptoms of emotional and psychological distress compared to their low-test-anxious colleagues. In some extreme cases suicide has been the result of test anxiety and its associated consequences (Deb, Strodl, & Sun, 2015; Iga, 1986; Wolferen, 1990). Sarason and Sarason, (1990) articulated that students who are highly-test-anxious voiced distress regarding poor or unsatisfactory grade level accomplishment as well as the penalties and humiliation at possible failure in key exams.

Test anxiety seems to span all levels and categories within the educational system. Researchers have determined that students in America who reported suffering from varying levels of test anxiety were between 10% and 40% (Cizek & Burg, 2006; Gregor, 2005; Von der Embse, Barterian & Segool, 2013). Special ability students, women, and other persons of minority status tend to account for greater amounts of individuals with test anxiety (Cassady & Johnson, 2002; Putwain, 2007; Sena, Lowe & Lee, 2007; Zeidner, 1990). Fernández-Castillo & Caurcel, (2015) replicated a three-year- study of trait-anxious students in college by Spielberger (1966b) and detected that over 20% of these students were categorized as failures, subsequently failing and leaving college. On the other hand, less than 6% of those students deemed as low-trait anxious suffered a similar fate.

Hembree (1988), Cassady and Johnson (2001) and McDonald (2001) suggested that the fear of examination is prevalent at all levels of educational development. Hembree (1988) added that social class background influences our ability to do well on tests as well as the placement received from grade school. Moore (2006) pointed out that researchers agree that examination anxiety commences in childhood, and as testing practices become frequent, individuals' exam anxiety levels escalate due to the cumulative effect of poor test performances.

The pressures that some people experience from testing begin in the early years and continue through adulthood, transcending cultural barriers. Connor (2003) reported that students begin to manifest test anxiety as early as their 7th year. Learners who, exhibit heightened exam anxiety levels have lower test performances and inferior general academic accomplishments when evaluated by grade point averages (Segool, Carlson, Goforth, Von der Embse & Barterian, 2013; Sena et al., 2007). The literature verifies academic stress associated with test anxiety as a pervasive problem not only across countries, and cultures, but also between ethnic categories and therefore, must be examined in light of these contexts (Wong, Wong, & Scott, 2006).

The psychological, social, and economic burdens victims of test anxiety experience demand that careful attention be directed at understanding the factors that are associated with this condition. Some of the precipitating factors that have been identified include physical abuse, psychological abuse, low self-esteem, and weak parental nurturance among others (Ogura, 1987; Rohlen, 1983; Young, 1993). Additionally research has also shown that test anxiety may be reduced or controlled with relaxation techniques (Gregor, 2005); meditation (Koch, 2010); guided imagery (Teel, 2005);

elevator breathing (Teel, 2005) and music (Haynes, 2004; Sezer, 2009). However, music has been the least researched as a predictor variable of test anxiety (Rastogi & Silver, 2014).

The effect of music as a calming and soothing agent has been studied in relation to anxiety in various situations. Brennan and Charnetski (2000) considered the outcome of music on self-reported anxiety levels and the immune system in the workplace and revealed that music had a prominent and lasting decreasing effect on members' perceived anxiety levels. Sung, Chang and Lee (2010) also suggested that there is a cumulative effect for favorite music listening intervention that can reduce stress or anxiety in seniors' with dementia in nursing homes. The results showed that older adults receiving preferred music listening experienced a meaningfully reduced anxiety score after six weeks compared to others receiving typical ordinary care with no music.

Music has been associated with healing practices over time. Apollo, who was considered the god of music and medicine, in Ancient Greek culture, utilized various kinds of music to cure disease and recreate a state of health, harmony, and order for an individual. In modern times, music is engaged and applied by numerous organizations to aid in the healing process in hospitals, nursing homes, clinics, and schools to address a variety of problems, including reducing anxiety (Burns & Woolrich, 2004; Clements-Cortés, 2013).

Brewer (2008), in discussing some tools to enhance learning uses relaxing music to aid individuals in experiencing slower heart rates, relaxed breathing patterns, clearer thinking, and enables a person to reach a deeper calmer, serene level of respite and tranquility. Like Brewer, other researchers agreed that music can become a vital tool to

alleviate anxiety and restore tranquility to the mind after a demanding work day. In fact, music affects many of our biological processes. Music targeted at certain tempos can entrain and slow our brain waves. In turn, our heart and respiratory rates will follow, therefore helping induce the relaxation response. Research in the area of music and anxiety enhances the usage of music to decrease or lower blood pressure and heart rate as well as dispel patients' stress and anxiety (Bartier, & Pratter, 1995; Bolwerk, 1990; Dubois,; Kaempf & Amodei, 1989; Moss, 1987; Steelman, 1990; Brewer, 2008).

Statement of the Problem

In the Caribbean Region, pressures to excel academically are pervasive. Caribbean students experience undue stress to pursue and attain educational accomplishment goals in order to experience self-esteem, family pride, and societal mobility. According to Campbell (2005) stress related symptoms are apparent as early as Grade six among Jamaican students taking the Grade Six Achievement Test (GSAT). Symptoms include headaches, palpitations, thoughts of failure, and stomachaches.

During my 15 years of teaching in the United States at the High school level and University students in the Caribbean, I encountered many students who suffered from fear of taking exams. They expressed high stress levels before, during and after exams. Both as a student, and an educator, I have experienced and observed at the university where I conducted this study, some of the manifestations of test anxiety. I have often noted the agony students experience before, during and after an exam, some wringing their hands, sweating and shaking. Others even blame and demean themselves.

Yet, within the Jamaican society there is limited research on this phenomenon. Specifically, there are no known studies that have explored the factors associated with

test anxiety in the Caribbean region. Campbell (2005) states that there is a paucity in the literature in the area of anxiety and music in this region. This deficit is even more underscored in light of Harrisingh's (2011) observation that numerous studies exist on test anxiety and the effect on student behavior. However, Landry, (2006) and others reported that none of these studies examined test anxiety and music (Schachter, 2007; Sena et al., 2007).

Purpose of the Study

The purpose of this study was to investigate test anxiety as a function of musical listening interest, while controlling for variables that were deemed plausible predictors of test anxiety among students of a Christian university in Jamaica. These variables included socio-demographic factors such as age and gender; socio-economic factors such as income and education as well as socio-psychological factors that include parental nurturance, self-efficacy, and religiosity.

Research Questions

The following research questions guided the study and constituted the basis of the research hypotheses and null hypotheses that were generated for testing:

1. What is the relationship between socio-demographic factors (gender, age, marital and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
2. What is the relationship between socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

3. What is the relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy), religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
4. What is the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
5. What is the relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital and parental status) of test anxiety and its two subscales (i.e. psychological and emotional impairment)?

The following guiding non-directional hypotheses flow from the research questions:

1. There is a relationship between socio-demographic factors (gender, age, marital and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment).
2. There is a relationship between socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment).
3. There is a relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy), religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment).
4. There is a relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment).

5. There is a relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital and parental status) of test anxiety and its two subscales (i.e. psychological and emotional impairment).

Conceptual Framework

The basic logic of the analytic model, which captures and summarizes the focus of the study, as shown in Figure 1, is pivoted on the assumption that past experiences of a regular, sustained nature embed in humans pre-dispositional tendencies that become the basis of, or source of mediation, in their responses to new experiences. In this study, the social conditioning theory provides us with a useful frame of reference by which the analytic model can be explicated. The notion of conditioned behavior advanced by early theorists (Pavlov, 1928; Skinner, 1974) among others opposes the preposition that human behavior is mainly under the influence of genetic predispositions. The early social behaviorists suggest that the human mind at birth is like a “Tabula Rasa” (blank slate) which receives and records life experiences to which it is exposed in the social environment (Skinner, 1974). While this study does not subscribe to the hard determinism implied by this theory, it nonetheless argues there is a conditioning effect.

It is here, presented that individuals from habituation, experience deep embedding factors due to their exposure to various foundational life events. Research demonstrates that individuals background experience conditions or orients them in particular ways.

The contention is that the exposure to varied musical and other life experiences embed different psycho-emotional impulses which become conditioned (stored) in individuals (Anderson et al., 2003; Cherry, 2000) as predispositions that become the basis

for the response generated by later encounters. In this way, it is argued that students' past music listening interest and other life experiences predispose them to certain psycho-emotional reactions to current encounters.

Each predictor variable identified in the analytic model thus represents conditioning experiences to which the participants of the study would have been exposed. The model highlights the relationship between several predictor variables and test anxiety. The included predictor variables, as can be seen in the model, are gender, age, marital status, parental status, income, education, parental nurturance, self-efficacy and religiosity. Each of these positions is associated with expectations, responsibilities, rewards and sanctions that serve to orient incumbents to patterns of behaving and habituations. It is thus that the connection between these past status-based, contextual experiences are connected to current behavior.

Significance of the Study

This study has the potential of providing baseline evidence for future research. The baseline evidence would be the findings elicited from the 329 male and female students at a Christian university. It may also inform educational practice in possible usefulness of some genres of music in the classroom between musical listening interest and exam anxiety. Furthermore, it may help to establish policies and intervention options in guiding music educators in developing an acceptable plan for classrooms involving genre of music to guide teachers as to what could be employed in the classroom in their effort to minimize learning related anxieties. Adopted strategies are approved policies that identify the abilities and deficiencies that may also affect how students prepare for exams.

Figure 1. Analytic Model of the study

Delimitations of the Study

This study is delimited to students at a private university in Jamaica who were eighteen years and above and mainly involved Caribbean students. The sample population consists of about two third females and one third males.

Limitations of the Study

There are two factors among others that can interfere with the external validity of this study, that is, the characteristics of the sample that can enable generalization to the wider population. Firstly, the sample from which the data were derived was a convenient sample which does not generally allow for safe generalization to the sample population. Secondly, there is a possibility that the respondents may not have truthfully responded to the questionnaire.

Definition of Terms

The following definitions are provided for clarity of this study:

Anxiety: Anxiety is a state of worry, apprehension, nervousness, concern, angst, disquiet, unease, fretfulness, and fear. This is the tension and discomfort that individuals experience in a testing situation. Anxiety is derived from the Latin terms *anxius* and *angere* which suggests, “uneasy and apprehension about an uncertain event or matter; worried” (Liebert & Morris, 1967; Öhman, 2000; Sartorius, 1991).

Demographics: The major characteristics by which a human population is described such as (age, sex, income, etc.) of a specific group of people (Vogt & Johnson, 2011).

Generalized Anxiety: is manifested by protracted or excessive anxiety, feelings of fear that are at times uncontrolled and result in suffering or impaired daily activities, and is supplemented by three or more related symptoms (such as agitation, irritability, reduced attention, and sleep disorders) (Wells, 2000).

Musical genre: a type of distinct musical flavour by which a number of compositions are grouped together in that they tend to embed in their hearers different pre-dispositional tendencies because they have commonalities of sound, social climate and form/style (definition constructed by researcher).

Musical listening interest: The sound, harmony, melody and lyrics that one listens to on a regular basis. (Definition constructed by researcher based on literature cited for this paper).

Parental Nurturance: is the nurture given to children that impacts all developmental stages and processes in their foundation for adulthood and development to navigate life (Peleg-Popko & Klingman, 2002).

Religiosity: is the concept that is advanced in the academic environment that describes the bent of an individual towards religious or spiritual themes (McMahon & Biggs, 2012).

Christian University: An institution of higher learning with traditional religious beliefs (Created for this document by researcher).

Self-efficacy: refers to an individual's belief or assessment of one's self-worth or ability to accomplish tasks and bring goals to fruition (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura, 1997; Nelson & Knight, 2010).

Socioeconomic status: refers to income and educational levels of participants.

Societal hierarchy, or divisions of strata, seems to be instinctively recognized by mostly everybody universally (Smith, Mulder, Bowles, & Hill, 2011).

Test anxiety: conceptualized in this study as the tension and nervousness that people experience in the testing situation, is a universal phenomenon and has greater impact than some generally recognize (Moore, 2006).

Testing Situation: The circumstances surrounding the feelings that one experiences before, during, and after an exam (Zeidner, 1998)

Organization of the Study

This study is organized into five chapters. Chapter 1 is the introduction to the study. It provides a background of the research, a background of the problem, a statement of the problem, the purpose of the study, the research questions, the significance of the study, definitions of terms, the conceptual framework, and organization of the study. Chapter 2 reviews the literature on the relationship between music and test anxiety and various factors. Chapter 3 address the research methodology selected to examine the problem, how the data were collected, the instrument used, and a description of the sample population used in the study. Chapter 4 describes the research findings and the interpretation of the analysis of the data. Chapter 5 summarizes and discusses the major findings of the study and draws conclusions and provides recommendations.

CHAPTER 2

LITERATURE REVIEW

“Music is colorless, yet it offers the most beautiful colors, it is odorless yet its aroma effervesces the most beautiful fragrance, it is not medicine, yet, from it is extracted the greatest healing, it is intangible, yet it wraps its arms around us giving the warmest of embraces, it is research, yet its impact remains inexhaustibly searchable.” Wayne Ireland-Cleghorne

This chapter presents a review of the literature on test anxiety, conducted in three phases. The first phase was completed by accessing university libraries and electronic data bases including Academic Search Premier, ERIC, MEDLINE, PSYCHLIT, CINAHL, EBSCO, First Search, Questia, as well as numerous journal reviews. In order to find the relevant materials the following terms were coupled with anxiety, examination anxiety and test anxiety to guide the electronic search: relationship, music, psychology of music, biological effects of music, demographics, self-efficacy, religiosity, stress, parental nurturance, emotions and university students. The second part was accomplished by examining various references for additional studies on the topic. Thus, the third part of this sequence, resulted in the adoption of a number of relevant articles and books for the review. Sources that were quoted from journals not indexed in the CD-ROM or in printed format were also obtained. Finally, books that examined foundational information on test -anxiety and appropriate test anxiety perspectives for evaluation, research and development were reviewed and summarized.

Test Anxiety: A Historical Overview

Research on test anxiety has a protracted, revealing, and rewarding history with a number of landmark studies. Zeidner (1998) acknowledged the work of Charles Darwin and Sigmund Freud as being among the early investigators whose pivotal labor facilitated establishing anxiety as a subject matter for scientific investigation. The first empirical investigation appears to have been published at the beginning of the last century by Folin et al. (1914) and Spielberger and Vagg (1995a). These early researchers examined second-year female medical college students and discovered that approximately 18% of the group, when evaluated after an examination indicated the presence of sugar in the urine, a condition associated with increased levels of anxiety in people. Participants showed no trace of sugar prior to the exam. Since the early part of the last century this condition in humans has been reported in the literature as “Emotional glycosuria” (Menninger, 1935).

Earlier, Cannon (1929) in his primary investigations of homeostasis or equilibrium and “fight-flight” reactions reported similar findings. He reported that after a difficult exam four of nine students passed sugar in their urine, but, that they had no evidence of sugar prior to the exam. In a similar vein, Luria (1932) examined differences of individuals relating to “stable” and “unstable” students of medicine in their responses to anxiety in testing situations. He found personality types, Individual Differences, and Intelligence as distinguishing features. In this process character is detected as reasonably steady and self enduring. Individual differences were examined by Cooper (1998) in the areas of optimism, irrational beliefs, and social anxiety. Intelligence looks at Personality and Cognitive state of individuals (Maltby, Day, & Macaskill, 2010).

In the 1930s, Neumann (1933) published the first book followed by papers from others on the etiology, treatment and management of test anxiety. The gravity of the problem was highlighted by Brown (1938a, 1938b) after two students attending the University of Chicago committed suicide. The suicides were attributed to their pending exams. Consequently, these events led to the Chicago researchers developing the first psychometric scale which identified high-risk, test anxious students. Stengel (1936) focused on achievement-related anxiety. Additionally, Freud's *Angst* (1936) published and translated in America, *The Problem of Anxiety*, triggered the interest of professionals in the arena of anxiety (Philips, Martin, & Meyers, 1972). The 1940s indicated a dearth of research regarding test anxiety, possibly eclipsed by World War II.

During the 1950s, a number of studies provided deeper insights into test anxiety. Test anxiety in the 1950s was "officially" initiated by Seymour Sarason and George Mandler, as cited in Sarason and Mandler (1952). These pioneers established and validated the test anxiety construct. During this period, McKeachie and coworkers (McKeachie 1951; McKeachie, Pollie, & Speisman, 1955) also guided investigation regarding the reduction of the harmful effect of anxiety on students' performance in the classroom. McKeachie (1951) revealed that multiple-choice exams lessened test anxiety. Cattell and Scheier (1958) also explored the difference of *state* versus *trait* personality. Interestingly, Hatfield (2013) maintained that a long-held and still popular difference amid "state" and "trait" anxiety allows anxiety to be thought of in two ways: as a temporary emotional state that nearly everyone experiences and as a consistent personality attribute. Thus, trait anxiety describes a personality characteristic rather than a

temporary feeling. While state anxiety refers to a temporary condition in response to some perceived threat.

The conceptual distinctions identified by Cattell and Scheier (1958) on studies on test anxiety laid the foundation for new contributions. Consequently, Spielberger's (1966a, 1972a, 1972b, 1972c) research underscored the gravity and extent of test anxiety and its impact on individuals. Later, a number of researchers identified exam anxiety as a variable of trait anxiety (Alpert & Haber, 1960; Spielberger, Anton, & Bedell, 1976; Zeidner, 1998) added to the test anxiety literature a subsequent key conceptual and methodological gift with scales and tools for assessment.

Test anxiety researchers for the 1960s and 1970s Sarason, Davidson, Lighthall, Waite, and Ruebush (1960) and Sarason, Hill and Zimbardo (1964) examined the impact of evaluative anxiety on educational performance. Sarason and his coworkers spearheaded the investigation of exam anxiety measures aimed mutually at adults (Test Anxiety Questionnaire) also children (Test Anxiety Scale for Children) residents. Sarason's extensive research indicated that students who were highly-test-anxious examinees would be more self-centered and self-deprecating than students with reduced exam anxiety. Zeidner, (1998) observed that "High-test-anxious examinees are more likely to experience interference with their task performance" (p. 10).

Liebert and Morris (1967, 1970) differentiated between worry, and emotionality and reported that worry was correlated with test performance (cognitive concern), whereas emotionality was found to be related to observations of autonomic responses aroused by evaluative anxiety (Zeidner, 1998). The cognitive model titled "cognitive-attentional" or "interference" identified the impact of test anxiety on performance (Wine,

1971). Programmatic research helped demonstrate the influence of situational parameters on exam anxiety and student presentation (Sarason & Ganzer, 1963; Sarason & Minard, 1962; Sarason, & Stoops, 1978; Tobias, 1979).

The final years of the 1970s and the early years of the 1980s saw advances in the cognitive-attentional model discarded with preference for the “study skills deficit” interpretation model. The latter school of thought argues that students who were highly-test-anxious perform inadequately on academic tasks and responsibilities for two reasons: (a) poor educational practices and exam-taking abilities, and (b) heightened tension occasioned by reduced training, organization, and difficulty with testing information (Benjamin, McKeachie, Lin, & Holinger, 1981; Culler & Holahan, 1980; Kirkland & Hollandsworth, 1980).

Test anxiety, as it relates to achievement motivation, continued to flourish in the 1990’s to the present (Dutke & Stöber, 2001; Elliot & McGregor, 1999). Educational psychology shows that in students' primary, secondary, and tertiary learning experiences exam anxiety plays a key role. However, distinct variances in exam anxiety is not only demonstrated in testers’ achievement, but also in the areas of institutional enthusiasm, positive educational self-concept, vocational innovation and improvement, character progress and wellbeing (Pekrun, Götz, Titz, & Perry, 2002). Meijer (2001) argued that the true potential of students can be concealed due to the bias of exam anxiety.

Lastly, test anxiety was sometimes included under the broader construct, of stress or anxiety during examination. Subsequently, a core feature was also represented in the form of test anxiety (Schwarzer & Buchwald, 2003). The emphasis in the realm of test anxiety is being expanded to embrace and highlight a widespread research platform on

sentiments or emotions experienced in the context of academic attainment (Pekrun, 2000; Pekrun et al., 2002). These researchers suggested that additional research is essential in continuing the examination of the range of emotions concomitant with the testing experience as well as the authentication of associated survey that measure a variety of exam emotions in addition to test anxiety.

The conception of test anxiety has been researched and discussed from a cross-cultural perspective. Bodas and Ollendick (2005) pointed to the varied international contexts and the implication of test anxiety globally by including Africa and several other developed, and developing countries across the globe. This signifies the prevalence of this problem across geographical, cultural and national boundaries. Nevertheless, most research have not scrutinized analytically the relationship between factors of culture, or tradition and the nature of test anxiety (Bodas, & Ollendick, 2005).

Factors which Relate to Test Anxiety

Research on anxiety, anxiety disorder, generalized anxiety disorder, physical symptoms of anxiety, emotional symptoms of anxiety, test anxiety, test anxiety and exam preparation, test anxiety and classroom size, test anxiety and interventions, and test anxiety and the influence of music, provide insights on the factors that relate to test anxiety. Some of the stated anxieties can play a role in impacting and influencing individuals in various formats. The intervention and influence of music in the classroom is suggested to alter students' mood. Thus, Nelson & Knight, (2010) submit that mood can present an indispensable character in the duration of exams. This can lead to prompt constructive mood where scholars can be inspired and experience less anxiety or worry, hence developing a capacity for managing exams, with better performance skills. Music

is experienced worldwide and can open magnificent accesses for educational opportunities for students.

Hembree (1988), Zeidner (1990), Zeidner (1998), and Moore (2006) agreed that test anxiety is a worldwide phenomenon associated with prominent adverse outcomes and subsequent negative cognitive performances, academic underachievement, emotional distress and ill health. Thus, the need to ascertain intervention options to address this phenomenon seems evident. The mission to recognize factors associated with anxiety and the limitations that are apparent among test-anxious students has been emphasized by numerous researchers (Wren & Benson, 2004).

Cherry (2000) suggested that some factors connected to anxiety for numerous pupils, can be combined to include: (1) unproductive revision practices, (2) deficient former exam performance that are lacking in expected standard, and (3) underlying anxiety problems. However, while evaluating some associated factors of test anxiety note must be taken that personality is deeply intertwined in the responses elicited from individuals in testing situations.

In a study of temperament and behavioral features associated with test-anxiety amongst school students in Kolkata, Salovey, & Mayer (1990) engaged regression analysis to validate that reactive aggression, emotive intellect and neurotic tendencies are significant forecasters of test-anxiety. These inclinations have possibly appeared as predictors of test-anxieties; collectively they explicated 22% of the variance (inconsistency) in Gupta and Dutta's (2012) study. The researchers also noted that social-cognitive prejudices can also steer fearful and hostile children to presume benign or vague or social evaluative circumstances as frightening.

In situations of threatening examination some students find the emotional assets to redirect their thoughts and actions therefore they identify testing conditions as less intimidating. These correlations suggest that as individuals' degree of aggression increases, so too do thoughts associated with test anxiety. Reactive aggression is distinctively categorized by impulsiveness, antagonism, resentment, and societal angst, absence of friendship networks, hostility, and uncommon practices. Additionally, it appears that emotional intelligence sanctions a negative relationship with test anxiety. In instances of the temperament variables, Matthews, Davies, Westerman, and Stammers (2000) established that neuroticism and psychoticism specify a positive relationship with test anxiety. Persons who score high on neuroticism are more probable than the ordinary to experience such feelings as anxiety, rage, jealousy, culpability, and depressed temperament.

Cannon (1929), a pioneer of stress research, postulated that the body discharges adrenaline, a hormone which aids an individual in the preparation for what is commonly described or referenced as the “fight or flight” reaction. In many cases, adrenaline flash is really an excellent mechanism. Individuals are thus poised effectively for action to respond efficiently in situations of stress ensuring vigilance and preparedness. Students who are highly test-anxious react with intensely negative emotional responses to examination stress, however, those with low test anxiousness, respond with greater enthusiasm and attentiveness (Spielberger, 1979).

The literature has also displayed that background influences containing racial, national, tribal, ethnic, familial, ancestral, scholastic, and societal conditions significantly contribute to educational anxiety correlated with strategies for assisting students from

various life circumstances to manage. (Juan “Tulip” Xiao, 2013). From a cross cultural perspective test anxiety plagues individuals across the world (Wong et al., 2006). Yet, cultures vary in their impact on students testing experience. Copious social principles have been suggested relating the likenesses and dissimilarities of nations as they relate to test anxiety but socialism and individuality amongst these values are the most deliberated (Oyserman, Coon, & Kemmelmeier, 2002).

Triandis (2001) emphasized cultures of individualistic and collectivistic philosophies are additionally differentiated by elements of horizontal-vertical relationships. An individualistic culture is a society which is characterized by individualism as opposed to collectivism. The individualism-collectivism continuum distinguishes cultures from one another on the bases of deeply felt views of what is right, wrong, and worthwhile (Rothwell, 2010). For example, in educational sites, the collectivistic-oriented Chinese scholars generally respond to educational failure by humiliation, shame, disgrace, embarrassment, or dishonor to parents, family, and one’s self (Wang & Ollendick, 2001). Thus, Collectivist culture may be seen as highly test anxious.

Amongst numerous countries, youth from Egypt, Jordan, and Hungary, demonstrated prominent intensities for test anxiety while the lowest levels were reported for Italy, Japan, and the Netherlands and surprisingly China (quite an aberration from the general pattern). As a group, the Islamic nations largely, testified to the maximum levels of test anxiety however, the lowest levels of test anxiousness reported were the Western European and Asian countries. Seipp and Schwarzer (1996) credited the severe negative

consequences of poor exam performance in Arabic countries to high test anxiety which has had a deleterious effect on Arabic students' exam coping skills.

In the Caribbean Region, the degree of educational anxiety survived by the average primary or high school student is specifically severe. Caribbean scholars are anticipated to pursue and attain educational accomplishment to realize respect, family prominence, and societal flexibility. Campbell, (2005) posited that stress related symptoms are evident among Jamaican Grade six students, especially those taking the Grade Six Achievement Test (GSAT). They express thoughts of failure, and indicate symptoms of headache, palpitations, and stomachaches. Only minimal data related to test anxiety in Jamaica and the effect that it has on parents during the GSAT preparation process is available (Green-Evans, 2004).

Socio-demographic Factors and Test Anxiety

Some sources have indicated the relevance of socio-psychological and socio-demographic factors in explaining test anxiety. The socio-demographic factors age, gender, social class, financial status, grade point average (GPA) give us a clue into the nature of test anxiety (Cassady & Johnson, 2002; Mohsen & Mansor, 2009).

Hill and Sarason (1966) after conducting a longitudinal 5-year investigation of approximately 700 pupils in primary or elementary school indicated that the influence of nervousness on presentation intensify by grade level throughout primary or elementary years of schooling. The research implies that age plays a significant role in the progressively adverse association between test anxiousness and scholastic attainment through years of elementary schooling. There is an incremental climb in the levels of students' anxiety-performance level from negligible in 1st grade to statistically important,

but modest in 3rd and 4th grades. However, by 5th and 6th grades the correlations became more modest and noteworthy (Zeidner, 1998). Hill and Wigfield (1984) showed a higher level of anxiety–presentation correlated amongst junior high school and high school pupils compared to elementary school pupils. Zeidner (1998) opined that anxiety-presentation peaked by grade 11.

The impact of gender on test anxiety is illustrated in the findings of Williams (1996) in which males display less anxiety than females after being presented with a stressor. It has been constantly seen in studies that significantly greater test anxiety has been evidenced in female than male students. This gender difference commences first in elementary school, continues for some time then peaks between 5th -10th grades, and begins decreasing in high school and continuing throughout college (Hembree, 1988).

Seipp & Schwarzer (1996) additionally emphasized that gender difference and the extent of its assessed impact in cultures around the world is about one third of a standard deviation. Higher test anxiousness have also been noted and reported in female graduate students over male graduate students (Ginter, Scalise, Mcknight, & Miller, 1982; Hojat, Glaser, Xu, Veloski, & Christian, 1999). This finding is reliable and comparable to the results in other investigations which reported that even though female students are more test anxious than males, they make superior grades in high school and college (Dwyer & Johnson, 1997; Keller, Crouse, & Trusheim, 1993; National Survey of Student Engagement [NSSE], 2002; Steinberg, Brown, & Dornbusch, 1996; Stricker, Rock, & Burton, 1993). Yet, it has been confirmed by the U. S. Department of Education, (2000), that this display of female students demonstrating higher grades even though exhibiting higher test anxiety does not seem to exist in previous reports.

Zeidner (1990) conducted a study of 163 male and 198 female college students in Israel. He employed Jensen (1980) aptitude test to determine whether socio-cultural bias favoring males existed with the Scholastic Aptitude Test (SAT). He found that students' performance did not vary by their social class or ethnic background and the gender differences still characterized the performance outcome of students.

Yet, Zeidner (1998) insisted that males and females, because of their cultural conditioning, tend to understand and react to circumstances of evaluation or assessment in different ways (Lewis & College, 1987). Males, unlike females, view conditions of testing as challenging or stimulating rather than threatening. Women by contrast tend to view the testing situations with fear, worry, anger, resulting in lower self-confidence (Zeidner, 1998). Couch, Garber, and Turner (1983) suggested that males display less worry than women, and women are more likely to reveal extra incapacitating anxiety than men.

Another key variable of influence include socio-economic status (Hembree, 1988). Socio-economic status (SES) is a paradigm that reveals individuals contact to preferred assets, money, goods, power, connections of networks, friends, medical care, education, leisureliness (Oakes and Rossi 2003). Guida and Ludlow (1989) found that students from low socio-economic background, as measured by the nonfree/ reduced lunch participation suffer from greater levels of exam anxiety than other privileged scholars.

Socio-psychological Factors and Test Anxiety

Parental Nurturance

Parental background has been discovered to be correlated to exam anxiety.

Students from families in which parenting styles reflect positive and supportive responsiveness to schooling tend to display greater levels of success in their educational journey, with less possibility to be disposed to anxiety in testing circumstances (Guttman, 1987; Peleg-Popko & Klingman, 2002; Sapp, 1999). Whenever children are placed under excessive academic pressure by parents, the opposite effect can ensue, commencing from early elementary stages where children's scholastic presentation does not measure up to parents impractical anticipations (Hill & Wigfield, 1984). As such, demands create principal environs for exam anxiety (McCaleb-Kahan & Wenner, 2009; McDonald, 2001). Numerous researchers have recognized that examination forms the greatest mutual basis of anxiety for scholars in Western countries as well as in China (e.g., Abouserie, 1994; Aldwin & Greenberger, 1987; Gallagher & Millar, 1996; Kyriacou & Butcher, 1993; Liu et al., 1998; Zhen, Wan, & Li, 2001).

Much academic stress may result from excessive expectations and demands from family members (Ang & Huan, 2006) hence, there results excessive stress on both school-aged children and adolescents to attain high academic excellence (Bossy, 2000; Ho, 1996). Gow, Bella, Kember, and Hau (1996) identified that academic stress is also particularly severe in Chinese society due to the expectation that students will pursue reach educational achievement to attain esteem, family respect, and societal flexibility. In addition, McCaleb-Kahan and Wenner (2009) suggested that the National College

Entrance Exam [NCEE] could intensify the competition in the educational environment while creating increased levels of academic anxiety.

Therefore, as individuals anticipate the environment of family relationships and level of support students experience at home can attenuate or exacerbate the associated stressors (Cizek & Burg, 2006). Other influences that act on exam anxiety likewise seem to be correlated with the poor educational skills of students. Ang and Huan (2006) developed The *Academic Expectations Stress Inventory* (AESI) for assessment of parent, educator and expectations of self as causes of academic anxiety in Asian youngsters, and presented it to 176 Singaporean secondary as well as college pupils a month earlier than their main exam. They also found that an additional source of schoolchildren exam anxiety could be anxiety of instructor (Cizek & Burg, 2006). This phenomenon can impact student test anxiety in the area of ability to maintain educational competence measured as grade point average (GPA). Further investigations have revealed that active study routines along with effective test-taking abilities amongst high school children are correlated with lower test anxiousness (Casbarro, 2005; Hembree, 1988).

Self-efficacy

A fuller understanding of test anxiety can be had from the standpoint of theories. Several theories have been utilized in this process. I will address the three following theories in this section. The theories of self-efficacy, locus of control, and learned helplessness explore how students' stages of self-confidence and exam anxiety specifically impact their educational attainment (Abdi, Bageri, Shoghi, Goodarzi, & Hosseinzadeh, 2012; Hassanzadeh, Ebrahimi, & Mahdinejad, 2012). Whenever a scholar lacks self-confidence in the ability to successfully manage testing situations, the student

becomes distressed resulting from poor grades and loses academic focus (Bandura, 1993). But, little is understood of the correlation of self-efficacy on test-anxiety.

Self-efficacy refers to individuals' self-confidence or competence in managing their life goals and assigned tasks. Poor self-confidence is related to emotions of despair, worry, stress, and powerlessness. Nevertheless, these emotions connect with those who suffer from poor self-image and experience negative feelings about their capabilities, progress, and undertakings (Bandura, 1997).

Locus of Control

Locus of control theory is a construct of importance for understanding test anxiety. Rotter (1966), a clinical psychologist and researcher developed a theory that people operate either from an internal or external locus of control. Thus, individuals respond according to their belief systems and are guided by outside powers such as providence, gamble, destiny, or fortune. Those of opposing views respond to the internal locus perspective relying on their individual work and personal choices and efforts. The theory emphasizes that when locus of control is underscored then students are given the opportunity to succeed based on their belief about achievements and catastrophes. (Connell & Wellborn, 1991; Covington, 2000; Deci & Ryan, 1985; Rotter, 1982). Consequently, it can be theorized that when persons with an external locus of control experience failures they have greater difficulty carrying out tasks than persons of internal locus of control.

Learned Helplessness

The learned helplessness theory was developed by Seligman (1975). It refers to the hopelessness, helplessness and resignation that people experience as a result of repeated failures or control by others in their ability to attempt or complete a task (Comer, 2004; Myers 2002).

This theory emphasizes a strong connection between learned behaviors and the resulting individual experience when faced with instances in which they have to prove themselves academically. Thus, Seligman (1975) concluded that knowledge of the learned helplessness is beneficial to educators and parents in aiding them to create an inspirational environment in which they may help students to counteract negativity and embrace autonomy, develop competence and social relatedness so they may experience less test anxiety.

Religious Practice/Affiliation and Test Anxiety

The age-long challenge that faces the study of the test taking experience is consistent with the expressions of fear and dread. Disadvantages experienced by test-anxious students include decreased enthusiasm (Cizek & Burg, 2006; Zeidner, 1998), poor testing experience (Chapell et al., 2005), and inferior educational attainment (Cassady, 2004). Implications of research signify that “worry during an examination distracts the learner’s attention, decreasing their capacity to do specific tasks and creating retrieval deficits” (Bembenutty, 2008, p. 123). Researchers have noted a positive correlation between spiritual or religious conviction and advantageous exercise and psychological and emotional wellbeing (Baldacchino & Draper, 2001; Hill & Pargament, 2003; Park, Cohen, & Herb, 1990). Religious practice is a protector of students’ ability to

withstand test anxiety during exam or test-taking periods. Furthermore, subjective religiosity and anxiety have been correlated inversely (Jansen, Motley, & Hovey, 2010). The word “spiritual” is used to describe religious spiritual experiences, while the word “religious” is used for institutionalized religiosity. In viewing proportions and intensities of depression and anxiety, no difference was noted between Catholic and other Christian denominations. Nevertheless, the effect of self-reported religious and self-reported religiosity were meaningfully correlated to depression but not to anxiety. Yet, both depression and anxiety were negatively correlated to attendance of religious service.

Scientific research now views spirituality as a new and developing area of study. Thus, the impact of spirituality and religiosity on anxiety have been scrutinized by few studies to date. McMahon and Biggs (2012) have advanced a unique study to investigate how devoutness and fundamental religiousness or religiosity aids individuals to handle or cope with anxiety during examination experiences. Students that are from a religious practice have expressed their knowledge of the impact of calm when in a testing situation. Intrinsic religiousness and decreased levels of anxiety and hopelessness have established sturdy relations in extrinsically focused individuals with greater hopelessness and anxiety (Davis, Kerr, & Kurpius, 2003; Maltby & Day, 2000; Park, et al., 1990; Leung & Bond, 2008) reaffirmed the concept that normally, religiosity appears to be connected by diminished degrees of anxiety, even the fretfulness, anxiety and worry concerning death (Hui, Bond, & Ng, 2007) or societal anxiety as inferred by the predisposition headed for selecting a public-focused calling (Bond, Leung, Tong, & Chemonges-Nielson, 2004).

Test Anxiety Interventions

Test anxiety interventions have commonly comprised of either precursor mediations or anxiety lessening interventions. Von der Embse et al. (2013) also posited that accommodations and adjustments to the method of testing, such as testing teams and assessing portfolios have been presented as substitutes intended to decrease/evade test anxiety (Hurren, Rutledge, & Garvin, 2006). The effects of intellectual–communicative approaches and competency awareness interventions to decrease test anxiety and increase test performance have been principally investigated or studied by test anxiety intervention (Gregor, 2005; Sapp & Farrell, 1994). Nevertheless, in most studies the generalizability of the findings can be limited due to the small sample sizes (Von der Embse, 2011). In a study, on high stress exams, Bushnell (1978) tried using stress-reducing techniques such as the mid-term and final exams. At the start of the exams, he provided free nourishment and blue books to his scholars. After scrutinizing the data, Bushnell advocated that the typical adverse relationship between exam anxiety and presentation was not attained. Yet, no t-tests were calculated on the changes between the mean test scores for high and low test anxious pupils.

As another intervention measure classroom size is believed to play a pivotal role in test anxiety. In two environs, a huge lecture hall and a small language laboratory, Bushnell (1978) tested 125 high and low anxiety undergraduates. Mean test scores for high anxiety scholars in the language lab were greater than mean test scores for high anxiety scholars in the lecture hall. The same was established for low anxiety students. There was similarly a change in mean scores established between high and low anxiety pupils in the lecture hall, while there was no important modification for pupils in the

language lab. In her dissertation, Haynes (2003) also suggested that the environment for exam performance was better in smaller classrooms. She further indicated that classroom size plays a significant role in exam anxiety. The Special Education News (2010) from Seattle Teachers' Union, reported that among other things early childhood development, literacy and class-room size impact test-taking anxiety.

The Relationship between Music and Cognition

In this study cognition directs the state of knowing how a relationship between music and cognitive response can inform a positive or negative response to test anxiety. Listening to certain genres of music can inform the amygdala to respond in sending messages to the hypothalamus which sends messages or responses to the cerebellum emptying into the nervous system a cadence of emotions to formalize responses of fear, flight, joy, anger and other triggered responses. Thoma et al., (2013) suggest that music (harmony, melody and lyrics) has positively affected stress-related bodily, as well as intellectually, and emotive processes.

Etaugh and Michal (1975) studied 32 undergraduates who were allowed to listen to their chosen type of music. Each student participating was coached to read and respond to a five questionnaire passage in silence. Secondly, a similar passage was also given to the undergraduates to read as they were listening to their musical selection. The outcomes suggested that the more habitually scholars recounted revising while listening to music, the less impaired their presentation was.

The rudimentary arithmetic abilities of 10th grade scholars was established by Mowesian and Heyer (1973) using five different conditions of music-styles: silence, rock music, folk music, classical-instrumental, and classical-vocal. They proposed that

“because music or some other distracter so frequently accompanies participants’ studying, music may be assumed to raise their morale” (p. 108) also music “may make studying and test-taking less tedious, boring, and anxiety-producing” (p. 108). Mood and arousal can be affected differently by various styles of music (Gabrielsson, 2001; Schellenberg, Nakata, Hunter, & Tamoto, 2007). Negative mood can disrupt performance while positive mood may facilitate cognitive task performance (Isen, 2000; 2002). Affect is the impact of music on an individual’s mood that can influence his or her response

The Relationship between Test Anxiety and Music

The effects of background music have been examined by researchers for both state anxiety and trait anxiety. The musical effects have yielded conflicting conclusions on these two types of anxieties. The Spielberger’s State Anxiety Inventory and a seven-point Likert-type scale was used by Davis and Thaut (1989) for relaxation to measure anxiety and relaxation before and subsequent to listening to background music. They found that, despite self-reports of decreased anxiety and increased relaxation, the music aroused the listeners’ auto-control of the bodily systems, as manifested in heart-beat, pulse rate, skin temperature, vascular constriction and digestive processes (Dillman, Carpentier, & Potter, 2009).

Muscle relaxation and background music were established by Stoudenmire (1975) to reduce state anxiety, but neither treatment was found to decrease or reduce trait anxiety. Knobloch and Zillman (2002) stated that young people reported how music helped them relax. When they feel stressed, they often engage in listening from their favorite collection of ‘tunes.’ Research results indicate that listeners can experience contrasting emotional arousal as a result of exposure to different musical types.

Investigators also suggests that the kind of effect music can have on listeners is related to their awareness of how that particular music had been reported to impact others whether positive or negative (Burns, Labbé, Williams, & McCall, 1999; Burns et al., 2002; Labbé, Booth, Jimerson, & Kawamura, 2004).

Test anxiety highlights the fact that individuals may experience generalized anxiety as a result of various practices. It stresses the influence of repeated life events on our capacity for developing all types of negative responses, including anxiety. Campbell (1997) and Jensen (2000) revealed the role music plays in reducing test anxiety as it is used in interventions even in large-size classrooms and their relation to an individual's self-efficacy.

The connection between test anxiety and self-selected music is very strong. In one study on relaxation with 126 practical nursing students, Cohen (1994) discovered that among other variables music showed effectiveness in reducing test anxiety. Furthermore, Hembree (1988) piloted a met-analysis of 562 test anxiety studies whose results indicated that HTA (high test anxious) students responded positively to background music. Also, LTA (low test anxious) students function best under ego-involving instructions and without music during tests.

The foregoing is the bedrock of student's control of their responses to emotional triggers and their proneness to self-determination or learned helplessness. Information on anxiety, anxiety disorder, physical symptoms of anxiety, emotional symptoms of anxiety, test anxiety, test anxiety and exam preparation, test anxiety and classroom size, test anxiety and interventions, and test anxiety and music provide an awareness of

conditioning and relevance to the individuals' self-efficacy. It is important to show the interrelatedness of each topic previously stated.

Music has been noted to impact all areas of student life. Study habits as well as listening to music, have been found to be effective in increasing reading comprehension. In this connection, research findings have shown that the students of performing and visual arts use reasoning, creativity, self-expression and individual skills – both concrete and abstract - to draw conclusions, formulate and develop a well-rounded education (Gullatt, 2007). The impact of music is long-lasting, deeply embedded in children's lives as growth, progress, and maturity emerge. Carey, Farris, Sikes, and Foy (1995) indicated that research affirms that music instruction is conducted on an average of 75 minutes per week in 97% of elementary schools in the USA. The authors continue to subscribe to the unique impact of music. In Music, the neurobiology of emotions, communication of emotions through music, and the effects of music on the wellbeing of human beings are some of the areas that provide specific information from researchers regarding the array of musical expression through genres and its impact on test anxiety.

Music has the capability to convey and evoke fairly strong oppositional emotions (Zentner, Grandjean, & Scherer, 2008). These emotions can be conceptualized as the ability to significantly function or adapt in order to survive. Early in the last century, several researchers have noted the effects of music on skin, muscle tone, heart-beat, blood pressure and respiration (Henkin, 1957; Hyde & Scalapino, 1918; Light, Love, Benson, & Morch, 1954; Phares, 1934; Sears, 1958). Early in that century, others (Gatewood, 1921; Middleton, Ray, Kerry, & Amft, 1944) acknowledged that shifts

in mood and feelings were functions of music. Thus, it seems music has the potential to keep one on an even emotional and psychological keel.

Music as a Neurobiological Phenomenon

The four chemicals (Guanine, Cytosine, Thymine and Adenine) from our DNA (Deoxyribonucleic Acid) that compose our genetic code carry the blueprint for life and music (Ricks, 1986). According to Osterman (1998):

music directly attacks the nervous system and does not depend upon the master brain to gain entrance into the organism, the result is that, via the thalamus, part of the brain lying below the main cerebellum, the seat of our emotions, sensations and feelings can be aroused (p. 12).

Larsen (1972) affirmed that "...therefore, the music that we hear affects the nervous system, the autonomic nervous system, and the whole body" (p.16). Diamond (1979) further discussed the impact of music on suppressing anxiety on the organs in the body. He disclosed that

There are twelve meridians (paths) related to specific body organs that affect the muscles: urinary bladder, circulatory, sex organs, gall bladder, heart, kidney, large and small intestines, liver, lung, spleen, stomach, and the thyroid gland. Negative emotions that weaken the thymus gland are fear, hate, anger, etc. Since every major muscle of the body is affected by a large portion of the popular music to which it is exposed, the problem becomes quite serious in light of the many hours of radio play throughout the world (p. 26).

Diamond (1979) indicated that:

the relationship between the thymus gland and agreeable music is very significant. This gland (prevalent in youth, but which disappears in adulthood) is the link between the mind and the body. It controls, monitors, and regulates energy flow in the meridian system, and is the first organ in the body to be affected by one's physical environment, social relationships, food, posture, negative emotions, and stress (p. 27-29).

Diamond (1979) further indicated that:

the stopped anapestic beat weakens the body because it goes against the natural rhythm of human makeup, thus affecting the heart and blood pressure. The body tends to respond to the beat with muscle weakness, anxiety, aggressive behavior, and a craving for more. It sets in motion the autonomic fright-and-flight response, thus causing a secretion of the hormone, epinephrine....*Switching* is another negative physical effect of rock beat which causes the brain waves to lose synchronization. Thus, a homolateral movement in the brain develops causing one-sided brain activity. Placing the body in an ensuing state of confusion and alarm, this process also causes perceptual difficulties, a decrease in performance (in school and work), hyperactivity and restlessness, reduction in decision making capacity, and loss of energy for no apparent reason (p. 101-103).

Campbell (1997) and Wigram, Pedersen, and Bonde, (2002) intimated that we have the ability to use music intentionally to improve our health, gain personal insights, and expand learning achievements. Music is therefore an intangible symbolic language with no specific suggestions or connections. Nevertheless, its basic design and arrangement serves as a vehicle of meaning to the mind (Miell, McDonald, & Hargreaves, 2005). It can act as a powerful sensory stimulus, engaging the brain in retraining neural and behavioral functions that can be applied to non-musical context in everyday life, such as therapeutic needs.

Campbell (1997) maintained that “over the centuries, healing systems have evolved in Far Eastern medicine and philosophy” (p. 139). Certain illnesses were treated by certain classical or romantic music. “For insomnia, Debussy’s ‘Ondine’ or ‘Scherzando’ or Bach’s ‘Goldberg Variations’ are recommended. For headaches and migraines, the Japanese suggested Mendelssohn’s ‘Spring Song,’ Dvorak’s ‘Humoresque’ or even a dose of George Gershwin’s ‘An American in Paris.’” (p.139). The song, “God’s love” (Ireland-Cleghorne, 1987, track 1) fits into this genre as it offers a rich, vibrant, multi-dimensional kaleidoscope of sounds that enhance relaxation, thus becoming an instrument for anxiety reduction and healing.

Campbell (2001) embraced the view proposed by Wang & Mong Chin-Shan, noting that “music holds great promise as a noninvasive treatment and is superior to drugs, which he feels should be used only as a last resort. He also finds music surprisingly effective in treating neuroses and emotionally-based illnesses” (p. 139).

Campbell (2001), further observed that “Music can help plants grow... lulls children to sleep, and marches men to war, drum out evil spirits, yet it is more than all these things” (p. 1).

Music as a Neurobiological Element of Emotions

The neurobiology of emotions is very interesting. Emotions are transient in nature. This means that they do not last. The primary emotions are anger, fear, pleasure, sadness, and disgust. According to Zentner et al. (2008) music is capable of expressing and inducing fairly intense emotions both positive and negative. As early as 1890, the effect of music and emotion was noted by William James. He conjectured that when the emotions become intense, they can have dramatic effects on our behavior. Furthermore, it was noted by Aristotle in Plato's *Republic* that different musical modes produced different emotional effects and were given detailed description. A number of researchers have documented a number of theories about music and emotion (Budd, 1985; Davies, 1994; Robinson, 2005).

Frijda and Sundararajan (2007) proposed that there are coarse and refined emotions and the finer emotions do not manifest themselves in overt behavior. There is an interrelation between the cortical area of the brain and the limbic system. In this central area there is a constant exchange of information. During this process the neural circuits and brain structures involved in emotions are transformed by countless chemical

neurotransmitters. Within the brain, the amygdala and the hippocampus are involved in the expression of emotions. Through the limbic system, responses can be influenced and constitutes a link where responses are learned (Wright, as cited by Byrne, 1997).

The function of the amygdala is complex. It is involved in both pleasurable and fearful emotional learning as well as the concept of fear conditioning. Fear conditioning is instructive in the understanding of the amygdala's role in emotional learning and memory. This would be comparable to Pavlovian or classical conditioning. Hearing a noise or seeing a visual stimulus followed by a shock is connected to fear conditioning. The individual or organism gets twitchy and startles easily, with additional reactions of elevated blood pressure, pulse rate, and reactions of freezing (Anthony Wright, as cited by Byrne.1997).

Rentfrow and Gosling, (2003) asserted that reports indicate that most activities of leisure have been overtaken by music as a central feature. For example such activities as television, motion picture viewing, as well as the reading of books, newspapers, and other periodicals all seem to be accompanied by music of one kind or another.

Zentner et al. (2008) posited that many researchers agree with Sloboda and O'Neill (2001), Laukka, (2007), and Saarikallio and Erkkila, (2007) that music is essentially used for mood and emotive parameters routinely in life. Music is referenced for its prevailing emotional effects. Additionally, Zentner and Kagan, (1998) observed the potent and lasting impact of music on babies and infants starting as young as 4 months. Zentner et al. (2008) also aligned with other investigators that "one reason for the universal appeal of music lies in the emotional rewards that music offers to its listeners" (p. 494).

Self-Selected Music Experience and Emotions

Jiang, Zhou, Rickson, and Jiang (2013) posited that numerous studies have shown that listening to music can be an effective approach for relieving stress, strain, and anxiety. Yet, for stress reduction, not all types, or genres of music is appropriate (Chafin, Roy, Gerin, & Christenfeld, 2004; Yehuda, 2011). Importantly, music preference and relaxation demonstrated a highly positive association. Participants who were most engaged by the music were considerably more relaxed than those who least liked the music. Jeong (2008) proposed that individuals affected by state-anxiety (worry) encountered a major decrease when engaged in active listening to their favorite music as compared to the unpreferred music listeners.

Collier (2007), Juslin, and Laukka (2004), and Vieillard et al., (2008) agreed that music can express emotions just like language. Yet, other researchers found that music also has the additional function of influencing emotions (Koelsch, Fritz, Cramon, Müller, & Friederici, 2006; Hunter, Schellenberg, & Schimmack, 2010; Khalfa, Roy, Rainville, Dalla Bella, & Peretz, 2008; Lundqvist, Carlsson, Hilmersson, & Juslin, 2009; Pereira et al., 2011; Trost, Ethofer, Zentner, & Vuilleumier, 2012).

The Effects of Music on the Wellbeing of Humans

The wellbeing, happiness or welfare of individuals is a unique element that defines quality of life when embedded tendencies are nurtured and fostered from early years. This age-related factor can be measured as a subjective experience by self-report (Berman, Snyder, Kozier, & Erb, 2008). Thoma, et al., (2013) agree that music listening influenced “the psychobiological stress system” (p. 2). These researchers found that

listening to music prior to being exposed to consistent anxiety primarily impact distress in the nervous system, and somewhat the endocrine and psychological stress response. Thus, an individual experiences wellbeing, happiness or security when they feel composed, determined and assured as if an aura of security envelopes them with high self-efficacy. This can propel individuals to function with assurance and ability to conquer obstacles.

Centers for Disease Control (CDC) references wellbeing as a subjective experience “generally includes global judgments of life satisfaction and feelings ranging from depression to joy” (Diener, Scollon, & Lucas, 2009; Frey & Stutzer, 2002). These results may lend support to explaining the favorable outcome of music on the human mind and body.

Of great importance, is the influence that music in general has on the human body and mind? Music, of course, depending on type or genre, may have desirable or undesirable effects on us human beings. In this section however, the positive effects of music will be explored. According to Lingerian (1983) different pieces of music stimulate diverse regions of the body and brain. Thus, it is critical to note the style or genre of music listened as this will impact the emotional and mental states of students during examinations.

A great amount of research has been piloted which reveal the positive connection of music with human cognition; its influence on anxiety levels and its capacity to alter people’s states of mind, affecting their moods and even their responses.

McFerran and Shoemark (2013) came to the conclusion that music therapy is a strong determinant in the cognitive well-being of a student with intellectual disability disorders

(IDD). It showed that non-musical positive outcomes may result from using music as a therapeutic tool.

Although the focus of that study was to examine how music may be used as a conduit for interaction and highlighted the positive interrelations of this medium with a student with profound intellectual disability, it is noteworthy that well-informed professionals may successfully draw upon the distinctive attributes of music. It is also true that older adults' behavior may dramatically improve when exposed to music of a certain genre.

A research executed by Sung et al. (2010) confirmed the evaluation of reduced anxiety in dementia and older patients by the intervention of patients listening to their favorite music. The researchers observed that even when patients are challenged by dementia and aging they can potentially experience psychological well-being and improved health when treated to preferred music. A similar suggestion also emerges from Sung, Lee, Li, and Watson (2011) that music can penetrate an individual's mind for better health and well-being and by responding the music intervention can alter anxiety levels of those with dementia and old age. So, why not a feeling of calm for concentration, reduction of anxiety and focused energy during examination?

Rout and Rout (2002) opined that a large number of multifaceted factors come together to determine the individual's vulnerability to stress. These factors include personality, adopted coping strategies, past experiences, ethnicity, gender, social supports, needs, and wants. This is where music is introduced to assist in alleviating such conditions.

Summary

Having looked at the various theories and postulates of the literature relating to test anxiety it is clear that there is a dearth of information on test anxiety as it relates to musical listening interest. The foregoing literature review has identified several patterns and findings on studies of test anxiety. Early research on test anxiety early in the second decade of the 20th century conducted by Folin et al. (1914) reported that test anxiety impacted the testee physiologically, causing a rise in the blood sugar level.

Early findings of test anxiety also revealed a relationship between test anxiety and various socio-demographic factors including age, gender, social class, financial status and educational competence. In this regard it has become established that test anxiety varies inversely with age, and is distinguished by gender with males being less test anxious than females. It also varies by social class as measured by income, where students test anxiety level demonstrated a direct relationship to their social class background by theirs and parents' financial stress level. Additionally, test anxiety level appears to vary by students' educational performance (as measured by GPA) in that students with high GPA tend to demonstrate less test anxiety than those with lower GPA.

There is also an indication that test anxiety is informed by early childhood experiences. Specifically, the research suggests that children experience test anxiety from an early age due to parent's unrealistic expectations, negative communication, the home environment and social nurturing. In these cases where children experienced deficient parent –child relationship, students from these situations tended to be more test anxious. Parental child relationship also impacts children's self-efficacy which is conceptualized as the confidence in one's own ability to accomplish a task.

Religiosity has also demonstrated a relationship to test anxiety. A number of studies have related religiosity to decreased anxiety, the more religious an individual the less test anxious.

Finally, the literature indicates that music has a diminishing effect on test anxiety. Several examples illustrate this point. Those who wrote exams with background music, when compared with those who did not, tended to experience lower test anxiety levels. In another experiment those who listened to music of their own choosing on a regular basis as compared to those who had no choice recorded lower levels of test anxiousness. Research has also shown test anxious students who have been treated with music as a therapeutic measure demonstrate significantly reduced test anxiety levels after the experiment.

The dearth of literature on test anxiety and music listening interest therefore provides justification for this research. It is hopeful that this study on musical interests will add to the body of research in this area of test anxiety and musical listening interests of students at a religious University in Jamaica.

CHAPTER 3

METHODOLOGY

This chapter focuses on the design and methodology of the study: “An Examination of Musical Listening Interests; Socio-demographic and Socio-psychological, Factors as Predictors of Test Anxiety among Students of a Religious University in Jamaica.” It provides details regarding the research design, the sample, and the variables employed and their associated instrumentation; the data collection procedures followed; and the techniques utilized in the data analysis.

Research Questions

As indicated in Chapter 1, the study was guided by the following research questions:

1. What is the relationship between socio-demographic factors (gender, age, marital status and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
2. What is the relationship between socio-economic factors (mother’s education, father’s education, income) its two subscales (i.e. psychological and emotional impairment)?
3. What is the relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy) religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

4. What is the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

5. What is the relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital status and parental status) of test anxiety?

Research Design

This study utilized an ex post facto, correlational cross-sectional, research design. This design is less costly and time-consuming to conduct and more human subject friendly. The correlational survey design is distinguished from other designs in that it enables the researcher to investigate existing conditions in light of preexisting differences in groups with a view of determining the relationship between variables. In this design, information on the independent and dependent variables are collected at the same time (Burns & Grove, 2001). The temporal sequence of these variables, is not known, thus the relationship is deemed correlational, and not causal. One weakness is that it is highly dependent upon the truthfulness of the respondents over whom little control can be exerted. This is so because of ethical considerations, which disallow manipulation of the independent variables with human subjects.

Population and Sample

The selection for the sample was drawn from the student body of a Christian institution in the Caribbean. The student body at this university was approximately 4000 and consisted primarily of Christians. A breakdown by gender reveals that 31 % of the

students are males and 69% females, with age ranging from 15 – 63 years (University Data Source [pseudonym], 2013). From this population a nonrandom sample of 329 respondents were chosen for the research. Given the population count, this sample should allow for enough statistical power in order for the researcher to make cautious and tentative generalizations to the population studied, notwithstanding the non-random nature of the sample.

Dependent Variables and Instrumentation

The dependent variable for this investigation was test anxiety. Test anxiety refers to the tension and nervousness that people experience in the testing situation resulting in a compromise in their capability to function comfortably in such situations. By this test taking condition is meant the circumstances surrounding the feelings that one experiences before, during and after an exam. Test Anxiety was operationalized by using the Westside Test Anxiety Scale. The usefulness of the instrument lies not only in its conceptual relevance but also, as indicated, by its brevity and the ease it allows in the administration to the sample respondents. Dr. Driscoll, the author of the instrument, reports that it takes about “five to eight minutes to administer” (Driscoll, 2007). It is publicly accessible and free of charge to schools. The Psychometric and ethical properties established for this instrument also conducted to its appropriateness. The instrument comprises 10 items that require participants to indicate how they feel, think and behave before, during and after an exam. Six of the items (1, 4, 5, 7, 8, & 10) capture the psychological impairments experienced during an exam while four of the items (2, 3, 6 & 9) tap into emotional impairments the fear, worry, and dread experienced (Driscoll, 2007).

Reliability and Validity of the Instrument

The reliability and validity of this instrument refer to the trustworthiness, consistency and ability of the instrument to correctly capture and represent the phenomenon it seeks to measure. If the instrument is reliable then it would have demonstrated consistency in obtaining similar responses over time. If the instrument is valid, it would measure up to the expectation of experts and correspond to the concept that it seeks to capture by other similar instruments. Miller, DeLapp & Driscoll (2007) states that the alpha validity level of the instrument varies from .95 - .96. In the current study a test for validity revealed a .93 alpha level for the overall scale and a .91 for the psychological and a .84 for the emotional subscales.

The Westside test anxiety scale was first cited in 2007. An internet review using the search engine Google returned 12,000 citations indicating moderate usage for a relatively new scale (Driscoll, 2006, 2012). Reporting on its content validity, Driscoll noted that the component of the Westside test anxiety scale correspond to other similar scales (Driscoll, 2012). He stated that the following four items assess worry:

(a) When I study I worry that I will not remember the material for the exam (2), (b) During important exams, I think that I am doing awful or that I may fail (3), (c) I worry so much before a major exam that I am too worn out to do my best on the exam (6), (d) After an exam, I worry about whether I did or did not do well enough (9): fear, worry, and dread which capture the emotion fear, worry, and dread found correspondence in the Cassidy-Johnson Cognitive Test Anxiety Scale.

The additional six items are impairment items (1, 4, 5, 7, 8 & 10) from the Westside scale, also found support in the Alpert and Haber (1960) Debilitative Anxiety

Parental Nurturing

Parental nurturing impacts all the developmental stages and processes of children in preparation for adulthood and helps them develop abilities to navigate the terrain of life. Thus, nurturing parents help children build solid foundations on which to plant their feet to positively impact society and have self-control (Proverbs 25:28). Various aspects of parental behaviors or characteristics can impact children's self-esteem or self-confidence (Gecas & Schwalbe, 1986). A number of desired developmental outcomes, including creativity, have been related to positive self-esteem, or self-perception (Coopersmith, 1967), aptitude for employment (Reasoner, 1983), and societal fulfillment (Scott & Stumpf, 1984).

Additionally, Diamond and Spillane (2004) hypothesized that one of the most reliable outcomes in educational investigation is noted by family upbringing and interaction, this relates closely to children's educational outcomes or achievement.

Research suggests that students' anxiety levels vary by parental background. Toyin (2013) found higher scores in test anxiety measures among low parental educational background, public school, female students. The differences in test anxiety scores were significant across type of school, parental educational background and gender. In discussing the outcomes of the study it was proposed that educational stakeholders be encouraged to design means through which test anxiety could be decreased among students across the specific variables that are being examined. Research suggests that students' anxiety levels vary by parental background.

Parental nurturance is an important parental background factor. Parental nurturance is conceptualized in this study as the perception that participants have

regarding how they were parented. It is operationalized by 24- items which have been readjusted (Buri, 1989) to a 12-item, five-point Likert- scale with “1” being strongly disagree and “5” being agree. This scale was designed by Buri (1989) to measure parental nurturance from the perspective of a child (of any age). Identical forms are used for both mothers and fathers with only gender references changed. With respect to scoring: Individual scores from each item are summed. Reverse scoring (1 = 5, 4 = 2, etc.) for items 1, 3, 7, 8, 11, 13, 14, 16, 18, 19, 21, and 24 (Buri, 1989). Some of the items included in the parental nurturance scale are as follows: 1) My mother/father seldom says nice things about me; 2) My mother/father is often critical of me and nothing I ever do seem to please him/her; 3) My mother/father enjoys spending time with me. The Psychometric Properties: Test–Retest reliability over a two-week period was .92 for ratings of mothers and .94 for fathers. Alpha for perceptions of mothers and fathers was .95 and .93 respectively. The entire document can be viewed (Appendix D for full items in Questionnaire).

Self-efficacy

Self-efficacy is important to this study as it examines one’s self-perception, feelings of adequacy, efficiency and ability to adapt to life events. Individuals with a heightened state of self-efficacy will demonstrate confidence and a sense of assurance in the face of challenging situations such as an exam. Self-efficacy is conceptualized as confidence in one’s own ability. It is expressed in the value an individual has in himself or herself to have more positive attitudes to school, be more likely to perform better and thus, reach higher educational aspirations (Bandura, 1988; Schwarzer & Jerusalem, 1995).

This construct is operationalized by a 10 item scale which can be reduced to a 6 item 4-point Likert type scale with: - not at all true =1; hardly true = 2; moderately true = 3; exactly true = 4. Nunnally and Bernstein's (1994) psychometric properties have been established to allow selection of items for the short version. The reliability of scales is often determined by the use of the Spearman-Brown formula which allows reliability of a smaller number of items to be compared with the full number of items to estimate the reliability to be expected. Reducing the number of items to six decreased the reliability to .84 (.71, is reckoned as the maximum loss in reliability that is acceptable). Because the reliability is decreased from .90 for the ten items of the original GSE gauge to .80 using 6 items, the instrument is deemed reliable with 6 items and therefore the number of items selected was six. Cronbach's alpha was used as a measure for the internal consistency of the scale for both the 10-item and the 6-item version.

The Psychometric Properties of the General Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995) was established to measure a person's confidence in their ability to organize resources and manage situations, to persist in the face of barriers, and to recover from setbacks. The scale consists of 10-items and takes only 4 minutes to complete. Internal reliabilities for the GSE range from .76 to .90. Research from 29 countries indicates that the GSE is configurably equal across cultures and that the underlying constructs of self-efficacy are universal (Scholz, Dona, Sud, & Schwarzer, 2002). The GSE has been found to be positively associated with satisfactory emotions, dispositional buoyancy, confidence and effort. Variance independent of measures of self-efficacy and optimism suggests it measures related, but not identical constructs. These are some of the following items: (1) I can always manage to solve difficult problems if I try

hard enough, and (2) If someone opposes me, I can find means and ways to get what I want (see Appendix D).

The General Self-Efficacy (GSE) validity corresponds with the reliability levels that has been established by the Self-esteem Scale developed by Rosenberg (Rosenberg, 1965). It is used extensively today across the United States (Heatherton & Wyland, 2003) and in various countries worldwide, such as Germany (Gudjonsson & Sigurdsson, 2003), the United Kingdom (Schaefer, Koeter, Wouters, Emmelkamp, & Schene, 2003) and Turkey (Kugu, Akyuez, Dogan, Ersan & Izgic, 2002). Thus, the Validity and Reliability for this instrument have been well established.

Religiosity

The inclusion of religiosity has been justified due to its usage in past studies. It is conceptualized as the extent to which one practices ones religion as indicted by church attendance, prayer, Bible reading and private devotion (WIN-Gallup, 2012). The different components of religiosity have been explored by many researchers (Brink, 1993; Hill & Hood, 1999). Participants' reactions are captured on a 5-point Likert gauge varying from one to five indicating increasing levels of practice.

Religious affiliation is important to this study because the researcher believes that one's religious orientation can predispose one to react differently to situations of stress. Students were asked to indicate their religious affiliations from a list provided by the researcher. What is your Religious affiliation? 1) Protestant Christian; 2) Roman Catholic; 3) Jewish; 4) Muslim; or 5) Other.

Prayer has been conceptualized as a form of religious practice. that can occur in

private or public. It can also be individual or communal. Additionally, it can employ songs or words. It is operationalized by a five-point Likert type scale ranging from a measure of one to five, indicating increasing levels of frequency. The items are as follows: How often do you pray? 1) Daily; 2) More than once per week; 3) Weekly; 4) Once per month; or 5) Other.

Bible reading is operationalized by a one-item Likert-scale ranging from one to five. How often do you read your Bible/ Torah/ Koran or religious books? 1) Daily; 2) More than once per week; 3) Weekly; 4) Once per month; 5) Other.

Frequency of worship was gauged by a one-item Likert type-scale using response options ranging from one to five how often do you attend a place of worship (Church, Synagogue, Mosque and Temple)? 1) Daily; 2) More than once per week; 3) Weekly; 4) Once per month; 5) Less than once per month. The independent variables will be utilized to explore their relationship to test anxiety.

Musical Genres

Last but not least, the main independent variable, musical listening interest is conceptualized as the kind of sound, lyric or melody that one listens to on a regular basis. This construct is captured by participants' response to the frequency with which they listen to the following genres of music: reggae, calypso, R & B (rhythm and blues), classical (ex. Mozart, Hayden, Beethoven), religious (inspirational, sacred, gospel), hip-hop, dance hall and other. Based on the trend in the literature, researchers have indicated the effectiveness of music genre and its impact on the lives of people (Don Campbell, 2001).

Music inspires emotional equilibrium, buttresses the growth of self-identity, increases social awareness, self-reliance, more positive attitudes, enhances memory skills, alertness, self-control, and positively influences the mood of the classroom (Hallam, 2010). This variable is used to decide the outcome of an exposure to types of music listened to and the level of test anxiety experienced by persons in testing situations. The genre of music included in this study constitute the types of music most frequently listened to in Jamaica, each is distinct in their appeal and impact on the emotional tone elicited in listeners, and thus it is argued in this study they predispose listeners differently, to react in situations of stress. Musical types listened to on a regular basis register varying effects in people (Davies, 2006). The deficit of studies on how varied listening interests relate to the level of anxiety persons experienced in situations of challenge/stress is the key issue to which this study responds. Hence the proposition that a relationship exist between the genres of music listened to and the level of anxiety experienced in the testing situation.

Procedure of Data Collection

In order to conform to ethical, procedural principles the researcher followed the following scheme in collecting the data:

1. A letter was sent to the chairperson of the Institutional Review Board (IRB) at the University where the study was conducted clarifying the purpose for the research and seeking permission to administer the survey instrument to available groups of students (see letter in Appendix A).

2. Once permission was granted, the proposed plan was sent to the IRB of Andrews University (AU) for approval to conduct the study with human subjects (see Appendix B).
3. Upon approval from Andrews University (AU) to conduct the investigation two strategies were utilized to assemble the information.
 - (a) An electronic format of the questionnaire was placed on Survey Monkey for respondents to complete.
 - (b) A hard copy format of the questionnaire was made available to students at a central location of the university where they were completed and returned.
4. The participants were informed of the safety measures that would be employed to protect their anonymity.
5. The participants were informed that all documents would be kept in safekeeping until after the successful defense of this dissertation.
 - (a) And that no one apart from the researcher and dissertation committee members would have access to the details of their individual responses.

As indicated elsewhere the researcher sought to test the following Null hypothesis.

Null Hypotheses

The following guiding hypotheses flow from the research questions: lines these numbers up the same: 1 and 2 are indented more than 3-5

1. There is no relationship between musical listening interest and test anxiety when socio-demographic factors (gender, age, marital and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment) are controlled

2. There is no relationship between musical listening interest and test anxiety when socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment) are controlled
3. There is no relationship between musical listening interest and test anxiety when social psychological factors (father nurturance, mother nurturance, and self-efficacy), religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment) are controlled.
4. There is no relationship between musical listening interest and test anxiety when the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment) are controlled.
5. There is no relationship between musical listening interest and test anxiety and its subscales when important and known correlates (gender, age, income, marital status, parental status and religious affiliation) of test anxiety and its two subscales (i.e. psychological and emotional impairment) are controlled. Therefore the immediacy of response in education, could impact educational outcomes.

Data Analysis

Table 1 summarizes the statistical techniques that were utilized in the analysis of the data.

Table 1.

Statistical Analysis Techniques

#	Question	Dependent Variable	Independent Variable	Hypothesis/Null Hypothesis To Be Tested	Analysis
1.	What is the relationship between socio-demographic factors (gender, age, marital status and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?	Test anxiety	Gender, age, marital status and parental status.	<p>There is a relationship between musical listening interest and test anxiety when gender is controlled.</p> <p>There is a relationship between musical listening interests and test anxiety when age is controlled.</p> <p>There is a relationship between musical listening interests and test anxiety when marital status is controlled.</p> <p>There is a relationship between musical listening interests and test anxiety when parental status is controlled.</p>	Anova T-test

Table 1 – *Continued*

#	Question	Dependent Variable	Independent Variable	Hypothesis/Null Hypothesis To Be Tested	Analysis
2	What is the relationship between socio-economic factors (mother's education, father's education, income) its two subscales (i.e. psychological and emotional impairment)?	Test anxiety	Mother's education, father's education, income.	<p>There is a relationship between musical listening interests and test anxiety when mother's education is controlled.</p> <p>There is a relationship between musical listening interest and test anxiety when father's education is controlled.</p> <p>There is a relationship between musical listening interest and test anxiety when income is controlled.</p>	Bivariate Correlation

Table 1 – *Continued*

#	Question	Dependent Variable	Independent Variable	Hypothesis/Null Hypothesis To Be Tested	Analysis
3	What is the relationship between socio-psychological factors (father nurturance, mother nurturance and self-efficacy) religiosity and test anxiety and its two subscales?	Test anxiety	Father nurturance, mother nurturance, self-efficacy and religiosity	There is a relationship between musical listening interests and test anxiety when father and mother nurturance and self-efficacy are controlled. There is a relationship between musical listening interest and test anxiety when religiosity is controlled.	Bivariate Correlation

Table 1 – *Continued*

#	Question	Dependent Variable	Independent Variable	Hypothesis/Null Hypothesis To Be Tested	Analysis
4	What is the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?	Test anxiety	Types of music one listens to on a regular basis (musical listening interest). Church attendance, Prayer, Bible reading, Private Devotion, Religious affiliation	There is a relationship between musical listening interests and test anxiety when types of music one listens to on a regular basis (musical listening interest) is controlled. There is a relationship between musical listening interests when religious affiliation is controlled.	Bivariate Correlation

Table 1 – *Continued*

#	Question	Dependent Variable	Independent Variable	Hypothesis/Null Hypothesis To Be Tested	Analysis
5.	What is the relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital status and parental status) of test anxiety?	Test anxiety	Musical listening interest and test anxiety as measured by gender, age, income, marital status and parental status.	There is a relationship between musical listening interests when gender, age, income, marital status and parental status are controlled.	Multivariate Regression

CHAPTER 4

RESULTS OF THE STUDY

This chapter presents a summary of the findings from the analysis linked to the research questions identified in this dissertation. Specifically, this chapter provides descriptive statistical information about the demographic characteristics of the participants in this research. The descriptive section includes the frequencies for each of the student perception variables as well as the frequencies, means, and standard deviations of each of the subscales and levels of all the study variables such as socio-demographics, (gender, age and race/ethnicity), socio-economic status (mother and father's education, and income), and family status (marital status, whether respondent has children/dependents, and number of children/dependents), school and academic status. Other variables include musical genre, religiosity, self-efficacy, parental nurturing (father and mother), and three measures of test anxiety (overall test anxiety and two subscales: psychological and emotional impairment).

Additionally, this chapter includes results from the correlation among all the variables in the study as well as analysis of variances and ordinary least square regression that test the input of the independent variables in relation to the overall measure of test anxiety and the two subscales: psychological and emotional impairment. The following inquiries directed the analysis described.

1. What is the relationship between socio-demographic factors (gender, age, marital and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

2. What is the relationship between socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

3. What is the relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy), religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

4. What is the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?

5. What is the relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital and parental status) of test anxiety and its two subscales (i.e. psychological and emotional impairment)?

As the research questions suggest, the purpose of this research was to examine the relationship between musical listening interest and test anxiety after controlling for important and known correlates of test anxiety. The statistical analyses used to examine the five research questions identified in this study are: univariate, bivariate and multivariate analyses.

Univariate Analysis

The results in Tables 1 thru 8 provide a summary of the sample characteristics as a means of contextualizing the results for the specific research questions. All of the results presented in these eight tables are univariate statistics associated with the variables included in the study.

A summary of Table 2 presents the gender, age, and race/ethnicity of the respondents in this study. There were about three times more females than males (74.5 % versus 25.5%) participants. The modal age category was 18 to 20 years (33.3%) with about 69% of all participants reporting being between the ages of 18 to 25. The smallest age groups were participants at both ends of the age spectrum; less than 18 years (5.2%) and 36 years and older (6.1%). Nine in 10 of the participants self-identified as Blacks (91.1%) with the “Other” category being the next largest (5.8%). The distribution for the other racial/ethnic groups was: Indian (1.5%), White (0.9%), and Chinese (0.3%). Missing data did not appear to be a problem: only 0.6% (n=2) were missing for the gender variable, 0.3% (n=1) for age, and 1.5% (n=5) for race/ethnicity.

The frequency and percent distribution for the current marital status of the respondents along with information about whether they have children (or other dependents) and the number of children (or other dependents) that they had at the time when they completed the survey are shown in Table 3. The majority (78.2%) of the sample were single individuals who were never married. An equal number of participants were married or engaged (n=29; 8.8%). Similarly, an equal number of participants (1.5%; n=5) reported being separated or widowed, and only about 1% (n=4) indicated that they

were divorced. More respondents reported not having children or dependents as compared to those who had children at the time of the study (76.6% versus 23.4%).

Table 2

Frequency and Percent Distribution of Gender, Age, and Race/Ethnicity of Sample

Variables	Frequency	Percentage
Gender		
Male	84	25.5
Female	245	74.5
Age		
Less than 18 years	17	05.2
18 – 20 years	110	33.3
21 – 25 years	102	30.9
26 – 30 years	42	12.7
31 – 35 years	39	11.8
36 years and above	20	06.1
Race/Ethnicity		
White	3	0.9
Chinese	1	0.3
Indian	5	1.5
Asian	1	0.3
Black	297	91.1
Other	19	5.8

About fifty eight percent of the participants reported having one child (or dependent), followed by 20.5% with two children (or dependents), 10.3% reported that they had three or four children (or dependents) respectively, and only one person (1.3%) had five children (or dependents). Except for age, as reported for the results in Table 3, truly missing data were less than 1% across the variables described in Table 3.

Table 3

Frequency and Percent Distribution of Marital Status and Children/Dependents of Sample

Variables		Percentage
Frequency		
Marital Status		
Never Married Singles	258	78.2
Engaged	29	8.8
Married	29	8.8
Separated	5	1.5
Divorced	4	1.2
Widowed	5	1.5
Parental status (Children/Other Dependent)		
Yes	77	23.4
No	252	76.6
Number of children/Dependents		
One	45	57.7
Two	16	20.5
Three	8	10.3
Four	8	10.3
Five	1	1.3

Tables 3 and 4 present the summary of the distribution for the socio-economic status as measured by the education levels of mother and father of the respondent and household income of the participants. The distribution of the education level for the respondent's mothers indicates that the largest group (n=136; 41.8%) was those with high school (or equivalent), followed by grammar/primary/ preparatory (n=50; 15.4%),

Bachelor's degree (n=49; 15.1%), vocational/technical School (n=33; 10.2%), some college (n=27; 8.3%), Masters (n=16; 4.9%) and Professional degree (n=2; 0.6%) and 3.7% (n=12) selected the "Other" category. A similar pattern, mostly in terms of ranking, emerged for the fathers. That is, similar to mothers, the highest number (n=140; 43.5%) of participants were high school (or equivalent) graduates, the second largest group was graduates from grammar/primary/preparatory school, and unlike the mothers' the lowest number (n=5; 1.6%) was found in the professional degree category. About 16% (n=50) of the fathers reported that their highest educational level was vocational/technical school as compared to just about half of that number indicating that they hold Bachelor's degrees (n=24; 7.5%). The "Other" category followed next with 4.7% (n=15), some college (n=14; 4.3%) and Master's degree (n=12; 3.7%). The percentage of missing data was small for both groups; 1.8% for mothers and 2.7% for fathers.

Not surprisingly, for the household income variable about 3 in ten of the respondents selected the "prefer not to disclose" category. Also, 4% opted for the "Other" response category. However, 14% (n=45) reported earning between \$10,000 and \$29,000 Jamaican dollars, followed by those with household incomes of \$149,000 or more (n=38; 11.8%), \$49,000 to \$69,000 (n=29; 9.0%), less than \$10,000 (n=25; 7.8%), \$29,000 to \$49,000 and \$69,000 to \$89,000 (both groups accounting for n=21 and 6.5% of the sample respectively), and the last two groups \$89,000 to \$109,000 and \$109,000 to \$129,000 had the same number of participants (n=16; 5.0%).

Table 4

Frequency and Percent Distribution of Highest Level of Education Completed of Parents

Education Levels	Years Of Schooling # Of Years	Frequency		Percent	
		Mother	Father	Mother	Father
Grammar/Primary/Prep School	6	50	62	15.4	19.3
High School Or Equivalent	11	136	140	41.8	43.5
Vocational/Technical School (2 Years)	13	33	50	10.2	15.5
Some College	13	27	14	8.3	4.3
Bachelor's Degree	15	49	24	15.1	7.5
Master's Degree	17	16	12	4.9	3.7
Professional Degree	20	2	5	0.6	1.6
Other	20	12	15	3.7	4.7

Table 5

Frequency and Percent Distribution of Household Income Levels among Respondents

Income Levels	Frequency	Percentage
Less than JA \$10,000	25	7.8
JA \$10,000 – JA \$29,000	45	14.0
JA \$29,000 – JA \$49,000	29	6.5
JA \$49,000 – JA \$69,000	21	9.0
JA \$69,000 – JA \$89,000	21	6.5
JA \$89,000 – JA \$109,000	16	5.0
JA \$109,000 – JA \$129,000	16	5.0
JA \$129,000 – JA \$149,000	5	1.6
JA \$149,000 or more	38	11.8
Prefer not to disclose	93	28.9
Other	13	4.0

Information about the distribution of the respondents across the academic units and status is presented in Table 6. A little more than a third of the participants (n=118; 36.1%) were affiliated with the School of Allied Health and Nursing and 18.7% (n=61) reported that they were connected with the School of Humanities, Behavioral and Social Sciences. Other results were as follows: Business and Hospitality Management (n=55;

16.8%), Education and Leadership (n=34; 10.4%), Religion and Theology (n=31; 9.5%), and Natural and Applied Sciences (n=28; 8.6%).

Except for graduate students (n=12; 3.8%), the distribution was somewhat similar across the other four academic status groups. Interestingly also, the highest percentage was observed for seniors (n=82; 25.7%), followed by juniors (n=80; 25.1%), sophomore (n=78; 24.5%), and the lowest was freshman (n=67; 21.0%).

Table 6

Frequency and Percent Distribution of School and Academic Status of Respondents

Variables	Frequency	Percentage
School		
Allied Health and Nursing	118	36.1
Business and Hospitality Management	55	16.8
Education and Leadership	34	10.4
Humanities, Behavioral and Social Sciences	61	18.7
Natural and Applied Sciences	28	8.6
Religion and Theology	31	9.5
Academic Status		
Freshman	67	21.0
Sophomore	78	24.5
Junior	80	25.1
Senior	82	25.7
Graduate	12	3.8

Table 7 provides a descriptive statistics for socio- psychological variables of self-efficacy, father and mother nurturance. The average score for self-efficacy was 3.24 and standard deviation was 0.451. The means and standard deviations for father and mother nurturance were 2.29 and 1.13 and 1.77 and 0.904 respectively.

Table 7

Means, and Standard Deviation for Three Units of the Socio-Psychological Variables: Self-Efficacy, Father and Mother Nurturance

Variables	N	Mean	Standard Deviation
Self-efficacy	329	3.24 (h)	0.451
Father Nurturance	329	2.29 (m)	1.13
Mother Nurturance	329	1.77 (l)	0.904

Note. Range for mean = High (h), Moderate (m), and Low (l).

Table 8 is a summary of the responses to the question that assessed the frequency with which respondents listened to musical genres such as reggae, calypso, rhythm and blues, classical, religious, hip-hop, dance hall, and ‘other.’ Overall, the respondents were somewhat consistent in the frequency of the musical genres that they reported listening to at the time of the study. Mostly, the participants did not listen or only did so for one to two hours for all of the musical genres. This suggests that large numbers of participants were not engaged or did so at relatively low frequency. This pattern was less pronounced for religious and rhythm and blues musical genres. Specifically, the highest percentages

were found for five of the eight musical genres in the never category: calypso (n=199; 71.6%), classical (n=134; 36.7%), hip-hop (n=133; 45.2%), dance hall (n=147; 50.5%), and other (n=15; 75%). The other three highest numbers were found for reggae (n=145; 48.2%), rhythm and blues (n=94; 31.4%), and religious (n=96; 30.8%) in the one to two hours weekly response category. The three to four hours a week response category was the next popular option that was selected and these results were mostly consistent across all of the musical genres. For the most part, the results for the other two response categories followed the general pattern of seven or more hours weekly being the next popular category. One departure was observed in these findings across all of the musical types. That is, religious music, where the second most popular category was seven or more hours weekly (n=87; 27.9%) and the least selected option was 'never.'

The results in Table 9 is a summary of the mean, standard deviation, Cronbach alphas, and the number of items that were associated with the three dependent variables used in this study. The mean and standard deviation respectively for the dependent variables were: test anxiety 3.06 and 1.13, psychological impairment 3.07 and 1.18 and emotional impairment 3.05 and 1.17. Test anxiety is a combination of the ten items that are shared by the two subscale variables. Psychological impairment consists of six items as compared to four items for emotional impairment. Cronbach alphas are often use to test the reliability and internal consistency of scales. This is especially important when established scales as used in a context that is different from where they were normed or have been used in previous empirical studies.

Table 8

Frequency and Percent Distribution of Musical Genres of Respondents

Frequency	Percentages							
	Reggae	Calypso	Rhythm & Blues	Classical	Religious	Hip-Hop	Dance Hall	Other
Never	95 (31.6)	199 (71.6)	85 (28.4)	134 (46.7)	19 (6.1)	133 (45.2)	147 (50.5)	15 (75.0)
1 - 2 hours weekly	145 (48.2)	64 (23.0)	94 (31.4)	98 (34.1)	96 (30.8)	91 (31.0)	92 (31.6)	1 (5.0)
3 – 4 hours weekly	31 (10.3)	5 (1.8)	55 (18.4)	31 (10.8)	56 (17.9)	29 (9.9)	25 (8.6)	3 (15.0)
5 – 6 hours weekly	11 (3.7)	5 (1.8)	26 (8.7)	11 (3.8)	54 (17.3)	20 (6.8)	7 (2.4)	0 (0.0)
7 or more hours weekly	19 (6.3)	5 (1.8)	39 (13.0)	13 (4.5)	87 (27.9)	21 (7.1)	20 (6.9)	1 (5.0)

The alphas for the three test anxiety dependent variables would be considered as excellent (.93 for text anxiety and .91 for psychological impairment) and good (.84 for emotional impairment) as shown in Table 9.

Table 9

Basic Descriptive Statistics and Cronbach Alphas for Dependent Variables

Variables	N	Mean	Standard Deviation	Alpha	Number of Items
Test Anxiety	327	3.06 (m)	1.13	0.932	10
Psychological Impairment	327	3.07 (m)	1.18	0.909	6
Emotional Impairment	327	3.05 (m)	1.17	0.836	4

Note. Range for mean - Moderate level (M)

Bivariate Analysis

Tables 9 thru 12 provide the results for bivariate analyses conducted to test research questions 1 to 4. These results include t-test, one-way ANOVA, and correlation statistical tests that evaluate the relationship between the predictor variables and test anxiety, psychological impairment and emotional impairment.

Research question number one deals with the extent to which socio-demographic factors (gender, age, marital status, and parental status are related to test anxiety and its two subscales (i.e. psychological and emotional impairment). Table 10 and 11 provide a summary of the results of the analyses that evaluated this question. No statistical gender differences were observed at the .05 level or below all three outcome variables in this

study. However, it is important to note that the gender means differential coincide with the literature for females reporting higher levels of test anxiousness. Not surprisingly, using Cohen (1988) guidelines for interpreting eta square the effect size was very small. That is, .009 or 9% and .010 or 10% of the variance in test anxiety and psychological impairment respectively was explained by gender. For marital status, never married were consistently higher in their reported levels of test anxiety ($p=.030$) and emotional impairment ($p=.015$) than the 'Other' category. A similar pattern was observed for psychological impairment ($p=.055$) but as shown in Table 10, this difference was only marginally significant. Similar to the eta square results for gender, a small effect size was observed for marital status (.015 or 15% for test anxiety, .011 or 11% for psychological impairment, and .018 or 18% for emotional impairment). The results for parental status was most consistent in that for all three outcomes statistical differences were observed. Specifically, respondents with children reported statistically significantly lower mean score on the overall measure of test anxiety (2.69 versus 3.17, $p=.002$), psychological impairment (2.69 versus 3.18, $p=.002$), and emotional impairment (2.69 versus 3.16, $p=.004$) than those who did not have children at the time of the study. The eta square results were: .029 or 29% for test anxiety, .031 or 31% for psychological impairment, and .025 or 25% for emotional impairment. While the effect size was relatively stronger than gender and marital status, using Cohen's d , the magnitude of the effect of parental status on test anxiety, psychological and emotional impairment was small. Finally, as shown in Table 10, no statistical difference was observed for the mean test anxiety scores across the three age categories identified in these analyses. Thus, age as operationalized in this study was not related to the overall measure of test anxiety and its two subscales.

Table 12 shows the results of the analysis to evaluate research question 2 that focuses on the relationship between socio-economic factors (father's and mother's education, and income) and test anxiety and its two subscales (i.e. psychological and emotional impairment). Specifically, question 2 assesses the zero-ordered correlation between socio-demographic factors and the three measures of test anxiety used in the study. The results indicate that none of the three socio-economic variables was correlated with any of the three outcomes identified in this study. Not surprising and not directly linked to the research questions, mother and father's education were positively correlated ($r=.384, p=.000$) and income was positively correlated to mother's education only ($r=.246, p=.000$).

Table 10

T-Test for the Relationship Between Gender, Marital and Parental Status and Test Anxiety, Psychological and Emotional Impairment

Variables	Group	N	Mean	SD	t	Df	p-value	Eta Square
Test Anxiety	Gender				-1.69	125.08	.093	.009
	Male	84	2.88	1.27				.
	Female	245	3.14	1.06				
	Marital Status				2.20	100.69	.030	.015
	Never Married	258	3.13	1.07				
	Married*	72	2.77	1.27				
	Parental Status (Have Children)				-3.11	113.71	.002**	.029
	Yes	77	2.69	1.23				
Psychological Impairment	No	252	3.17	1.08				
	Gender				-1.85	129.46	.067	.010
	Male	84	2.86	1.29				
	Female	245	3.15	1.13				

Table 10 – *Continued*

Variables	Group	N	Mean	SD	t	Df	p-value	Eta Square
Emotional Impairment	Marital Status				1.94	103.49	.055	.011
	Never Married	258	3.13	1.14				
	Married*	72	2.80	1.29				
	Parental Status (Have Children)	77	2.69	1.24	-3.25	117.89	.002**	.031
	Yes	252	3.18	1.14				
	No							
	Gender				-1.35	125.93	.178	.006
	Male	84	2.90	1.31				
	Female	245	3.12	1.10				
	Marital Status				2.48	102.11	.015	.018
	Never Married	258	3.14	1.11				
	Married*	72	2.72	1.29				
	Parental Status (Have Children)	77	2.69	1.28	-2.92	113.18	.004**	.025
	Yes	252	3.16	1.11				
	No							

Note. * Includes previously married (divorced, separated, widowed).

* = $p < 0.05$, ** = $p < 0.01$; NS=none of the groups was significantly different from each other.

Table 11

One Way ANOVA Between Test Anxiety and Subscales and Age Categories

Variables	Age Group			F	P	Eta square
	<20(n= 127) M(SD)	21-25(n=102)M(SD)	>26(n=101) M(SD)			
Test Anxiety	3.08 (1.05)	3.04 (1.12)	3.14 (1.08)	.017	.983	.022
Emotional Impairment	3.05 (1.13)	3.10 (1.19)	2.98 (1.16)	.086	.918	.119
Psychological Impairment	3.07 (1.22)	3.08 (1.25)	3.04 (1.27)	.564	.570	.764

Table 12

Correlations Between Parent's Education, Household Income and Test Anxiety, Psychological Impairment, and Emotional Impairment.

Variables	N	Mean	SD	1	2	3	4	5	6
1 Test Anxiety	331	3.0604	1.12805	1.00					
2 Psychological Impairment	331	3.0655	1.18082	.974**	1.00				
3 Emotional Impairment	331	3.0528	1.16590	.939**	.837**	1.00			
4 Father's Education	307	2.52	1.419	-.012	-.001	-.026	1.00		
5 Mother's Education	313	2.82	1.525	.026	.019	.035	.384**	1.00	
6 Income	216	4.58	2.737	-.035	-.036	-.031	.085	.246**	1.00

Note. * = $p < 0.05$, ** = $p < 0.01$

Table 13 provides a summary of the results for research question 3 that assesses the relationship between social psychological factors (religiosity, father nurturance, mother nurturance, and self-efficacy) and test anxiety and its two subscales (i.e. psychological and emotional impairment). Religiosity and mother nurturance were unrelated to all of the three aforementioned outcome measures. In contrast, and as expected, father nurturance was negatively related to test anxiety ($r = -.186, p = .001$), psychological impairment ($r = -.175, p = .001$), and emotional impairment ($r = -.183, p = .001$). This suggests that a decrease in father's nurturance was associated to higher levels of test anxiety, psychological impairment and emotional impairment. Other results shown indicate that religiosity was positively related to mother nurturance ($r = .384, p = .002$) and father nurturance ($r = -.109, p = .050$). Mother nurturance and father nurturance were negatively related ($r = -.422, p = .000$). Finally, self-efficacy is negatively related to religiosity ($r = -.129, p = .01$) and father nurturance ($r = -.123, p = .01$).

Table 13

Correlations between Religiosity, Mother and Father Nurturance and Test Anxiety, Psychological Impairment, and Emotional Impairment.

Variables	N	SD	Means	1	2	3	4	5	6	7
1 Test Anxiety	326	X	X	1.00						
2 Psychological Impairment	326	1.18497	3.0685	.974**	1.00					
3 Emotional Impairment	326	1.16490	3.0613	.939**	.837**	1.00				
4 Religiosity	326	.59032	2.0460	.067	.067	.059	1.00			
5 Mother Nurturance	326	.90247	1.7610	.039	.044	.028	.384**	1.00		
6 Father Nurturance	326	1.12158	2.2746	-.186**	-.175**	-.183**	.109*	.422**	1.00	
7 Self-efficacy	326	.44974	3.2407	.068	.042	.089	-.129**	-.039	+.123**	1.00

Note. * = $p < 0.05$, ** = $p < 0.01$

Question four evaluates the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment). Table 14 shows the correlations among the musical listening genres and test anxiety as measured by psychological and emotional impairment. Overall, the size of the coefficients was small. Religious music was positively correlated with the measures of test anxiety: psychological impairment ($r = .148, p=.009$) and emotional impairment ($r = .129, p =.022$). Also, emotional impairment was negatively correlated with rhythm and blues ($r = -.145, p =.012$). Both of the dependent variables were not significantly correlated with any of the other musical genres except for the three previously described. Not surprisingly, the two measures of test anxiety were highly correlated ($r = .837, p = .000$). A number of significant correlations were observed among the seven measures of musical genres. Specifically, reggae was positively correlated with calypso ($r = .423, p=.000$), rhythm and blues ($r = .460, p=.000$), classical ($r = .137, p=.023$), hip-hop ($r = .531, p=.000$), and the highest correlation with dance hall ($r = .707, p=.000$). Calypso was positively correlated with rhythm and blues ($r =.317, p=.000$), classical ($r = .310, p=.000$), hip-hop ($r =.303, p=.000$), and the highest correlation ($r = .353, p=.000$). Rhythm and blues was positively correlated with classical ($r =.140, p=.020$), hip-hop ($r =.575, p=.000$), and dance hall ($r = .447, p=.000$).

Table 14

Correlations Among Musical Genres, Psychological Impairments, and Emotional Impairments Variables.

	1	2	3	4	5	6	7	8	9
1 Reggae	1.00								
2 Calypso	.423**	1.00							
3 Rhythm & Blues	.460**	.317**	1.00						
4 Classical	.137*	.310**	.140*	1.00					
5 Religious	-.035	.112	-.020	.206**	1.00				
6 Hip-Hop	.531**	.303**	.575**	.063	-.203**	1.00			
7 Dance Hall	.707**	.353**	.447**	.070	-.160**	.679**	1.00		
8 Psychological Impairment	-.037	.029	-.065	.023	.148**	-.066	-.056	1.00	
9 Emotional Impairment	-.015	.019	-.145*	-.021	.129*	-.068	-.050	.837**	1.00

Note. * = $p < 0.05$, ** = $p < 0.01$

Multivariate Analysis

The final set of analyses focus on relationship between musical listening genres interest and test anxiety and its two subscales (psychological and emotional impairment) after adjusting for gender, age, income, marital status, parental status, and father nurturance. The research question that guided the analysis is: What is the relationship between musical listening interest and test anxiety after controlling for gender, age, income, marital status, parental status, and father nurturance?

Tables 14 through 16 provide summaries of the regression analyses carried out to assess the singular and joint effect of the main independent variable (musical listening interest) and control variables on the outcome variables, test anxiety and its two subscales. Each table consists of two regression models. One model (Model I) evaluates the effects of musical listening types on the dependent variable (test anxiety) and its two subscales (emotional impairment and psychological impairment). The other model (Model II), which assesses the contribution of musical listening types on the three outcome variables after controlling for age, gender, income, marital status is dichotomized into single (never married, married/ or formerly married), parental status, and father nurturance.

Table 15 shows the results of the analysis that used the models defined with Test Anxiety as the dependent variable. In Model I, religious music was positively related to the overall measure of Test Anxiety used in this study ($\beta = .202, p = .022$). That is, increased levels of listening to religious music is associated with increased levels of Test Anxiety. The six other measures of musical listening interest were all unrelated to Test Anxiety. Not surprising, only about 4% of variance in Test Anxiety was explained by the

inclusion of the seven measures of musical listening interest. The coefficient for religious listening interest remained positive, and statistically significant ($\beta = .203, p = .021$) after the control variables were entered in Model II. Similarly, the other measures of musical listening interests remained non-significant predictors of Test Anxiety. Among the control variables, only father nurturance ($\beta = -.256, p = .002$) was significantly related to Test Anxiety. On the contrary to religious listening musical interest, father nurturance was inversely related to the dependent variable. Finally, the inclusion of the control variables in Model II resulted in 12% of total variance explained.

Table 16 presents the multivariate results for the association between musical listening interest and psychological impairment after controlling for age, income, marital status, parental status, and father nurturance. Similar to the results for the overall measure of Test Anxiety, religious music was positively related to psychological impairment ($\beta = .192, p = .029$). Thus, higher levels of listening to religious music is associated with increased levels of psychological impairment. Also as shown when the overall measure of Test Anxiety was considered, the six other measures of musical listening interest were all unrelated to psychological impairment. Only 4% of variance in psychological impairment was accounted for when the seven measures of musical listening interest was assessed. The coefficient for religious listening interest remained positive, and statistically significant ($\beta = .194, p = .028$) after the control variables were entered in Model II. Also, the other six measures of musical listening interests remained non-significant predictors of psychological impairment. Among the control variables, only father nurturance ($\beta = -.254, p = .002$) was significantly related to subscale measure of Test Anxiety - psychological impairment.

Table 15

Regression Coefficients for the Relationship between Musical Listening Interest and Test Anxiety

Variables	Model 1			Model 2		
	b	SE	β	b	SE	β
Reggae	-.046	.122	-.043	-.069	.122	-.065
Calypso	-.002	.135	-.002	.030	.138	.021
Rhythm & Blues	-.050	.082	-.059	.030	.138	.021
Classical	-.005	.100	-.004	.021	.100	.018
Religious	.177	.076	.202*	.178	.077	.203*
Hip-Hop	.035	.112	.037	.016	.114	.017
Dance Hall	.038	.128	.038	.060	.127	.060
Gender				-.242	.237	-.092
Age				.006	.301	.002
Income				.044	.042	.101
Marital status				.227	.359	.084
Parental status				.012	.332	.004
Farther nurturance				-.250	.077	-.256**
Constant	2.639	.362		1.785	.569	
R Squared	.039			.116		
R-Square Change	.039			.077		
N	163			163		

Note. + = $p < 0.10$, * = $p < 0.05$, ** = $p < 0.01$

On the other hand unlike religious listening musical interest, father nurturance was inversely related to the dependent variable. Finally, the inclusion of the control variables in Model II resulted in 12% of total variance explained in psychological impairment.

Table 17 is a summary of the multivariate analysis that evaluated the extent to which musical listening interests are related to emotional impairment after controlling for age, income, marital status, parental status, and father nurturance. The results for the dependent variable emotional impairment were similar to those presented for the overall measure of Test Anxiety and psychological impairment. Specifically, listening to religious music was positively related to emotional impairment ($\beta = .200, p = .023$). Thus, higher levels of listening to religious music is associated with increased levels of emotional impairment. Also as shown when the overall measure of Test Anxiety and psychological impairment were assessed, the six other measures of musical listening interest were all unrelated to emotional impairment. Only 4% of variance in emotional impairment was accounted for when the seven measures of musical listening interest was assessed. The coefficient for religious listening interest remained positive, and statistically significant ($\beta = .200, p = .023$) after the control variables were entered in Model II. Also, the other six measures of musical listening interests remained non-significant predictors of emotional impairment. Among the control variables, only father nurturance ($\beta = -.237, p = .003$) was significantly related to subscale measure of Test Anxiety – emotional impairment. Contrary to religious listening musical interest, father nurturance was negatively related to the dependent variable. Finally, the inclusion of the control variables in Model II resulted in 12% of total variance explained in emotional impairment.

Table 16

Regression Coefficients for the Relationship between Musical Listening Interest and Psychological Impairment

Variables	Model 1			Model 2		
	b	SE	β	b	SE	β
Reggae	-.090	.125	-.082	-.108	.125	-.099
Calypso	-.009	.138	-.006	.016	.141	.011
Rhythm & Blues	-.022	.084	-.025	-.074	.085	-.085
Classical	.033	.102	.028	.061	.102	.051
Religious	.172	.078	.192*	.173	.078	.191*
Hip-Hop	.000	.115	.000	-.004	.116	-.004
Dance Hall	.085	.130	.083	.108	.130	.106
Gender				-.323	.242	-.120
Age				.024	.307	.010
Income				.051	.043	.113
Marital status				.202	.367	.073
Parental status				-.075	.339	-.026
Farther nurturance				-.254	.079	-.254**
Constant	2.635	.370		1.825	.581	
R Squared	.041			.118		
R-Square Change	.041			.077		
N	163			163		

Note. + = $p < 0.10$, * = $p < 0.05$, ** = $p < 0.01$

Table 17

Regression Coefficients for the Relationship between Musical Listening Interest and Emotional Impairment

Variables	Model 1			Model 2		
	b	SE	β	b	SE	β
Reggae	.020	.129	.018	-.011	.129	-.010
Calypso	.007	.142	.005	.053	.145	.034
Rhythm & Blues	-.092	.087	-.104	-.133	.088	-.150
Classical	-.063	.106	-.051	-.039	.105	-.031
Religious	.185	.081	.200*	.185	.081	.200*
Hip-Hop	.088	.118	.088	.045	.120	.045
Dance Hall	-.033	.134	-.031	-.012	.134	-.011
Gender				-.121	.250	-.044
Age				-.022	.317	-.008
Income				.035	.045	.074
Marital status				.264	.378	.093
Parental status				.143	.350	.049
Farther nurturance				-.244	.082	-.237**
Constant	2.644	.381		1.724	.599	
Squared	.041			.117		
R-Square Change	.041			.076		
N	163			163		

Note. + = $p < 0.10$, * = $p < 0.05$, ** = $p < 0.01$

Finally, additional analyses were conducted to further assess the research questions identified in the study. Specifically, dummy variables were created for all of

the musical listening interests variables used in the study. Levels of listening to these different genre of music were organized into three groups (high, medium/moderate, and low) except for religious listening type (high and low). This was done in order to capture how test anxiety levels vary by specific subgroup listening levels. Some interesting results were observed when regression analysis were conducted for religious listening genre and test anxiety. First, individuals listening to religious music for one to two hours weekly reported significantly lower levels of test anxiety as compared to those listening for seven or more hours weekly ($\beta = -.206, p = .003$). None of the other levels of listening to religious music was significantly different from the reference category (i.e. seven or more hours weekly) in their reported levels of test anxiety. Second, similar to the results for religious music (marginally significant, $p=.083$) individuals who listened to reggae music one to two hours weekly as compared to those who listened for seven or more hours reported slightly lower levels of test anxiety ($\beta = -.188, p = .083$). Interestingly, it should be noted that additional tests were conducted to profile these two groups; individuals who listen to religious music one to two hours a week as compared to those who listened for seven or more hours a week. While no statistical differences were observed for the socio-demographic and socio-economic variables and these two groups of individuals (i.e. listening to religious music for one to two hours a week and listening for seven and more hours), significant differences were observed for the three individual religious items included in this study. Specifically, for all three of the religious variables, individuals who listened to religious music one to two hours weekly reported significantly lower levels of religious activities than those who listened to religious music for seven or more hours a week. The following results are for one to two hours versus

seven hours listening: frequency of prayer ($M = 3.58$ versus $.759$, $p=.000$), frequency of reading Bible/Torah/Koran or other religious books ($M = 2.67$ versus 3.28 , $p=.000$); and frequency of attending a place of worship such as a church/synagogue/mosque/temple ($M = 1.97$ versus 2.26 , $p=.005$).

Similar additional results were observed for psychological impairment. First, individuals listening to religious music for one to two hours weekly reported significantly lower levels of psychological impairment as compared to those listening for seven or more hours weekly ($\beta = -.206$, $p = .003$). Again, none of the other levels of listening to religious music was significantly different from the reference category (i.e. seven or more hours weekly) in their reported levels of psychological impairment. Second, similar to the results for religious music (marginally significant, $p = .058$) individuals who listened to reggae music one to two hours weekly as compared to those who listened for seven or more hours reported slightly lower levels of test anxiety ($\beta = -.128$, $p = .058$).

The final set of additional results were linked to emotional impairment. Somewhat similar additional results were observed for emotional impairment. First, individuals listening to religious music for one to two hours weekly reported significantly lower levels of emotional impairment as compared to those listening for seven or more hours weekly ($\beta = -.177$, $p = .010$). As previously noted none of the other levels of listening to religious music was significantly different from the reference category (i.e. seven or more hours weekly) in their reported levels of emotional impairment. Second, unlike the results for the two other dependent variables, individuals who never listened to rhythm and blues as compared to their peers in the highest frequency of listening to this musical genre reported higher levels of emotional impairment ($\beta = .174$, $p = .050$).

CHAPTER 5

SUMMARY, DISCUSSION, IMPLICATIONS AND CONCLUSION OF FINDINGS

This study sought centrally to understand the relationship between test anxiety and musical listening interest controlling for theoretically and conceptually relevant socio-demographic, socio-economic, socio-psychological and religious variables. In this connection, five hypotheses were generated from which the null hypotheses were derived and tested. After restating the purpose, research questions, and important findings of the study, this chapter discusses the findings with respect to each tested hypothesis. The significance, policy implications of the findings; the limitations of the findings; and recommendations for future research in the area of the study are also presented.

Purpose of the Study

The purpose of this study was to investigate test anxiety as a function of musical listening interest, while controlling for variables that were deemed plausible predictors of test anxiety among students of a Christian university in Jamaica. These variables included socio-demographic factors such as age and gender; socio-economic factors such as income and education as well as socio-psychological factors including parental nurturance, self-efficacy, and religiosity.

Research Questions

The following research questions guided the study and constituted the basis of the research hypotheses and null hypotheses that were generated for testing:

1. What is the relationship between socio-demographic factors (gender, age, marital and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
2. What is the relationship between socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
3. What is the relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy), religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
4. What is the relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment)?
5. What is the relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital and parental status) of test anxiety and its two subscales (i.e. psychological and emotional impairment)?

Brief Literature Review

The literature discussed in chapter 2 identified several relationships between test anxiety and a number of variables. Cassady & Johnson, (2002); as well as Mohsen & Mansor, (2009) observed that socio-demographic factors gender, age, social class,

financial status, grade point average (GPA) give us a clear window into the nature of test anxiety. A number of studies have regularly shown that female students have significantly higher test anxiety than male students. This gender difference varies across grade levels. Hembree, (1988) along with Connor (2003) reported that this phenomenon begins early in elementary school. Hembree, (1988) specified that this peaks in grades 5-10, and decreases in high school and college. Zeidner (1998) and Lewis & College, (1987) attributed this gender difference to the differential socialization experiences of males and females.

The extent to which a nurturing parenting environment mediates test anxiety was indicated in the work of Peleg-Popko and Klingman (2002), Guttman (1987), Sapp (1999), and others. They noted that students from families in which parenting styles reflect positive and supportive responsiveness to schooling tend to display greater levels of success in their educational journey with less susceptibility to test anxiety.

Researchers (Baldacchino & Draper, 2001; Hill & Pargament, 2003; Park, Cohen, & Herb, 1990) found a positive relationship between spirituality, religious belief and beneficial physical and mental health outcomes. Jansen, Motley, & Hovey, (2010) underscored that religious practice is a protector of students' ability to withstand test anxiety during exam or test-taking periods. They specifically reported an inverse relationship with test anxiety and subjective religiosity.

Summary of Important findings

Before a discussion of the preceding lists is embarked upon, an itemization of the important findings of the study, derived from the test hypothesis is given. The null

hypotheses were assessed by the means of bivariate (BS) and multivariate (MS) statistical analyses.

Problem

The stated problem identified an enormous deficit in the literature on the factors associated with test anxiety generally, and test anxiety and music listening interest in particular, in the Caribbean region. This deficit is made even more distinct by the numerous studies that exist on test anxiety elsewhere and the effect it has on students' behavior and performance in the classroom.

Method

This study employed an ex post facto, correlational cross-sectional, research design in which two strategies were utilized to collect the data. An electronic format using Survey Monkey, an online research tool, as well as a hard copy format in which participants were asked to complete the questionnaire in their classes was administered. The convenience sample, (N = 329) was drawn from both undergraduate and graduate students at a Christian university in Jamaica. Bivariate and Multivariate techniques were used to gauge the relationships between the identified predictors and outcome variables. The following list of the important findings reflects this focus.

Important Findings

1. At the bivariate level, marital status, parental status, father nurturance, rhythm and blues and religious music were all found to be significantly related to test anxiety. When t-tests were used to assess the relationship between overall test anxiety (OTA), and psychological impairment (PI), and emotional impairment (EI)

against marital status, respondents who were married were found to be less test anxious than those who were not married: OTA ($t = 2.20, p = .030$); PI ($t = 1.94, p = .055$); EI ($t = 2.48, p = .015$).

2. Similarly, when the three measures of test anxiousness were examined against parental status, participants with children were found to be less test anxious than those who have no children: OTA ($t = -3.11, p = .002$); PI ($t = -3.25, p = .001$); EI ($t = -2.92, p = .004$).
3. The same three measures were checked against father nurturance using Pearson r correlation. In each instance, statistically significant inverse relationships were found between each of the three measures when examined against father nurturance: OTA ($r = -.186, p = .01$); PI ($r = -.175, p = .01$); EI ($r = -.183, p = .01$). This suggests that the test anxiety levels of participants were lowered with increased levels of father nurturance.
4. When the three dependent variables were examined against rhythm and blues, only one showed significance. Participants demonstrated less test anxiousness with increased listening to rhythm and blues in the area of emotional impairment ($r = -.145, p = .012$).
5. However, religious music demonstrated positive relationships with two measures of test anxiousness PI ($r = .148, p = .009$); and EI ($r = .129, p = .022$). This indicates that the more participants listened to religious music the more test anxious they were as indicated by their psychological and emotional impairment.
6. At the multivariate level, the three measures of test anxiety were each significantly related to two predictor variables, religious music and father

nurturance. In the case of psychological impairment, religious music explains 19% of the variance ($\beta = .191, p < 0.10$). However, for emotional impairment 20% of the variance ($\beta = .203, p < 0.10$) was explained by religious music listening. On the other hand, when the three measures of test anxiety were regressed on father nurturance inverse relationships resulted in each instance. In the instance of overall test anxiety 26 % of the variance was explained by father nurturance ($\beta = -.256, p < 0.01$); for psychological impairment, 25% of the variance was explained ($\beta = .254, p < 0.01$), and for emotional impairment 24% was explained ($\beta = .237, p < 0.01$) by the same variable. This tells us that the control variable father nurturance is the strongest predictor of test anxiety.

Null Hypotheses Tested

The following five null hypotheses guided the discussions of the findings:

1. There is no relationship between socio-demographic factors (gender, age, marital status and parental status) and test anxiety and its two subscales (i.e. psychological and emotional impairment).
2. There is no relationship between socio-economic factors (mother's education, father's education, income) and test anxiety and its two subscales (i.e. psychological and emotional impairment).
3. There is no relationship between socio-psychological factors (father nurturance, mother nurturance, and self-efficacy) religiosity and test anxiety and its two subscales (i.e. psychological and emotional impairment).

4. There is no relationship between the types of music one listens to on a regular basis (musical listening interest) and test anxiety and its two subscales (i.e. psychological and emotional impairment).
5. There is no relationship between musical listening interest and test anxiety and its subscales after controlling for important and known correlates (gender, age, income, marital status and parental status).

Discussion of Findings as they Relate to Null Hypotheses

The degree to which the null hypotheses were supported in this study will be examined in this section.

Null Hypothesis #1

The proposition that there is no relationship between test anxiety and socio-demographic factors was partially supported both for the overall measure and the subscales of test anxiety (see Table 14). Specifically, of the four demographic factors examined three displayed a significant relationship with test anxiety and its subscales. As can be seen in Table 14, the levels of significance vary for these variables. Gender is marginally significant with females indicating a higher mean than males ($\bar{x} = 3.14$, $p = .093$). Marital status shows a clear significance with married participants recording a higher mean than unmarried participants ($\bar{x} = 2.77$, $p = .030$) and parental status demonstrating strong significance with test anxiousness ($\bar{x} = 3.17$, $p = .002$). The higher mean associated with participants who were parents suggests that parenting participants reported lower test anxiousness than nonparent participants.

Age, contrary to the literature is not related to test anxiety. Several studies, as noted in the literature review, have reported a relationship between age and test anxiety.

These studies indicated that as students increased in age their test anxiety levels tended to decrease. Additionally, the marginal significance of the relationship between gender and test anxiety also runs counter to the evidence of test anxiety and gender in past research. Past studies reported significantly higher test anxiety in females than males. Though the mean differentials for gender indicated lower levels of anxiety for men in this study, the non-significant relationship may be due to a non-random sample with a selection bias which favored females almost 3:1 (245: 84).

The significant relationships between marital status and parental status and test anxiety respectively are concordant with past findings and suggest an increased capacity by married and parenting students to deal with situations of stress. This is understandable since these participants would have been accustomed to dealing with stressors of various kinds on a regular basis, and doubtless have developed requisite coping mechanisms which were transferred to the testing situation.

Null Hypothesis # 2

The proposition that no relationship exists between the socio-economic factors of education and income, operationalized as parents years of education and yearly earnings in this study, and the participating students' level of test anxiousness was supported in the study. Based on the socio-economic theory that socio-economic resources (Finkelstein, Kubzansky, Capitman, & Goodman, 2007) such as education and income levels provide a source of resilience for managing situations of stress, it was expected that students' capacity to deal with anxiety would be inversely related to their socio-economic background. Specifically, persons on the higher end of the socio-economic spectrum are generally considered to possess more material, social and intellectual resources that

enable them to better cope with situations of stress and anxiety. That this was not the case in this study may be attributable to the cultural peculiarities of a “third world” setting, where often status inconsistency obtains and do not match the realities of more advanced societies.

Null Hypothesis #3

The proposition that no relationship exists between socio-psychological and religiosity factors and test anxiety and its subscales was only partially supported in this study, with religiosity showing no relationship. However, father nurturance demonstrated significant relationship with test anxiety and its subscales, as expected.

The direction of the relationship of father nurturance with test anxiety is inverse, suggesting that participants experienced lower levels of test anxiety with increased levels of nurturance from their fathers. This is consistent with the literature and the logic of interpersonal relationships that suggest that nurturing relationships between parents and their children would translate to more confident and less anxious children.

The non-significant relationships observed between the three measures of test anxiousness and mother nurturance and self-efficacy, also gave rise to wonder as to what these conditions mean to the sample respondents. These unexpected findings suggest the need for more qualitative approaches such as the use of focus groups to unravel what might be happening.

Null Hypothesis # 4

The proposition that no relationship exists between the three measures of test anxiousness used in this study and musical listening interests was not supported in the study. The null hypothesis is rejected. Still, as in the case of the null hypothesis

discussed, the outcome of the statistical analysis is somewhat puzzling. The direct variation of the frequency participants listened to religious music with their test anxiety levels does not match the expectation of the researcher.

It was expected that frequent listening to religious music would have predisposed the study participants to be less test anxious. A positive beta of .192 suggests a moderately strong increase in students' test anxiety level with every unit of frequency they listened to religious music. However, the researcher yet wonders if it is the frequency of listening to religious music that led to increased test anxiousness or whether it was the highly anxious students who sought out religious music as a relief from anxiety.

Again, this is the case of the surprising correlations in the bivariate analysis that tested null hypothesis #2, the answer to the previous question can only be properly addressed by an ethnographic study. Such an approach would employ a more close-up method of investigation such as focused group investigation and participant response to open ended questions directed at gauging how anxious they are and how they attempted to deal with their anxiety. Further, one might want to consider reconceptualizing the religious musical genre in order to account for the subtypes of that genre.

Null Hypothesis # 5

The proposition that when the socio-economic and social psychological variables used in the study were included in the regression analysis there would be no relationship between musical listening interest and the three measures of test anxiousness was not supported in this study. In each of the three models that examined the proposed relationship religious music showed significance with each of the outcome variables:

emotional impairment, psychological impairment and the total test anxiety measure. The null hypothesis of no relationship was therefore rejected. What remains to be explained, however, is the direction of the relationship listening to religious music seems to induce with test anxiety, even in the context of the employed controls. The researcher anticipated an inverse relationship rather than the direct one obtained.

This outcome may be due to any number of factors, but two seem likely. As previously noted, one factor might be that those persons who showed much interest in religious music might have been anxiety prone and have sought out religious music as a relief. Yet, another factor may be due to the kind of religious music participants listened to. It can be argued that music affects us beyond our best intention. Since this study did not control type of religious music, this factor cannot be ruled out.

Limitations of Study

The integrity of any research venture aimed at capturing patterns that characterize human behavior must be gauged by the methodology employed in the associated study. This study utilized an ex post facto correlational, cross-sectional design. This means that the responses of the study respondents to the variable of interest were lifted at a single point in time (cross-sectional) after the studied behaviors were enacted (ex post facto). Additionally, the persons from whom the data were lifted were not selected in a way to allow for every one of the population studied to be included in the sample. The result is that a convenience, non-random sample responded to the administered questionnaire.

Another limitation of this study might be due to the way the main independent variable was measured. Respondents were asked to indicate the frequency with which they listened to given genres of music. This question ignored, though not intentionally,

the context of the relationship that was examined i.e. music and test anxiety. A more useful way of phrasing the question that measured the main independent variable (musical listening interest) would have been to connect listening interest to test anxiety. Such a phrasing might read as follows. How frequently do you listen to the following genre before a major examination?

Each of the aforementioned limitation points: the correlational nature of the study, the cross-sectional gathering of the data, the non-random way the sample was chosen and the way the main independent variable was measured, limit the extent that we can speak of the validity of the demonstrated relationship and the inference we can draw from them. For example, the fact that the data on which this study is based were drawn from a cross-sectional design suggests that it is difficult to talk about a cause/effect relationship between the independent and dependent variables. This means that one is only associated with the other and not the cause of the other. Furthermore, the convenience nature of the sample suggests that the group from which the data were collected might not be truly representative of the population that was studied. Hence, it is difficult, if not inappropriate, to draw inference based on the findings of the study to the population. The findings reported in this study must therefore be seen in light of these limitations.

Significance and Policy /Practice Implication of the Study

This study was concerned mainly with the investigation of the relationship between musical listening interest and test anxiety. This study is the first of its kind as far as my scrutiny of the literature goes not only in Jamaica but elsewhere as well. My many years of teaching at various levels of the educational process, and my use of singing

recorded music to generate a calming mood in the classroom have proven effective and has led me to embark on this study. The relationship between the types of music the participants of this study listened to on a regular basis and their test anxiety level demonstrated significance in some cases though not in keeping with the expectations with which I embarked upon this study. In particular, I expected that religious music would have an inverse relationship with the students test anxiety. As indicated earlier, this was not the outcome. Rather, frequent listening to religious music showed a direct relation to test anxiety (i.e. the more students listened to religious music the higher the test anxiety level they reported).

Another important relationship that has implications for policy-formation is the relationship between father nurturance and test anxiety. The analysis showed that the greater the nurturing relationship between participants and their fathers the less test anxious they were. Education systems can draw insight from this connection by devising workshops to engage parents of test anxious students. It is hoped that this process will stimulate positive resonance in the achieved outcomes.

These findings are of much importance. The university where the study was done is a religious university that operates under the assumption that the more students are exposed to religious practices the greater their positive behavioral outcomes would be. However, the positive relationship between test anxiety and listening to religious music should provide the basis for some questions as to why this is so.

Recommendations for Future Research

Based on the findings and the limitations of the study discussed in the foregoing paragraphs of this chapter as well as the literature review in chapter 2, five

recommendations are given for the guidance of future research in this area of study. It is thus recommended that future research in the area:

1. Seek to obtain samples chosen in a random way. This would certainly increase the external validity of the study, allowing those who use the study to be in a safe position to draw valid inferences to the population on which this study is based;
2. utilize as far as possible experimental controls exposing one group to a treatment while withholding it from the other. For example, encourage a class or group of students to listen to the rhythm & blues for a week and other group to listen to the music of their choice except rhythm & blues, the week before their test;
3. employ a longitudinal design where these genre could be employed and responses could be elicited from students preparing for exams at different points in time. Such designs will allow for the establishment of a “cause effect” relationship;
4. seek to employ more contextually relevant measures for the musical listening interest variable. For example, ensuring that the phrasing of the question references the testing context which it does not in the current study;
5. employ more qualitative data collection approaches such as interviews and focus groups with a view of understanding the counter intuitive findings on religious music.

Conclusion

The research environment has the potential to shatter any preconceived opinions or notions. It demands that the researcher and others associated with a particular subject remain broadminded and open to what is revealed from the findings and processes engaged. This study on test anxiety in the light of musical listening interest, socio-

demographic and socio-psychological factors has unearthed expected and unexpected relationships. For example religious music was found to be directly related to test anxiety (i.e. the more one listened to religious music the higher the level of test anxiety they reported). Expectedly, the higher the level of father nurturance the lower the level of test anxiety reported. It is now up to the professional community guided by evidence based-practice to decide how these findings can be best appropriated to their practice.

APPENDICES

APPENDIX A

INFORMED CONSENT FORM

Andrews University

Informed Consent

NCU P.O.
Waltham
Manchester
Jamaica W.I
May 5, 2014

Dear Participants:

This letter serves to inform you regarding the research project that I, Wayne E.N. Ireland-Cleghorne, am conducting on test anxiety and the factors that are related to it. This study is required for my doctoral dissertation.

Title: “Musical Listening Interest, Socio- demographic and Socio-psychological factors as predictors of Test Anxiety among Students of a Religious University in Jamaica.”

Purpose:

The purpose of this study is to investigate the relationship between musical listening interest, socio-demographic and socio-psychological factors as predictors of test anxiety among students of a religious university in Jamaica. The study will also examine the relationship between musical listening interest and test anxiety while controlling for variables that are deemed plausible predictors of test anxiety. These will include socio-demographic factors such as age, gender, social class, self-efficacy, religiosity, educational performance, and parental nurturing. Therefore, the following research questions will guide the study and constitute the basis of the research hypotheses that are generated for testing.

Recruitment

I have been informed that I have to be 18 years or older, to participate in this study. I have been informed that it will take me no more than 60 minutes to complete the survey.

Benefit:

In this study I will seek to understand what are the factors that can help us better respond to individuals with test anxiety. There are many students who suffer from test anxiety and your participation in this study will help us find ways of helping those students. Thus, I would like to invite your participation.

Risks and Discomforts:

There are no risks associated with this study because the data collection is completely anonymous and the topic is not sensitive. The information you provide will be kept in strict confidence and not available for public scrutiny. Participants will not be asked to identify themselves. **Please do not write your name on any document.**

Risk of Injury:

I have been informed that there will be no exposure to physical or psychological harm. There will be no more than minimal risk, threat, or harm to myself.

Voluntary Participation:

I have been informed that my participation in this study is strictly voluntary. I can withdraw at any time without any penalty or prejudice.

Confidentiality:

I have been informed that there are no circumstances which could compromise my voluntary consent. The researcher alone will have access to the data you provide. I have been informed that it will be kept in a secure place for a period of no less than three years. I have been informed that there will be no documentation to identify me.

Anonymity:

I have been informed that my identity will be concealed in all research documents. I have been informed that the study will be anonymous.

Compensation or Reimbursement:

I have been informed that I will not receive compensation in the form of money or any other type of reward as a result of my participation in this study.

Participant Concerns

I have been informed that if I have any questions or require any further information about the research project or my rights as a participant, I should contact Dr. Lionel Matthews at 1-269-461-4703 (home), or 1-269-471-3159 at Andrews University, email matthews@andrews.edu or I may contact the researcher, Wayne Ireland-Cleghorne, at the following telephone numbers: 476-3223 digi-cell and 772- 1373 lime, or email WCleghorne212@aol.com .

Recruitment

I have been informed that I have to be 18 years or older, to participate in this study. I have been informed that it will take me no more than 60 minutes to complete the survey.

have read the content of the consent form and I agree to participate in the research titled “Musical Listening Interest, Socio- demographic and Socio-psychological factors as predictors of Test Anxiety among Students of a Religious University in Jamaica.”

I understand that the information I give is strictly confidential and will be used for research purposes only. Privacy will be maintained as well as anonymity and confidentiality safeguarded by not having my name on any document/s. All documents will be kept in safekeeping until after the successful defense of this dissertation. There will not be any research assistants thus all documentation will be contained in safekeeping by the researcher and all raw data destroyed at the end of the analysis.

Please Print Participants name:

Participants' signature: Date

APPENDIX B

LETTERS

Recruitment Letter

Dear Participants:

I am conducting a research study entitled “Musical Listening Interest, Socio-demographic and Socio-psychological factors as predictors of Test Anxiety among Students of a Religious University in Jamaica.”

The purpose of this study is to investigate the relationship between musical listening interest, socio-demographic and socio-psychological factors as predictors of test anxiety among students of a religious university in Jamaica. The study will also examine the relationship between musical listening interest and test anxiety while controlling for variables that are deemed plausible predictors of test anxiety. These will include socio-demographic factors such as age, gender, social class, self-efficacy, religiosity, educational performance, and parental nurturing.

I am inviting you to participate in this study. Your participation is appreciated as it will help me contribute to the knowledge base. If you are willing to participate please click on the link to open the survey.

Thank you.

Wayne Ireland-Cleghorne
Lot 5 Bent Close
Waltham, Mandeville
Manchester
Jamaica, West Indies
Telephone: 476-3223 digicel, or 772- 1373 lime,
email WCleghorne212@aol.com .

Institution Letter

NCU P.O.
Waltham
Manchester
Jamaica W.I
November 29, 2011

Ulalee Rhobe University
Jamaica West Indies.

To Whom It May Concern:

Dear Sir/Madam;

My name is Wayne Ireland-Cleghorne, I am a PhD candidate at Andrews University, Department of Leadership and Education. I am writing to request permission to administer a survey instrument to inquire about students' test anxiety.

This is a study inviting college students to participate in research concerning their "Musical Listening Interest, Socio- demographic and Socio-psychological factors as predictors of Test Anxiety among Students of a Religious University in Jamaica."

The survey instrument is comprised of 21 questions which will be sent to the students by random selection process. The researcher will send the survey instrument to the university's survey monkey then it will be emailed to the students. If the students agree to participate in the research process and sign the agreement letter then the survey will open to allow answers.

While the benefits may not be immediately experienced from taking part in the research, but it is hoped that the data collected from the students (about the genre of music they listen to on a regular basis) will contribute by offering suggestions to teachers about how to help students feel less anxious in testing situation.

Thank you for your voluntary participation. I look forward to working with you. If you have any questions about this project, please contact Andrews University Institutional (IRB) Office at 1-269 -471-6246.

Sincerely,

Wayne E. N. Ireland-Cleghorne (Mrs.)
Doctoral Student - Andrews University

APPENDIX C

INSTRUMENTS

Test Anxiety and Associated Factors Questionnaire

This survey is intended to collect information on the factors that relate to test anxiety. The researcher will be very pleased if you would complete this questionnaire.

1. Please check the year that applies to you.
 - a) Freshman
 - b) Sophomore
 - c) Junior
 - d) Senior

2. Choose the College or School in which you study.
 - a) College of Allied Health & Nursing
 - b) College of Business & Hospitality Management
 - c) College of Education and Leadership
 - d) College of Humanities, Behavioral & Social Sciences
 - e) College of Natural & Applied Sciences
 - f) School of Religion and Theology

3. What is your current GPA?

.....

Please circle the answer that is applicable to you.

4. What is your Gender?

-
- a) Male
 - b) Female

5. What is your age range?
- a) 18 - 20
 - b) 21- 25
 - c) 26 - 30
 - d) 31- 35
 - e) Other _____
6. What is your current marital status?
- a) Single (never married)
 - b) Married
 - c) Separated
 - d) Divorced
 - e) Widowed
 - f) Engaged
7. Do you have children? Yes _____ No _____
If Yes. How many? _____
8. What is the highest level of education that your mother has completed?
- a) Grammar/Primary/Prep school
 - b) High school or equivalent
 - c) Vocational/Technical school (2 years)
 - d) Some college
 - e) Bachelor's degree
 - f) Master's degree
 - g) Professional degree (PhD, MD, JD etc)
 - h) Other _____
9. What is the highest level of education that your father has completed?
- a) Grammar/Primary/Prep school
 - b) High school or equivalent
 - c) Vocational/Technical school (2 years)
 - d) Some college
 - e) Bachelor's degree
 - f) Master's degree
 - g) Professional degree (PhD, MD, JD etc)
 - h) Other _____
10. How would you classify yourself?
- a) White/Caucasian
 - b) Chinese
 - c) Indian
 - d) Asian
 - e) Black
 - f) Other _____

11. Household income per month- What is your total household income?

- a) Less than JA \$10,000
- b) JA \$10,000 to JA \$29,000
- c) JA\$29,000 to JA\$49,000
- d) JA\$49,000 to JA\$69,000
- e) JA\$69,000 to JA\$89,000
- f) JA\$89,000 to JA\$109,000
- g) JA\$109,000 to JA\$129,000
- h) JA \$129,999 to JA\$149,000
- i) JA\$149,000 or more
- j) Prefer not to disclose

12. How frequently do you listen to each of the following genres of music?

From the following 5 options select your most appropriate answer.

Genre of music	0 = Never	1-2hrs.per week	3-4hrs.per week	5-6hrs. per week	7 or more hrs. per week
a) Reggae					
b) Calypso					
c)R & B (Rhythm & Blues)					
d) Classical					
e) Religious (Inspirational, Gospel, Sacred)					
f) Hip-Hop					
g) Dance Hall					
h) Other - please name_____					

13. Check the appropriate box that best describes the following items.

General Self-Efficacy (GSE) questions	Not at all true = 1	Hardly true = 2	Moderately true = 3	Exactly true = 4
a. I can always manage to solve difficult problems if I try hard enough.				
b. It is easy for me to stick to my aims and accomplish my goals.				
c. I can solve most problems if I invest the necessary effort.				
d. I can usually handle whatever comes my way.				
e. I can remain calm when facing difficulties because I can rely on my coping abilities.				
i. If I'm in trouble I can usually think of a solution.				

14. Instructions: Please provide the appropriate responses to the statements below, by using the 5 point scale.

Westside Test Anxiety Scale	5 extremely or always True	4 Highly or usually True	3 Moderately or sometimes True	2 Slightly or seldom True	1 Not at all or never True
1. The closer I am to a major exam; the harder it is for me to concentrate on the material.					
2. When I study, I worry that I will not remember the material for the exam.					
3. During important exams, I think that I am doing poorly or that I may fail.					
4. I lose focus on important exams, and I cannot remember the material that I knew before the exam.					
5. I finally remember the answer to the exam questions after it is over.					
6. I worry so much before a major exam that I am too worn out to do my best on it.					
7. I feel out of sorts or not really myself when I take important exams.					
8. I find that my mind sometimes wanders and I lose concentration when I am taking important exams.					
9. After an exam, I worry about whether I did or did not do well enough.					
10. I struggle with writing exams and try to avoid them as much as I can. I feel that whatever responses I give on the exams will not be good enough.					

15. What is your religious affiliation?

- a) Protestant Christian
- b) Roman Catholic
- c) Jewish
- d) Muslim
- e) Other _____

16. How often do you pray?

- a) Daily
- b) More than once per week
- c) Weekly
- d) Once per month
- e) Other _____

17. How often do you read your Bible/ Torah/ Koran or religious books?

- a) Daily
- b) More than once per week
- c) Weekly
- d) Once per month
- e) Other _____

18. How often do you attend a place of worship (Church, Synagogue, Mosque and Temple)?

- a) Daily
- b) More than once per week
- c) Weekly
- d) Once per month
- e) Other _____

PARENTAL NURTURANCE SCALE (PNS)

The following questions are about the kind of interaction you have had with your parents. Indicate how each statement applies to you and your mother/father during your years growing up at home. There are no right or wrong answers.

19. Kindly answer all questions using a check or tick in the appropriate box.

19. (PNS) Parental Nurture Scale Questions.	1= Strongly disagree.	2= Disagree	3= Neither agree nor disagree.	4= Agree	5= Strongly agree.
1. My mother seldom says nice things about me.					
3. My mother often acts as if she doesn't care about me.					
7. I am tense and uneasy when my mother and I are together.					
8. I feel that my mother finds fault with me more often than I deserve.					
11. My mother does not understand me.					
13. I don't feel that my mother enjoys being with me.					
14. My mother doesn't really know what kind of person I am.					
16. My mother does not feel that I am important and interesting.					
18. My mother is often critical of me and nothing I do ever seems to please her.					
19. My mother seldom shows me any affection.					
21. My mother is generally cold and removed when I am with her.					
24. My mother does not really care much what happens to me.					

Indicate how each statement applies to you and your father during your years growing up at home. There are no right or wrong answers.

20. Kindly answer all questions using a check or tick in the appropriate box.

20. (PNS) Parental Nurture Scale Questions.	1= Strongly disagree.	2=Disagree	3= Neither agree nor disagree.	4= Agree	5= Strongly agree.
1. My father seldom says nice things about me.					
3. My father often acts as if he doesn't care about me.					
7. I am tense and uneasy when my father and I are together.					
8. I feel that my father finds fault with me more often than I deserve.					
11. My father does not understand me.					
13. I don't feel that my father enjoys being with me.					
14. My father doesn't really know what kind of person I am.					
16. My father does not feel that I am important and interesting.					
18. My father is often critical of me and nothing I do ever seems to please him.					
19. My father seldom shows me any affection.					
21. My father is generally cold and removed when I am with him.					
24. My father does not really care much what happens to me.					

Thank you for participating in this survey!!!

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