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TEST ANXIETY AMONG UNIVERSITY UNDERGRADUATES: THE ROLE OF HARDINESS AND LOCUS OF CONTROL

By

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Abstract

Test anxiety is a commonplace issue in learners globally. Students who experience test anxiety are often side-tracked in test situations and experience problems with understanding relatively straightforward instructions. This study examined hardiness and locus of control as predictors of test anxiety among undergraduates in Redeemer's University. A cross sectional survey design was adopted and a sample of 350 students (male-177; female-133; mean-20.11, SD-1.47) selected through a multi-stage sampling technique. Questionnaires was used for data collection include, A Short Hardiness; Locus of control of behaviour scale; and The Westside Test Anxiety Scale. Multiple linear regression analysis was used to analyse the hypotheses of this study. Findings from this study showed that hardiness predicted test anxiety (β=-.14, t=-2.59, p < .05). Locus of control also predicted test anxiety (β= .37, t= 6.74, p< .01) among undergraduates. Hardiness and locus of control jointly accounted for 21% of the total variation in the level of test anxiety among undergraduates F(2, 347)= 47.34, p< .01. None of the other demographic variables were found to be significant determinants of test anxiety. It was concluded from the study results that hardiness and locus of control are factors that significantly predict test anxiety among undergraduates in Redeemer's University.

Keywords: *Hardiness, university students, locus of control, test anxiety, learners*

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Introduction

Test Anxiety is a commonplace occurrence among undergraduate students across different learning levels globally. Impending exams usually cause students to get worried and anxious about issues ranging from course contents, expected questions to test outcomes. While a little nervousness can help students perform their best, the distress becomes a matter of concern when is excessive and interferes with a student's performance on an exam. This situation is commonly referred to as test anxiety (Von der Embse et al., 2018). Students experiencing test anxiety can experience physical, emotional and cognitive symptoms (McDonald, 2010).

Physical effects of test anxiety experienced by students may include: sweating excessively, nausea, vomiting, or diarrhoea, stomach pain, rapid heartbeat, shortness of breath, headaches and light headedness. Emotional symptoms can include self-doubt, fear, stress, hopelessness, inadequacy and anger. Cognitive symptoms may include restlessness or avoidance of test and examination settings (Soares & Woods, 2020). In some situations, test anxiety can become so intense that students will drop out of school to avoid the origin of their fear (Quinn & Peters, 2017). In situations like this, there is a need for the consideration of other factors that could help limit these negative impacts on students academics while efforts are put in place to help students identified with such problems manage the situation.

Hardiness is a personality trait seen in people that can push through the different challenges life has to offer. Hardiness is the ability to endure and overcome hardships and extreme situations (Woodard, 2004). Maddi (2006) classified hardiness as a mixture of three attitudes (commitment, control, and challenge). The unique mixture of these three attitudes is known as the 3Cs of hardiness. Together, they provide the resilience and inspiration required to turn challenging situations from possible tragedies into personal development opportunities. It is characterized by a willingness to be actively involved, a need to be in charge of the situation, and a drive to learn from the events of life regardless of the outcomes. People possessing all three hardiness attitudes have the capability to turn unfortunate situations into opportunities for self-development (Johnsen et al. 2014).

Hardiness can be a very useful trait to have for undergraduate students struggling with test anxiety. This can help them to keep moving and to push through any testing situations that would have caused them great fear and unrest. Hardiness is regarded as one of the adaptation resources

of personality to stressful situations and is responsible for the preservation of our mental health (Johnsen et al. 2014). With this personality trait, undergraduate students can turn around what would have been a scary scenario for them, into an opportunity for personal growth, learning and development.

Aside from hardiness, another factor that is perceived to aid in reducing the occurrence of test anxiety is the locus of control utilised by students. Locus of control is a psychological concept that refers to how strongly people perceive or believe that the series of events and experiences that occur in their life is within their control (Kesavayuth et al, 2022). Locus of control is of 2 types, internal and external (Rotter, 1966). Locus of control has a vital role to play in everyone's life, from how we cope with stress to maintaining the morale to take control over our own lives. Students possessing a strong internal locus of control believe that the events in their lives are a result of their actions. In the case of an examination, students with a high internal locus if control will attribute the outcome of the exam whether good or bad to their actions and take responsibility for it. Whereas students possessing an external locus of control will blame their failure on the exam or the teacher responsible, or that it was just their luck instead of the blame to lie on their lack of preparation (Rotter, 1966). Consequently, possessing a strong internal locus of control and the hardiness trait can equip students with the coping mechanisms required to manage stress and anxiety.

In tertiary education, test anxiety is more prevalent due to the stakes being higher with regards to test and exam conditions, as failing an exam could result in students having to retake courses or spend an extra year or more in the University (Ali & Mohsin, 2013). Test anxiety has also been found to be prevalent in high pressure courses. Tsegay, et al (2019) in a study of the prevalence and predictors of test anxiety among students studying medicine in Addis Ababa found a prevalence rate of 52%. First-year, gender of students, lower grade point average, oral exam, excessive course load, lack of systemic study plan, lower social support, and psychological distress were all significantly related to the level of test anxiety. Although some researchers had given attention to test anxiety (Liu et al., 2024), not many studies have been conducted on hardiness and locus of control as factors that can significantly predict test anxiety. Given the importance of locus of control and the psychological hardiness trait on students' ability to manage and cope with test

anxiety, this study seeks to examine the role of hardiness and locus of control as predictors of test anxiety among undergraduates.

Hypotheses

1. Hardiness will significantly predict undergraduates' level of test anxiety.
2. Locus of control will significantly predict undergraduates' level of test anxiety.
3. Hardiness and locus of control will jointly predict undergraduates' level of test anxiety.

Methods

The study adopted a cross-sectional descriptive survey design and sampled 350 male and female students across 4 faculties at the Redeemer's University. The independent variables are hardiness and locus of control, while the dependent variable was test anxiety. Inclusion criteria for the study were that participants are currently enrolled in the university, with no known memory impairments. Ethical approval for the study was obtained from the ethics research panel based at the Behavioural Studies department of the Redeemer's University.

Research Instrument

A structured questionnaire was used in assessing test anxiety, locus of control and hardiness. The questionnaire contained four sections;

The first section consisted of 6 questions aimed at surveying the demographic characteristics of respondents.

The second section consisted of the Short Hardiness scale; a 15-item questionnaire by Bartone (1995) used in measuring personality Hardiness. This scale is measured on a 4-point Likert scale ranging from 0-Not at all true to 3-Completely true. Sample items include, "Most of my life gets spent doing things that are meaningful", "By working hard you can nearly always achieve your goals", "Changes in routine are interesting to me". The scale was interpreted using the mean scores and individuals that measured above the mean had a high level of hardiness.

This 15-item scale includes positively and negatively keyed items covering the three conceptually important Hardiness facets of commitment, control, and challenge. In a sample of 700 Army reservists in medical units mobilised for the Gulf War, Cronbach's alpha coefficient for

the total hardiness measure is .83, and for the facets, .77 (commitment), .71 (control), and .70 (control). This scale has demonstrated appropriate criterion-related and predictive validity in several samples concerning both health and performance under high-stress conditions.

The third section consisted of 17-item scale by Craig et al. (1984), developed to measure Locus of control, it is measured on a 6-point Likert scale ranging from 0-strongly agree to 5-generally disagree. Sample items include "I can anticipate difficulties and take action to avoid them", "A great deal of what happens to me is probably just a matter of chance". The scale was interpreted such that individuals measuring above the mean indicated that they had an external locus of control while individuals measuring below the mean indicated an internal locus of control. The 17-item Locus of Control of Behaviour scale is shown to have satisfactory internal reliability, not to be related to sex, age or social desirability and to be stable over time in the absence of treatment. It was also shown to have construct validity, correlating substantially with Rotter's I-E general expectancy scale (r = 0.67). More importantly, the LCB scale was shown to discriminate between Mirels' personal and political subscales of the Rotter I-E scale (r = 0.70 and 0.31 respectively).

The fourth section consisted of the Westside Test Anxiety Scale by Driscoll (2004), a brief, 10-item instrument designed to identify students with anxiety impairments who could benefit from an anxiety-reduction intervention. It is measured on a 5-point Likert scale ranging from 5-extremely or always true, to 1-not at all or never true. Sample items include, "The closer I am to a major exam, the harder it is for me to concentrate on the material". The scale items cover self-assessed anxiety impairment and cognitions that can impair performance. The measure was such that scores from above the mean indicated a high level of test anxiety.

Data Analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics (mean, standard deviation, frequency and percentage) was applied in establishing the prevalence of the study variables among the population. This was also used to describe the socio-demographics of the study participants.

Results

Table 1
Socio-Demographic Characteristics of Participants

Variables		Number	%
Sex	Male	177	50.6
	Female	133	49.4
	Total	350	100.0
Level of Study	200	61	17.4
	300	148	42.3
	400	141	40.3
	Total	324	100.0
Faculty	Social Sciences	203	58.3
	Natural Sciences	45	12.9
	Humanities	61	17.4
	Law	41	11.7
	Total	324	100.0
Age	Range (17 – 26), Mean (20.11), SD(1.47)		

The demographic characteristics of the sampled participants in the studied population are shown in Table 1. They include the participant's sex, level of study and faculty. From Table 1, the distribution by sex shows that 177 of the participants are male, making up 50.6% of the population, 173 participants are female, making up 49.4% of the population. This shows that most of the students that responded to the survey were male students. The level of study category shows that 61 participants (17.4%) are in 200 level, 148 participants (42.3%) are in 300 level and 141 participants (40.3%) are in 400 level. Participants' ages ranged from 17 to 26 years old with a mean age of 20.11 (S.D= 1.47).

Table 2 shows that majority of individuals fall within the moderate level of Test Anxiety (N=172; 49.1%), those with low level of Test Anxiety are 77 (22.0%) of the population, while we have a severe case among 13.7% of the population. Indications revealed that just 15.1% of undergraduates do not experience test anxiety.

For hardiness, the findings from this research shows that 11.1% had extremely low level of hardiness, 45.7% measured low on hardiness, 28.3% had a moderate level of hardiness, while 14.9% has high level of hardiness. Lastly on prevalence was the utilization of locus of control and

it was observed that 37.1% of the respondents had internal locus of control, 62.9% had external locus of control. This means that most undergraduates utilize external locus of control.

Table 2
Frequency and Percentage Explaining the Prevalence of Test Anxiety, Hardiness and Locus of Control among Undergraduates

Variables	Categories	Frequency	Percentage %
Test Anxiety	None	53	15.1
	Low	77	22.0
	Moderate	172	49.1
	High	48	13.7
	Total	350	100
Hardiness	Extremely Low	39	11.1
	Low	160	45.7
	Moderate	99	28.3
	High	52	14.9
	Total	350	100
Locus Of Control	Internal	130	37.1
	External	220	62.9
	Total	350	100

The results in Table 3 indicated that hardiness had a significant negative relationship with test anxiety $r(348)= -.33$, $p < .01$. This means that as hardiness increases, test anxiety tends to decrease and as test anxiety increases, hardiness tends to decrease among undergraduates.

Table 3
Correlation Showing the Relationship among the Variables

Variables	1	2	3	4	5	6	Mean	SD
1. Test Anxiety	1	-.33**	.45**	.03	-.06	.07	28.40	6.54
2. Hardiness		1	-.51**	-.17**	.08	-.16**	23.73	6.10
3. Locus of Control			1	.11*	.05	.02	37.85	9.76
4. Age				1	-.10	.64**	20.11	1.47
5. Sex					1	-.12*	-	-
6. Level of study						1	-	-

Note: ** p < 0.01, * p < 0.05, N= 350

Locus of control had a significant positive relationship with test anxiety $r(348)= .45$, $p < .01$, such that when undergraduates are oriented with an internal locus of control, test anxiety decreases, and as undergraduates and self-oriented towards external locus of control, their test

anxiety also tends to increases. Hardiness had a significant negative relationship with locus of control $r(348)= -.51$, $p < .01$. This implied that as hardiness increases, locus of control tends to decrease and as the locus of control increases hardiness tends to decrease.

The results also showed the association between the social demographic characteristics and test anxiety among undergraduates. It was noted that age, sex and level of study had no significant association with test anxiety. This means that the considered social demographics were not significantly related the undergraduates' experience of test anxiety. This also clarifies that the social demographics of undergraduates were not possible confounding or intervening variables for the major variables within the research.

Table 4

Linear Regression Analysis showing prediction of Test Anxiety by Hardiness and Locus of Control

Predictors	**β**	**t**	**R**	**R^2**	**df**	**F**
			.46	.21	2, 347	47.34**
Hardiness	-.14	-2.59*				
Locus of Control	.37	6.74**				

Note: ** p < 0.01, * p < 0.05, N= 350

Table 4 indicated that hardiness significantly predicted test anxiety ($\beta = -.14$, $t= -2.59$, $p < .05$). This implied that the experience of test anxiety by undergraduates could be predicted by their level of hardiness. This confirmed hypothesis 1 and it was accepted. The result also indicated that locus of control significantly predicted test anxiety ($\beta = .37$, $t= 6.74$, $p < .01$). This was in such a way that undergraduates with an internal locus of control experienced a higher level of test anxiety, while those with an external locus of control experience a lower level of test anxiety. The finding was in line with the formulated hypothesis 2 and the hypothesis was accepted.

Considering the joint prediction of hardiness and locus of control on test anxiety, it was observed that both variables significantly predicted test anxiety experienced by undergraduates $F(2, 347)= 47.34$, $p < .01$. This was with a significant variance of 21% contributed by both variables to the total variance observed in test anxiety ($R= .46$, $R^2= .21$). This result confirmed hypothesis 3 and it was accepted.

Discussion

The main objective of this study was to examine how hardiness and locus of control can predict test anxiety among undergraduate students in Redeemer's University, Osun State. A total of three hypotheses were tested during the study. The findings of the study supported the idea that both Hardiness and locus of control play significant roles in determining test anxiety among undergraduate students.

The outcome from hypothesis one, which states that Hardiness will significantly predict undergraduate student's level of test anxiety demonstrated hardiness to have a significant negative relationship with test anxiety of undergraduate students. This result indicates that an increase in students Hardiness reduces their test anxiety. This finding infers that undergraduate students that have the Hardiness trait will be able to deal with their test anxiety, and will also be able to overcome it. Hardiness influences the way individuals face various problems in their life and leads them toward having a realistic look at mental stresses. Having the Hardiness trait will enable students to turn the stressful and unpleasant situation of tests or exams into opportunities for learning and development. This result appears to be consistent with previous research findings by Javad et al., (2013) in Iran, on the relationship between hardiness and exam anxiety in high school students.

The second hypothesis states that locus of control will significantly predict undergraduate student's level of test anxiety. The results state that locus of control has a significant positive relationship with test anxiety. The results indicate that an increase in internal locus of control brings about a decrease in test anxiety, and as external locus of control increases, Test Anxiety also increases. The finding infers that individuals with an internal locus of control are able to process and overcome test anxiety better than individuals possessing an external locus of control. This is because individuals possessing an internal locus of control believe in success through hard work and focus, they believe in taking their destinies into their own hands. This makes them better equipped at handling Test Anxiety.

On the other hand, individuals possessing an external locus of control generally believe that their successes or failures result from external factors beyond their control such as fate or luck. This results in them taking a carefree attitude towards testing situations. And as a result, they become overwhelmed with Test Anxiety. This result is consistent with the findings of previous

research by Onyekuru & Ibegbunam (2014) on the Relationships among test anxiety, locus of control, and academic achievement among college students.

The third hypothesis states that hardiness and locus of control will jointly predict undergraduate student's level of test anxiety. The results state that that hardiness and locus of control significantly predicts test anxiety. The results indicate that an increase in Hardiness leads to a decrease in the level of test anxiety and an increase in test anxiety leads to a decrease in hardiness. locus of control had a significant influence on test anxiety in such a way that an increase in internal locus of control leads to a decrease in the level of test anxiety, and an increase in external locus of control leads to an increase in the level of test anxiety. The findings indicate that students that have the hardiness trait are less likely to experience test anxiety.

Conclusion

The current study reveals that hardiness and locus of control are factors that significantly predict test anxiety among undergraduates in Redeemer's University. Based on these findings, it is strongly recommended that university administrators and lecturers should understand the concept of hardiness and locus of control and how they in turn influence test anxiety among students. Secondly, the university environment should be designed in a manner that boosts the internal locus of control of students and brings out the hardiness potential in them. Furthermore, university student bodies should organize programs and seminars to teach and explain the concept of hardiness and how it can be beneficial to students and practical ways in which it can help them overcome test anxiety.

The major limitation for this study was that data was collected in the middle of the school year which is usually characterized by heavy coursework for most students. Hence, most students were not readily motivated to participate in the study.

The current study analysed hardiness and locus of control as predictors of test anxiety among undergraduates in Redeemer's University in Osun State. Due to the specificity of location, there is a need to carry out further investigation on hardiness and locus of control as predictors of test anxiety among undergraduates in universities across Nigeria. Further investigations on the impact of test anxiety on variables such as academic performance and psychological well-being are also vital in catering to the general well-being of university students.

References

Ali, M. S., & Mohsin, M. N. (2013). Relationship of test anxiety with students' achievement in science. *International Journal of Educational Science and Research, 3*(1), 99-106.

Bartone, P. T. (1995). *A short hardiness scale*. Paper presented at the Annual Convention of the American Psychological Society, New York.

Craig, A. R., Franklin, J. A. & Andrews, G. (1984), A scale to measure locus of control of behaviour. *British Journal of Medical Psychology*, 57: 173-180.

Driscoll R. Westside Test Anxiety Scale. American Test Anxiety Association. 2004. Retrieved from https://files.eric.ed.gov/fulltext/ED495968.pdf

Javad, K., Shohreh., & Mostafa A. (2013). The relationship between identity components and hardiness among university students. *Life Science Journal*, 10(2s), 203-205.

Johnsen, B. H., Hystad, S. W., Bartone, P. T., Laberg, J. C., & Eid, J. (2014). Hardiness profiles: defining clusters of the dispositional resilience scale and their relation to soldiers' health. *Military Behavioral Health*, *2*(2), 123-128.

Kesavayuth, D., Binh Tran, D., & Zikos, V. (2022). Locus of control and subjective well-being: panel evidence from Australia. *PLoS One*, *17*(8), e0272714.

Liu, S., Zhao, W., Shanks, D. R., Hu, X., Luo, L., & Yang, C. (2024). Effects of Test Anxiety on Self-Testing and Learning Performance. *Educational Psychology Review*, *36*(2), 1-38.

Onyekuru, B., & Ibegbunam, J. O. (2014). Relationships among Test anxiety, Locus of control and Academic achievement among college students. *European Scientific Journal, ESJ, 10*.

Quinn, B. L., & Peters, A. (2017). Strategies to reduce nursing student test anxiety: A literature review. *Journal of Nursing Education*, *56*(3), 145-151.

Rotter, J. B (1966). Generalised expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1–28.

Soares, D., & Woods, K. (2020). An international systematic literature review of test anxiety interventions 2011–2018. *Pastoral Care in Education, 38*(4), 311-334.

Tsegay. L., Shumet. S., Damene. W., Gebreegziabhier. G., & Ayano. G. (2019). Prevalence and predictorss of test anxiety among medical students in Addis Ababa Ethiopia. *BMC Medical Educational 14;19(1):423.*

Von der Embse, N., Jester, D., Roy, D., & Post, J. (2018). Test anxiety effects, predictors, and correlates: A 30-year meta-analytic review. *Journal of affective disorders*, *227*, 483-493.

Woodard, C. R. (2004). Hardiness and the Concept of Courage. *Consulting Psychology Journal: Practice and Research*, *56*(3), 173.