Relationship between Hardiness and Mental Health Disorders among Undergraduate Students in Enugu State, Nigeria

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Abstract

The study determined the association of hardiness with depression, anxiety, and stress symptoms among undergraduate students using a cross-section of 717 students from two public universities in Enugu state, Nigeria. The study was guided by a research question and a hypothesis. Data were collected using the Depression Anxiety and Stress Scale and the Dispositional Resilience Scale with Cronbach alpha values of 0.89 and 0.81 respectively, and analysed with Statistical Product and Service Solution, version 20. Using ANOVA and linear regression, findings show that hardiness negatively predicted depression and anxiety but not stress. A high prevalence of depression (40.07%), anxiety (69%), and stress (33.1%) symptoms were observed. Therefore, hardiness training programmes might be effective in addressing mental health disorders among students.

Keywords: Mental health, depression, anxiety, stress, hardiness, resilience, undergraduate students.

Introduction

The severity of mental health problems and risky behaviours among university students around the world is on a steady rise in the last decade. Researchers refer to these trends as an emerging "mental health crisis" in higher educational institutions[1,2]. Being mentally healthy entails one's ability to function effectively and make positive contributions to one's community despite life stresses and challenges[3]. According to Kessler et al.[4], the probability of experiencing common psychological problems increases throughout adolescence to the early adulthood stage and this makes university students a particularly vulnerable population. The most common mental challenges among young people are depression, anxiety, and stress[5]. Depression is a persistent sadness marked by unpleasant feelings and decreased physical activity that impairs a person's potential for adaptation, deteriorates their psychological health, and lowers their psychological resistance[6].

Anxiety disorders are a group of mental disorders that produce overwhelming and persistent nervousness and fear which are medically incapacitating, leaving many patients incapable to function optimally[7]. Stress on the other hand is a normal human reaction to challenging circumstances that causes anxiety and mental strain and motivates humans to deal with problems and dangers[8]. Stress may be divided into two categories; acute and chronic stress. While chronic stress lasts longer or recurs because of persistent demands or challenging life situations, acute stress is stronger and short-lived and occurs after traumatic occurrences[9]. Stress is strongly related to mental health issues and can affect general well-being, however, it is not necessarily a mental health disorder and is not directly associated with illnesses, as everyone goes through periods of stress. Research has shown that how individuals respond to stress and the persistence of stressful conditions are the moderating factors between the impact of stress and individual well-being[9,10].

Starting a university education is a significant turning point in young people's lives. It is a time of substantial change, great anticipation about university life, and high expectations for academic success[11]. Universities in Nigeria are currently experiencing an unprecedented explosion in the number of students admitted into various programs. Yet there has not been a commensurate increase in the provision of necessary infrastructure and services to match the teaming students' population. Additionally, these students face the challenges associated with leaving home, living independently, forming new social networks, adjusting to new teaching methods, and increasing financial demands[11]. These situations are likely to heighten the level of stress students undergo in their academic pursuits. Undergraduate students are of particular research concern in the issue of mental health, because they represent the nation's future human resources. Therefore, their mental preparedness to take on the various sectors of the nation's economy should not be trivialized.

Mental health problems among university students have been associated with poor attendance to lectures, poor academic performance and possibly dropping out of school[12]. It could also lead to poor interpersonal relationships, reduced chances of being employed, and consequently lower personal income and higher risks of poverty[13].

Factors associated with students' mental health challenges include a high-stress academic atmosphere, competitiveness, an excessive workload, sleep deprivation, financial difficulties, and peer pressure[14]. The more risk factors young people experience, the greater the impact on their mental health. However, the psychological resource known as hardiness might moderate how these factors affect individuals' mental health.

Hardiness relates to the stress-buffering characteristics of healthy people[15]. It is the ability to understand external conditions accurately and to make a desirable decision about oneself[16]. Hardiness is a personality attribute comprising a synthesis of emotions, cognition, and behaviour[17]. It is linked with resilience as both refer to an individual's ability to cope with stress and adversity[18]. An individual's level of hardiness is influenced by his/her worldviews, availability of social resources, and specialised coping mechanisms[19]. Kobasa[20] identified three components of hardiness which are commitment, control, and challenge. The element of commitment is the likelihood for one to engage in life events and have a real desire and interest in life activities; control is seen as a propensity to think and behave like one has the power to influence life situations; and the challenge is believing that life situations are avenues for growth and development[21]. Hardiness combines these three components, allowing people to turn unpleasant situations into opportunities, build resilience and enhance performance through active coping[21].

Psychological hardiness plays an important part in the life of a person[17]. It enhances performance, health, and mood during challenging situations by turning potential hazards into chances for growth[21]. People with high psychological hardiness can withstand stress without becoming ill[22]. They can influence their life outcomes since they are actively involved and learning from the activities of life[23]. Hardy individuals approach life enthusiastically and are confident that they can handle it successfully, which results in less stressful experiences; on the other hand, individuals low on hardiness tend to withdraw from some life circumstances and perceive them as more threatening[15]. They are hurt more by adverse experiences in the long term[24].

Various studies[25–27] show a high prevalence of mental health challenges among Nigerian undergraduate students. However, there is a dearth of data on the interaction between hardiness and mental health disorders among undergraduate students. Therefore, this study aims at filling this gap by providing an answer to the research question; what is the role of hardiness in the mental health challenges faced by undergraduate students?

Theoretical Framework: This study bears on the hardiness theory to explore the pathway through which individuals react to and adapt to difficult situations such as adversity, change, loss, and danger[28,29].

Hardiness was first conceptualized by Kobasa[20] as a psychosocial trait that might moderate the link between stress and sickness. This psychological framework proposes that people who have a sense of control over their lives, a commitment to their goals, and an openness to change, are better able to deal with stress and maintain their health[30]. Hardiness, like religiosity, social support, and positive thinking is a form of coping mechanism[31]. The hardiness theory posits that hardiness emerges as a culmination of diverse positive childhood experiences resulting in a general feeling that one's environment is safe and satisfying[32]. However, hardiness is not a static personality trait; individuals over time, can actively or passively gain an improved capacity to process stressful situations[10].

There are varying conclusions on the stress-buffering role of hardiness and consequently its impact on mental health and illness. In a review of studies among working adults, Funk[32] observed that hardiness was not a protective factor against stress, as individuals could process stress positively or negatively despite their hardiness level. However, according to other research, hardiness negatively predicts anxiety[33], depression[6,33], and academic stress[34]. Other studies[35–37] found that hardiness enhanced positive mental health, self-esteem, and self-efficacy of individuals. The study by To et al.[38] also found that resilience serves as an adaptive defense against psychological disorders such as depression, anxiety, and stress and recommends that identifying persons at risk of distress and poor resilience levels is critical for the health promotion initiatives that aim to maximise benefit from interventions.

There have not been significant intervention policies and programmes by the government targeted at undergraduate students to help mitigate the challenge. Wada et al.[39] decried the low awareness, lack of specialized health personnel, and the government's nonchalant attitude towards mental health issues in Nigeria. Perhaps, these might be a result of a poor understanding of the interactions between mental health and the psychological trait of hardiness. A related study by Ojeleye et al.[40] found that resilience was associated with the academic performance of Nigerian undergraduate students. Another study among Nigerian secondary school students[41] observed that improved resilience was associated with an improved sense of belonging at school. Data appears scarce, in the Nigerian context of the association between hardiness and the mental health of undergraduate students. This is the gap that this study intends to fill. The study, therefore, hypothesizes that hardiness will negatively predict depression, anxiety and stress among the students in the study area.

Methodology

Participants: The study participants were 717 out of 83,432 undergraduate students at the University of Nigeria and students at Enugu State University of Science and Technology (ESUT).

The population of the students was 44201 students from the University of Nigeria and 39231 from ESUT. Using an online sample size calculator by Calculator.net at 95% confidence interval, 5% margin error, and 50% population proportion. This gave a sample size of 381 from each of the two institutions. After data sorting, 717 copies were viable and used for the study. The participants comprised 49.9% males and 50.1% females. The majority (85.2%) of them were aged 25 years and below, 89.4% were single, 86.1% were of Igbo ethnic group, 1.9% were 100-level students, and 28% were in their final years.

Data collection instruments: Two standardized instruments were used to collect data for the study; the 15-item Dispositional Resilience Scale (DRS-15) and the 21-item Depression Anxiety and Stress Scale (DASS-21). The DASS-21 was used in the assessment of the mental health status of the respondents in the dimensions of depression, anxiety, and stress. The respondents were asked to rate which statement applied to them in the past week on a 3-point Likert scale ranging from 0 (Did not apply to me at all) to 1 (Applied to me very much or most of the time). Seven items each assessed depression, anxiety, and stress. A sample item for depression is "*I couldn't seem to experience any positive feeling at all (*item 3)." Anxiety includes such items as "*I experienced breathing difficulty* (item 2) while a sample item for stress was "*I tended to overreact to situations* (item 7).

The DRS-15 assesses psychological hardiness in the dimensions of Commitment, Control, and Challenge. A sample item for Commitment is "Most of my time is spent doing things that are meaningful (item 1)." A sample item for Control is "I really look forward to my daily activities (item 6)," and a sample item for Challenge is "*I enjoy the challenge when I have to do more than one thing at a time* (item 9). Each item was rated on a 3-point scale ranging "completely true" to "not true at all".

The two instruments showed high internal consistency of the items with Cronbach alpha co-efficient values of 0.89 and 0.81 respectively. Shapiro-Wilk test showed that the data slightly deviated from normal ($p < 0.05$). The skewness and the kurtosis of the data were mild (values < 0.6).

Ethical approval and informed consent: Ethical approval for the study was obtained from the University of Nigeria Teaching Hospital Ethical Committee on Research Projects with the number: NHREC/05/01/2008B-FWA00002458-1RB00002323. Written informed consent was obtained from the participants after an explanation of the purpose of the research and the confidential nature of their data.

Research procedure: Seven hundred and sixty-two copies of the questionnaires were hand-distributed to the participants with the aid of three research assistants for approximately seven days. All the copies were completed and returned immediately giving a 100% return. However, extreme outliers were removed after which a total of 717 questionnaires were used for the study.

Data and Statistical Analysis: Data obtained from the DRS-15 scale were summed up and analysed as composites of the sub-scales and a total hardiness score[42]. The score range for each subscale was 0–15, and 0-45 for the total hardiness index. Negative keyed questions were reverse-coded and higher scores indicated a higher level of psychological hardiness. Scores on commitment, control, and challenge subscales were categorised as low (0–5), moderate (6-10), and high (11-15), while total hardiness was categorised as low (0-15), moderate (16–30) and high (31-45).

The total scores obtained from the DASS-21 scale were multiplied by 2 to obtain the final scores on each subscale[43]. The obtainable scores ranged from 0 – 42 for each of the sub-scales of depression, anxiety, and stress. In this study, participants that obtained 0-9 on depression were classified as 'normal', and scores ≥ 10 were classified as 'symptomatic'. Anxiety scores of 0-7 points were classified as normal and ≥ 8 points were symptomatic, while stress scores of 0 – 14 points were classified as Normal and > 14 points were symptomatic.

Frequencies and percentages were used to analyse the prevalence data while One-Way ANOVA and Linear regression were used to determine the association between resilience and mental health of the respondents. Partial eta squared (η^2) values were calculated to determine the measures of association or ANOVA. The η^2 values of 0.01, 0.06, and 0.14 were regarded as small, moderate, and large effect sizes[44]. The significant level was $p \leq 0.05$. All data analyses were carried out with IBM-SPSS (version, 20).

Results and Discussion

Prevalence of Depression, Anxiety, and Stress among the participants: The finding of the study (Figure-1) showed a high prevalence of mental health disorders among the students. Anxiety disorder symptoms had the highest prevalence (69.0%). A little less than half (40.7%) of the participants showed symptoms of depression and 33.1% had stress symptoms. The participants had slightly above the normal mean range of depression (8.15±5.87) and anxiety (10.27±6.18), but were within the normal mean range of stress (11.54± 6.80) symptoms.

The level of resilience was equally high (Figure-2) with more than half (54.2%) showing high commitment. Many (65.7%) of them had a high level of control, and about half (49.9%) had a high overall resilience level. The majority (73.2%) of the participants had a moderate level of challenge and a few (10.5% showed high challenge. Only a negligible proportion (0.1%) showed a low resilience level. The respondents showed moderate levels of commitment (10.82±2.65), challenge (7.83 ± 2.41), and overall resilience (30.00±4.56); while they showed a high level of control (11.36 ± 2.45).

Association between resilience and the mental health of the respondents: A One-way Analysis of Variance (ANOVA) and linear regression were conducted to determine the association between the independent variable resilience in the dimensions of commitment, control, challenge, and overall resilience, and the dependent variable; mental health in the dimensions of depression, anxiety disorder and stress. The result (Table-1) showed that low levels of commitment (F=22.67; p< 0.001) was

significantly associated with higher depression score among the respondents with a small effect size (η^2 values = 0.03). Low and high levels of challenge (F=11.17; p<0.001) were associated with higher depression scores, with a moderate effect size (η^2 = 0.06). Control was not statistically associated with depressive symptoms at any level, though the low-level group had a higher mean depression score than the other groups.
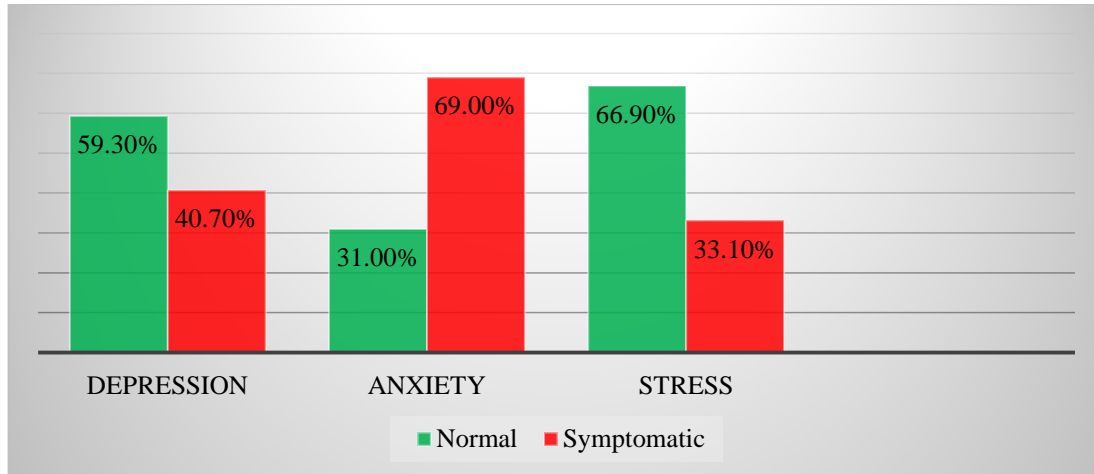

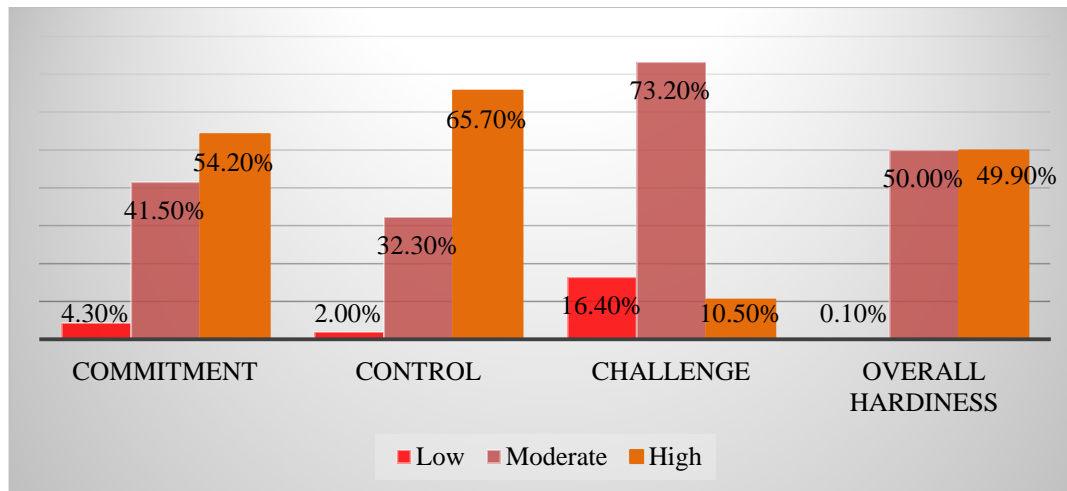**Figure-1:** Prevalence of Depression, Anxiety and Stress among the Participants.

Figure-2: Hardiness Level of the Participants.

Table-1: Comparison of the Depression Mean Scores of the Participants based on their Hardiness Levels.

Hardiness Levels	Mean			F values (df = 2)	P- values	η^2
	Low	Moderate	High			
Commitment	14.25± 5.85[a]	8.99± 6.06[b]	7.19± 5.41[b]	22.67	.000*	.060
Control	9.69 ± 3.64[a]	8.36 ± 6.22[a]	8.01 ± 5.74[a]	0.719	.487	.008
Challenge	10.13± 5.92[a]	7.55 ± 5.67[b]	9.20 ± 6.43[a]	11.17	.000*	.030

η^2; Eta squared, F; ANOVA values, df; degrees of freedom, p; level of significance.

Data in Table-2 show that all three resilience categories had significantly ($p \leq 0.05$) different anxiety mean scores. Low commitment (F=15.93; $p < 0.001$) and control (F=2.99; p= 0.05) levels were associated with higher anxiety scores compared to moderate and high levels. Low and high challenge levels were also associated with higher anxiety scores than moderate challenge levels (F = 4.33; p = 0.012).

The measures of the association were all small (<0.06). The result also showed that only challenge was associated with stress score (Table-3). Low and high levels of challenge were associated with higher stress scores (F=8.38; p<.001) compared to moderate levels of challenge with a small effect size (η^2 = 0.023). Commitment and control were not significantly (p > 0.05) associated with stress at any level.

Further analysis using bivariate linear regression (Table-4) shows that resilience significantly and negatively predicted depression (B= -.264; p<.000) and anxiety (B = -.127; p = 0.011) symptoms among the participants, accounting for 4.3% and 0.9% variations in depression and anxiety symptoms respectively. Although resilience showed a negative relationship with stress (B= -.094), the association was not significant (p = 0.088). The hypothesis was not rejected concerning the association between resilience and depression and anxiety symptoms, but it was rejected in the aspect of stress.

Discussion of findings: The finding of the study shows a high prevalence of symptomatic mental health disorders among the students. Anxiety disorder symptoms had the highest prevalence (69.0%), followed by depressive symptoms (40.7%) and stress symptoms (33.1%). This finding confirms the report of previous studies[26-28], that mental health disorders are highly prevalent among Nigerian undergraduate students. This situation is worrisome given that poor mental health is detrimental, not only to the individual student's present and future life but also to the families and society at large. Individuals with mental health challenges do not often function effectively in their chosen fields of endeavour and do not usually make meaningful contributions to their community[3].

In more severe cases, they could even pose safety risks to their immediate environment. The high prevalence of symptomatic mental health challenges was notwithstanding the moderate (49.9%; mean = 10.82) level of hardiness observed among the respondents. Generally, the students mostly showed higher levels of hardiness in the areas of commitment (54.2%; mean=10.82) and control (65.7%; mean = 11.36), than in the area of challenge (10.5%; mean = 7.83). The finding suggests that while the students might be strongly engaging in life activities with interest (commitment), and able to influence what goes on around them (control); more efforts are required for them to improve their attitudes that emphasize harnessing stressful life experiences for personal growth and fulfilment[10]. Highly resilient individuals may handle stress without becoming ill and can impact life outcomes by actively participating in activities and learning from them, regardless of whether the stress is positive or negative[22,23].

Table-2: Comparison of the Anxiety Mean Scores of the Participants based on their Hardiness Levels.

Hardiness Levels	Mean			F values (df = 2)	P- values	η^2
	Low	Moderate	High			
Commitment	17.00 ± 6.65^a	9.75 ± 6.06^b	10.23 ± 5.41^b	15.93	.000*	.043
Control	14.00 ± 5.89^a	9.84 ± 6.36^b	10.36 ± 6.06^b	2.99	.050*	.008
Challenge	11.19 ± 6.30^a	9.86 ± 6.07^b	11.66 ± 6.42^a	4.33	.014*	.012

η^2; Eta squared, F; ANOVA values, df; degrees of freedom, p; level of significance.

Table-3: Comparison of the Stress Mean Scores of the Participants based on their Hardiness Levels.

Hardiness Levels	Mean			F values (df = 2)	P- values	η^2
	Low	Moderate	High			
Commitment	11.83 ± 5.50^a	11.84 ± 7.29^a	11.32 ± 6.52^a	0.53	.589	.001
Control	8.82 ± 6.25^a	11.40 ± 7.12^a	11.69 ± 6.66^a	1.12	.327	.003
Challenge	13.41 ± 7.93^a	10.93 ± 6.48^b	12.91 ± 6.39^a	8.38	.000*	.023

η^2; Eta squared, F; ANOVA values, df; degrees of freedom, p; level of significance.

Table-4: Bivariate Linear Regression of the Association between Hardiness and Mental Health of the Respondents

Hardiness and Mental Health	R	R^2	B	Std. Error	F	P value
Hardiness * Depression	.207	.043	-.264	.047	32.174	.000*
Hardiness * Anxiety	.095	.009	-.127	.050	6.509	.011*
Hardiness * Stress	.064	.004	-.094	.055	2.913	.088

Exploring the association between hardiness and mental health disorder symptoms, the findings show that, though the effect sizes were small, low levels of commitment, control, and challenge were significantly associated with higher depressive and anxiety symptoms among the respondents. The study hypothesis is therefore not rejected. Another study[22] similarly found that low levels of commitment, control, and challenge were associated with less tolerance to stress and uncertainties among university students. Individuals with high levels of commitment, control, and challenge abilities are less likely to experience prolonged sadness and negative affect (depression), nor are they susceptible to persistent fear and nervousness (anxiety) because committed individuals have a broad sense of purpose, identifying with and finding meaning in their surroundings. And because they have invested in themselves and the environment, they are resistant to giving up. Individuals with high control feel they can make a difference by choosing their behaviours and answers, whereas people with the capacity for facing challenges anticipate life's unpredictability and personal growth through negative situations[17].

The dimension of challenge was associated with all three; depressive, anxiety, and stress symptoms. Interestingly both high and low levels of the challenge were associated with experiencing higher symptoms of the forms of mental health disorders. This finding suggests that individuals who embrace challenges a lot might be endangering their mental well-being as much as those who are averse to them. This finding indicates that a moderate level of challenge might be optimal for the mental well-being of students.

Further evidence is found for the study hypothesis as hardiness significantly and negatively predicted depression and anxiety symptoms among the students, though the strength of the significant relationships was small. The students that participated in the current study did not seem to vary from other students in different geographical areas concerning the phenomenon. Bacchi and Licinio[46] and Rudwan and Alhashimia[38] similarly observed that lower levels of psychological distress were linked to higher levels of resilience among university students in Australia and Oman respectively. Students may be depressed when they feel they are not in control of the circumstances of their school and personal lives, leading to a loss of enthusiasm towards their studies, sadness, lack of interest, and emotional and physical issues, all of which can interfere with their academic, personal and family life and negatively influence their general well-being[46].

Among students, anxiety may be associated with problems at school, difficult examinations, meeting deadlines in the submission of assignments, or making other important decisions. Anxiety might be a typical stress response that provides energy or focus, however, for people suffering from anxiety disorders, fear can be intense and long-lasting[47]. Stress on the other hand is a normal part of academic life, but chronic stress can make students feel their lives are beyond their control, which might impair their well-being[9]. Being mentally healthy enables individuals to live satisfying and meaningful lives as they employ their resources toward building a functional society. Hardy individuals approach life actively, believe they can handle it, and see life's challenges as meaningful and helpful, which leads to less stressful experiences; whereas people who lack hardiness tend to view certain life situations as dangerous and consequently they suffer more from negative experiences[15,25].

Furthermore, hardiness was not significantly associated with stress. This finding suggests that hardiness might not be as important for coping with stress as other coping mechanisms or social support[33]. Regardless of their level of hardiness, individuals may effectively manage stress with the aid of strong social networks and other forms of coping mechanisms[31]. Moreover, stress is not a mental health disorder on its own, but how individuals process their stressful situations and how long they are exposed to such experiences might provide the link between stress and mental health[9,10].

Limitations of the study: The major limitation of the study is that usually associated with self-report such as participants giving biased responses or their inability to accurately recollect facts about themselves. Another limitation of the study is the non-normality of the data. Despite these, we believe the study contributed to the body of knowledge on the interaction between hardiness and mental health challenges of young people within the Nigerian context.

Conclusion

The study reiterates the already reported elevated risk of symptomatic mental health problems among Nigerian undergraduate students, particularly in the aspect of anxiety symptoms.

This is notwithstanding their generally moderate level of hardiness. Hardiness might play a role in the mental well-being of students as higher levels of commitment and control were associated with less depression and anxiety. Both high and low levels of challenge had an impact on mental health, indicating that it could be best for young people to moderately embrace life challenges. However, hardiness might not buffer stress as the association was not significant. University authorities should therefore collaborate with public health professionals to plan and execute hardiness training programmes, and mental health sensitization programmes among students. Further research is necessary to identify other risk factors for the mental health of Nigerian students.

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