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## Anxiety and Depression as Predictors of Quality of Life among University Undergraduates

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### Abstract

Quality of life has remained a recurring theme in research considering it's important in the overall psychological well-being of the individuals. Several predictors have been used to investigate quality of life among different populations and samples with varied results. Importantly, studies investigating undergraduate quality of life tend to be scarce. Therefore, this study investigated the predictive ability of anxiety and depression on quality of life among undergraduates in Ibadan, Nigeria. Cross-sectional research design was adopted while purposive sampling technique was used to select one university in South-west Nigeria. Data were conveniently collected from 400 undergraduates using validated scales and analyzed using zero-order statistics and multiple regression to test four hypotheses which was accepted at  $p = .001$ ). The results demonstrated that anxiety and depression jointly and independently predicted the physical, psychological, social relationship and environment domain quality of life among study participants. The study concludes that anxiety and depression are robust predictors of quality of life among the population of study. The study recommended that parents and other stakeholders should work in synergy to reduce triggers of anxiety and depression and provide for the well-being of the undergraduates.

**Keywords:** Anxiety; Depression; Quality of Life; Undergraduates; Nigeria.

### Abstrak

Kualitas hidup tetap menjadi tema yang berulang dalam penelitian mengingat hal ini penting dalam kesejahteraan psikologis individu secara keseluruhan. Beberapa prediktor telah digunakan untuk menyelidiki kualitas hidup di antara populasi dan sampel yang berbeda dengan hasil yang bervariasi. Yang penting, penelitian yang menyelidiki kualitas hidup mahasiswa cenderung langka. Oleh karena itu, penelitian ini menyelidiki kemampuan prediksi kecemasan dan depresi terhadap kualitas hidup di kalangan mahasiswa di Ibadan, Nigeria. Desain penelitian cross-sectional diadopsi sementara teknik pengambilan sampel

purposif digunakan untuk memilih satu universitas di Nigeria barat daya. Data dikumpulkan dengan mudah dari 400 mahasiswa dengan menggunakan skala yang telah divalidasi dan dianalisis menggunakan statistik orde nol dan regresi berganda untuk menguji empat hipotesis yang diterima pada  $p = .001$ ). Hasil penelitian menunjukkan bahwa kecemasan dan depresi secara bersama-sama dan secara independen memprediksi kualitas hidup domain fisik, psikologis, hubungan sosial dan lingkungan di antara para peserta penelitian. Penelitian ini menyimpulkan bahwa kecemasan dan depresi merupakan prediktor yang kuat untuk kualitas hidup di antara populasi penelitian. Penelitian ini merekomendasikan bahwa orang tua dan pemangku kepentingan lainnya harus bekerja secara sinergis untuk mengurangi pemicu kecemasan dan depresi serta memberikan kesejahteraan bagi para mahasiswa.

**Katakunci:** Kecemasan; Depresi; Kualitas Hidup; Mahasiswa; Nigeria.

## 1 Introduction

The World Health Organization (WHO, 1998) conceptualizes quality of life (QoL) as individuals' subjective perception of their overall well-being, considering their cultural factors, values, goals, expectations, standards and concerns. It is a subjective concept that varies among individuals. Moreover, WHO (1998) decomposed QoL into four domains: Physical health, psychological health, social relationships, and the environment which tends to interact with each other to give wholeness. For example, poor physical health can limit daily functioning of an individual, while psychological distress would negatively affect overall well-being. Besides, positive social relationships would contribute to higher levels of well-being, while socio-economic status influences access to healthcare and other essential resources. Finally, environmental factors such as clean air, water, and access to green spaces, would significantly influence quality of life among individuals.

One group of individuals whose quality of life needs to be monitored is the youth in the university. Because, their transition from secondary education to higher institution is characterized with different stressors and demands such as academic pressures, financial constraints, social adjustment, and time management which could influence their quality of life (Fakroga, 2023). One factor considered in this study as a predictor of quality of life among undergraduates is anxiety which is described as the feelings of unease, concern and apprehension that typically emerges during adolescence (Beesdo et al., 2009). Anxiety tends to affect social functioning such as "impairing peer relationships, deficits in social skills, and causes mental health disorders" (Keller, 2006). Individuals who experience anxiety often have fewer and lower-quality friendships, as well as

delayed romantic relationships (Glickman & La Greca, 2004; La Greca & Harrison, 2005). Furthermore, anxiety hinders social functioning and emotional development among undergraduates (Herbert et al., 2009). Also, Korkmaz et al. (2020) found anxiety level among healthcare workers during COVID-19 to have negative correlation between anxiety levels and QOL. This means that higher anxiety levels were associated with lower QOL. Anxiety was further found to contribute to emotional distress, social withdrawal, and reduced engagement in enjoyable activities which affected quality of life among study participants (Korkmaz et al., 2020).

Extant found social phobia (anxiety) to influence quality of life among the Iranian students (Ghaedi et al., 2010). The second factor considered in this study is depression which is characterized by persistent low mood, loss of interest in activities, decreased energy levels, feelings of guilt or worthlessness, sleep disturbances, and difficulties with concentration (Marcus et al., 2012; Yalemwork, 2015). Studies have reported a high prevalence of depression. For example, the global prevalence of depression was about 49.86%, about 9.0% for Africa 3.1% in Nigeria (Liu et al., 2020). In terms of gender, depression has been reported to be higher in females (5.9%) compared to their male counterparts (4.8%) among the African samples (Esan & Esan, 2016). In addition, high prevalence of depression among undergraduate populations in Nigeria have been reported. For example, Aniebue and Onyema (2008) found about 23% of Nigerian undergraduates to have experienced depression. Similarly, Chinawa et al. (2015) found a significant prevalence of depression among undergraduates in Southeastern Nigeria. Studies have found individuals with depression to be 33 times more likely to commit suicide compared to individuals who do not experienced depression (Stringaris,

2017). Specifically, Tekinarslan (2017) found a significant relationship between depression and quality of life among students who reported depressive symptoms than those who reported no symptoms. Moreover, Ratnani et al. (2017) found both social anxiety and depression to have negative effects on the quality of life among undergraduate students.

Participants diagnosed with social anxiety disorder and depression reported lower quality of life, especially in domains related to psychological well-being and social relationships. These findings highlight the detrimental effects of depression on the overall well-being and quality of life among undergraduates. Specifically, Gan and Yuen Ling (2019) found anxiety and depression among Malaysian medical students to be 33% and 11%, respectively.

These symptoms were associated with lower QOL across different domains of quality of life among study participants. Taken together, studies have found a high prevalence of anxiety and depression among undergraduate populations. However, studies linking anxiety and depression to quality of life among undergraduates particularly in Nigeria are lacking thus creating a gap in knowledge to be filled. Therefore, the objective of this study was to examine anxiety and depression as predictors of quality of life among undergraduates of the University of Ibadan. The research question raised to guide this study was: Would anxiety and depression jointly and independently predict domain quality of life among undergraduates of the University of Ibadan? The study would provide a fresh insight into the predictive ability of anxiety and depression on domain quality of life among undergraduates of the University of Ibadan. Also, healthcare professionals and mental health practitioners would gain valuable insight from this study as it would shed light on the effects of anxiety and depression on domain quality of life among undergraduates of the University of Ibadan.

Finally, the findings of this study would serve as a foundation for the development of evidence-based strategies and interventions to effectively manage anxiety and depression among undergraduate populations. The study was anchored using the Biopsychosocial (BPS) model proposed by Engel (1977). The model posits that an individual's biological, psychological, and social factors contribute to the understanding of the overall quality of life. The biological factor consists of individuals' physical health, genetics,

and physiological processes that can significantly influence their quality of life. The psychological factors constitute individuals' thoughts, emotions, beliefs, and mental well-being which influence perceived quality of life. Finally, the social factor encompasses individuals' social relationships, support networks, and the social environment in which they live which contributes to their quality of life. The interconnectedness of the biological, psychological and social factors has made the BPS model a valuable tool to understand individuals' quality of life across different populations and samples. The following hypotheses were tested in this study: H1: Anxiety and depression would jointly and independently predict the physical health domain quality of life (QoL) among undergraduates of the University of Ibadan. H2: Anxiety and depression would jointly and independently predict psychological domain quality of life among undergraduates of the University of Ibadan.

**H3:** Anxiety and depression would jointly and independently predict social relationships domain QoL among undergraduates of the University of Ibadan.

**H4:** Anxiety and depression would jointly and independently predict the environment domain QoL among undergraduates of the University of Ibadan.

## 2 Method

The study adopted cross-sectional survey design using validated questionnaires to gather data from the participants. The independent variables were anxiety and depression while the dependent variable was quality of life among undergraduates of the University of Ibadan. The study was conducted at the University of Ibadan located in the Ibadan North Local Government Area (LGA) of Oyo State, Nigeria. As at the time of study, the population of study consisted of 16,623 undergraduates as at 2021/2022 session (University Management Services, 2023).

In terms of the sampling technique, purposive sampling was used to select the University of Ibadan while convenience sampling technique was used to select participants for the distribution of the questionnaires. The sample size was calculated using Slovin's formula to 391 with a markup of 10% to take care of attribution given 419 participants. However, 419 questionnaires were distributed, of which 400 were retrieved.

In this study, data were collected using validated questionnaires which includes the Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983) was used to evaluate levels of depression and anxiety among participants. The HADS consisted of 14 items of two subscales: Depression (7 items) and anxiety (7 items). Participants rated the extent to which they experienced each symptom within a specific time period on a scale from 0 to 3. The HADS-A and HADS-D subscales were scored separately, with higher scores indicating greater levels of anxiety and depression, respectively. Sample items for HADS-A include: "I feel tense or 'wound up'" and "I still enjoy the things I used to enjoy"

I feel tense or 'wound up' and for HADS-D include: "I look forward with enjoyment to things" and "I feel cheerful" Authors Cronbach's alpha for HADS was 0.93 and for this study, Cronbach's alpha was 0.89. The Cronbach's alpha for HADS-A was 0.93 and for HADS-D, it was 0.90.

In addition, the World Health Organization Quality of Life-BREF Scale (WHOQOL-BREF, 1998) was utilized to measure quality of life among study participants. The WHOQOL-BREF consisted of 26 items assessing QoL across four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items). The scale is presented in a 5-point Likert's format ranging from "Very poor (Very dissatisfied), Poor (Dissatisfied), Neither poor nor good (Neither satisfied nor dissatisfied), Good (Satisfied), Very good (Very satisfied)". The two items are: "How satisfied are you with your health?" and "How satisfied are you with your health?" The Cronbach's alpha obtained was 0.61. The scale has a high validity and reliability across many studies, population and samples. Cronbach's alpha for the general items was 0.89.

Procedurally, both physical and online methods were used for data collection. A web based questionnaire was designed using Google

Forms and hoisted on the University portal for undergraduates. Also, physical participants were approached in the faculties and were provided with information about the purpose of the study and invited to participate in the study. Informed consent was obtained from all participants ensuring voluntary participation. Those who gave consent were assured of the anonymity and confidentiality of their responses. A total of 419

questionnaires were distributed of which 400 were collected and found useful for the analysis.

IBM SPSS version 23 was used to analyze data collected. Both descriptive and inferential statistics were computed. Hypotheses 1-3 were tested using zero-order correlation statistics while hypothesis 3 or 4 were tested using multiple regression. All hypotheses were accepted at  $p = .001$  level of significance.

### 3 Result and Discussion

The descriptive statistics showed that 186 (46%) of the participants were males while 214 (54%) were female participants. The participants' age range was between 18 and 35 years ( $M_{age} = 21.86$ ,  $SD = 2.44$ ). In terms of the participants' ethnic groups, 322 (81%) were Yoruba, 33(8%) were Igbo, 5(1%) were Hausa and 40 (10%) were from other ethnic groups. The analysis further indicated that 90(23%) of the participants were in the 100 level, 94 (23.5%) were in 200 level, 106(27%) were in the 300 level, 93(23.3%) were in the 400 level while 17(4%) were in the 500 level. Next, the descriptive statistics of the four domains quality of life based on participants' gender is presented in Table 1.

**Table 1.** Descriptive Statistics Quality of Life Domains among Study Participants

M(S D)	Physical	Psychologi cal	Social relations	Enviro nment
Male	64.75±13.79	63.40±15.95	61.19±19.65	53.76±15.22
Fem ale	63.97±13.32	64.28±13.99	64.36±18.51	53.80±14.01
Tota l	64.34±13.53	63.87±14.92	62.89±19.09	53.79±14.57

Table 1 presents the mean and standard deviation for the four domains in WHO-QOL BREF. Participants in this study reported a relatively moderate level of satisfaction in the physical (64.34), psychological (63.87), and social (62.89) domains of quality of life. However, the mean score for the environment (53.79) domain was relatively lower, indicating a comparatively lower level of satisfaction in the participants' environmental experiences. There are slight differences in the mean scores for males and females in each domain, but it is difficult to draw definitive conclusions about gender differences in the domains. This is followed by zero-order correlation for the study variables presented in Table 2.

**Table 2.** Zero-order Correlation Statistics of the Study Variables

Variables	M	SD	1	2	3	4	5	6
1. Anxiety	79.000	4.038	1					
2. Depression	56.425	3.217	.49*	1				
3. Physical	643.350	13.528	.43*	.45*	1			
4. Psychological	638.725	14.922	.52*			1		
5. Social relationship	628.875	19.095	.26*	.28*	.38*	.54*	1	
6. Environment	537.850	14.567	.31*	.35*	.60*	.52*	.46*	1

\*.Correlation is significant at the 0.01 level

Table 2 presents zero-order correlation statistics of the study variables. The result showed significant negative relationship between anxiety and physical health ( $r = -.43, p = .001$ ), psychological health ( $r = -.52, p = .001$ ), social relationships ( $r = -.26, p = .001$ ) and environment ( $r = -.31, p = .001$ ) domains of quality of life among study participants. Furthermore, the results indicated a significant negative relationship between depression and physical health domain quality of life ( $r = -.45, p = .001$ ), psychological health ( $r = -.54, p = .001$ ), social relationships ( $r = -.28, p = .001$ ), and environment domain ( $r = -.35, p = .001$ ). Based on the robust psychometric properties of the study variables, it was considered suitable for multiple regression analysis.

**Testing the hypotheses**

**H1:** Anxiety and depression would jointly and independently predict the physical health domain quality of life (QoL) among undergraduates of the University of Ibadan. This was tested using multiple regression analysis and the result is presented in Table 3.

**Table 3:** Multiple Regression Showing Anxiety and Depression as Predictors of Physical Health Domain Quality of Life among University Undergraduates

Predictors	$\beta$	t	R	R <sup>2</sup>	F	p
Anxiety	-.2	5.5	.09	.259	69.546	.000
Depression	-.3	6.3	.15	.378	120.802	.000

\*Significant at  $p = .001$ , Dependent Variable: Physical domain quality of life

Table 3 presents results of anxiety and depression as joint and independent predictors of the physical health domain QoL among undergraduates of the University of Ibadan. The results revealed that anxiety and depression jointly predicted the physical health domain QoL among study participants [ $R^2 = .259, F(2,397) = 69.546, p = .000$ ]. Collectively, anxiety and depression accounted for about 25.9% variance in the physical health domain QoL. Further results indicated that anxiety ( $\beta = -.274, t = -5.522, p = .000$ ) and depression ( $\beta = -.315, t = -6.350, p = .000$ ) independently predicted physical health QoL among study participants. Therefore, the hypothesis was accepted.

**H2:** Anxiety and depression would jointly and independently predict psychological domain quality of life (QoL) among undergraduates of the University of Ibadan. The hypothesis was tested using multiple regression analysis and the results are presented in Table 4.

**Table 4:** Multiple Regression Analysis Showing Anxiety and Depression as Predictors of Psychological domain Quality of Life among University Undergraduates

Predictors	$\beta$	t	R	R <sup>2</sup>	F	p
Anxiety	-.3	7.333	.615	.378	120.802	.000
Depression	-.3	8.317	.781	.635	246.000	.000

\*Significant at  $p = .001$ , Dependent Variable: Psychological domain quality of life

Table 4 presents results of anxiety and depression as joint and independent predictors of psychological domain QoL among undergraduates of the University of Ibadan. The results showed that anxiety and depression jointly predicted psychological health QoL [ $R^2 = .378, F(2,397) = 120.802, p = .000$ ]. This means anxiety and depression accounted for about 37.8% variance in the psychological health QoL among study participants. In addition, both anxiety ( $\beta = -.333, t = -7.333, p = .000$ ) and depression ( $\beta = -.378, t = -8.317, p = .000$ ) independently predicted psychological health QoL. Therefore, the hypothesis was confirmed.

**H3:** Anxiety and depression would jointly and independently predict social relationships domain



QoL among undergraduates of the University of Ibadan. This was tested using multiple regression analysis and the result is presented in Table 5.

**Table 5.** Multiple Regression Analysis of Anxiety and Depression as Predictors of Social Relationships Domain Quality of Life among University Undergraduates

Predictors	$\beta$	t	p	R	R <sup>2</sup>	F	p
Anxiety	-.158	-2.881	.000	.31	.09	21.5	.00
Depression	-.203	-3.710	.000	.31	.09	21.5	.00

\*Significant at  $p = .001$ , Dependent Variable: Social relationships domain quality of life

Table 5 shows results of anxiety and depression as joint and independent predictors of the social relationship domain QoL among undergraduates of the University of Ibadan. The results showed that anxiety and depression jointly predicted social relationship domain QoL [ $R^2 = .098$ ,  $F(2, 397) = 21.513$ ,  $p = .000$ ]. This implies that anxiety and depression explained about 9.8% variance in the social relationship QoL. Furthermore, the results indicated that both anxiety ( $\beta = -.158$ ,  $t = -2.881$ ,  $p = .000$ ) and depression ( $\beta = -.203$ ,  $t = -3.710$ ,  $p = .000$ ) independently predicted psychological health QoL. Hence, the hypothesis was accepted.

**H4:** Anxiety and depression would jointly and independently predict environment QoL among undergraduates of the University of Ibadan. The hypothesis was tested using multiple regressions analysis and the result is presented in Table 6.

**Table 6.** Multiple Regression Analysis Showing Anxiety and Depression as Predictors of Environment Domain Quality of Life among University Undergraduates

Predictors	$\beta$	t	p	R	R <sup>2</sup>	F	p
Anxiety	.181	3.404	.001	.38	.15	34.9	.00
Depression	.264	4.964	.000	.38	.15	34.9	.00

\*Significant at  $p = .001$ , Dependent variable: Environment domain QoL

Table 6 shows results of anxiety and depression as joint and independent predictors of

the environment domain QoL among undergraduates of the University of Ibadan. The results revealed that anxiety and depression jointly predicted environment domain QoL [ $R^2 = .150$ ,  $F(2,397) = 34.903$ ,  $p = .000$ ]. Together, anxiety and depression accounted for about 15% variance in the environment domain QoL among study participants. Further analysis revealed that anxiety ( $\beta = .18$ ,  $t = 3.404$ ,  $p = .001$ ) and depression ( $\beta = .264$ ,  $t = 4.964$ ,  $p = .000$ ) independently predicted the environment domain QoL. Therefore, the hypothesis was supported.

The hypothesis that anxiety and depression would jointly predict physical health domain QoL was supported which accounted for about 25.9% variance explained in health quality of life domain among study participants. Also, anxiety and depression independently predicted physical health domain QoL. This indicates that the higher the level of anxiety and depression, the lower the physical health quality of life among undergraduates of the University of Ibadan. These findings lent credence to previous results that there is interaction and independent influence of anxiety and depression on quality of life among different populations and samples including youths (Korkmaz et al., 2020).

In addition, anxiety and depression jointly predicted psychological health domain QoL was accepted which accounted for 37.8% variance in health quality of life domain among study participants. Moreover, anxiety and depression independently predicted psychological health domain QoL. This implies that the higher the level of anxiety and depression, the lower the psychological health quality of life among undergraduates of the University of Ibadan. The present findings supported by Gan and Yuen Ling (2019) result that anxiety and depression interact to predict quality of life among diverse populations including undergraduates. In addition, Tekinarslan (2017) result confirmed the influence of anxiety and depression on psychological health quality of life in their study.

Furthermore, anxiety and depression would jointly predict social relationships domain QoL was confirmed which explained about 9.8% variance in social relationship domain quality of

life among study participants. Furthermore, anxiety and depression independently predicted social relationship domain QoL among study participants. This indicates that the higher the level of anxiety and depression, the lower the social relationships quality of life among undergraduates of the University of Ibadan. Furthermore, Gan and Yuen Ling (2019) finding supported the present result that anxiety and depression would jointly and independently interact to influence quality of life across different populations and samples. Also, Alsubaie et al. (2019) supported the current finding that depressions significantly influence individuals' quality of life including youths and undergraduates.

Finally, the hypothesis that anxiety and depression would jointly predict environment domain QoL was accepted and this accounted for about 15% variance in environment domain quality of life among study participants. In addition, anxiety and depression independently predicted the environment domain QoL among study participants. This indicates that the higher the level of anxiety and depression, the lower the environment quality of life among undergraduates of the University of Ibadan. Also, anxiety and depression independently predicted environment quality of life among study participants. The findings corroborated Ratnani et al. (2017) result that anxiety and depression whether jointly or independently were strong predictors of environment domain quality of life among their study participants. This goes to explain that the environment individuals live in has a strong influence on their quality of life (Fakrogha, 2023).

## 4 Conclusion

This study examined the predictability of anxiety and depression on physical, psychological, social relationships and environment domain quality of life among undergraduates of the University of Ibadan. The results of the four hypotheses tested confirmed that anxiety and depression are robust predictors of the domains quality of life among study participants. The implications of these findings call for the designs and implementation of good mental health programmes to assist undergraduates evaluated to be affected by the symptoms of anxiety and depression. In addition, adequate welfare programmes should be in place to help those in need thereby in order to improve their quality of life.

Some limitations of this study need to be mentioned. To begin with, the study employed self-reported questionnaires both online and physical for data collection which was not devoid of response bias. Further study would benefit using group discussion and documentary evidence from psychological units to triangulate data collected from self-reported questionnaires. In addition, only one university was purposively selected with a sample size of 400 undergraduates. Further study would benefit from selecting more universities within and across the geopolitical areas of study to enhance generalization of study findings. Finally, the two independent variables investigated may not have been exhaustive; therefore, further study should include social support, learned helplessness and personality traits.

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