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The Role of Mental Health and Educational Programmes in Predicting Quality of Life: A Cross-Sectional Study

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Abstract: The Covid-19 pandemic has significantly impacted adolescents, particularly within the learning environment. Despite the low prevalence of COVID-19 among adolescents and the general mild symptoms or asymptomatic nature of their cases, the pandemic has induced significant psychological changes and social challenges. Therefore, this study focused on quality of life and mental health of students at Indonesian religious colleges during the COVID-19 pandemic, where religious aspects are integral to the curriculum. It adopted a cross-sectional design with an initial analysis using SPSS version 29. The sample included 395 students from various educational programmes, comprising 14% males and 86% females, with an average age of 19.65 years (SD = 1.03). The results showed that mental health was a crucial factor affecting students quality of life, particularly within the Preschool Education programme. Gender disparities were observed in areas such as physical health and depression, necessitating customised support in educational settings. Variations in students' perceived health status were also identified in specific programmes, such as mathematics and guidance education, showing the impact of academic environments. Generally, the study showed the crucial need for targeted interventions to address mental health issues and support students' quality of life during and after the pandemic.

INTRODUCTION

The COVID-19 pandemic has caused rapid and unprecedented changes in the lives of billions of people, ranging from children and adolescents to adults. This has necessitated various countries to implement massive precautions to prevent the spread of the virus and reduce millions of deaths and hundreds of millions of people infected worldwide. An encouraging aspect of this pandemic is that the prevalence among children and adolescents is relatively low (between 0.8% and 3.3%), with the majority showing only mild physical symptoms or being asymptomatic (Castagnoli et al., 2020; Shekerdemian et al., 2020; Walker & Tolentino, 2020; Williams et al., 2021). The mortality rate in this age group is not as severe and lethal as in adults, but the impact is more pronounced on quality of life. Children and adolescents often face significant changes in daily lives due to school closures, restrictions on activities outside the home, and social distancing rules. These measures can particularly be burdensome for young people due to the prevention from playing and interacting with peers (Castagnoli et al., 2020; Shekerdemian et al., 2020; Walker &

Tolentino, 2020). The pandemic has brought about numerous psychological changes and social challenges for children and adolescents, affecting both homes and learning environments (Arnett, 2015). Adolescence is a sensitive period for students, marked by an increased need for social interaction (Castagnoli et al., 2020). Therefore, the consequences of the COVID-19 pandemic that require limiting social and physical interaction could have a significant impact on quality of life.

Several studies have been conducted on quality of life of children and adolescents during the COVID-19 pandemic. The first study was conducted in China, the initial epicenter of the pandemic, showing an increase in stress, anxiety, and depression. Jiao et al. reported that a third of children and adolescents aged 6 to 20 years were more easily irritated and worried ("The Oxford Handbook of Emerging Adulthood.," 2016). Xie et al. found that 23% of primary to secondary school children experienced symptoms of depression and 19% showed anxiety during the pandemic (Xie et al., 2020). Similarly, Zhou et al. reported that 44% of middle and high school adolescents had symptoms of depression, 37% showed anxiety and 31% experienced both types of symptoms (Zhou et al., 2020).

Studies from India, focusing on children and adolescents aged 5–18 years (Saurabh, 2020; Yeasmin et al., 2020) and from Brazil, focusing on those aged 6-12 years (Avila et al., 2020) also showed the negative impact of the pandemic on quality of life. These studies found that adolescents experienced high levels of psychological stress, including worry, helplessness, anxiety, and fear. Specifically, an investigation in the United States showed that the psychological and mental health of children and adolescents worsened compared to pre-pandemic times (Gassman-Pines et al., 2020; Patrick et al., 2020).

Furthermore, studies from Italy and Spain found that mental health issues such as behavioural problems, irritability, and loneliness in children and adolescents increased during the COVID-19 lockdown (Ezpeleta et al., 2020). Quantitative study on parents, children, and adolescents as well as qualitative study in Germany found that children and adolescents experienced mental stress related to the pandemic. Generally, these studies showed a significant increase in quality of life and mental health problems among children and adolescents during the pandemic (Ravens-Sieberer, Kaman, Erhart, Devine, et al., 2021).

Religious universities in Indonesia, which are formal higher institutions prioritising religious aspects in the learning process, are not exempt from the challenges caused by the Covid-19 pandemic. However, several studies have shown that religious rituals significantly reduce anxiety (Adi, 2016; Moodi et al., 2020; Sari et al., 2021), foster mental health (Estrada et al., 2019; Rosyad, 2016; Weber & Pargament, 2014), and improve quality of life (Abolghasem-Gorji et al., 2017; Ferriss, 2002; Sure, 2019) for adolescents and adults. Till date, no study has specifically examined quality of life and mental health of students at religious universities during the COVID-19 pandemic, who were equipped with religious and spiritual values through coursework and learning processes.

Therefore, the current study aimed to identify quality of life and mental health of adolescents, specifically students, during the COVID-19 pandemic at Indonesian religious colleges. The following study questions guided the investigation: (1) Do students' mental health influence quality of life?; (2) Does quality of life and mental health vary between male and female students?; (3) How does quality of life vary among students in different programmes?

THEORETICAL SUPPORT

Quality of Life

According to the World Health Organization (1996), quality of life is individual's assessment of their position in life relative to aspirations, expectations, standards, and objectives, considering the immediate cultural environment and value system. This definition refers to individual's psychological state, physical well-being, degree of autonomy, social connections, personal convictions, and interaction with the surroundings. Similarly, Jacobson & Curtis (2000) define quality of life as individual's subjective evaluation of the level of contentment with life, including both mental and physical well-being. Quality of life can be described as the extent to which individuals evaluate the contentment and significance of existence (Sarafino & Smith, 2014).

Renwick et al. (1996) proposed that quality of life is perceived in terms of satisfaction, contentment, morals, and general well-being. This concept includes assessment of physical, material, social, and emotional well-being, as well as personal growth and participation in activities, according to life values. The assessment of quality of life can be both subjective and objective. Objective evaluation describes living conditions such as health, income, housing, social networks, and social activities, while subjective evaluation refers to personal contentment with these living conditions. The WHOQOL-BREF (Organization, 1996) categorises quality of life into four dimensions, namely physical health, psychological well-being, social relationships, and environment.

A study conducted in Germany, focusing on parents, children, and adolescents showed that the ongoing pandemic had significant psychological effect on youth (Ravens-Sieberer et al., 2022). These studies found substantial evidence of increased concerns related to mental well-being and quality of life of children and adolescents during the pandemic. Similarly, (2023) identified a negative correlation between academic stress, COVID-19 anxiety, quality of life (QoL), and resilience. A positive correlation was also found between resilience and quality of life, showing that resilience significantly mitigated the detrimental effects of academic stress on personal well-being. The study further showed the role of resilience as a substantial mediator element in the relationship between COVID-19 anxiety and quality of life for nursing students. Social support remains a significant factor in improving quality of life for elderly and middle-aged individuals diagnosed with autism, even when demographic factors and depression are considered (Charlton et al., 2023).

Mental Health

The World Federation for Mental Health defines mental health as a condition that enables optimal physical, intellectual, and emotional development, as long as it corresponds with the circumstances of others (Health et al., 2005). A mentally healthy society allows its members to develop according to personal abilities. This definition shows mental health is not solely individual concern but also requires community support to ensure optimal development. Furthermore, it refers to individual's emotional, psychological, and social well-being (Bandyopadhyay, 2018), or how a person thinks, feels, and behaves, influencing the ability to handle stress, relate to others, and make choices (Health et al., 2005). Mental health is more than the absence of mental disorders, as it is a state of well-being that enables people to cope with the stresses of life, realise personal abilities, learn and work effectively, and contribute to the community (Sahu & Gupta, 2013).

Mental health within educational sphere is crucial, as it influences students' academic performance, general well-

being, and future success. The academic environment significantly impacts students mental health, serving as a primary arena for stressors, social interactions, and personal development. Academic pressures, such as exams, assignments, and performance expectations, can contribute to increased stress, anxiety, and even depression among students (Vaez & Laflamme, 2008). Academic excellence often brings stress related to time management, workload, and fear of failure, which can adversely affect mental health when not adequately addressed.

Social dynamics in educational settings play a crucial role in mental well-being. Furthermore, peer relationships, social acceptance, and the general school environment significantly impact students' mental health (Suldo et al., 2008). Bullying, social exclusion, and negative peer interactions can cause feelings of isolation, low self-esteem, and psychological distress. Mental health in educational institutions can be addressed by providing adequate support structures and resources for students. School-based mental health programmes, counseling services, and initiatives that promote mental health awareness help create a supportive environment (Stallard, 2013). These programmes aim to reduce stigma, improve mental health literacy, and offer coping strategies to manage stress and emotional challenges.

METHOD

Participants

This study used a stratified random sampling method, drawing its sample from the student body of the Universitas Islam Negeri Raden Intan Lampung. The university was chosen due to its reputation as a leading Islamic higher education institution in environmental aspects and its provision of religious-related materials to students. In this context, investigating the correlation between students' quality of life and mental health was particularly intriguing. Stratified random sampling was used to ensure a representative random selection of students at various academic levels. The research obtained approval from the Institutional Review Board of the Universitas Islam Negeri Raden Intan Lampung, which adhered to the institution's ethical standards. The sample size, determined by Slovin formula (Yamane, 1967), comprised 395 students. The respondents had an average age of 19.65 years (SD = 1.35) and an average study duration of 2.48 years (SD = 1.03). Data were collected during the pandemic (2019 – 2020), and Table 1 presents a comprehensive breakdown of the characteristics of the respondents.

Instruments

This study used the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire, consisting of 26 questions (Organization, 1996). The measurement tool comprised four dimensions, namely physical health, psychological well-being, social relationships, and environmental relationships. Students provided responses on a 5-point Likert scale ranging from 1 "never" to 5 "always". The primary focus was to thoroughly examine the validity and reliability of these measurement instruments.

Table 1. Characteristics of the Respondents.

Characteristics of the Respondents	n	Frequency (%)
Age		
17 years	24	6
18 years	50	13
19 years	109	28
20 years	98	25
21 years	85	22
22 years	24	6

Characteristics of the Respondents	n	Frequency (%)
23 years	4	1
Gender		
Male	54	14
Female	341	86
Study Period		
Semester I	24	6
Semester III	114	29
Semester V	129	33
Semester VII	98	25
Semester IX	29	7

Mental health instrument used was the Mental Health Inventory (MHI-38) questionnaire developed by Parombean et al. (2023). This tool assessed various aspects, including positive mental health conditions, such as generally positive emotions, emotional states like love, and life satisfaction. It also evaluated negative mental health conditions such as anxiety, depression, and loss of behavioural and emotional control. The questionnaires used a 5-point Likert scale where responses ranged from 1 "totally disagree" to 5 "totally agree." Furthermore, the psychometric properties associated with these instruments were assessed.

Data Analysis

This study started with an initial analysis using SPSS version 29, including descriptive statistics and correlation assessments between variables. The primary analysis was to verify and ensure the reliability of the measurement tools. Also, confirmatory factor analysis (CFA) was used to examine the construct validity of the questionnaire. The fit of the CFA model was evaluated using comparative fit indices (CFI), Tucker-Lewis indices (TLI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR). According to previous studies, acceptable fit indices were CFI and TLI > 0.90, SRMR between 0 and 0.1, and RMSEA < 0.5 (Hu & Bentler, 1999). R software was used to create visual representations that showed variable relationships within the scale, as well as students performance. Furthermore, multiple regression analysis was performed to explore mental health as a dependent variable across various programmes. A t-test was also conducted to investigate gender-based disparities in quality of life and mental health of students.

RESULT AND DISCUSSION

Validity and Reliability

CFA was conducted to validate Quality of Life (QoL) model within the Indonesian context. The results showed a satisfactory fit for the model (Chi-squared = 274.674, df = 247, p < .001, NFI = .89, TLI = .94, CFI = .93, SRMR = .05, RMSEA = .09). All elements showed strong factor loadings, ranging from .49 to .81. Furthermore, the internal consistency of this model was assessed using Cronbach alpha.

Table 2. Construct Validity of Mental Health and Quality of Life.

Variables	χ^2	CFI	TLI	RMSEA	Alpha
Mental health	1208.470	.94	.97	.09	.72
Quality of life	274.647	.93	.94	.05	.76

In terms of instrument reliability, the results of the Cronbach alpha analysis showed the reliability of all instruments. Specifically, factors related to QoL showed good reliability levels, with Cronbach alpha values ranging from .68

to .89. Among these factors, the relationship with the environment had the highest reliability at α=.86, while physical health showed the lowest at α=.68. Psychological well-being showed a high reliability level with α=.84, and social relationships also had the highest reliability among the other factors, standing at α=.89. Furthermore, the AVE values for the relationship with the environment, physical health, psychological well-being, and social relations were .67, .64, .63, and .77, respectively.

Focussing on mental the health instruments, the fit of the model was evaluated with the following results; Chi-squared = 1208.470, df = 132, p < .001, NFI = .73, TLI = .97, CFI = .94, SRMR = .10, RMSEA = .09. The loading factors for each item ranged between .42 to .85. The Cronbach Alpha for the loss of the behavioural and emotional control scale was α= .76. The anxiety scale showed the highest score with α=.85. Similarly, the depression and affective scale (love) showed high values at α=.86 and α=.93, respectively. Positive emotions were measured at α=.93, and satisfaction had the highest reliability at α=.99, while the AVE ranged between .61 to .89.

Descriptive Statistics

Table 3 shows significant correlations between each quality of life factor and mental health. The strongest correlation was observed between loss of behavioural-emotional control and depression (r = .69). This showed depression was related to challenges in managing emotions, including difficulties in cognitive control, ineffective emotion regulation strategies, and deficits in emotion regulation (Compare et al., 2014). The relationship between depression and anxiety also showed a strong correlation (r = .68). A positive attitude towards academics was linked to students' confidence in the certainty of knowledge. Anxiety was characterised by fear and apprehension, while depression was associated with feelings of sadness and decreased energy levels (Shek et al., 2022). However, these elements often coexisted, with individuals experiencing depression also experiencing high levels of anxiety, potentially leading to panic attacks. Anxiety correlated with social relationships (r = .09), and a significant correlation was found between environment and social relationships (r = .60). This showed exposure to natural environments, such as green spaces, alleviated physiological stress and promoted stress reduction, while supportive social networks positively impacted the development of the attentional system (Federico, 2020).

Table 3. Statistical Summaries and the Relationship Between each Variable in Mental Health and Quality of Life Scale**.**

Var.	M	SD	Skewness	Kurtosis	1	2	3	4	5	6	7	8	9	10
1. PH	3.70	1.39	.86	.95										
2. PW	18.59	3.60	-.41	-.28	-.60**									
3. SR	10.70	2.24	-.45	.40	-.03	-.06								
4. RE	26.19	4.68	.11	-.08	-.06	-.02	.60**							
5. AN	10.84	2.40	-.01	-.30	-.07	-.02	.09*	.09						
6. DP	9.36	2.76	.25	-.41	.08	-.08	.09	.05	.68**					
7. LB	9.77	2.92	.19	-.76	.00	-.06	.07	.09	.68**	.69**				
8. PE	7.98	1.87	.07	-.39	.03	.01	-.01	-.10*	-.22**	-.22**	-.23**			
9. AF	10.71	2.61	-.03	-.47	-.04	.04	-.02	-.07	-.14**	-.17**	-.20**	.59**		
10. SA	11.39	2.49	-.14	-.29	-.02	.04	-.07	-.16**	-.29**	-.39**	-.36**	.68**	.59**	

Note: 395; **p < .01; *p <. 05; PH = PH = Physical Health; PW = Psychological Wellbeing; SR = Social Relations; and RE = relationship with Environment; AN = Anxiety; DP = Depression; LB = loss of behaviour and Emotional Control; PE = Positive Emotions; AF = Affective; SA = satisfaction

RQ1. Do Students' Mental Health Influence Quality of Life?

Multiple regression analysis was used to address the initial inquiry regarding the influence of students mental health on quality of life across various study programmes. Table 4 presents individual contributions of each aspect of quality of life to mental health. The results showed that mental health played a more significant role in determining quality of life in the Preschool Education programme than other study programmes.

Table 4. Results of Multiple Regression Analysis for Mental Health as Dependent Variable.

Study Programme	Independent Variable	r	β	$r.\beta.100$	*t(4)*	*p*
BKPI	Physical health	-.29	-.23	6.94	4.14	.17
	Psychological well-being	.29	.26	7.52	-1.41	.15
	Social relations	.06	-.16	-1.04	1.48	.42
	Relationship with environment	.05	.09	.50	-0.81	.60
	The total variance is explained by			13.93%	0.54	
MPI	Physical health	-.06	-.06	.37		.73
	Psychological well-being	-.01	-.06	.04	-0.35	.72
	Social relations	.03	-.18	-.56	-0.36	.44
	Relationship with environment	.15	.28	4.33	-0.79	.22
	The total variance is explained by			4.17%	1.25	
PBA	Physical health	.15	.09	1.31		.59
	Psychological well-being	-.25	-.24	6.07	0.55	.14
	Social relations	.04	.11	.39	-1.50	.51
	Relationship with environment	-.19	-.19	3.88	0.67	.24
	The total variance is explained by			11.65%	-1.20	
PBI	Physical health	-.10	.03	-.32		.85
	Psychological well-being	-.14	-.08	1.07	0.19	.63
	Social relations	.31	.32	9.92	-0.49	.23
	Relationship with environment	.24	-.02	-.52	1.23	.93
	The total variance is explained by			10.14%	-0.09	
PGMI	Physical health	.09	.05	.47		.76
	Psychological well-being	-.10	-.07	.69	0.31	.68
	Social relations	.09	.18	1.72	-0.42	.40
	Relationship with environment	-.04	-.16	0.55	0.85	.45
	The total variance is explained by			3.42%	-0.76	
PIAUD	Physical health	-.11	-.14	1.52		.36
	Psychological well-being	-.15	-.16	2.42	-0.93	.29
	Social relations	-.14	.32	-4.37	-1.08	.27
	Relationship with environment	-.27	-.56	15.06	1.12	<.05
	The total variance is explained by			14.62%	-2.03	
PSPB	Physical health	.07	.09	.57		.69
	Psychological well-being	.11	.12	1.38	0.41	.55
	Social relations	-.04	-.07	.27	0.61	.78
	Relationship with environment	-.03	.02	-.07	-0.29	.93
	The total variance is explained by			2.15%	0.09	
PSPF	Physical health	.15	.19	2.82		.25
	Psychological well-being	.10	.12	1.17	1.17	.47
	Social relations	.03	.07	.20	0.73	.73
	Relationship with environment	-.05	-.14	.69	0.35	.50
	The total variance is explained by			4.89%	-0.69	
PSPM	Physical health	.08	.12	.90	4.14	.41
	Psychological well-being	.17	.17	2.92	-1.41	.25
	Social relations	.08	.01	.03	1.48	.98
	Relationship with Environment	.13	.12	1.50	-0.81	.46
	The total variance is explained by			*5.36%*	*0.54*	

Note: N = 44; F-statistics BKPI (Islamic Guidance Education)= 1.617, p >.05; N = 44; F-statistics MPI (Islamic Management Education) = .435, p >.05; N = 44; F-statistics PBA (Arabic Education) = 1.217, p >.05; N = 44; F-statistics PBI (English Education) = 1.125, p >.05; N = 44; F-statistics PGMI (Islamic

Elementary Education) = .354, *p* >.05; N = 44; F-statistics PIAUD (Preschool Education) = 1.717, *p* >.05; N = 28; F-statistics PSPB (Biology Education) = .132, *p* >.05; N = 44; F-statistics PSPF (Physic Education) = .513, *p* >.05; N = 53; F-statistics PSPM (Mathematics Education) = 696, *p* >.05.

In Table 4, showing the multiple regression analysis of mental health in various study programmes, the highest trend in terms of the relationship between aspects of quality of life and mental health was observed in the PIAUD programme. In this context, the relationship with the environment factor showed a significant negative correlation with mental health (r = -.56). This variable explained a relatively high proportion of variance in mental health (14.62%). On the contrary, the lowest trend was observed in the PSPB programme. In this context, none of quality of life aspects had a substantial relationship with mental health, and none of the correlations were strong or statistically significant. Only a very minimal percentage of variance in mental health (2.15%) was explained by quality of life factors within this programme.

A structural equation modeling analysis was conducted to test the study hypotheses (Fig. 1). The results showed that mental health accounted for 1.3% of the variance in quality of life (R2 = .013). Furthermore, the variables were controlled for age (see Fig. 2), showing that age explained 3.9% of the variance in mental health (R2 = .039) and 0.7% of the variance in quality of life (R2 = .007).

The path coefficients showed significant relationships among the variables. Mental health was negatively correlated with quality of life (β = -.113, p < 0.001). When controlling for age, both mental health and quality of life showed positive correlations with age, with mental health having a path coefficient of β = .198 (p > 0.05) and quality of life having a path coefficient of β = .682 (p > 0.05).

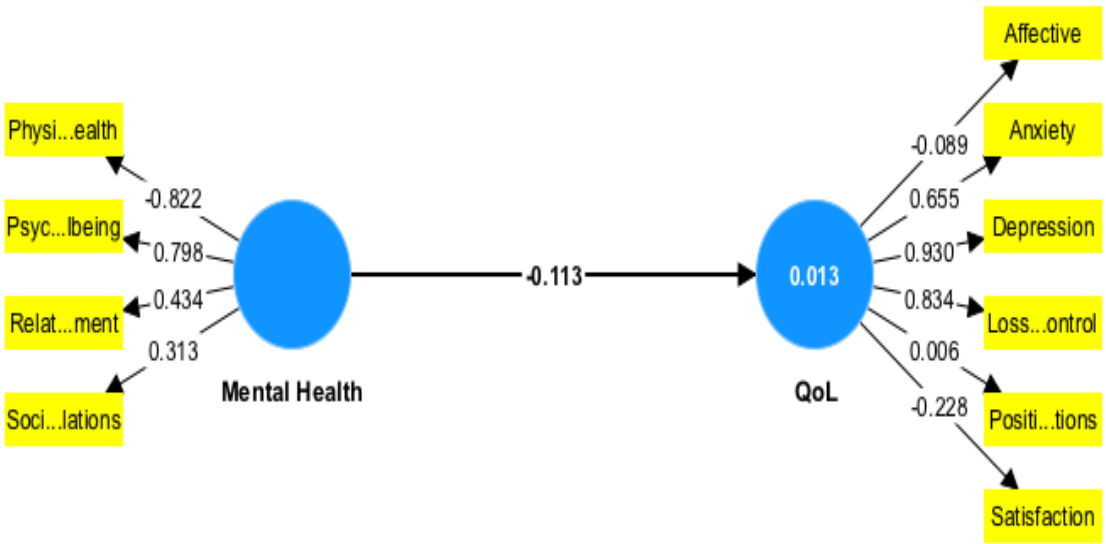

Figure 1. SEM of Mental Health and Quality of Life.

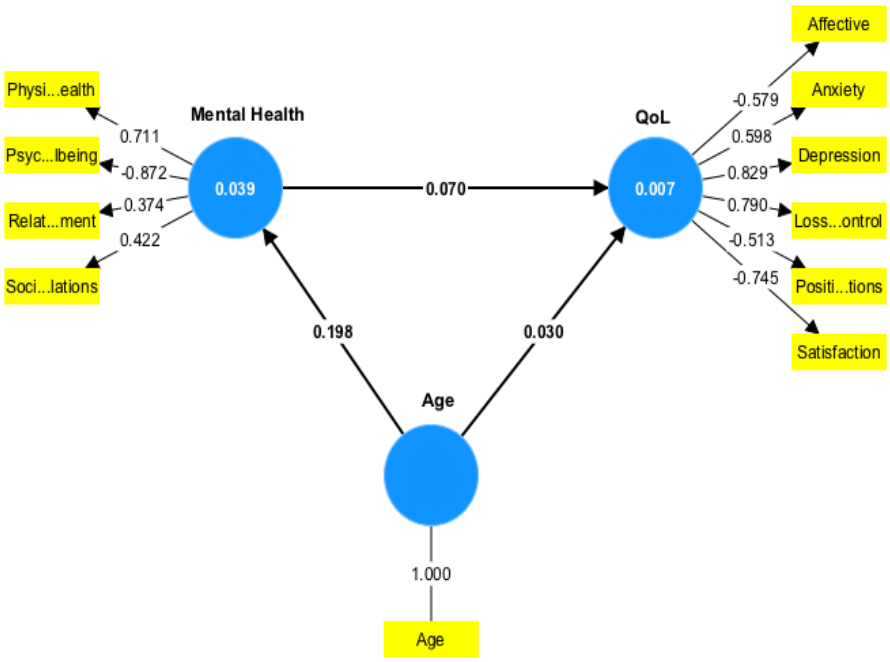

Figure 2. SEM of Mental Health and Quality of Life with Control Variable.

Table 5. Path Model Among Variables.

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	*p values*
Age -> Mental Health	0.198	0.134	0.159	1.250	$p > 0.05$
Age -> QoL	0.030	0.057	0.074	0.403	$p > 0.05$
Mental Health -> QoL	0.070	-0.060	0.115	0.608	$p > 0.05$
Age -> QoL	0.014	-0.005	0.025	0.555	$p > 0.05$
Age -> Mental Health	0.198	0.134	0.159	1.250	$p > 0.05$
Age -> QoL	0.044	0.053	0.079	0.558	$p > 0.05$
Mental Health -> QoL	0.070	-0.060	0.115	0.608	$p > 0.05$

RQ2. Does Quality of Life and Mental Health Vary between Male and Female Students?

Table 6 presents the disparities in quality of life and mental health among male and female students. An independent sample t-test was conducted to assess the impact of gender on both quality of life and mental health in both genders. This was supported by (Michel et al., 2009), identifying a correlation between gender preferences and quality of life, as well as mental health (McIntyre et al., 2014).

The results showed discernible variations in certain domains between male and female students. Significant differences between the sexes were observed in aspects related to physical health and depression. Female students had slightly lower mean scores in physical health (M = 3.69, SD = 1.38) compared to male counterparts (M = 3.75, SD = 1.49) with a significance level below .05. Similarly, there was a statistically significant difference in depression scores, where female students (M = 9.39, SD = 2.84) had slightly higher scores compared to male students (M = 9.23, SD = 2.39), also below the .05 threshold.

There were no significant differences in several other domains, including the relationship with the environment, psychological well-being, social relationships, anxiety, loss of behavioural and emotional control, positive emotions, affective (love) and satisfaction between male and female students, evidenced by p-values exceeding .05.

RQ3. How does Quality of Life Vary among Students in Different Programmes?

The violin plot in Fig. 3 visually represents the disparities and fluctuations in scores across various categories within each programme, offering a comprehensive view of students' perceptions and experiences in different domains.

Observing the 'Physical Health' category, mean scores fluctuated between 5.42 (with an SD of 1.500 in BKPI) and 2.65 (with an SD of 0.872 in PSPM). Exploring 'Psychological Wellbeing', the mean scores spanned from 2.18 (with an SD of 1.076 in PBI) to 23.65 (with an SD of 1.012 in PSPM), showing significant divergence among programmes in this domain. Furthermore, social relations had slight variations between programmes, ranging from 10.20 (with an SD of 1.742 in PSPM) to 11.53 (with an SD of 1.854 in MPI), showing relatively minor fluctuations compared to other aspects.

In the 'Relationship with Environment' category, mean scores had slight differences, fluctuating between 25.63 (with an SD of 4.532 in PSPM) and 26.93 (with an SD of 4.175 in MPI). These variations between categories and programmes showed the nuanced perspectives and experience.

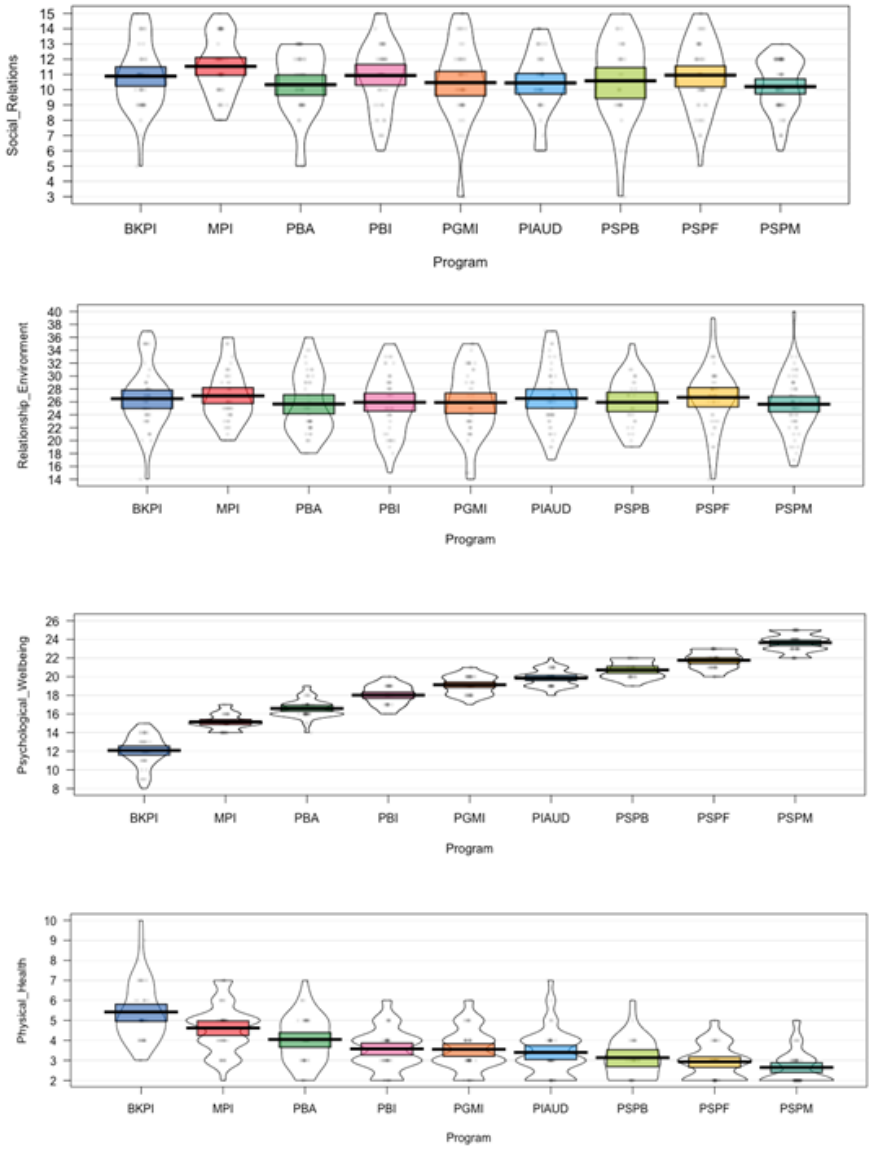

Figure 3. Violin Plot for Quality of Life Due to Different Programme.

This study made significant contributions by exploring various aspects and commonalities of quality of life and mental health within the context of higher education. To ensure the reliability of measurements, CFA was conducted and internal consistency was assessed using Cronbach's alpha for each questionnaire. These steps were crucial in validating the reliability of instruments before proceeding to data analysis.

This study not only confirmed the specificity of certain domains within quality of life but also showed the broader scope of particular aspects. Furthermore, it offered valuable insights on the relationship between quality of life and mental health. Mental health influenced quality of life of students, with a significant effect observed in the Preschool Education programme compared to other academic study programmes. In specific domains of quality of life, such as the relationship with environmental factors, mental health had a significant influence, accounting for approximately 15.06% of the variation. This result showed the crucial role of mental health in shaping students' perceptions of their environment and the effect on general quality of life. The analysis showed that the variable (relationship with the environment) explained a considerable proportion (14.62%) of the variance in mental health. This high explanatory power confirmed the importance of environmental factors in influencing students' mental health status within educational context (Hossain et al., 2019; Hwang & Kim, 2022). Understanding these complex relationships between mental health and quality of life, particularly in the context of environmental interactions, provided valuable insights into the mechanisms affecting students' well-being (Neill et al., 2022) and showed the importance of addressing mental health concerns to improve general quality of life (Gielen et al., 2001), specifically within educational settings.

The percentage of variance explained by the included variables ranged from 2.15 to 14.62% of quality of life variance, although not all regression models predicted mental health quality across all programmes. In line with (Evans et al., 2007; Rajmil et al., 2009; Ravens-Sieberer, Kaman, Erhart, Otto, et al., 2021), the current study showed that quality of life, specifically mental health, had the strongest influence, in terms of the relationship with environmental factors compared to other factors.

An important result in this study was the disparities in quality of life and mental health between male and female students. The results showed significant disparities across specific domains, specifically gender-based differences in certain aspects of mental health and quality of life. In particular, significant variations were observed in the domains of physical health and depression. Female students had slightly lower mean scores in physical health compared to male counterparts, while showing slightly higher scores in depression. These results were consistent with previous studies showing gender-based differences in mental health concerns (Otten et al., 2021; Vuelvas-Olmos et al., 2023). Studies consistently showed that females tended to report higher levels of depression than males (Piccinelli & Wilkinson, 2000; Smith et al., 2008), corroborating the trend observed in the current investigation. Similarly, gender variations in perceived physical health were documented, although the extent of these differences could vary across studies.

Another significant result was the disparities in quality of life domains across various academic programmes, reflecting the nuanced experiences and perceptions of students within distinct educational settings. Significant variations were particularly observed in the 'Physical

Health' domain within the mathematics education programme and guidance education programmes, showing distinct differences compared to other academic programmes. The result was in line with previous studies, showing discrepancies in students' perceptions of physical quality of life influenced by the academic environment. This included McCallen & Johnson (2020) and Lee (2007), showing the influential role of academic programmes and institutional settings in shaping students' perceived health status.

This study had certain limitations that required consideration. One primary constraint pertained to the sample composition, which exclusively comprised students from education field within a specific geographic area. To provide a more comprehensive understanding, future studies should include a broader spectrum of academic disciplines such as social sciences, law, engineering, and others. This would enable a comparative analysis of quality of life and mental health across various fields, providing more nuanced insights.

Besides the stronger impact of mental health on the relationship with environmental factors compared to other domains, it was essential to acknowledge the absence of data on potential changes in students' mental well-being after COVID-19 and upon completion of academic tenure. Therefore, a longitudinal study was necessary to ascertain the trajectory of students' quality of life over an extended period.

Another significant limitation was the exclusive focus on exploring the correlation between quality of life and mental health, without delving into the potential links with academic performance or general point academic (GPA). Therefore, future studies were recommended to include an analysis of how mental health during the COVID-19 pandemic directly and indirectly affected academic achievements. This would require a comprehensive understanding of the influence of these variables on academic performance, both in terms of direct and indirect impacts.

CONCLUSION

In conclusion, this study was significant as it provided empirical evidence to resolve the ongoing debate among scholars regarding the broad versus specific domains of quality of life and mental health across diverse academic programmes. The results provided valuable information on the nuanced relationship between quality of life and mental health within diverse academic programmes. Furthermore, the study not only validated certain specific domains within quality of life but also showed the broader impact of particular aspects. Mental health had a significant influence on students quality of life, specifically showing a stronger influence in the Preschool Education programme compared to other academic studies. The prominence of mental health's influence, particularly in the relationship with environmental factors, underlined its significance in shaping students' perceptions of environment and general well-being within educational contexts. The study also showed gender-based disparities in specific areas of quality of life as well as differences in physical health and depression between male and female students. These results were consistent with previous studies, stating how female tended to report higher levels of depression while also showing nuanced differences in perceived physical health between genders. Examination of quality of life domains in various academic programmes reflected the nuanced experiences and perceptions of students within distinct educational settings. In addition, there were significant variations in certain domains like physical health within specific programmes such as mathematics and guidance education, showing the influence of academic

environments on students' perceived health status.

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