Spirituality and Physical Health as Predictors of Mental Health Among University Students

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Abstract

This study examined the predictive influence of spirituality and physical health on depression, anxiety, and stress among undergraduate students during their first full return to face-to-face learning after the COVID-19 pandemic. Anchored on the Biopsychosocial Model, SPIRE Model, and Health Hexagonal Model, a complex correlational design was employed using multiple linear regression analysis. Data were collected from 1,760 freshmen and sophomore students enrolled in 24 academic programs at a state university in the Philippines. Three validated instruments—the DASS-21, the Spirituality Scale, and the Physical Health Questionnaire—were administered. Findings revealed that spirituality, particularly the dimension of self-discovery, was a significant protective factor against depression, anxiety, and stress. In contrast, physical health concerns such as sleep disturbances, gastrointestinal problems, and respiratory infections were substantial risk factors across all three psychological outcomes. These results affirm the multifaceted nature of mental wellness and highlight the importance of integrating spiritual and physical dimensions in designing context-sensitive mental health interventions for higher education. The study contributes novel insights from the Philippine context to the growing global discourse on student mental health and underscores the value of holistic, culturally grounded approaches in supporting psychological well-being in post-pandemic academic transitions.

A. Introduction

The COVID-19 pandemic triggered unprecedented disruptions globally, affecting not only economic systems but also significantly impacting public health (Giray et al., 2022; Nasukha et al., 2023; Yusaini et al., 2024). One particularly alarming consequence has been the sharp rise in mental health concerns. Rahlin et al. (2024) documented a notable decline in mental health alongside economic instability, emphasizing how the pandemic amplified vulnerabilities in both physical and psychological well-being. Batra et al., (2021) argue that the pandemic exacerbated psychological distress, with worsening symptoms reported during periods of lockdown and prolonged isolation (Gundogan, 2022). As the world gradually transitioned into the post-pandemic phase, mental health emerged as a critical public health priority—particularly among vulnerable populations such as university students. But just how widespread are conditions like depression, anxiety, and stress in this demographic?

Multiple studies have attempted to quantify this burden. Dessauvagie et al., (2022), in a review of 34 studies on Southeast Asian undergraduate students, found a median point prevalence of depression at 29.4%. Batra et al. (2021) extended this finding globally, reporting a 31.2% pooled prevalence of depression among students across 15 countries. Similarly, Deng et al. (2023), through a meta-analysis of 191 studies involving children and adolescents, observed a 31% pooled prevalence of depressive symptoms. Anxiety also emerged as a pressing concern, with studies identifying its rising prevalence among students worldwide (Ahmed et al., 2023; Liu et al., 2023). This increase was further intensified by the pandemic, which catalyzed widespread psychological uncertainty (Tan et al., 2023). For stress, Gundogan (2022) attributed its surge to pandemic-related disruptions, with prevalence rates among students ranging between 16% and 26% (Dessauvagie et al., 2022; Batra et al., 2021).

In response to these concerns, various theoretical frameworks have attempted to explain the complex nature of mental health. The Biopsychosocial Model (Engel, 1977) underscores the interaction of biological,

psychological, and social factors, including spirituality and environmental context. More recent models, such as the Biopsychosociotechnical Model (Card, 2023), the SPIRE Model (Ben-Shahar, 2021), and the Health Hexagonal Model (Chan & Hazan, 2022), adopt a more holistic view of mental wellness. These models incorporate aspects of spirituality, physical health, relational dynamics, and life purpose—advancing the argument that mental well-being is not merely the absence of illness but a state of comprehensive personal harmony.

Within this integrative framework, spirituality has been consistently highlighted as a protective factor against mental health issues. Spirituality refers not only to religious practices but also to an individual's search for meaning, purpose, and connection to something greater than the self. Several studies support this assertion: Visser and Law-van Wyk (2021) noted the role of spiritual well-being in reducing emotional difficulties, while Di et al., (2023) linked higher levels of religious and spiritual commitment to lower psychological distress. Furthermore, spirituality has been shown to foster positive coping strategies, emotional regulation, and cognitive reappraisal (Sirrine et al., 2023; Najafi et al., 2022), especially among undergraduate students navigating the developmental challenges of young adulthood (Duche Pérez et al., 2023; Lucchetti et al., 2021). Spiritual engagement provides internal resources that are especially valuable in times of uncertainty, such as the pandemic and its aftermath.

In parallel, physical health remains an equally important component of mental wellness. Poor physical health, including sleep disturbances, chronic fatigue, and unhealthy lifestyle behaviors, has been linked to heightened levels of psychological distress (Doan et al., 2023; Jansen et al., 2022). Physical health issues may not only exacerbate emotional dysregulation but also undermine students' capacity to cope with academic and social demands. Conversely, empirical evidence from Bell et al., (2019) and Mahindru et al., (2023) shows that regular physical activity improves mood, regulates biological stress responses, and enhances cognitive resilience. These benefits are particularly pronounced during adolescence

and young adulthood, a period characterized by physiological and neurological sensitivity to stress. Yet, as White et al., (2024) noted, physical health's role is multifaceted and often mediated by psychological and social variables—suggesting a complex, bidirectional relationship between body and mind. This calls for greater attention to how somatic symptoms such as sleep disturbances, headaches, and gastrointestinal issues may serve as both symptoms and predictors of mental health problems.

Despite this growing body of research, notable gaps persist. Most existing studies were conducted before or during the height of the pandemic and often did not focus on the intersection between spirituality and physical health in predicting depression, anxiety, and stress. Furthermore, many studies isolate these variables rather than exploring how they jointly influence mental wellness outcomes. Additionally, few investigations have targeted freshmen and sophomore university students, a subgroup particularly vulnerable due to the simultaneous academic, developmental, and post-pandemic transitions they face. While existing studies acknowledge the impact of physical activity and the protective role of spiritual practices, they often overlook the broader dimensions of physical health (e.g., somatic symptoms) and spiritual well-being (e.g., self-discovery, relationships, and eco-awareness).

Context-specific research is needed to address these gaps, particularly in low- and middle-income countries where mental health resources may be limited and where cultural perceptions of wellness differ significantly from Western models. In the Philippine context, for instance, spirituality and religious values are deeply embedded in cultural identity, making them potentially powerful resources for psychological resilience. Yet, few empirical studies have explored how these cultural strengths intersect with health-related behaviors to influence mental health outcomes among higher-education students.

Thus, the present study seeks to fill these gaps by examining how spirituality and physical health jointly influence psychological distress—

specifically depression, anxiety, and stress—among freshmen and sophomore university students in the Philippines. Grounded in integrative wellness models and guided by empirical insights, the study aims to provide culturally relevant and developmentally appropriate recommendations for mental health interventions in higher education. In doing so, it contributes to a growing global discourse on holistic approaches to student wellness and offers practical insights for designing mental health programs that align with students' lived experiences in a post-pandemic world.

B. Method

This study employed a complex correlational research design to examine the influence of spirituality and physical health on the levels of depression, anxiety, and stress among freshmen and sophomore undergraduate students. The choice of this design allowed for the investigation of predictive relationships between multiple independent variables and psychological outcomes in a natural educational setting. Specifically, multiple linear regression analysis was conducted to assess the degree to which spirituality and physical health contributed to the variance in depression, anxiety, and stress scores. Prior to conducting regression analysis, standard statistical assumptions—including normality, linearity, multicollinearity, and independence of errors—were carefully evaluated and met. Complementary to the inferential analysis, descriptive statistics were also employed to provide an overview of the distribution and central tendencies of the variables under study. Data analysis was carried out using JASP version 0.16.4.0.

The participants consisted of 1,760 undergraduate students enrolled at a state university in the Philippines during the first semester of the academic year 2023–2024. These participants, representing 24 academic programs, were selected during the first return to full face-to-face classes after the COVID-19 pandemic, providing a timely and contextually relevant perspective on their mental health experiences. The sample had a mean age of 19.02 years (SD = 1.36) and included 952 females, 770 males, and 38 individuals who did not disclose their sex. The study adopted a total

population approach, ensuring broad representation across disciplines and minimizing sampling bias.

Three validated self-report instruments were used in this study. The first was the Depression, Anxiety, and Stress Scale (DASS-21), developed by Lovibond and Lovibond (1995), which includes three subscales, each composed of seven items. The instrument assesses symptoms of dysphoria, hopelessness, anxiety, irritability, and related constructs and is grounded in a dimensional understanding of mental health. In this study, the DASS-21 demonstrated high internal consistency with a Cronbach's alpha of 0.88. The second instrument was the Spirituality Scale (SS) developed by Delaney (2005), comprising 23 items measuring self-discovery, relationships, and eco-awareness as facets of spirituality. The internal reliability for this scale in the current study was acceptable, with a Cronbach's alpha of 0.71. The third instrument was the Physical Health Questionnaire (PHQ), a 14-item tool adapted from Schat et al., (2005) and based on the original work by Spence et al. (1987). This scale measures four physical health dimensions: sleep disturbances, headaches, gastrointestinal problems, and respiratory infections, and achieved a Cronbach's alpha of 0.69 in the present study.

All instruments were administered in person in a supervised setting during the early weeks of the semester, ensuring that students had already begun adapting to the return to face-to-face learning. The administration process lasted approximately 15 minutes and was conducted with appropriate ethical oversight. Ethical clearance was secured from the Institutional Ethics Review Committee of the university, which approved the protocol covering the study's objectives, participants, procedures, and instruments. All participants were informed of the voluntary nature of their participation, assured of the confidentiality of their responses, and provided informed consent prior to data collection.

C. Results and Discussion

In order to understand the psychological well-being of undergraduate students in the context of post-pandemic higher education,

this study analyzed the influence of two important predictors—spirituality and physical health—on the levels of depression, anxiety, and stress. Drawing from validated theoretical frameworks and employing multiple linear regression analysis, the study aimed to identify significant predictors and explain the extent to which these variables account for mental health outcomes among freshmen and sophomore students. The results are presented in two main sections: first, the statistical findings that describe the participants' experiences and the influence of each variable, and second, a discussion of these findings in relation to existing literature, highlighting key insights and implications.

1. Results

The present study investigated spirituality and physical health as predictors of depression, anxiety, and stress, particularly among 1,760 undergraduate students. Predictors were based on existing multifaceted mental wellness models. Responses were analyzed via descriptive statistics and multiple linear regression.

Table 1. Descriptive statistics of the scales and subscales used in the study

	N	M	SD	Min.	Max.
Depression Scale	1760	21.28	8.90	0.00	42.00
Anxiety Scale	1760	23.48	8.44	2.00	44.00
Stress Scale	1760	22.57	7.71	4.00	42.00
Spirituality Scale	1760	103.32	14.03	55.00	132.00
Self-discovery	1760	17.66	3.50	5.00	24.00
Relationships	1760	30.21	4.06	9.00	36.00
Eco-awareness	1760	55.45	8.65	27.00	72.00
Physical Health Questionnaire	1760	53.64	12.49	20.00	87.00
Sleep Disturbances	1760	15.89	4.26	4.00	28.00
Headaches	1760	14.25	4.25	3.00	21.00
Gastrointestinal Problems	1760	13.86	5.15	4.00	28.00
Respiratory Infections	1760	9.64	3.49	3.00	21.00

Table 1 presents the descriptive statistics. As can be observed from the subscales of DASS-21, the Anxiety Scale had the highest mean (M = 23.48). Using the conventional severity labels provided by Lovibond and

Lovibond (1995), as a group, severe depression, extremely severe anxiety, and moderate stress were experienced. The Depression Scale also registered the most varied responses (SD = 8.90).

Regarding the SS, a mean of 103.32 with a standard deviation of 14.03 was observed. Its subscale mean scores ranged from 17.66 to 55.45, with standard deviations from 3.50 to 8.65. Comparisons cannot be made among the subscales of the SS because of the unequal number of items. The Self-discovery Subscale has four items, the Relationships Subscale has six items, and the Eco-awareness Subscale has 13 items.

As for the PHQ, a mean of 53.64 with a standard deviation of 12.49 was observed. As to its subscales, mean scores ranged from 9.64 to 15.89, with standard deviations ranging from 3.49 to 5.15. Similar to the SS, comparisons cannot be made because of the unequal number of items. The Sleep Disturbances Subscale has four items, the Headaches Subscale has three items, the Gastrointestinal Problems Subscale has four items, and the Respiratory Infections Subscale has three items.

Seven assumptions of multiple linear regression were tested. Normality and concerns for outliers were examined in the predictors (spirituality and physical health), together with the outcome variables (depression, anxiety, and stress). Skewness and kurtosis values were all in the normal range. The variable boxplots and histograms also revealed the absence of outliers. It was observed that relationships appeared linear and without concerns for heteroscedasticity through the use of scatterplots. Also, residual plots showed normal distribution and a weak correlation ($r = 0.05$) between the two predictors. Variance Inflation Factors for the models were all below 5, and Tolerance statistics were above 0.20, indicating non-substantial concerns with multicollinearity. The models all had acceptable independence of errors (Durbin-Watson = 1.82 for depression, 1.84 for anxiety, and 1.84 for stress), all within the acceptable range of 1.5-2.5.

Table 2. Multiple linear regression with spirituality
and physical health as predictors of depression

Predictors	β	P
Spirituality	-0.23	<.00
Physical Health	0.34	<.00

Notes: R^2 = 0.16, F (2,1757) = 165.13

Table 2 shows the result of the multiple linear regression with spirituality and physical health serving as predictors of depression. Total scores from the scales were used. The result indicates that the predictors explained 16% of the variance (R^2 = 0.16, F (2,1757) = 165.13, p < .00). Thus, spirituality and physical health were predictors of depression when controlling for the other predictors. It was further revealed that spirituality significantly and negatively influenced depression (β = -0.23, p < .00). A point increase in spirituality was a 0.23 decrease in depression. Concerning physical health, it positively and significantly influenced depression (β = 0.34, p < .00). A point increase in physical health was a 0.34 increase in depression. The subscales of the PHQ are physical health concerns.

Table 3. Multiple linear regression with spirituality subscales as predictors of depression

Predictors	B	P
Self-discovery	-0.26	<.00
Relationships	-0.04	0.24
Eco-awareness	0.01	0.69

Notes: R^2 = 0.07, F (3,1756) = 46.31

Multiple linear regression using the subscales of the SS was also performed. As can be observed, the result of the regression analysis indicated that the predictors explained 7% of the variance (R^2 = 0.07, F (3,1756) = 46.31, p < .00). Collectively, the predictors explained depression by 7%, and the remaining percentage can be explained by other predictors not investigated in the present study. It was further revealed that among the subscales of SS, only self-discovery significantly and negatively influenced depression (β = -0.26, p < .00). A point increase in self-discovery was a 0.26 decrease in depression.

Table 4. Multiple linear regression with physical health subscales
as predictors of depression

Predictors	β	p
Sleep Disturbances	0.24	<.00
Headaches	0.00	0.87
Gastrointestinal Problems	0.06	0.03
Respiratory Infections	0.16	<.00

Notes: $R^2 = 0.13$, $F (4,1755) = 66.11$

Furthermore, similar to the SS, multiple linear regression was performed using the subscales of the PHQ. Table 4 shows the results of the regression analysis; it indicated that the predictors explained 13% of the variance ($R^2 = 0.13$, $F (4,1755) = 66.11$, $p < .00$). Collectively, the predictors explained depression by 13%, and the remaining percentage can be explained by other predictors not investigated. Specifically, sleep disturbances ($\beta = 0.24$, $p < .00$), gastrointestinal problems ($\beta = 0.06$, $p < .03$), and respiratory infections ($\beta = 0.16$, $p < .00$) significantly and positively influenced depression. A point increase in sleep disturbance was a 0.24 increase in depression, a point increase in gastrointestinal problems was a 0.06 increase in depression, and a point increase in respiratory infections was a 0.16 increase in depression.

Table 5. Multiple linear regression with spirituality
and physical health as predictors of anxiety

Predictors	β	P
Spirituality	-0.02	0.32
Physical Health	0.41	<.00

Notes: $R^2 = 0.16$, $F (2,1757) = 171.62$

Table 5 shows the results of the multiple linear regression. Total scores from the scales were used. It indicated that the predictors explained 16% of the variance ($R^2 = 0.16$, $F (2,1757) = 171.62$, $p < .00$). Thus, spirituality and physical health were predictors of anxiety when controlling for the other predictors. It was further revealed that only physical health positively and significantly influenced anxiety ($\beta = 0.41$, $p < .00$). A point increase in the physical health total score was a 0.41 increase in anxiety. The subscales of the PHQ are physical health concerns.

Table 6. Multiple linear regression with spirituality subscales as predictors of anxiety

Predictors	β	P
Self-discovery	-0.13	<.00
Relationships	0.04	0.25
Eco-awareness	0.07	0.03

Notes: $R^2 = 0.01$, $F (3,1756) = 6.69$

Table 6 presents the multiple linear regression analysis using spirituality subscales as predictors of anxiety. The results indicate that the predictors explained only 1% of the variance ($R^2 = 0.01$, $F (3,1756) = 6.69$, $p < .00$). Thus, the predictors explained anxiety by only 1%, and the remaining percentage can be explained by other predictors not investigated. Self-discovery significantly and negatively influenced anxiety ($\beta = -0.13$, $p < .00$). A point increase in self-discovery was a 0.13 decrease in anxiety. Also, eco-awareness significantly and positively influenced anxiety ($\beta = 0.07$, $p < 0.05$). A point increase in eco-awareness was a 0.07 increase in anxiety.

Table 7. Multiple linear regression with physical health subscales as predictors of anxiety

Predictors	β	p
Sleep Disturbances	0.18	<.00
Headaches	0.16	<.00
Gastrointestinal Problems	0.14	<.00
Respiratory Infections	0.09	<.00

Notes: $R^2 = 0.17$, $F (4,1755) = 87.06$

Table 7 shows that the predictors explained 17% of the variance ($R^2 = 0.17$, $F (4,1755) = 87.06$, $p < .00$). Collectively, the predictors explained anxiety by 17%, and the remaining percentage can be explained by other predictors not investigated. Also, all four subscales of the PHQ significantly and positively influenced anxiety. A point increase in sleep disturbances was a 0.18 increase in anxiety; a point increase in headache was a 0.16 increase in anxiety; a point increase in gastrointestinal problems was a 0.14 increase in anxiety; and a point increase in respiratory infections was a 0.09 increase in anxiety.

*Table 8. Multiple linear regression with spirituality
and physical health as predictors of stress*

Predictors	B	P
Spirituality	-0.08	<.00
Physical Health	0.40	<.00

Notes: $R^2 = 0.16$, F (2,1757) = 169.60

Table 8 shows that the predictors explained 16% of the variance ($R^2 = 0.16$, F (2,1757) = 169.60, p < .00). Total scores were used. The predictors explained stress by 16%, and the remaining percentage can be explained by other predictors not investigated. Thus, spirituality and physical health were predictors of stress when controlling for the other predictors. It was further revealed that both spirituality ($\beta = -0.08$, p < .00) and physical health ($\beta = 0.40$, p < .00) significantly influenced stress. A point increase in spirituality was a 0.08 decrease in stress, while a point increase in physical health was a 0.40 increase in stress. The subscales of the PHQ are physical health concerns — as measured by the PHQ subscales — were strongly associated with increased stress levels. This underscores the relevance of somatic symptoms in understanding psychological distress.

Table 9. Multiple linear regression with spirituality subscales as predictors of stress

Predictors	β	P
Self-discovery	-0.19	<.00
Relationships	0.02	0.50
Eco-awareness	0.06	0.05

Notes: $R^2 = 0.02$, F (3,1756) = 14.26

Table 9 shows the result of the multiple linear regression. It indicates that the predictors explained only 2% of the variance ($R^2 = 0.02$, F (3,1756) = 14.26, p < .00). Collectively, the predictors explained stress by only 2%, and the remaining percentage can be explained by other predictors. Self-discovery significantly and negatively influenced stress ($\beta = -0.19$, p < .00). A point increase in self-discovery was a 0.19 decrease in stress. Also, eco-awareness positively and significantly influenced stress, with a point increase in eco-awareness resulting in a 0.06 increase in stress, possibly

indicating that greater awareness of environmental issues may be linked to increased emotional concern or anxiety about ecological threats.

Table 10. Multiple linear regression with physical health subscales as predictors of stress

Predictors	β	P
Sleep Disturbances	0.19	<.00
Headaches	0.11	<.00
Gastrointestinal Problems	0.12	<.00
Respiratory Infections	0.13	<.00

Notes: R^2 = 0.16, F (4,1755) = 82.70

Table 10 shows that the predictors explained 16% of the variance (R^2 = 0.16, F (4,1755) = 82.70, p < .00). Collectively, the predictors explained stress by 16%, and the remaining percentage can be explained by other predictors. Also, all four subscales of the PHQ significantly and positively influenced stress. A point increase in sleep disturbances was a 0.19 increase in stress; a point increase in headaches was a 0.11 increase in stress; a point increase in gastrointestinal problems was a 0.12 increase in stress; and a point increase in respiratory infections was a 0.13 increase in stress.

2. Discussion

The hypothesis of the present study was anchored on the Biopsychosocial Model (Engel, 1977), the SPIRE Model (Ben-Shahar, 2021), and the Health Hexagonal Model (Chan & Hazan, 2022; Azizah et al., 2024), all recognizing that mental wellness was multifaceted with spirituality and physical health included. These are the essential results that merit emphasis:

First, the experience of severe depression, extremely severe anxiety, and moderate stress was comparable to previous studies among undergraduate students. For example, moderate (Alhemedi et al., 2023), moderate to severe (Lee et al., 2021; Huda & Salem, 2022), and 70% mild to severe depression (Wickramasinghe et al., 2023) were all documented. Also, moderate to severe anxiety and stress have been noted (Lee et al., 2021). However, DASS-21 was not used in previous studies. Additionally, the

present study was conducted in the first semester of the school year 2023-24, the first face-to-face classes after the pandemic. With the participants being freshmen and sophomore undergraduate students, many adjustments to college and full face-to-face classes have been experienced.

Second, regarding depression, it had the most varied intensity (SD = 8.90) in the present study. Based on previous studies, variables like sex, academic performance, poverty (Choychoda, 2023), age (Souza et al., 2023), experience of loneliness, bullying, smoking, and familial concerns (Singh et al., 2023; Yang et al., 2023) were contributing factors to depression. Moreover, spirituality (β = -0.23, p < .00) has been identified as a significant predictor of depression according to previous studies (e.g., Duche Pérez et al., 2023; Leung, 2023; Lucchetti et al., 2021; Najafi et al., 2022; Ozcan et al., 2021; Visser & Law-van Wyk, 2021). In particular, 49% of 138 studies reviewed revealed religiosity/ spirituality influenced a decrease in depression (Braam & Koenig, 2019). Also, spiritual well-being is negatively associated with depression (Leung & Pong, 2021). One possible explanation is that beliefs can be used to cope with distress (Lucchetti et al., 2021). Higher levels of spiritual commitment also equate to higher levels of well-being, resulting in lower levels of psychological distress (Di et al., 2023).

The negative and significant influence of self-discovery on depression (β = -0.26, *p* = <.00) can be explained by its description. According to Delaney (2005), self-discovery is a journey of inner reflection and search for meaning and purpose. Personal and demographic variables like age, gender, culture, and ethnicity majorly influence spirituality. The age of the participants, together with their Filipino background, all played significant influences.

With physical health significantly influencing depression (β = 0.34, p < .00), previous studies have established a physical and mental health connection. For example, Doan et al. (2023) found that a point improvement or decline in physical health scores resulted in an increase or decrease in mental health scores. Additionally, there were health-related variables like physical activity (Bell et al., 2019; Huang et al., 2023;

Mahindru et al., 2023; Pengpid & Peltzer, 2018; Rodríguez-Romo et al., 2022; Tamminen et al., 2020) and sleep (Du et al., 2021; Hutchesson et al., 2023) that influenced mental health. Thus, physical health concerns can be attributed to unhealthy choices. A correlation between unhealthy lifestyle behaviors and depression has been established (Zhang et al., 2023), while Wei et al. (2024) found a negative relationship between physical exercise and depressive mood.

Specifically, the significant influence of sleep disturbances (β = 0.24, p < .00), gastrointestinal problems (β = 0.06, p < .03), and respiratory infections (β = 0.16, p < .00) on depression can be explained by the fact that frequent experience of these concerns may lead to dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest or involvement, anhedonia, and inertia, which the Depression Scale of Lovibond and Lovibond (1995) measured.

Third, regarding anxiety, it was revealed to be the most intensely experienced (extremely severe) and was comparable with extant literature. For example, Ahmed et al. (2023) claimed that it was a common mental health concern, with high prevalence among undergraduate students worldwide. Also, Tan et al. (2023) believed that its pervasiveness was a critical concern in higher education institutions.

As to physical health concerns significantly influencing anxiety (β = 0.41, p < .00), the study by Zhang et al. (2023) found that unhealthy lifestyle behaviors were related to anxiety symptoms. The frequent experience of sleep disturbances, headaches, gastrointestinal problems, and respiratory infections can lead to situational anxiety and subjective experience of anxious affect, which were all measured by the Anxiety Scale of Lovibond and Lovibond (1995). Although not investigated in the present study, physical activity can protect against anxiety. The meta-analysis by Lin and Gao (2023) found that physical activity interventions were effective against anxiety among undergraduate students, with aerobic exercises being the most optimal.

With self-discovery (β = -0.13, p < .00) and eco-awareness (β = 0.07, p < 0.05) significantly influencing anxiety, it must be noted that self-discovery

refers to a journey starting with reflection and the search for meaning. In contrast, eco-awareness is the highest level of spirituality and encompasses awareness and the interconnectedness of life (Delaney, 2005). With 19.02 as the mean age of the participants, self-discovery was more relatable to their age compared to eco-awareness. As found in the study of MahdiNejad et al. (2021), a significant relationship between age and spirituality existed through cognitive neuroscience, with older ages reaching spirituality sooner. Specifically, alpha and theta brain signals increased in the 30 to 35 age range, while the increase was slower in the 20 to 29 age range.

Fourth, as to stress, both spirituality (β = -0.08, p < .00) and physical health concerns (β = 0.40, p < .00) were identified as predictors. It must be noted that the present study's participants were undergraduate freshmen and sophomore students. It was safe to assume that they were bombarded with a lot of stressors not only from academic activities but also from the transition to college and the transition to full face-to-face classes. Based on extant literature, examinations, inadequate time to study, low grades, extensive learning content, and the need to perform well in examinations (Paudel et al., 2023) were all sources of stress. However, it is important to note that spiritually healthy individuals suffer less from stress (Leung & Pong, 2021; Najafi et al., 2022). With self-discovery (β = -0.19, p < .00) and eco-awareness (β = 0.06, p < .05) being significant predictors of stress but with opposing influences, again, this may be attributed to the impact of age on spirituality as highlighted in the study of Mahdi Nejad et al. (2021).

Physical health concerns (sleep disturbances, headaches, gastrointestinal problems, and respiratory infections) all significantly influence the experience of stress; again, this can be attributed to the description of the Stress Scale by Lovibond and Lovibond (1995). To be specific, the scale measures difficulty relaxing, nervous arousal, and being easily upset, agitated, irritable, overreactive, and impatient, which can all be experienced during frequent physical health concerns. Also, the importance of physical activity needs to be highlighted again. As found in the study of Hachenberger et al. (2023), physical activity was negatively

associated with stress, and stress experience had negative effects moderated by physical activity.

Taken together, the results lead to the need for intervention. While mental health research and monitoring are important, interventions are equally important (Deng et al., 2023). Raccanello et al. (2023) believed that mental health concerns merit due attention, especially after a pandemic. Measures like school closures, social distancing, and lockdowns were put into place primarily to prevent the spread of infections, but the combined effects of these measures led, in some cases, to the development of depression, anxiety, post-traumatic stress disorder, and psychological distress. Interventions may focus on early detection (Dessauvagie et al., 2022; Souza et al., 2023), treatments (Souza et al., 2023), scaling up of counseling facilities, addressing mental health stigmas (Dessauvagie et al., 2022), sensitization, prevention, education (Bazargan et al., 2023; Dessauvagie et al., 2022; Singh et al., 2023; Siregar et al., 2024), review of school-based mental health programs, and policies (Barendse et al., 2023; Dessauvagie et al., 2022; Singh et al., 2023).

Using the results of the present study, contextualized mental health programs can include the development of supplementary modules on spirituality and physical health, which can be discussed in relevant courses. Also, spirituality and physical health concerns can be explored in detail during counseling sessions. Furthermore, informational materials on spirituality and physical health can be developed and distributed to students in order to create awareness and appreciation.

The implications of the present study extend beyond the local context and contribute meaningfully to the global discourse on student mental health in higher education. As emphasized in prior international research, depression, anxiety, and stress among undergraduate students are not isolated phenomena but are experienced across different regions and educational systems (Ahmed et al., 2023; Lee et al., 2021; Wickramasinghe et al., 2023). The findings that spirituality and physical health significantly influence psychological well-being align with global studies highlighting

the importance of holistic approaches in student support systems (Duche Pérez et al., 2023; Leung, 2023; Mahindru et al., 2023; Qorib & Afandi, 2024). Particularly in the wake of the COVID-19 pandemic, when students worldwide have faced disruptions in learning, social isolation, and psychological distress, this study underscores the need for culturally adaptable and context-sensitive mental health interventions. Programs that integrate spiritual development and promote physical well-being have the potential to be tailored across various cultural settings, supporting global mental health efforts as suggested by researchers such as Deng et al. (2023) and Dessauvagie et al. (2022). Thus, the present study affirms existing global findings and offers context-specific insights from the Philippine setting that can inform broader policy frameworks and intervention strategies in other countries navigating similar post-pandemic transitions.

Ultimately, the data in the present study were collected entirely using self-report measures and may have captured perceptions and subjective experiences. Also, with 1,760 freshmen and sophomore undergraduate participants from a state university in the Philippines, results cannot be easily generalized to all undergraduate students, especially those enrolled in private institutions whose concerns might differ. However, it must be noted that efforts were exerted to ensure the reliability and validity of results, like using existing models as guides, choosing relevant scales, face-to-face scale administration, using statistical procedures, and extant literature to support the claims. That is why, despite the limitations, it still contributed to identifying protective factors. The focus on spirituality and physical health concerns is its main contribution to the pool of knowledge.

D. Conclusion

In this study, the findings affirm the multifaceted nature of mental wellness as described by existing biopsychosocial and holistic health models, underscoring the significant role of spirituality—particularly self-discovery—as well as specific physical health concerns in predicting depression, anxiety, and stress. These results provide valuable insight into the protective and risk

factors experienced by students undergoing transitional challenges in higher education, especially in the aftermath of the COVID-19 pandemic. More importantly, they support the integration of spiritual and physical health dimensions in developing context-sensitive mental health interventions.

The study contributes to a growing body of international literature promoting holistic, culturally relevant, and developmentally appropriate strategies for addressing student mental well-being. Future research may build on these findings by incorporating intellectual, emotional, and relational variables and employing mixed-method or longitudinal approaches. Doing so would offer a more comprehensive understanding of how complex and interconnected domains of student life shape mental health.

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