

INTERNATIONAL JOURNAL OF
EDUCATION, PSYCHOLOGY
AND COUNSELLING
(IJEPC)

www.ijepec.com



**MENTAL HEALTH, RELIGIOSITY, AND RELIGIOUS COPING:
A CROSS-SECTIONAL STUDY AMONG MEDICAL AND
HEALTH SCIENCES STUDENTS**

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Article Info:

Article history:

Received date: 17.10.2024
Revised date: 11.11.2024
Accepted date: 24.12.2024
Published date: 31.12.2024

To cite this document:

Sukeri, N. S., Mazzuki, N. F. A., Abdullah, M. I., Jaffer, U., Kadri, N. M., Nassir, C. M. N. C. M. (2024). Mental Health, Religiosity, And Religious Coping: A Cross-Sectional Study Among Medical And Health Sciences Students. *International Journal of Education, Psychology and Counseling*, 9 (56), 882-896.

Abstract:

This study aims to investigate the relationship between mental health, as measured by the Depression, Anxiety, and Stress Scale (DASS-21), and religiosity among university students in east coast Peninsular Malaysia. A total of 484 students, predominantly from medical and health sciences programs, were examined to understand how religious beliefs and practices, measured using the Duke University Religion Index (DUREL) and the brief scale of religious coping (RCOPE), influence levels of depression, anxiety, and stress. The findings reveal significant associations between religiosity and mental health indicators. Higher levels of religiosity were associated with lower levels of depression, anxiety, and stress. Positive religious coping was linked to higher anxiety and stress, while its impact on depression was not significant. Negative religious coping was significantly associated with higher levels of depression, anxiety, and stress. These results suggest that religiosity can serve as both a protective factor and a source of stress, depending on the coping mechanisms employed. The study highlights the importance of culturally sensitive mental health interventions that incorporate an understanding of religious contexts. The nuanced effects of religious involvement on mental health underscore the need for targeted strategies to support the psychological

DOI: 10.35631/IJEPC.956054

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well-being of students, emphasizing holistic approaches in university health programs. This research contributes to the broader discourse on mental health and religiosity, offering valuable insights for educators, mental health professionals, and policymakers in multicultural settings.

Keywords:

Mental Health, Depression, Anxiety, Stress, Religion, Coping

Introduction

Mental health challenges among university students have become a critical concern worldwide, with increasing rates of depression, anxiety, and stress reported across various academic settings (Asif et al., 2020; Auerbach et al., 2016). These psychological issues not only affect students' academic performance and overall well-being but also have long-term implications for their professional and personal lives. The interplay between mental health and socio-demographic factors, including religion and religiosity, remains an area that requires deeper exploration (Vaingankar et al., 2021; Eisenberg et al., 2007), particularly in multicultural societies like Malaysia.

Religion and spirituality have long been recognised as influential factors in mental health, providing individuals with a sense of purpose, community support, and coping mechanisms during times of stress (Aggarwal et al., 2023; Ozcan et al., 2021; Koenig, 2012). However, the impact of religious beliefs and practices on mental health is complex and multifaceted. While some studies suggest that religiosity can serve as a protective factor against mental health issues, others indicate that it can also contribute to psychological distress, especially when religious expectations and practices become sources of stress (Pastwa-Wojciechowska et al., 2021; Pargament et al., 2011; Smith et al., 2003).

In Malaysia, a country characterized by its diverse religious landscape, understanding the relationship between religiosity and mental health is particularly pertinent. The predominant religion, Islam, along with other faiths such as Buddhism, Christianity, Hinduism, and traditional Chinese religions, shape the cultural and social dynamics of the population (Department of Statistics Malaysia, 2020). Our study focuses on university students, a group particularly vulnerable to mental health issues due to academic pressures, transitional life stages, and the unique stressors associated with higher education (Campbell et al., 2022; Reavley & Jorm, 2010; Bayram & Bilgel, 2008). Hence, the primary objective of this research is to investigate the relationship between mental health indicators, specifically depression, anxiety, and stress as measured by the DASS-21 scale, and religious affiliation among university students in Malaysia. This study aims to identify whether religious beliefs and practices serve as protective factors or stressors for mental health, considering the socio-demographic context of the students.

Moreover, despite the well-documented general relationship between religiosity and mental health, there is a paucity of research examining this interplay within the context of Malaysian university students. Given the unique cultural and religious composition of Malaysia, it is crucial to explore how different religious affiliations influence mental health outcomes in this population. Previous studies have highlighted the significant role of religiosity in shaping mental health, but the specific mechanisms through which religion impacts depression, anxiety,

and stress among students in Malaysia remain understudied (Abdel-Khalek & Tekke, 2019; Krauss et al., 2006).

Understanding the relationship between religiosity and mental health in Malaysian university students is vital for several reasons. First, it can inform the development of culturally sensitive mental health interventions that consider the religious and spiritual needs of students. Second, it provides insights into the potential protective or detrimental effects of religious practices on mental health, which can guide university policies and support services. Lastly, this research contributes to the broader discourse on the role of religion in mental health, offering valuable implications for educators, mental health professionals, and policymakers working in multicultural and multi-religious settings (Koenig et al., 2012).

Thus, this study seeks to fill the gap in the existing literature by providing a nuanced understanding of how religiosity impacts the mental health of university students in Malaysia. By examining the associations between religious affiliation and mental health indicators, this research aims to identify key factors that can enhance or hinder psychological well-being in this population, ultimately contributing to more effective and culturally appropriate mental health strategies.

Methodology

Study Design

This cross-sectional study was designed to comprehensively analyse the interplay between socio-demographic factors, mental health, and religiosity among medical and health sciences students. By using a combination of self-report questionnaires, the study aims to capture a detailed picture of how these variables interact within the student population at universities across East Coast Peninsular Malaysia.

Study Population

The study population comprised undergraduate students enrolled in medical and health sciences programs at universities across East Coast Peninsular Malaysia. Inclusion criteria included students who were currently registered and actively attending courses, aged between 18 and 25 years, and who provided informed consent. Exclusion criteria included students with a history of neurological or psychiatric disorders, substance abuse, or any condition that could significantly impact cognitive function and mental health.

Sample Size Determination

Using G*Power Software version 3.1.9.7, using a t-test for linear multiple regression (one tail) the required sample size was calculated based on an effect size (f^2) of 0.02, a significance level of $p < 0.05$, and a power ($1 - \beta$ error probability) of 95%, number of predictors of 5 resulting in a total sample size of 543 students. However, after considering 10% of drop out we obtained the total number of students, $N = 488$. A purposive sampling method was employed to select participants from the medical and health sciences faculties. Finally, after successful recruitment, 4 students decided to withdraw from participating, making the final sample size of $N = 484$.

Data Collection Instruments and Procedures

Participants were recruited through announcements and email invitations. Informed consent was obtained from all participants. Permission was obtained from the instrument formulators to use their instruments and inventories. The items were digitized, and the language was made more applicable to the Malaysian context. Data was collected online using Google Forms. Data collection was set to ensure that only the individuals willing to participate would be allowed to, according to inclusion and exclusion criteria and has read and understood the informed consent as well instructions for the study and were willing to proceed.

Socio-Demographic and Clinical Proforma Data

This self-report questionnaire collected data on age, gender, socio-economic status, family background, and other relevant socio-demographic variables.

DASS-21 (Depression, Anxiety, and Stress) Assessment

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) was used to measure participants' levels of depression, anxiety, and stress. It is a set of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and stress experienced by normal subjects and clinical populations are essentially differences in degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

Students' Religiosity Assessment

To measure the religiosity among students the Duke University Religion Index (DUREL) inventory was used (Koenig et al., 1997). It is a 5-item measure which delineates three areas of religiosity i.e., organized religious activity (ORA), non-organized religious activity (NORA) and intrinsic religiosity (IR) (Koenig et al., 1997). ORA refers to communal religious activities e.g., attending public places of worship and religious activities. NORA refers to religious activities conducted in a personal manner, e.g., private scripture reading, and personal prayer time. IR assesses the degree of personal religious commitment and motivation.

DUREL has high test-retest reliability = 0.91, high internal consistency $\alpha = 0.78-0.91$, and high convergent validity with other measures of religiosity $r = 0.71-0.86$ (Koenig & Büsling, 2010). The DUREL was translated into the Malay language as the DUREL-M (Duke Religious Index Malay Version) and has been validated in the Malaysian population. The translated version had a good internal reliability of 0.8 (Nurasikin et al., 2010). It scores between a range of 5-27. Sample of items are:

- No. 1 (ORA): “*How often do you attend church or other religious meetings?*”, scaled-answer: 1 - Never; 2 - Once a year or less; 3 - A few times a year; 4 - A few times a month; 5 - Once a week; 6 - More than once/week.
- No. 4 (IR): “*My religious beliefs are what really lie behind my whole approach to life*”, scaled-answer: 1- Definitely not true; 2 - Tends not to be true; 3 - Unsure; 4 - Tends to be true; 5 - Definitely true of me.

Students’ Religious Coping Assessment

A brief scale of religious coping (RCOPE) (Pargament et al., 2011) was used to assess students’ religious coping. It consists of 14 items with seven positive coping (P-RCOPE) items and seven negative coping (N-RCOPE) items to assess the role of religion in coping with various dimensions of life. It consists of positive and negative coping methods. P-RCOPE includes a positive relationship with God as a means of coping and involves praying, meditating, and reflecting on God to help when there is distress. N-RCOPE occurs when God is blamed for misfortune and believes the trauma or challenges being faced is a punishment from God (Pargament et al., 2011).

In terms of internal consistency, this measure is $\alpha = 0.92$ (median) for P-RCOPE and $\alpha = 0.81$ (median) for N-RCOPE. There was also good concurrent validity, predictive validity, and incremental validity (Pargament et al., 2011). This scale was translated into the Malay language with a Cronbach’s alpha of 0.87 for P-RCOPE and 0.88 for N-RCOPE (Yusoff et al., 2009). Some sample items for P-RCOPE are:

- “*Looked for a stronger connection with God*”
- “*Focused on religion to stop worrying about my problems*”

The RCOPE is generally rated on a four-point Likert scale ranging from 0 (“not at all”) to 3 (“a great deal”) and the scores for positive and negative are summed up to give an overall score (Pargament et al., 2011).

Statistical Data Analysis

The collected data were analysed using Statistical Package for Social Sciences (SPSS) software version 26 and SPSS Modeler version 18 (IBM Corp., Armonk, NY, USA). An alpha (α) was set at 0.05 with a confidence interval (CI) at 95%. Descriptive statistical analysis, such as mean, standard deviation, chi-square, and analysis of variance (ANOVA) was applied to the data. The analyses were adjusted for covariates.

Ethical Considerations

The study protocol was reviewed and approved by the Universiti Sultan Zainal Abidin Human Research Ethics Committee (UHREC). This study has been assigned a study protocol code (UniSZA/UHREC/2023/590). All participants provided written informed consent, and their data were anonymized to ensure confidentiality. Participants were informed of their right to withdraw from the study at any time without penalty.

Results

Students' Depression, Anxiety, and Stress (DASS-21) Profiles

Table 1 outlines the depression, anxiety, and stress profiles of 484 students using the DASS-21 scoring system. This profile indicates varying levels of depression, anxiety, and stress among students, with a significant portion experiencing extreme levels of anxiety (mean score: 10.26 ± 7.88 , followed by depression (mean score: 9.69 ± 8.39), and stress (mean score: 11.32 ± 7.79).

Table 1: Students' Depression, Anxiety, and Stress (DASS-21) Profile

| DASS-21 Scoring | Frequency, n (%) | | |
|------------------|------------------|------------|------------|
| | Depression | Anxiety | Stress |
| Normal | 177 (36.6) | 104 (21.5) | 149 (30.8) |
| Mild | 30 (6.2) | 42 (8.7) | 53 (11) |
| Moderate | 84 (17.4) | 46 (9.5) | 89 (18.4) |
| Severe | 51 (10.5) | 48 (9.9) | 91 (18.8) |
| Extremely Severe | 142 (29.3) | 244 (50.4) | 102 (21.1) |

Socio-demographic Profiles

Table 2 provides a summary of the sociodemographic profiles of 484 students with an average age: of 21.26 years with a standard deviation of 3.07. Gender distribution shows 17.8% male, 80.2% female, and 2.1% undisclosed. Ethnicity is predominantly Malay (92.8%), followed by Chinese (1.7%), Indian (2.5%), and other ethnicities (3.1%). Most students are followers of Islam (95.2%), with minor representations from Buddhism, Taoism, Hinduism, Sikhism, and other religions. Nearly all students (98.6%) are non-smokers, with a few ex-smokers and a single light smoker. Most are single (97.3%), with a minimal number married or undisclosed. Academic programs vary, with significant numbers in medical and health sciences, nursing, pharmacy, dietetics, biomedical sciences, nutrition sciences, medical imaging, and allied health sciences. Students are primarily in their first year (43.4%), with decreasing numbers in higher years.

Moreover, most students fall into normal stress ($n = 149$, 30.7%) and depressive ($n = 177$, 36.5%) levels. However, an alarmingly 244 (50.4%) students had extremely severe anxiety across different programs. Besides, the chi-square analysis also revealed significant associations between ethnicity and anxiety [X^2 (df): 27.89 (12); $p = 0.00 \leq 0.05$], ethnicity and stress [X^2 (df): 21.29 (12); $p = 0.00 \leq 0.05$], religion and anxiety [X^2 (df): 45.18 (20); $p = 0.00 \leq 0.05$], religion and stress [X^2 (df): 32.34 (20); $p = 0.00 \leq 0.05$]. Additionally, spousal status is also associated with anxiety [X^2 (df): 17.76 (8); $p = 0.00 \leq 0.05$]. Based on Figure 1, students from medical and health sciences, and the nursing program recorded the highest number of severe and extremely severe stress, anxiety, and depression, followed by students from the pharmacy program. Pearson chi-square revealed there is a significant association between the type of undergraduate program with stress level [X^2 (df): 66.66 (36); $p = 0.001 \leq 0.05$] and depression level [X^2 (df): 57.85 (36); $p = 0.012 \leq 0.05$], but not with anxiety level. Finally, DASS-21 scores are not associated with other students' sociodemographic profiles and clinical proforma.

Table 1: Students' Sociodemographic Profiles and Association With DASS-21 Scales

| Socio-demography Variables | Frequency, n (%) | Chi-Square; X^2 (df) | | |
|----------------------------|------------------|------------------------|--------------|--------------|
| | | Depression | Anxiety | Stress |
| Age** | 21.26 ± 3.07 | 53.49 (40) | 41.38 (40) | 40.33 (40) |
| Gender | | | | |
| Male | 86 (17.8) | | | |
| Female | 388 (80.2) | 4.08 (8) | 8.52 (8) | 10.88 (8) |
| Undisclosed | 10 (2.1) | | | |
| Ethnicity | | | | |
| Malay | 449 (92.8) | | | |
| Chinese | 8 (1.7) | 10.67 (12) | 27.89 (12) * | 21.28 (12) * |
| Indian | 12 (2.5) | | | |
| Other | 15 (3.1) | | | |
| Religion | | | | |
| Islam | 461 (95.2) | | | |
| Buddhism | 4 (0.8) | 21.37 (20) | 45.18 (20) * | 32.34 (20) * |
| Taoism | 1 (0.2) | | | |
| Hinduism | 13 (2.7) | | | |
| Sikhism | 3 (0.6) | | | |
| Others | 2 (0.4) | | | |
| Smoking Status | | | | |
| Non-smoker | 477 (98.6) | 4.69 (8) | 13.35 (8) | 14.14 (8) |
| Ex-smoker | 6 (1.2) | | | |
| Light smoker | 1 (0.2) | | | |
| Spousal Status | | | | |
| Single | 471 (97.3) | 6.87 (8) | 17.76 (8) * | 7.83 (8) |
| Married | 2 (0.4) | | | |
| Undisclosed | 11 (2.3) | | | |
| Program | | | | |
| MBBS | 48 (9.9) | | | |
| Medical & Health Sc. | 105 (21.7) | | | |
| Nursing | 90 (18.6) | | | |
| Dentistry | 5 (1.0) | 57.84 (36) * | 46.18 (36) | 66.66 (36) * |
| Pharmacy | 53 (11) | | | |
| Dietetics | 50 (10.3) | | | |
| Biomedical sciences | 29 (6) | | | |
| Nutrition sciences | 46 (9.5) | | | |
| Medical imaging | 36 (7.4) | | | |
| Allied Health sciences | 22 (4.5) | | | |
| Level of Study | | | | |
| Year 1 | 210 (43.4) | | | |
| Year 2 | 130 (26.9) | 21.09 (160) | 24.79 (16) | 26.11 (16) |
| Year 3 | 111 (22.9) | | | |
| Year 4 | 32 (6.6) | | | |
| Year 5 | 1 (0.2) | | | |

Notes: N = 484, data values are presented as number of subjects (n), with percentage (%) in parentheses; ** Data are means ± standard deviations. Light smoker (≤ 10 per day). * The level of significance which is selected at $\alpha = 0.05$ (2-tailed)

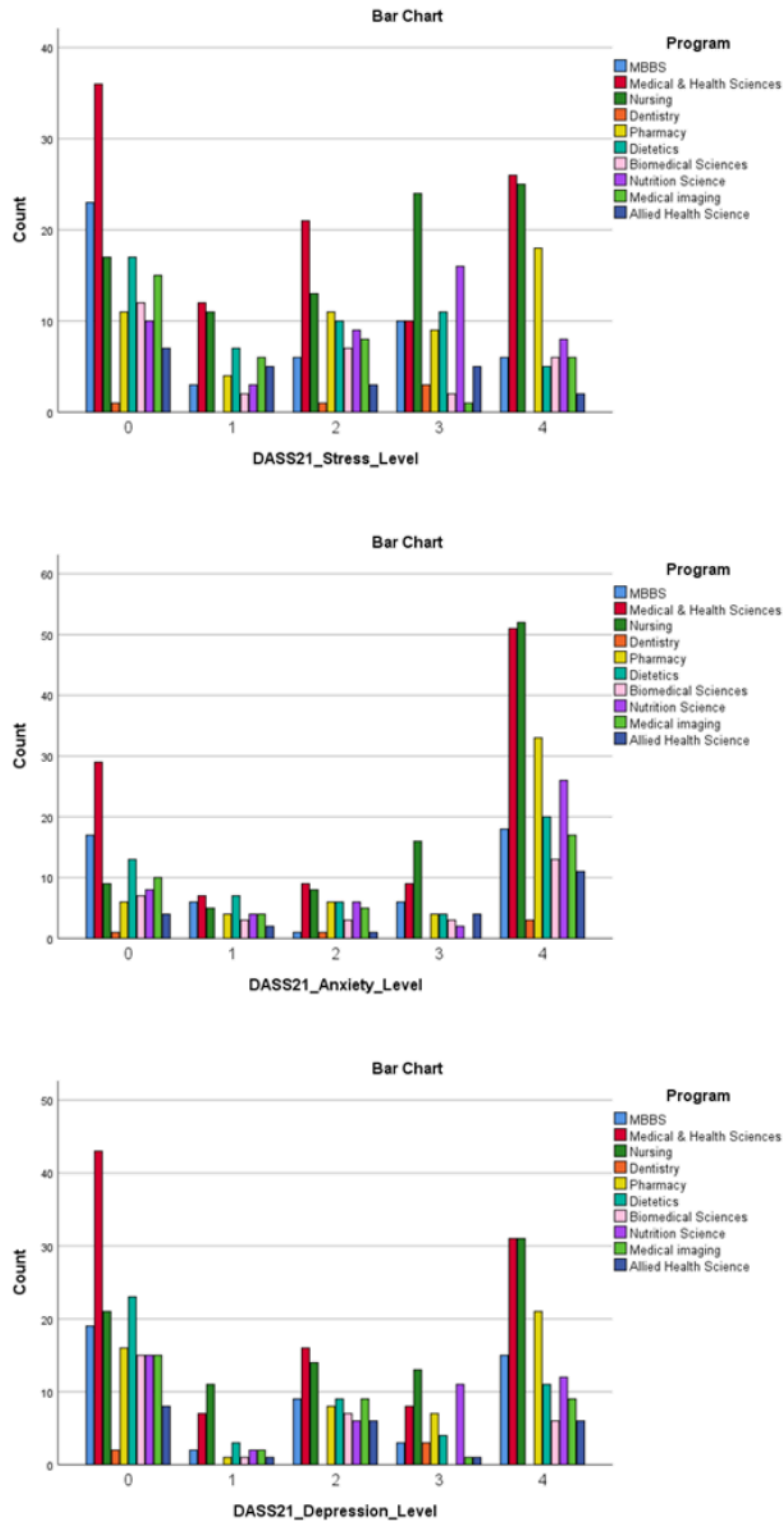


Figure 1: Bar Chart Indicating Stress, Anxiety, And Depression Levels Among Students From Each Program. Notes: 0: Normal; 1: Mild; 2: Moderate; 3; Severe; 4: Extremely Severe.

Relationship Between DASS-21 and Religiosity and Religious Coping

Table 3 represents the results of a multiple linear regression analysis exploring the relationships between stress, anxiety, and depression (measured by DASS-21) and three independent variables: positive religious coping (P-RCOPE), negative religious coping (N-RCOPE), and religiosity (DUREL).

Positive religious coping (P-RCOPE) is positively associated with stress, anxiety, and depression, but the association with depression is not significant. Negative religious coping (N-RCOPE) is positively associated with stress, anxiety, and depression, with significant relationships across all three dependent variables. Religiosity (measured by DUREL) is negatively associated with stress, anxiety, and depression, indicating that higher levels of religiosity are associated with lower levels of these mental health issues. This relationship is significant for all three dependent variables. The R^2 values indicate that the independent variables explain a modest proportion of the variance in stress, anxiety, and depression.

Table 3: Multiple Linear Regression of Relationship Between DASS-21, Religiosity and Religious Coping

| Dependent variables | Independent variables | Std. Coefficient Beta (β) |
|--|---|-----------------------------------|
| DASS-21 Stress (y) | Constant | 16.190 |
| | P-RCOPE x_1 | 0.442 * |
| | N-RCOPE x_2 | 0.414 * |
| | DUREL x_3 | -0.843 * |
| R^2 | 0.116 | |
| Adjusted R^2 | 0.111 | |
| Regression equation | $\hat{y} = 16.19 + 0.442 x_1 + 0.414 x_2 - 0.843 x_3$ | |
| DASS-21 Anxiety | Constant | 12.690 |
| | P-RCOPE x_1 | 0.347 * |
| | N-RCOPE x_2 | 0.448 * |
| | DUREL x_3 | -0.642 * |
| R^2 | 0.08 | |
| Adjusted R^2 | 0.08 | |
| Regression equation | $\hat{y} = 12.69 + 0.347 x_1 + 0.448 x_2 - 0.642 x_3$ | |
| DASS-21 Depression | Constant | 20.387 |
| | P-RCOPE x_1 | 0.175 |
| | N-RCOPE x_2 | 0.644 * |
| | DUREL x_3 | -0.873 * |
| R^2 | 0.162 | |
| Adjusted R^2 | 0.156 | |
| Regression equation | $\hat{y} = 16.19 + 0.644 x_2 - 0.873 x_3$ | |

Note: * significant levels, $p < 0.05$

The Mediating Role of RCOPE in The Association Between Religiosity and DASS-21

The mediating variables investigated were religious (positive and negative) coping i.e., the P-RCOPE and N-RCOPE. Regression analysis using a percentile bootstrap estimation approach with 10000 samples (Shrout & Bolger, 2002), implemented with the PROCESS Macro Version 4.1 (Hayes, 2022, model 4) was used to investigate the mediating role of religious coping (P-RCOPE and N-RCOPE) on the relationship between religiosity mental health i.e., in term of

DASS-21 score (as per depression, anxiety, and stress). The mediating results are tabulated in Table 4.

Table 4: Summary of Religious Coping Mediation in Religiosity and DASS-21

| Relationship | Total Effect | Direct Effect | Indirect Effect | CI at 95% | | T-Statistic |
|------------------------------------|--------------|---------------|-----------------|-----------|-------|-------------|
| | | | | Lower | Upper | |
| DASS-21 Stress | | | | | | |
| Religiosity → P-RCOPE → Stress | -0.55 (0.00) | -0.88 (0.00) | 0.336 | 0.161 | 0.510 | -5.43 |
| Religiosity → N-RCOPE → Stress | -0.55 (0.00) | -0.55 (0.00) | -0.005 | -0.050 | 0.033 | -5.47 |
| DASS-21 Anxiety | | | | | | |
| Religiosity → P-RCOPE → Anxiety | -0.41 (0.00) | -0.68 (0.00) | 0.275 | 0.100 | 0.460 | -3.98 |
| Religiosity → N-RCOPE → Anxiety | -0.41 (0.00) | -0.41 (0.00) | -0.005 | -0.052 | 0.034 | -3.98 |
| DASS-21 Depression | | | | | | |
| Religiosity → P-RCOPE → Depression | -0.76 (0.00) | -9.40 (0.00) | 0.177 | -0.019 | 0.363 | -7.14 |
| Religiosity → N-RCOPE → Depression | -0.76 (0.00) | -0.75 (0.00) | -0.007 | -0.068 | 0.047 | -7.14 |

In terms of direct path (i.e., DUREL to Stress), there is a significant negative direct effect of DUREL on stress ($F = 29.451, p < 0.001$). Higher scores on the DUREL are associated with lower stress levels. For, the mediator path (i.e., DUREL to P-RCOPE), there is a significant positive effect of DUREL on P-RCOPE ($F = 338.482, p < 0.001$). whereby, higher DUREL scores are associated with higher positive religious coping. In terms of negative religious coping (represented by N-RCOPE), for the mediator path (i.e., DUREL to N-RCOPE), there is no significant effect of DUREL on N-RCOPE, as indicated by the non-significant ($F = 0.07, p > 0.793$).

Based on Table 4, in terms of DASS-21 stress, the mediator to outcome path (i.e., P-RCOPE to stress), there is a significant positive effect of P-RCOPE on stress. Thus, higher positive religious coping is associated with higher stress levels. The indirect effect (i.e., DUREL to Stress via P-RCOPE), the indirect effect of DUREL on stress through P-RCOPE is significant (BootSE: 0.088, 95% CI: [0.161, 0.510]). This indicates that part of the effect of DUREL on stress is mediated by P-RCOPE. In summary, while higher DUREL scores directly reduce stress, they also increase positive religious coping, which in turn increases stress slightly. The overall indirect effect suggests a partial mediation, meaning that positive religious coping explains part of the relationship between DUREL and stress.

Meanwhile, for the mediator to outcome path (i.e., N-RCOPE to stress), there is a significant positive effect of N-RCOPE on stress ($F = 24.51, p < 0.001$). Whereby higher negative religious coping is associated with higher stress levels. Moreover, the indirect effect (i.e., DUREL to stress via N-RCOPE) shows that the indirect effect of DUREL on stress through N-RCOPE is not significant, as the confidence interval for the indirect effect includes zero (BootSE: 0.020, 95% CI: [-0.050, 0.033]). In summary, while higher DUREL scores directly reduce stress, the mediation effect through negative religious coping (N-RCOPE) is not significant. This indicates that negative religious coping does not mediate the relationship between DUREL and stress in this model. The overall impact of DUREL on stress remains significant and negative.

For DASS-21 anxiety, the mediator to outcome path (i.e., P-RCOPE to anxiety), there is a significant positive effect of P-RCOPE on anxiety ($F = 13.16, p < 0.001$). Hence, higher positive religious coping is associated with higher anxiety levels. The indirect effect (i.e., DUREL to anxiety via P-RCOPE) is significant (BootSE: 0.092, 95% CI: [0.100, 0.460]). This indicates that part of the effect of DUREL on anxiety is mediated by P-RCOPE. In summary, while higher DUREL scores directly reduce anxiety, they also increase positive religious coping, which in turn increases anxiety slightly. The overall indirect effect suggests a partial mediation, meaning that positive religious coping explains part of the relationship between DUREL and anxiety.

Additionally, there is a significant positive effect of N-RCOPE on anxiety ($F = 18.02, p < 0.001$). Hence, higher negative religious coping is associated with higher anxiety levels. The indirect effect of DUREL on anxiety through N-RCOPE is not significant, as the confidence interval for the indirect effect includes zero (BootSE: 0.022, 95% CI: [-0.052, 0.034]). In summary, while higher DUREL scores directly reduce anxiety, the mediation effect through negative religious coping (N-RCOPE) is not significant. This indicates that negative religious coping does not mediate the relationship between DUREL and anxiety in this model. The overall impact of DUREL on anxiety remains significant and negative.

For DASS-21 depression, there is a significant positive effect of P-RCOPE on depression ($F = 27.64, p < 0.001$). Higher positive religious coping is associated with higher depression levels. The indirect effect of DUREL on depression through P-RCOPE is not significant, as the confidence interval for the indirect effect includes zero (BootSE: 0.098, 95% CI: [-0.019, 0.363]). In summary, while higher DUREL scores directly reduce depression, they also increase positive religious coping, which in turn slightly increases depression levels. However, the indirect effect through positive religious coping is not statistically significant, indicating that positive religious coping does not mediate the relationship between DUREL and depression in this model. The overall impact of DUREL on depression remains significant and negative.

Finally, there is a significant positive effect of N-RCOPE on depression ($F = 45.29, p < 0.001$), indicating higher negative religious coping is associated with higher depression levels. Moreover, the indirect effect of DUREL on depression through N-RCOPE is not significant, as the confidence interval for the indirect effect includes zero (BootSE: 0.029, 95% CI: [-0.068, 0.047]). In summary, while higher DUREL scores directly reduce depression, the mediation effect through negative religious coping (N-RCOPE) is not significant. This indicates that negative religious coping does not mediate the relationship between DUREL and depression in this model. The overall impact of DUREL on depression remains significant and negative.

Discussion

This study explores the intricate relationship between mental health indicators—specifically depression, anxiety, and stress—and religiosity among medical and health sciences students in East Coast Peninsular Malaysia. Our findings reveal significant associations between religious affiliation and mental health outcomes, emphasizing the complex role of religiosity in influencing psychological well-being.

The results demonstrate that higher levels of religiosity, as measured by the Duke University Religion Index (DUREL), are significantly associated with lower levels of depression, anxiety, and stress. This finding aligns with existing literature suggesting that religiosity can serve as a protective factor against mental health issues by providing a sense of purpose, community support, and coping mechanisms (Aggarwal et al., 2023; Koenig et al., 2012; Pargament, 2011). Specifically, students who reported higher levels of organized and non-organized religious activities and intrinsic religiosity exhibited lower scores on the Depression Anxiety and Stress Scale (DASS-21).

Positive religious coping (P-RCOPE) showed mixed effects. While it was associated with higher levels of anxiety and stress, its impact on depression was not significant. This suggests that positive religious coping, which involves seeking comfort and guidance from a higher power, may sometimes lead to increased stress and anxiety due to heightened religious expectations or perceived inadequacies in meeting those expectations (Francis et al., 2019; Ano & Vasconcelles, 2005). The finding that positive religious coping correlates with higher anxiety and stress is particularly noteworthy. It implies that the benefits of positive religious coping may be counterbalanced by the pressure to adhere to religious norms and the fear of religious failure, which can amplify stress and anxiety (DeRossett et al., 2021; Chow et al., 2021; Rosmarin et al., 2009). This duality of religious coping highlights the need for nuanced mental health interventions that recognize both the supportive and potentially stressful aspects of religious engagement.

On the other hand, negative religious coping (N-RCOPE), characterized by feelings of punishment or abandonment by a higher power, was significantly associated with higher levels of depression, anxiety, and stress. This is consistent with previous studies indicating that maladaptive religious coping can exacerbate psychological distress (Dolan et al., 2021; King et al., 2018). The strong association between negative religious coping and adverse mental health outcomes underscores the detrimental impact of perceiving religious experiences as punitive or neglectful. This can lead to a cycle of increased psychological distress, as negative religious coping may reinforce feelings of hopelessness and helplessness, thereby worsening mental health symptoms (Abdel-Khalek & Tekke, 2019).

Thus, our findings underscore the importance of culturally sensitive mental health interventions that incorporate an understanding of religious and cultural contexts. Given the significant role of religiosity in shaping mental health outcomes, universities and mental health professionals should consider incorporating spiritual assessments and interventions into their academic and practice (Aggarwal et al., 2023; Koenig et al., 2012). For instance, promoting positive religious coping strategies while addressing maladaptive coping mechanisms can enhance psychological resilience and well-being among students. This approach can help students leverage the supportive aspects of their faith while mitigating the stress-inducing elements, ultimately fostering a more balanced and beneficial use of religious coping (Smith et al., 2003).

Moreover, the significant associations between religiosity and mental health indicators highlight the need for university policies and support services to acknowledge and accommodate the spiritual needs of students. Universities could implement programs that provide spiritual counselling and support, fostering an environment that respects and integrates diverse religious practices and beliefs. Such programs could include training counsellors on religious diversity, creating spaces for religious activities, and facilitating interfaith dialogues to promote understanding and support among students of different faith backgrounds (Koenig & Büssing, 2010).

Limitations

This study has several limitations. First, the cross-sectional design limits the ability to infer causality between religiosity and mental health outcomes. Longitudinal studies are needed to establish temporal relationships and causative links. Second, the sample is predominantly Muslim, reflecting the religious demographics of Malaysia, which may limit the generalizability of the findings to other religious groups or multicultural settings. Future research should include a more diverse sample to explore the impact of different religious affiliations on mental health. Third, the reliance on self-report measures may introduce response biases. Future studies could incorporate qualitative methods to gain deeper insights into the lived experiences of religious coping and their impact on mental health. Additionally, the study's focus on medical and health sciences students may not fully capture the experiences of students in other fields, who may face different stressors and coping mechanisms.

Future Directions

Future research should explore the mechanisms through which religiosity influences mental health. Investigating the role of religious community support, personal spirituality, and religious practices can provide a more comprehensive understanding of how religiosity impacts psychological well-being. Additionally, examining the intersection of religiosity with other socio-demographic factors such as socioeconomic status, gender, and ethnicity can offer valuable insights into the nuanced ways religion affects mental health across different populations. Longitudinal studies that follow students over time could elucidate how changes in religious beliefs and practices impact mental health throughout their academic careers.

Conclusion

This study contributes to the growing body of literature on the relationship between religiosity and mental health, particularly within the context of Malaysian university students particularly in medical and health sciences discipline in east coast Peninsular Malaysia. Our findings highlight the dual role of religiosity as both a protective factor and a potential source of stress, depending on the nature of religious coping strategies employed. By fostering a holistic approach that integrates spiritual and mental health care, we can better support the well-being of students and address the complex interplay between religiosity and mental health.

Acknowledgements

This project was supported by Universiti Sultan Zainal Abidin (UniSZA) under Dana Penyelidikan Universiti 1.0 (UNISZA/2023/DPU 1.0/15 | RD026).

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