Association Between Religiosity, Spirituality, and Depression-Anxiety Among Pharmacist Students in Indonesia

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Abstract. Students in the Pharmacist Professional Study Program (PPSP) must pass the Indonesian Pharmacist Competency Exam (UKAI) to get the title of pharmacist. They feel the burden and fear of not passing the exam, which can trigger anxiety and depression, especially in the pandemic era. Religion also provides a perspective that individuals can use to reduce their distress when faced with many stressors. The study aims to determine the relationship between religiosity and spirituality and depression and anxiety in PPSP students in Indonesia. The method used in the study is a cross-sectional design with DUREL, DSES, SAS and SDS questionnaires as the data instruments. The study was carried out in all Association of Higher Education in Indonesian Pharmacy (APTFI) regions. A cluster random sampling technique was conducted and 362 students participated. The study found that Indonesian PPSP students had mild to moderate anxiety (21%). Fortunately, the relationship between the level of spirituality, depression, and anxiety represents negative values, with a correlation R = -0.123 ($p < 0.05$) and -0.115 ($p < 0.05$), which indicates that religiosity and spirituality in PSPP students are associated with lower levels of depression and anxiety. As a consequence, developing spirituality and religiosity for PPSP students and improving mental well-being is essential.
Keyword: mental illness, pharmacists, students, religion, spirituality

1 Introduction

Globally, the Covid-19 pandemic has had a significant impact on the mental health of the general population and groups at high risk [1]. Without the pandemic itself, students often experience anxiety or even melancholy as a result of their academic obligations. In addition, pharmacy education and pharmacy training are rigorous and arduous endeavors, it has been identified as one of the health disciplines that may contribute to student academic stress. Stress has a negative impact on the mental health of students, leading to stress-related disorders, low subjective life satisfaction, and poor academic performance [2].

Depression is one of the aspects of the comprehensive investigation of mental illness within its relationship with religiosity. At least 10 to 20 million people have ever experienced depression. The lack of spirituality has often been associated with the emergence of negative behavior and psychology, one of which is depression [3]. On the other hand, A Pew Research Center survey titled 'The Global God Divide' revealed that 96% of Indonesia's population stated that faith in God is very important, required for the instillation of morality and values [4]. Another study also reported that spirituality plays an important role in the life and health of most people [5].

Indonesia has a unique geographies, a large archipelago, with multicultural and multiracial society [6]. In some provinces or cities, religions other than Islam may be the majority. In Bali, Hinduism is the dominant religion ; in North Sulawesi, Papua, and West Papua, Christianity predominates; and in East Nusa Tenggara, Catholicism predominates. Officially, only Islam, Christianity, Catholicism, Hinduism, Buddhism, and Confucianism are recognized religions [4]. When contemplating religion in a psychological context, numerous factors come into play [7]. An individual may perform various rituals in a group setting in accordance with the tenets of religion, which consist of externally manifested motivated behavior with distinct goals. Spirituality, on the other hand, is an internal endeavor that is subjective in nature, has a unique relationship with a transcendent being, and may involve spiritual experiences [8].

Previous research on the topic of religiosity and mental health focused primarily on populations with a majority of a single religion [9]. Limited studies have been conducted to assess the relationship between religiosity and spirituality in multi-religion countries. Furthermore, Students in the Pharmacist Professional Study Program (PPSP) must pass the Indonesian Pharmacist Competency Exam (UKAI) to get the title of pharmacist. They feel the burden and fear of not passing the exam, which can trigger more anxiety and depression, especially in the era of covid-19 pandemic. Therefore, study about religiosity and spirituality and the prevalence of anxiety and depression among PPSP students need to be done in Indonesia.

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The results are expected to provide an overview of the degree of relationship between the level of religiosity and spirituality with the level of anxiety and depression in students of the Pharmacist Professional Study Program in dealing with academic problems. The findings of this study can be useful to help students maintain mental health amid academic stressors and can be used as coping mechanisms for depression and anxiety in students.

2 Methods

2.1 Study design

An online survey, cross-sectional design with cluster random sampling is conducted in 40 universities that have PPSP that represent the five regions of APTFI in Indonesia. From 20 universities chosen, only twelve (12) universities gave permission to include in this study. Data was collected online using google forms that shared into university representative. Total of 367 respondents are participated in this study. The research was carried out from June until October 2020. The ethical clearance was obtained from Ethics Committee Faculty of Medicine Sultan Agung Islamic University with number 207/VII/2020/Komisi Bioetik.

2.2 Study instrument

The research uses four questionnaire instruments to measure each variable of religiosity, spirituality, anxiety, and depression. Religiosity was measured using Duke University Religion Index (DUREL) and translated into Indonesia languange by Primaningtyas in 2019 [10]. The item about Organized religious activity (ORA), non-organized religious activity (NORA) and intrinsic religiosity (IR) explanation were described in original study by Koenig in 2010[11]. In Spirituality is measured using DSES (*Daily Spiritual Experience Scale*) by Underwood in 2011 and translated into Indonesia language that called DSES-Ina by Qomarudin and Rahmah in 2019[12]. DSES is useful for measuring daily spiritual experiences that usually occur and can be aimed at someone who believes in a religion or do not. Anxiety was measured using the SAS (*Zung Self Rating Anxiety Scale*) by Zung in 1971 and translated into an Indonesian version by Setyowati in 2019 [13]. Depression was measured using the SDS (*Zung Self-Rating Depression Scale*) Indonesian version by Susanto et al in 2019 [14].

2.3 Data collection

The study made use of convenience sampling. The inclusion criteria were willingness to participate, ≥18 years of age and registration as an PSPP student, which as first taker or retaker in UKAI. The approximate time needed to complete the questionnaire estimated at around 15-20 minutes.

2.4 Data analysis

The collected data were analyzed using descriptive statistics. It summarized participant characteristics, reporting mean and standard deviation for continuous variables, while categorical variables were presented as the frequency with a corresponding percentage. Additionally, Spearman rank correlation analyses were used to examine potential correlations between religious factors and symptoms of anxiety or depression. Subsequently, result was consulted with the psychiatrist into conclusion drawing.

3 Results

In total 362 students participated in this study. Majority are female (84,8%), 17-25 years old (54,1%), have not taken UKAI or first taker (91,9%), single (95,9%), and Muslim. This study found that depression and anxiety are dominated by the young adult age group (17-25 years), woman, single and first taker of UKAI (**Table 1**).

Table 1. Demographic characteristics of the respondents

Table 1. Demographic of the Respondents				
Demographic Factor		**%**	**Depression N(%)**	**Anxiety N(%)**
Age				
17-25	233	64.4	20 (54.1)	46 (59)
26-35	123	34	16 (43.2)	32 (41)
36-45	6	1.6	1 (2.7)	0 (0)
Sex				
Male	55	15.2	6 (16.2)	9 (11.5)
Female	307	84.8	31 (83.8)	69 (88.5)
Marital Status				
Single	347	95.9	37 (100)	78 (100)
Married	15	4.1	0 (0)	0 (0)
UKAI Status				
First taker	339	93.6	34 (91.9)	70(89.7)
Retaker	23	6.4	3 (8.1)	8 (10.3)
University in 5 Region APTFI				
Andalas University	4	1,1		
STIFAR Riau	44	12.2		
UHAMKA	27	7.5		
Indonesia University	21	5,8		
Padjajaran University	50	13,8		
Jember University	33	9,1		
Hasanuddin University	26	7,2		
Halu Oleo University	12	3,3		
STIFI Perintis Padang (UPERTIS)	31	8,6		
Gadjah Mada Universi	37	10,2		
Unissula	11	3		
UMS	66	18,2		
Total	**362**	**100**	**37 (100)**	**78 (100)**

3.1 Religiousity of Pharmacist Students

This study presents that PSPP students in Indonesia have high index in religious based on DUREL scores (Mean : 23.48), with the highest score is in question "How often do you spend time (individually), example Shalat/learning holy book/Meditation (or another religious activity?)" (**Table 2**)

Table 2. DUREL Analysis

DUREL (*Duke University Religion Index*)				
No	**Question**	**M (SD)**	**Me**	**Mo**
1.	Pray/do religious activity to Mosque/Church/Monastery/ Pura/Temple (ORA)	4.38 (1.329)	4	6[a]
2.	Spend time (individually) to Shalat/learning holy book/Meditation (or another religious activity) (NORA)	5.25 (1.394)	6[b]	6
3.	In my life, I feel the presence of Allah/God/Jesus (IR1)	4.78 (0.468)	5	5
4.	My religious beliefs are what guide my daily life (IR2)	4.52 (0.675)	5	5
5.	I try my best to practice my religion in dealing with every problem in my life (IR3)	4.54 (0.609)	5	5
Total		23.48 (2.809)	24	24

3.2 Spirituality of Pharmacist Student

This study found that PSPP students in Indonesia have high index in spirituality based on DSES score. The highest score is on the statement of " I ask God for help in my daily activities", and high score in question "In general, how do you feel and how close are you to God?" with score 2,98 out of 3 (**Table 3**).

Table 3. DSES Analysis

DSES (*Daily Spiritual Experience Scale*)				
No	**Question**	**M (SD)**	**Me**	**Mo**
1.	I feel the presence of God or the Sacred Thing.	4.31 (1.4)	5	5
2.	I feel very close to life.	4.12 (1.421)	5	5
3.	During worship or other times of association with God, I feel joy and it frees me from everyday problems.	4.19 (1.46)	5	5
4.	I find strength in my religion and spirituality	4.3 (1.428)	5	5
5.	I feel comfortable in my religion and spirituality	4.43 (1,427)	5	5
6.	I feel peace and harmony inside	4.33 (1.405)	5	5
7.	I ask God for help in my daily activities.	4.56 (1.431)	5	5
8.	In my daily activities, I feel God's guidance.	4.44 (1.421)	5	5
9.	I immediately felt God's love for me (a).	4.41 (1.453)	5	5
10.	I immediately felt God's love for me (b)	4.22 (1.502)	5	5
11.	The beauty of creation touches me spiritually.	4.34 (1.420)	5	5
12.	I am thankful for my blessings/luck.	4.52 (1.407)	5	5
13.	I care about others selflessly.	4.15 (1.423)	5	5
14.	I accept other people even if they do what I think is wrong.	3.47 (1.487)	3	2
15.	I want to be close or united with God.	4.48 (1.438)	5	5
16.	In general, how do you feel and how close are you to God?	2.98 (0.795)	3[a]	3[a]
Total		67.28 (19.264)	75	78

3.3 Level of Anxiety of Pharmacist Students

The present study show that Indonesian PSPP students have mild into moderate score of anxiety, with the highest score in statement of "my hand feel dry and warm" (**Table 4).**

3.4 Level of Depression of Pharmacist Students

This study report that Indonesian PSPP students do not have - mild depression, with the highest score in "I don't want to think too long" (**Table 5**). Subsequently, this result was consulted with a psychiatrist, which conclude that Indonesian PSPP students do not have depression.

3.5 Correlation Religiousity-Spirituality with Anxiety and Depression of Pharmacist Students

This study indicates that there is a moderate positive correlation between depression and anxiety (r = 0.452**), which means that the higher the level of anxiety, the higher the level of depression. There is a weak negative correlation between depression and spirituality levels (r = -0123 *), which can be interpreted that the higher the spirituality level, the lower the level of depression. Then, there is a weak negative correlation between depression level and ORA, NORA, and IR religiosity level dimensions (r = -0.127 *, -0.166 ** and -0.216**). The results mean that the higher the religiosity level of the ORA, NORA, and IR dimensions, the lower the depression level.

Table 6 shows the correlation analysis between anxiety and spirituality shows a weak negative relationship (r = -0.115*), which can be interpreted that the higher the level of spirituality, the lower the level of anxiety. The relationship between anxiety and the dimensions level of religiosity of the ORA, NORA and IR dimensions is (r = -0.17**, 0.041, and 0.16**). It can be interpreted that anxiety is not correlated with NORA but is weakly and negatively correlated with ORA and IR. Therefore, it can be interpreted that the increasingly higher levels of religiosity (ORA and IR) make

increasingly lower levels of anxiety to decrease. The correlation between spirituality and the religiosity dimensions of ORA, NORA and IR (r = 0.056, 0.167**, and 0.321**) indicates that spirituality is not correlated with ORA, but correlated positively weak with NORA and IR. Therefore, it can be interpreted that the higher the level of religiosity (NORA and IR), the higher the level of spirituality.

Table 4. SAS Analysis

SAS *(Zung Self-rating Anxiety Scale)*				
No	**Question**	**M (SD)**	**Me**	**Mo**
1.	I feel more nervous and anxious than usual	2.31 (0.702)	2	2
2.	I have no reason to be afraid	1.96 (0.773)	2	2
3.	I am temperamental and panic easily	2.16 (0.711)	2	2
4.	I feel lonely and depressed	1.78 (0.811)	2	2
5.	I think everything is fine, nothing bad will happen	2.29 (0.832)	2	2
6.	My arms and legs were shaking	1.47 (0.636)	1	1
7.	I am bothered by headaches, neck and back pain	1.88 (0.780)	2	2
8.	I feel weak and tired	2.04 (0.760)	2	2
9.	I feel calm and can sit still	2.21 (0.859)	2	2
10.	I feel my heart pounding	1.83 (0.698)	2	2
11.	I feel dizzy	1.64 (0.668)	2	2
12.	I suddenly wanted to pass out	1.19 (0.482)	1	1
13.	I can breathe easy	1.51 (0.781)	1	1
14.	I feel numbness and tingling in my fingers and toes	1.59 (0.694)	1	1
15.	I am bothered by stomachaches or indigestion	1.89 (0.828)	2	2
16.	I often urinate	2.27 (0.874)	2	2
17.	My hands are dry and warm	3.15 (0.934)	3	4
18.	My face gets hot easily	1.55 (0.740)	1	1
19.	I fall asleep easily and sleep well	2.26 (0.940)	2	3
20	I have nightmares	1.73 (0.619)	2	2
Total		37.83 (7.272)	38	40

Table 5. SDS analysis

SDS (*Zung Self-rating Depression Index*)				
No.	**Question**	**M(SD)**	**Me**	**Mo**
1.	I feel sad and grieve	1.88 (0.608)	2	2
2.	I feel fresher in the morning	2.13 (0.712)	2	2
3.	I often mourn (cry over, regret) myself	1.96 (0.79)	2	2
4.	I have difficulty sleeping at night	2.14 (0.916)	2	2
5.	My appetite is good as usual	1.82 (0.747)	2	2
6.	I have an interest in the opposite sex	1.71 (0.836)	2	1
7.	I'm getting thin	1.79 (0.819)	2	1
8.	I have difficulty defecating	1.79 (0.757)	2	2
9.	My heart rate beats faster	1.75 (0.688)	2	2
10.	I feel tired for no reason	1.9 (0.793)	2	2
11.	My mind is as clear (clear) as ever	2.22 (0.76)	2	2
12.	I can do the things I used to do well	1.90 (0.697)	2	2
13.	I am restless and unsettled	1.93 (0.739)	2	2
14.	I am hopeful (optimistic) about my future	1.8 (0.698)	2	2
15.	I get offended quickly	2.01 (0.812)	2	2
16.	I don't want to think too long	2.57 (0.772)	3	3
17.	I feel useful and needed	2.21 (0.694)	2	2
18.	My life is full of sufficiency	1.87 (0.748)	2	2
19.	I feel like everything will be better if I die	1.4 (0.792)	1	1
20.	I can still enjoy the things I used to do	1.73 (0.713)	2	2
Total		38.50 (7.669)	38	37

Table 6. Spearman Correlation Analysis

Spearman analysis						
	ORA	**NORA**	**IR**	**S**	**Anxiety**	**Depression**
S	0.056	0.167**	0.321**	1	-0.115*	-0.123*
A	-0.17**	0.041	-0.16**	-0.115*	1	0.452**
D	-0.127*	-0.166**	-0.216**	-0.123*	0.452**	1

4 Discussion

This study was first insight about correlation of religiousity and spirituality with anxiety-depression among pharmacists students in Indonesia. This study presents that depression and anxiety are majority found in women, similarly in Malaysia and United Kingdom [15], [16]. The experience makes them more concerned with themselves, does not focus on the learning process, has a much shorter memory range, and deteriorates the emotional intelligence that affects the optimal learning process[17]. It also majority occurred in single students, similarly in Malaysia [16]. Evidence shows that

marriage produces positive mental health outcomes, such as decreasing levels of depression, anxiety, the desire to commit suicide, and drug abuse [18].

Furthermore, this study demonstrates depression and anxiety occur in most students who have not taken UKAI before. The result is similar in United States that pharmacy students who will take the NAPLEX (North American Pharmacist Licence Examination). Students can experience an increase in anxiety when they try to adjust learning habits and adjust preferences for intensity, demands, structure, and pace within the professional environment of the graduate level. Various changes and adjustments to the pharmacist's role, such as the apprentice in work activities ahead of UKAI, can result in confidence changes, an increase in insecurity, and stress within the pharmacy student [19]. However, this findings are different with some studies from Malaysia and Saudi Arabia, which reported that depression and anxiety increased as age increases. As students increase in age, they become more mature and aware of the responsibility and challenges to manage [15], [20].

This study found that the level of religiosity of pharmacy students in Indonesia is included in the high category. Based on the dimensions of ORA from DUREL, to the question "How often do you do worship/other religious activities at the mosque/church/monastery/temple ?" respondents answered "once a week" or "more than once a week" were 44.2%. In the IR dimension with the questions : "In my life, I feel the real presence of Allah/God/deity.", "My religious belief is guiding my everyday life" and "I tried as best as possible to practise the teachings of my religion in the face of every incident in my life.", respondents who answered "agree" or "very strongly agree" were amounted to 98.9%, 96.6%, and 96.9%, repectively. This findings are similar in previous research by Jacob et al in 2017 [21].

This study also indicating that the level of spirituality of pharmacy students in Indonesia is included in the category of high spirituality category even though the diversity is also high. On the final concluding question, "In general, according to your feelings, how close are you to God?" Respondents who answered "very close" or "as close as possible" are as much as 69.9%. However, this finding is contrastly with a study from United States [22]. In addition, this study interprets that most pharmacy students in Indonesia do not experience severe depression and anxiety. The highest prevalence level of depression and anxiety among PPSP students in Indonesia is 9.4% of mild depression and 21% of mild-moderate anxiety. Similarly in Malaysia [16]. However, the results is different with study in China[23].

This study demonstrates, it can be inferred that religious rituals can reduce the levels of depression and anxiety even though the association is low(r = -0.17*, -0.127*). This may be due during this pandemic, all the limitations to conducting activities outside allow students have time at home and have many opportunities to practise worship and seek tranquility [24]. Then the weak negative correlation of the level of depression with religiosity (NORA) (r = -0.166**) shows that in addition to obligatory worship activities/religious rituals, such as viewing religious lectures on social networks, giving can bring calm and reduce depression syndrome. Then religiosity (IR) in this investigation is weakly negatively correlated with anxiety and depression (r = -0.16 ** and -0.216**). The results mean that the low levels of depression and anxiety of respondents could be caused by the high intrinsic religiosity/spirituality, such as practising religion as the highest value, with an orientation towards unity with a direction of good intentions, as well as trying to practise religion and obtain peace [21].

Based on these results, it is known that high religiosity and spirituality are associated with lower levels of depression and anxiety. ORA activities such as public or privately (dhikr, prayer) are formally arranged with teaching that a general group following may increase social support, healthy behaviour, and better lifestyle and happiness. Thus, religiosity and spirituality also help face stress, fear, sadness, misery, and anger. Individuals with a degree of spirituality and religiosity that are high tend to produce better mental health and quality of life because they develop internal and external mechanisms that can help overcome the difficulties in life's journey [25]. Religious involvement is thought to prevent the development of mental disorder (or ameliorate its course) and increase mental health resiliency [7].

The study results showed a weak negative correlation between religiosity and spirituality with levels of anxiety and depression because the research population was a heterogeneous sample composed of students from various cultures and religions. Given the pluralistic and multireligious nature of the study population, the concepts and interpretations of religiosity may vary and they may embrace the concept of spirituality rather than formal religion. Although spirituality and religiosity overlap, there is a significant difference between the two constructions. Spirituality refers to a more personal and individual interpretation in search of meaning, while dogmatic and institutionalised sacred interpretations characterize religiosity. Religiosity is a multidimensional construct; the measurement scale used may not fully reflect the strength and nature of a person's involvement in religious activities. Therefore, the scale alone may not be a measure of religiosity that is adequate in the real sense [8].

An explanation of the negative relationship between religiosity and anxiety depression can be found in study by Abdel-Khalek et al. in 2019 [26], which majority respondents in this study are muslim. Based on that study, Islam religion can be considered to be coping mechanism to face problems and difficulties as well as an effective anxiety release mechanism. In Islam, several practices are available to relieve anxiety and other negative emotions, including ablution and prayer five times a day, reciting the Qur'an, remembering Allah, praying and fasting for a month each year (Ramadan)[26]. In addition to spirituality and religiosity, other factors can be related to the level of depression and anxiety, such as smoking, parent marital status, GPA, family mental disorders/treatment history,

health state, loss of someone valuable, age, ethnicity/race, religion, supportive social relationships, positive family environment and appropriate coping style to improve mental welfare[16].

Developing spirituality and religiosity for PPSP students and improving mental well-being is essential and will be helpful in work experience in the future. As a study in United Stated, which clinical pharmacist improving therapy medication through patient spiritual counseling therapy[27]. Pharmacy students can be encouraged to understand how spirituality affects patients' views, such as understanding its relationship with health care decision making. Pharmacy students will become sensitive and listen more actively to the patient when participating in the health care initiative, communicate persuasively about the specific medication intervention, give a lifetime of treatment that has implications associated with religious beliefs, and showing empathy when dealing with a varied patient population.

5 Conclusion

Presumably, this study has strength in the broad samples and first insight into religion-spirituality and mental health among pharmacists students in Indonesia. However, this study has limitations in a small sample. In conclusion, there is no depression detected in Indonesian PSPP students. Even though Indonesian PPSP students had mild to moderate anxiety, this study found a relationship between the level of spirituality, depression, and anxiety that represents negative values. Indicate that religiosity and spirituality in PSPP students are associated with lower levels of depression and anxiety. This finding suggests that improvements can be made through the competencies or curriculum of the pharmacist profession in Indonesian institutions that teach the importance of religiosity and spirituality and identify stressors and coping mechanisms that can be done to cope with anxiety and depression. Most importantly, students understand the importance of mental health and the impact that can be caused in the future.

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References

1. S. Pappa, J. Chen, J. Barnett, A. Chang, R. K. Dong, W. Xu, A. Yin, B. Z. Chen, A. Y. Delios, R. Z. Chen, S. Miller, X. Wan, and S. X. Zhang, “A systematic review and meta-analysis of the mental health symptoms during the Covid-19 pandemic in Southeast Asia,” *Psychiatry Clin. Neurosci.*, vol. 76, no. 2, pp. 41–50, 2022, doi: 10.1111/pcn.13306.
2. O. Article, “Impact of Religiosity on Subjective Life Satisfaction and Perceived Academic Stress in Undergraduate Pharmacy Students,” pp. 192–198, 2018, doi: 10.4103/jpbs.JPBS.
3. S. Kasen, P. Wickramaratne, M. J. Gameroff, and M. M. Weissman, “Religiosity and resilience in persons at high risk for major depression,” *Psychol. Med.*, vol. 42, no. 3, pp. 509–519, 2012, doi: 10.1017/S0033291711001516.
4. R. Ardi, D. H. Tobing, G. N. Agustina, A. F. Iswahyudi, and D. Budiarti, “Religious schema and tolerance towards alienated groups in Indonesia,” *Heliyon*, vol. 7, no. 7, p. e07603, 2021, doi: 10.1016/j.heliyon.2021.e07603.
5. P. Gavaza, B. M. Rawal, and E. Johnston, “Exploratory Research in Clinical and Social Pharmacy Pharmacy students ’ perceived barriers to spiritual care : A qualitative study,” *Explor. Res. Clin. Soc. Pharm.*, vol. 9, no. May 2022, p. 100246, 2023, doi: 10.1016/j.rcsop.2023.100246.
6. H. Surendra, D. Paramita, N. N. Arista, A. I. Putri, A. A. Siregar, E. Puspaningrum, L. Rosylin, D. Gardera, M. Girianna, and I. R. F. Elyazar, “Geographical variations and district-level factors associated with COVID-19 mortality in Indonesia: a nationwide ecological study,” *BMC Public Health*, vol. 23, no. 1, pp. 1–12, 2023, doi: 10.1186/s12889-023-15015-0.
7. H. G. Koenig, F. Al-Zaben, and T. J. VanderWeele, “Religion and psychiatry: recent developments in research,” *BJPsych Adv.*, vol. 26, no. 5, pp. 262–272, 2020, doi: 10.1192/bja.2019.81.
8. B. Francis, J. S. Gill, N. Y. Han, C. F. Petrus, F. L. Azhar, Z. A. Sabki, M. A. Said, K. O. Hui, N. C. Guan, and A. H. Sulaiman, “Religious Coping , Religiosity , Depression and Anxiety among Medical Students in a Multi-Religious Setting,” pp. 1–13, 2019, doi: 10.3390/ijerph16020259.
9. N. Upadhayay, “Clinical training in medical students during preclinical years in the skill lab,” *Adv. Med. Educ. Pract.*, vol. 8, 2017, doi: 10.2147/AMEP.S130367.
10. W. PRIMANINGTYAS, A. A. A. K. A. N. PUTRI, and H. HASTUTI, “Body Image and Religiosity in Adolescents: a Comparation Between Public and Private High School Students,” *Smart Med. J.*, vol. 2, no. 2, p. 98, 2020, doi: 10.13057/smj.v2i2.35672.
11. R. M. Bonelli and H. G. Koenig, “Mental Disorders, Religion and Spirituality 1990 to 2010: A Systematic Evidence-Based Review,” *J. Relig. Health*, vol. 52, no. 2, pp. 657–673, 2013, doi: 10.1007/s10943-013-9691-4.
12. M. bagus Qomarrudin;Rahmah Indawati, “Spiritual everyday experience of religious people,” *J. Int. Dent. Med. Res.*, vol. 2, no. 2, pp. 827–834, 2019.
13. A. Setyowati, M. H. Chung, and A. Yusuf, “Development of self-report assessment tool

for anxiety among adolescents: Indonesian version of the zung self-rating anxiety scale," *J. Public Health Africa*, vol. 10, no. S1, pp. 3–6, 2019, doi: 10.4081/jphia.2019.1172.

14. T. D. Susanto, "Validity and Reliability of Indonesian Languages Version of Zung Self-Rating Depression Scale Questionnaire for Pulmonary Tuberculosis Patients," *Indian J. Public Heal. Res. Dev.*, vol. 10, no. 12, pp. 2023–2027, 2019, doi: https://doi.org/10.37506/v10%2Fi12%2F2019%2Fijphrd%2F192171.
15. U. Jaffer, C. M. Nasril, R. A. Osman, A. L. A. Razak, N. Allie, M. A. Ahmed, M. A. Jalaludin, and N. M. Kadri, "The Mediating Roles of Religious and Spiritual Coping between Religiosity, Spirituality, and Depression among Medical and Health Science Students," *Eur. J. Mol. Clin. Med.*, vol. 9, no. 8, pp. 1209–1223, 2022, [Online]. Available: https://www.embase.com/search/results?subaction=viewrecord&id=L2021958906&from=export
16. N. S. M. Yusof, Z. A. Zainal, H. Huri, Sabrina, A. Jacob, M. N. Alwi, Y. Hassan, R. Hashim, I. A. Wahab, A. Y. A. Nasiruddin, N. A. Jamludin, Amelah, M. A. Qader, S. A. Hisham, N. Jamil, C. Shin, Chee, and L. Ghazali, "Prevalence of depression among undergraduate pharmacy students in Malaysia," *Int. J. Pharm. Res.*, vol. 12, no. 3, pp. 2033–2042, 2020, doi: 10.31838/ijpr/2020.12.03.282.
17. S. Mirawdali, H. Morrissey, and P. Ball, "Academic anxiety and its effects on academic performance," *Int. J. Curr. Res.*, vol. 10, no. 6, pp. 70017–70026, 2018, [Online]. Available: https://www.journalcra.com/sites/default/files/issue-pdf/30653.pdf
18. G. G. Gan and Y. L. Hue, "Anxiety, depression and quality of life of medical students in Malaysia," *Med. J. Malaysia*, vol. 74, no. 1, pp. 57–61, 2019.
19. C. A. Spivey, M. A. Chisholm-Burns, and J. L. Johnson, "Factors associated with student pharmacists' academic progression and performance on the national licensure examination," *Am. J. Pharm. Educ.*, vol. 84, no. 2, pp. 269–276, 2020, doi: 10.5688/ajpe7561.
20. S. Samreen, N. A. Siddiqui, and R. A. Mothana, "Prevalence of anxiety and associated factors among pharmacy students in Saudi Arabia: A cross-sectional study," *Biomed Res. Int.*, vol. 2020, 2020, doi: 10.1155/2020/2436538.
21. B. Jacob, A. White, and A. Shogbon, "First-year student pharmacists' spirituality and perceptions regarding the role of spirituality in pharmacy education," *Am. J. Pharm. Educ.*, vol. 81, no. 6, pp. 1–7, 2017, doi: 10.5688/ajpe816108.
22. B. Jacob, T. Huynh, A. White, A. S. Nwaesei, R. Lorys, W. Barker, J. Hall, L. Bush, and W. L. Allen, "Pharmacy and nursing students' perceptions regarding the role of spirituality in professional education and practice," *Am. J. Pharm. Educ.*, vol. 84, no. 9, pp. 1218–1225, 2020, doi: 10.5688/ajpe7777.
23. R. Shao, P. He, B. Ling, L. Tan, L. Xu, Y. Hou, L. Kong, and Y. Yang, "Prevalence of depression and anxiety and correlations between depression, anxiety, family functioning, social support and coping styles among Chinese medical students," *BMC Psychol.*, vol. 8, no. 1, pp. 1–19, 2020, doi: 10.1186/s40359-020-00402-8.
24. I. Rammouz, L. Lahlou, Z. Salehddine, O. Eloumary, H. Laaraj, and M. Ouhamou, "symptoms among nursing and medical students during the middle stage of the COVID- pandemic : A cross-sectional study in Morocco".
25. L. M. Vitorino, G. Lucchetti, F. C. Leão, H. Vallada, and M. F. P. Peres, "The association between spirituality and religiousness and mental health," *Sci. Rep.*, vol. 8, no. 1, pp. 1–9, 2018, doi: 10.1038/s41598-018-35380-w.
26. A. M. Abdel-Khalek, L. Nuño, J. Gómez-Benito, and D. Lester, "The Relationship Between Religiosity and Anxiety: A Meta-analysis," *J. Relig. Health*, vol. 58, no. 5, pp. 1847–1856, 2019, doi: 10.1007/s10943-019-00881-z.
27. L. C. Ilechukwu, A. A. Sewagegn, and A. N. Amedu, "Intervention for depression among undergraduate religious education students," no. September, pp. 1–5, 2022.