

RELIGIOSITY AND MEANING IN LIFE AS FACTORS ASSOCIATED WITH RESILIENCE AND PERCEIVED STRESS IN HEALTH SCIENCES STUDENTS*

Kremena MINEVA¹

Abstract

The study aimed to examine the impact of aspects of religiosity and meaning of life on resilience and perceived stress in health sciences students. The study was conducted with 227 Bulgarian undergraduates. The instruments used were Perceived Stress Scale (PSS), Brief Multidimensional Measure of Religiosity and Spirituality (BMMRS), Brief Resilience Scale (BRS) and Meaning of Life Questionnaire (MLQ). Analyses showed that meaning in life and organizational religiousness positively predicted resilience. Positive religious coping performed as a positive predictor of perceived stress, whereas the presence of meaning in life acted as its negative predictor. Resilience fully mediated the relationship between organizational religiousness and perceived stress, and it partially mediated the relationship between meaning in life and perceived stress. Findings indicated that meaning in life and participation in organized religious practices are protective factors that strengthen students' ability to positively adapt to daily stress, address the resilience as a mechanism through which these factors lead to more positive appraisals of stress as well as shows the tendency to cope with stress through the transcendent source as unfavorable to subjective perception on stress. Practical implications of the findings and directions for future research were discussed.

Key words: Adaptation, Medical education, Meaning, Stress.

1. Introduction

Education in the health sciences is considered one of the most academically and emotionally demanding training programs (Quek *et al.*, 2019). High competitiveness, training in a hospital environment and increasing responsibilities are among the challenges faced by medical students, exposing them to more intense stress compared to students in other specialties (Khazir, Jambarsang, Abbasi-Shavazi, 2019). This in turn leads to difficulties in interacting with patients, poor

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¹Chief-assistant Professor, PhD, Department of Medical psychology, Medical Faculty, Trakia University, Bulgaria, e-mail address: kremena.mineva@trakia-uni.bg, ORCID ID: <https://orcid.org/0000-0002-6470-8708>

academic performance, and a high prevalence of stress-related disorders among them worldwide (Quek *et al.*, 2019). Resilience to stress is therefore of paramount importance for this group of students. Although there is not yet full consensus in the literature, resilience tends to be conceptualized not as a personality trait, but as a process by which good mental health is maintained during times of stress, with levels returning to or even increasing to those prior to the experience of stress (Métais *et al.*, 2022). In support of this conceptualization, a recent study in a sample of the general Romanian population aged between 23 and 68 years showed that trait resilience not only did not buffer the negative effects of stress on health, but actually increased them due to a more rapid depletion of personal resources (Chiracu, 2019). However, resilience as a dynamic process implies factors that determine and maintain it, enabling a person to better cope with stress. Research in recent decade emphasized meaning-based resources in relation to achieving resilience, much of which focused on religiosity as a system of religious meaning.

Religiosity is seen as both an internal relationship with the sacred and a formal, institutional and external expression of that relationship, usually operationalized through beliefs and practices within a particular religious worldview and community (Pargament *et al.*, 2013). According to a systematic review of 454 studies about the relationship between religiosity and stress, religiosity performed as a resource for boosting resilience in the majority of them (Koenig, 2012). Another systematic review with a meta-analysis of 34 studies found a moderate positive correlation between religiosity and resilience (Schwalm *et al.*, 2022). Other research found a positive correlation between religiosity and resilience to intense stress among undergraduate students (Edara *et al.*, 2021), but some studies found no significant correlation and no significant effect of religiosity in predicting resilience during extreme stress (Eldred, 2020; Gan, Wong, Jiao, 2023).

In the literature, religiosity is considered a multidimensional construct, the number of dimensions of which are not well defined and are usually measured empirically through religious practices, religious beliefs, religious coping and religious support. Research over the past three decades, confirmed the positive role of religious coping in adapting to difficult life situations (e.g. Pargament *et al.*, 2013). Religious coping can be attributed to seeking religious support and adopting a perception about positive interaction with a higher power – i.e. positive religious coping (PRC) or dissatisfaction with the relationship with a higher power and religious community, and seeing negative events as God's punishment - i.e. negative religious coping (NRC) (Pargament *et al.*, 2013). It was found that more frequent use of PRC and less frequent use of NRC predicted higher resilience among people dealing with the stress because of chronic illness (Brito, Seidl, 2019; Ramírez *et al.*, 2022). In college students, PRC correlated positively with their resilience, whereas NRC showed any significant associations (Somos, 2020). In contrast, a study of 317 participants aged 19 to 60 years, including university students, found that NRC but not PRC was significantly negatively associated with resilience (Surzykiewicz *et al.*, 2022). Moreover, through reduced resilience, NRC impaired functioning and

increased psychological distress in 688 healthy individuals aged 20 to 68 years (Konaszewski *et al.*, 2023).

Other aspects of religiosity with established links to resilience are religious beliefs and practices. For example, religious beliefs were positively correlated with resilience among university students, increasing their cognitive and emotional resources to cope with uncertainty under extreme stress (Edara *et al.*, 2021) and reducing distress, according to a meta-analysis of 13 articles with 5620 respondents (Forouhari *et al.*, 2019). Religious practices also increased resilience among members of a religious community (Williams, 2022), as collective practices had a greater effect than individual practices, regardless of age (Chen, Kim, VanderWeele, 2021).

Another meaning-based construct associated with resilience is meaning in life (MIL). According to a study of university students, religious belief increased MIL and through it also predicted adaptation to stress and positive mental health (You, Lim, 2019). However, MIL may function as a general meaning construct independent of religiosity, referring to the assessment of one's life as coherent, having a sense of purpose or mission, and meaningful (Steger *et al.*, 2006). Such an evaluation of one's personal life seems to be related to recovery from stress and the reduction of its negative consequences. For example, a meta-analytic review of 108 articles with a total of 76,892 participants found that MIL was negatively correlated with less distress during adversity (He *et al.*, 2023) and directly predicted less current psychological distress in medical students (Seidel, Daniels, Ostafin, 2023; Trzebiński, Cabański, Czarnecka, 2020; Pino, Cunegatti, D'Angelo, 2022). The presence of MIL in students was positively correlated with their resilience to intense stress (Mohammed, Sebastian, 2022), prospectively and positively predicted it longitudinally (Arslan, Yildirim 2021) and cross-sectionally (Rasheed, Fatima, Tariq, 2022; Karataş, Tagay 2021).

In addition to the ability to adapt to stress, religiosity and MIL are related to subjective perceptions of stressors. MIL predicted lower perceived stress levels (Li, Wong, Chao, 2019; Humphrey, Vari, 2021; Hashemikamangar, Afshari, 2022), and a similar predictive effect was found for the use of PRC during extreme stress (Mahamid, Bdier, 2021). However, the relationships between other indicators of religiosity and perceived stress among college students are inconsistent. For example, research showed that collective religious practices were negatively correlated with perceived stress (Aftab *et al.*, 2018), but others found that both collective and individual practices, as well as religious beliefs, were associated with lower levels of perceived stress (Himcinschi, Buzgar, Pintea, 2022), or that religious beliefs, but not religious practices, were correlated with stress in college students (Banazadeh *et al.*, 2019). Other authors found that indicators of religiosity did not show significant correlations with subjective ratings of stress in medical students (Leite, Dornelas, Secchin, 2021; Rammouz *et al.*, 2023), or that it influenced them only indirectly through resilience (Edara *et al.*, 2021; Konaszewski *et al.*, 2023).

In summary, in the scientific literature, religiosity and MIL are factors associated with resilience and reduced perceived severity of acute or chronic intense stress. Most studies examine the potential impact of one aspect of religiosity or

measure religiosity in general without considering its multicomponent structure. Furthermore, there is inconsistent evidence about the influence of different aspects of religiosity on stress appraisals and the role of resilience as a mechanism in this relationship. There is also a paucity of studies examining the influence of MIL and aspects of religiosity on resilience and perceptions of daily stress in medical students. Given that these students are exposed to more intense daily stress during their training, understanding the factors that promote adaptation to stress may contribute to the development of programs aiming to prevent its negative effects during professional training.

2. Methodology

2.1. Objectives

The objectives of the present study were: first, to explore the impact of MIL and aspects of religiosity on resilience and perceived stress; second, to establish the mediating role of resilience in the relationships between MIL and aspects of religiosity and perceived stress.

2.2. Hypotheses of the study

It was hypothesized that:

H1: Religious beliefs, religious practices, PRC and MIL positively predict resilience (1a) and negatively predict perceived stress (1b)

H2: NRC negatively predicts resilience (2a) and positively predicts perceived stress (2b)

H3: Resilience mediates the relationship between both MIL and the aspects of religiosity and perceived stress.

2.3. Participants

The study was conducted among 227 Bulgarian undergraduate students, aged 18 to 56 years ($M = 30.27$, $SD = 10.91$), distributed by gender as follows: male - 38 (16.7%), female - 189 (83.3%); by field of study: medicine - 55 (24.2%), nursing - 97 (42.8%), midwifery - 33 (14.5%), medical assistant - 42 (18.5%); by religious affiliation: Christian - 155 (68.3%), Muslim - 60 (26.4%), other - 4 (1.8%), atheist - 8 (3.5%); by self-assessed religiousness: strongly religious - 25 (11%), moderately religious - 123 (54.2%), weakly religious - 62 (28.2%), not religious - 15 (6.6%).

2.4. Instruments

Brief Resilience Scale (BRS) (Smith *et al.*, 2008). The scale is unidimensional and consists of 6 items evaluated on a 5-point Likert scale. The items 2, 4, 6 are reversible. A higher score on the scale means a higher degree of resilience as a better ability to recover from the difficulties experienced. In our study, a high internal consistency of the scale was found (Cronbach's $\alpha = .83$).

Perceived Stress Scale (PSS) (Cohen, Kamarck, Mermelstein, 1983). The scale assesses the extent to which life situations are perceived as threatening, unpredictable, uncontrollable without specify the stressors. It contains 14 items for each, respondents evaluate the frequency of occurrence in the last month on a scale from 1 = "Never" to 5 = "Very often". High general score indicated negative perception of stress as more severe. Internal consistency of the scale in the study was very high (Cronbach's $\alpha = .85$).

The Brief Multidimensional Measure of Religiousness and Spirituality (BMMRS) (Fetzer, 2003). Subscales that are assumed to measure religiosity aspects were used. The term “God” was replaced with “Higher power” to make the statements appropriate for all religions. The “Private religious practice” subscale measured religious behavior outside of organized public activities. It consisted of four statements with an eight-point response scale and one statement with a five-point response scale, ranging from 1 (more often) to 5 or 8 (never), respectively. The Cronbach's α reliability for the sample was 0.83. The “Religious support” subscale measured the extent congregations provide help in times of difficulty. It consisted of four statements with a four-point response scale that ranged from 1 (very often) to 4 (never). The Cronbach's α reliability for the sample was 0.83. The “Organizational religiousness” subscale measured participation in collective religious activities and practices through two statements with a six-point response scale ranging from 1 (more than once a week) to 6 (never). The Cronbach's α reliability for the sample was 0.83. The “Religious coping” subscale measured religious practices and beliefs to deal with difficulties. Four statements measured PRC and three statements measured NRC. Respondents were asked to indicate their agreement with the statements on a four-point response scale ranging from 1 (very) to 4 (not at all). The Cronbach's α reliability for the study was 0.66.

Meaning in Life Questionnaire (MILQ) (Steger *et al.*, 2006). As the aim of the study focused primarily on the characteristics of MIL experienced by participants, we only used the “Presence of MIL” subscale that assesses how much people perceive their lives as meaningful. It consists of 5 items rated from 1 (strongly disagree) to 7 (strongly agree). The reliability for the sample was Cronbach's $\alpha = 0.83$.

2.5. Procedure

The research was conducted in accordance with the ethical standards of the institutional research committee and with the 1965 Declaration of Helsinki and its later amendments. Prior to participating in the study, students were informed about the purpose of the study and that participation was voluntary and anonymous. All participants provided written informed consent. The survey was conducted via a Google form that was sent via email to participants, and took approximately 15 minutes to complete. Participants received no reward or credit and they could withdraw at any time without consequence.

2.6. Data analysis

Preliminary analyses were conducted to examine observed scale characteristics, correlation estimates between the study variables and the assumption of normality using Kolmogorov-Smirnov test. Kruskal-Wallis test was conducted to investigate resilience and perceived stress differences between groups on self-rated religiousness and religious affiliation. Further, stepwise multiple regression analyses were conducted with variance inflation factor (VIF) and Durbin Watson (DW) test for checking the non-collinearity in the models. Mediation analyses using the PROCESS macro (Model 4 for SPSS version 4.2 (Hayes, 2018) controlling for age, were carried out. The bootstrap method with 10 000 resamples to estimate the 95% Confidence intervals (CI) was applied to indirect effect. The data were analyzed by SPSS (Version 26).

3. Results

The assumption of the normality of the distribution of scores was approved ($p > .05$). Pearson's product moment correlation coefficients that were found are shown in Table 1.

Table 1. Correlational matrix between study variables

	1	2	3	4	5	6	7	8
1. PS	-							
2. PRC	.19***	-						
3. NRC	.11	-.04	-					
4. RS	-.16**	.22***	-.27***	-				
5. OR	.22*	.34***	-.07	.18**	-			
6. PRP	.34*	.46***	-.32**	.12	.53***	-		
7. Res	-.56***	.07	.01	.08	.28**	-.12	-	
8. MIL	-.42***	.18**	.11	.21**	.05	.09	.35***	-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$; PS - Perceived stress, PRC - Positive religious coping, NRC - Negative religious coping; RS - Religious support; OR- Organizational religiousness; PRP - Private religious practices, Res - Resilience, MIL - Meaning in life

As shown in Table 1, moderate positive and negative correlations between MIL and resilience, and MIL and PS respectively were found. Individual religious practices also moderately positively correlated with PS, while collective practices and PRC moderately positively correlated with PS, but religious support moderately negatively correlated with it. Further, no significant differences were found between the level of resilience and PS in students according to their religious affiliation and self-rated religiousness. Stepwise regression analyses showed that PS was negatively predicted by MIL with a large effect size and it was positively predicted by PRC with a small effect size uniquely explaining 17.2 % and 2.7 % respectively of the variance of PS. The model was significant $F(2, 222) = 27.583, p < .001$ and explained 19.9 % of the variance of dependent variable. DW = 1.72, tolerance (.968 - 1.00), VIF (1.00 - 1.03). Stepwise regression analyses showed that resilience was positively predicted by MIL with a moderate effect size as well as by organizational religiousness with a small effect size uniquely explaining 12.4 % and 2.8 % respectively of variance in the resilience. The model was significant $F(2, 223) = 19.933, p < .001$ and explained 15.2 % of the variance in the dependent value, DW = 1.66, tolerance (.965- 1.00), VIF (1.00- 1.04) (see Table 2).

Table 2. Stepwise regression analysis results for significant predictors of perceived stress and resilience

DV	IV	B	SE	β	p	t	95% CI	
							LL	UL
PS	Const	40.816	2.534		.000	16.107	35.817	45.816
	MIL	-.476	.072	-.438	.000	-6.650	-.617	-.335
	PRC	.420	.124	.219	.001	3.37	.174	.665

Res	Const	6.275	2.388		.000	2.628	1.564	10.986
	MIL	.274	.057	.320	.000	4.768	.161	.388
	OR	.620	.177	.235	.012	3.499	.271	.970

Note. DV - Dependent variable, IV - Independent variable, MIL - Meaning in life, PRC - Positive religious coping, OR - Organizational religiousness

To examine the mediating role of resilience in the association of both MIL and religious indicators with PS, mediation analyses were conducted. Consecutively, MIL, organizational religiousness, private religious practices, NRC, PRC, religious support as independent variable (IV), religiosity as mediating variable, and PS as dependent variable (DV) were entered. The direct effect as a pathway from the IV to the DV while controlling for the mediator was estimated. The indirect effect as a pathway from the IV to DV through the mediator was calculated using bootstrap resampling. A significant indirect effect was detected when the zero was not found in the 95% Boot CI. The analysis revealed a significant indirect effect of MIL on PS ($b = -.1611$, boot SE = .0341, boot CI [-.2357; -.1004]). Furthermore, the direct effect of MIL on PS in presence of the mediator was also found significant ($b = -.2369$, SE = .0537; $t = -4.408$, $p = .000$, CI [-.3428; -.1310]). Hence, resilience partially mediated the relationship between MIL and PS. The results revealed a significant indirect effect of organizational religiousness on PS via resilience ($b = -.5280$, boot SE = .0311, boot CI [-.8874; -.2098]). Furthermore, the direct effect of organizational religiousness on PS in the presence of the mediator was found non-significant ($b = .1611$, $p > 0.05$) thus showing full mediation of resilience in the relationship between organizational religiousness and PS. The indirect effects of PRC, NRC, private religious practices and religious support on PS through resilience were found non-significant.

4. Discussion

Analyses showed a weak to moderate correlation relationship between variables of interest, as well as that both type of religion being practiced and the self-reported strength of religiosity were not factors that influenced resilience and the stress perception. Further, MIL and organized religiousness positively predicted resilience with moderate and weak effects, respectively, thereby confirming Hypothesis 1a. MIL negatively predicted perceived stress with a large effect size, and PRC positively predicted it with a small effect size, thus Hypothesis 1b was not fully confirmed. There was no significant predictive effect of NRC on resilience and perceived stress, thus Hypothesis 2 was not supported. Resilience was found to mediate the relationships between both MIL and collective religious practices and the perceived stress, thus Hypothesis 3 was confirmed.

The study showed that MIL acted as the strongest positive predictor of perceived stress and resilience. Having a sense of purpose in life directly increased students' resilience to stress and decreased its perceived severity both directly and indirectly through resilience. These results are consistent with previous findings about positive associations between MIL and resilience, although in the context of

intense stress (Rasheed, Fatima, Tariq, 2022; Karataş, Tagay, 2021), as well as those showing negative associations of MIL with perceived stress (Humphrey, Vari, 2021; Hashemikamangar, Afshari, 2022).

MIL is a protective personal resource which through maintaining perceptions of coherence, purposefulness and significance of life, activates relevant cognitive, motivational, and emotional processes to cope with stress successfully. For example, MIL promoted proactive coping by enhancing tendencies to apply meaning-focused coping, proactive planning, and positive reinterpretation, it increased self-efficacy for coping with stressors also (Krok, Zarzycka, Telka, 2023; Ward *et al.*, 2023), maintained positive daily affect and future temporal focus (Miao, Gan, 2019), and decreased the tendency to engage in negative repetitive thinking (Ostafin, Proulx, 2020). Through such effective self-regulation, MIL leads to a positive perception of stressors as less emotionally impactful, promotes self-efficacy for coping, supports motivation to overcome difficulties, and proactive actions also. Furthermore, MIL also influenced resilience through physiological mechanisms involved in the stress response and predicted lower levels of allostatic load at 10-year follow-up (Zilioli *et al.*, 2015). Moreover, MIL helped individuals not only to maintain their mental health in the face of hardship, but also to achieve post-traumatic growth aftermath (Pino, Cunegatti, D'Angelo, 2022; Yıldırım, Arslan, 2021). All of this points to a broader spectrum of MIL's influence on stress adaptation, highlighting its benefits not only for maintaining better mental health under stress in the short term, but also in the long term.

Surprisingly, PRC was found to directly increase the severity of perceived stress, which is inconsistent with previous findings (Mahamid, Bdier, 2021). The discrepancy could be due to the characteristics of this coping, which is to hold a more passive, avoidance-oriented approach that inhibits proactive behavior in daily life situations that are presumed to be controllable, but supports adaptation to the uncontrollable ones, such as major health threats, which are exactly those proposed in the literature (Ramírez *et al.*, 2022; Brito, Seidl, 2019; Somos, 2020). The study found no significant relationships between NRC and the variables of interest, which is in line with previous studies among university students (Somos, 2020; Jans-Beken, 2019), indicating the irrelevance of this coping for resilience and perceptions of daily stress.

The study showed that collective religious practices predicted greater resilience in students and, through it, reduced perceived stress. These findings may be due to the links between religious practices and positive emotional experiences reported in other studies. For example, research found that these practices were associated with higher levels of happiness and life satisfaction in the general population (Aydogdu *et al.*, 2021) and mediated the relationship between religiosity and higher well-being in religious practitioners (Surzykiewicz *et al.*, 2022). A meta-analysis of 48 longitudinal studies found that of the eight aspects of religiosity extracted, only participation in organized practices was significantly associated with mental health, as measured by levels of distress, life satisfaction and well-being, albeit with small effects (Garssen, Visser, Pool, 2021). Collective, but not individual, religious practice predicted higher positive affect and lower negative affect (Gordon,

2019), higher life satisfaction (Garssen, Visser, Pool, 2021), and higher social well-being through increased feelings of connectedness and congregational belonging, experienced sympathy, trust, and number of friendships in the community (Dunbar, 2021). These findings further support the role of religious practice as a factor in promoting resilience and maintaining mental health.

The study found no significant relationship between religious beliefs and both resilience and perceived stress. According to other authors, religious beliefs had no direct effect on positive mental health during distress in college students, but indirectly predicted higher positive affect by increasing religious practices (Gan, Wong, Jiao, 2023). In turn, religious practice at least once a week increased life satisfaction and positive affect in adolescents who already held religious beliefs (Chen, Kim, VanderWeele, 2021), decreased anxiety (Phillips *et al.*, 2023), and increased feelings of hope in college students (Wnuk, 2023). This suggests that it is not religious beliefs, but their integration into daily life through religious practice, that act as a buffer against anxiety, a source of hope, and a resource for adaptation to stress.

5. Conclusion

The study provides evidence that meaning in life and collective religious practices are positive determinants of resilience in health professions students. Increased resilience is the mechanism by which MIL, in part, and collective religious practices, in full, lead to students' more positive perceptions of daily stress. The tendency to rely on a transcendent source to cope with stress impairs the perception of stress, but is irrelevant to the resilience.

The findings of the study have several practical implications. The study contributes to understanding of the factors that promote resilience in health professions students and the mechanisms by which these positively influence perception of stress. The study suggests the potential benefits of encouraging students to find and maintain a strong sense of meaning in their lives, promoting participation in collective religious practices, and reducing tendencies to rely on a higher power to ensure successful adaptation to daily stressors. This could be applied in the development of programs to prevent the negative effects of stress on students' health, as well as interventions to build resilience in those with stress-related mental health problems.

Some limitations of the study need to be mentioned. The first limitation lies in the prevalence of women in the sample recruited, as female students in health professions are strongly represented. Another limitation is the uneven distribution of students according to the specialties studied, which did not allow the specificities of the relationships to be drawn depending on them. Also, the analyses included age as a covariate given the wide age range of participants, but future research could explore the relationships between religiosity, resilience and perceived stress across different age cohorts. In addition to resilience, other mechanisms may mediate the relationship between religiosity and stress, consistent with the mediating effects of dispositional hope (Wnuk, 2023), coping self-efficacy, and positive reappraisal presented in the literature (Dolcos *et al.*, 2021). Including these in future research

would enhance our understanding of the impact of religiosity on stress and resilience, particularly on these indicators which did not show a significant relationship in the current study.

REFERENCES

1. Aftab, M. T., Naqvi, A. A., Al-Karasneh, A. F., Ghori, S. A. (2018). Impact of Religiosity on Subjective Life Satisfaction and Perceived Academic Stress in Undergraduate Pharmacy Students. *Journal of pharmacy & bioallied sciences*, 10(4), 192-198. https://doi.org/10.4103/JPBS.JPBS_65_18
2. Arslan, G., Yıldırım, M. (2021). A Longitudinal Examination of the Association Between Meaning in Life, Resilience, and Mental Well-Being in Times of Coronavirus Pandemic. *Frontiers in psychology*, 12, 645597. <https://doi.org/10.3389/fpsyg.2021.645597>
3. Banazadeh, N., Sabahi, A., Ziaadini, H., Jalali-Khalilabadi, A., Banazadeh, M. (2019). The Relationship between Extrinsic and Intrinsic Religious Orientation with Perceived Stress and Cigarette Addiction among University Students. *Addiction & health*, 11(2), 73-80. <https://doi.org/10.22122/ahj.v11i2.226>
4. Brito, H. L., Seidl, E. M. F. (2019). Resilience of People with HIV/AIDS: Influence of Religious Coping. *Trends in Psychology*, 27(3), 647-660. <https://doi.org/10.9788/TP2019.3-04>
5. Chen, Y., Kim, E. S., VanderWeele, T. J. (2021). Religious-service attendance and subsequent health and well-being throughout adulthood: evidence from three prospective cohorts. *International journal of epidemiology*, 49(6), 2030–2040. <https://doi.org/10.1093/ije/dyaa120>
6. Chiracu, A. (2019). The role of resilience in the relationship between stressful life events and health in a Romanian sample. *Romanian journal of applied psychology*, 21(2).
7. Cohen, S., Kamarck, T., Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-96
8. Dolcos, F., Hohl, K., Hu, Y., Dolcos, S. (2021). Religiosity and Resilience: Cognitive Reappraisal and Coping Self-Efficacy Mediate the Link between Religious Coping and Well-Being. *Journal of religion and health*, 60(4), 2892–2905. <https://doi.org/10.1007/s10943-020-01160-y>
9. Dunbar, R. I. M. (2021). Religiosity and religious attendance as factors in wellbeing and social engagement. *Religion, Brain & Behavior*, 11(1), 17-26. <https://doi.org/10.1080/2153599X.2020.1712618>
10. Edara, I. R., del Castillo, F., Ching, G. S., del Castillo, C. D. (2021). Religiosity, Emotions, Resilience, and Wellness during the COVID-19 Pandemic: A Study of Taiwanese University Students. *International Journal of Environmental Research and Public Health*, 18(12), 6381. <https://doi.org/10.3390/ijerph18126381>
11. Eldred, L. (2020). *The Impact of Religiosity and Personality on Resilience and Coping Strategies*. [Undergraduate Theses and Capstone Projects, University of Lynchburg]. <https://digitalshowcase.lynchburg.edu/utcp/164>

12. Fetzer, I. (2003). *Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group*. Kalamazoo, MI: John E. Fetzer Institute.
13. Forouhari, S., Hosseini Teshnizi, S., Ehrampoush, M. H., Mazloomi Mahmoodabad, S. S., Fallahzadeh, H., Tabei, S. Z., Nami, M., Mirzaei, M., Namavar Jahromi, B., Hosseini Teshnizi, S. M., Ghani Dehkordi, J., Kazemitabae, M. (2019). Relationship between Religious Orientation, Anxiety, and Depression among College Students: A Systematic Review and Meta-Analysis. *Iranian journal of public health*, 48(1), 43-52.
14. Gan, S. K., Wong, S. W., Jiao, P. D. (2023). Religiosity, Theism, Perceived Social Support, Resilience, and Well-Being of University Undergraduate Students in Singapore during the COVID-19 Pandemic. *International journal of environmental research and public health*, 20(4), 3620. <https://doi.org/10.3390/ijerph20043620>
15. Garsen, B., Visser, A., Pool, G. (2021). Does Spirituality or Religion Positively Affect Mental Health? Meta-analysis of Longitudinal Studies. *International Journal for the Psychology of Religion*, 31(1), 4-20. <https://doi.org/10.1080/10508619.2020.1729570>
16. Gordon, N. C. (2019). *Religion and aging: exploring the effects of religiosity on mental well-being across age cohorts*. Diss. Wichita State University. <http://hdl.handle.net/10057/16399>
17. Hashemikamangar, S., Afshari, A. (2022). Predicting Role of Resilience and Meaning in Life in Perceived Stress of Frontline Health Care Workers during COVID-19 Outbreak. *International Journal of Social Science and Humanity*, 12(1), 24-28.
18. Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach (Methodology in the Social Sciences)* (2nd ed.). New York, NY: The Guilford Press.
19. He, X.-X., Wang, X.-Q., Steger, M. F., Ji, L.-J., Jing, K., Liu, M.-F., Ye, B.-J. (2023). Meaning in life and psychological distress: A meta-analysis. *Journal of Research in Personality*, 104, 104381. <https://doi.org/10.1016/j.jrp.2023.104381>
20. Himcinschi, M., Buzgar, R., Pinte, S. (2022). The effects of religiosity and spiritual well-being on perceived stress during Covid-19 Pandemic. *European Journal of Science and Theology*, 18(4), 19-32.
21. Humphrey, A., Vari, O. (2021). Meaning Matters: Self-Perceived Meaning in Life, Its Predictors and Psychological Stressors Associated with the COVID-19 Pandemic. *Behavioral sciences (Basel, Switzerland)*, 11(4), 50. <https://doi.org/10.3390/bs11040050>
22. Jans-Beken, L. (2019). The relationship of spiritual coping with resilience and perceived stress: Validation of the Dutch Spiritual Coping Questionnaire. *Spiritual Psychology and Counseling*, 4, 93-108. <https://dx.doi.org/10.12738/spc.2019.4.2.0063>
23. Karataş, Z., Tagay, Ö. (2021). The relationships between resilience of the adults affected by the covid pandemic in Turkey and Covid-19 fear, meaning in life,

- life satisfaction, intolerance of uncertainty and hope. *Personality and individual differences*, 172, 110592. <https://doi.org/10.1016/j.paid.2020.110592>
24. Khazir, Z., Jambarsang, S., Abbasi-Shavazi, M. (2019). The Study of General Health Status in the Students of Shahid Sadoughi University of Medical Sciences in Yazd. *J Community Health Research*, 8(3), 131-138.
 25. Koenig, H. G. (2012). Religion, spirituality, and health: the research and clinical implications. *ISRN psychiatry*, vol. 278730. <https://doi.org/10.5402/2012/278730>
 26. Konaszewski, K., Skalski, S., Niesiobędzka, M., Surzykiewicz, J. (2023). Religious struggles and mental health in the Polish population during the COVID-19 pandemic. Mediation effects of resilience as an “ability to bounce back. *Journal of Beliefs & Values*, 44(1), 135-153, <https://doi.org/10.1080/13617672.2022.2075645>
 27. Krok, D., Zarzycka, B., Telka, E. (2023). Risk Perception of COVID-19, Religiosity, and Subjective Well-Being in Emerging Adults: The Mediating Role of Meaning-Making and Perceived Stress. *Journal of psychology and theology*, 51(1), 3-18. <https://doi.org/10.1177/00916471221102550>
 28. Leite, L. C., Dornelas, L. V., Secchin, L. de S. B. (2021). Influence of religiosity on medical students' mental health. *Revista Brasileira De Educação Médica*, 45(2), e062. <https://doi.org/10.1590/1981-5271v45.2-20200446.ING>
 29. Li, P., Wong, Y., Chao, R. (2019). Happiness and meaning in life: Unique, differential, and indirect associations with mental health. *Counselling Psychology Quarterly*, 32(3-4), 396-414.
 30. Métais, C., Burel, N., Gillham, J. E., Tarquinio, C., Martin-Krumm, C. (2022). Integrative Review of the Recent Literature on Human Resilience: From Concepts, Theories, and Discussions Towards a Complex Understanding. *Europe's journal of psychology*, 18(1), 98-119. <https://doi.org/10.5964/ejop.2251>
 31. Mahamid, F., Bdier, D. (2021). The Association Between Positive Religious Coping, Perceived Stress, and Depressive Symptoms During the Spread of Coronavirus (COVID-19) Among a Sample of Adults in Palestine: Across Sectional Study. *Journal of religion and health*, 60(1), 34-49. <https://doi.org/10.1007/s10943-020-01121-5>
 32. Miao, M., Gan, Y. (2019). How does meaning in life predict proactive coping? The self-regulatory mechanism on emotion and cognition. *Journal of personality*, 87(3), 579-592. <https://doi.org/10.1111/jopy.12416>
 33. Mohammed, A., Sebastian, K. (2022). The Relationship Between Meaning in Life, Self-Control and Resilience Among Young Adults. *International Journal of Indian Psychology*, 10(3), 1497-1503, <https://doi.org/10.25215/1003.158>
 34. Ostafin, B. D., Proulx, T. (2020). Meaning in life and resilience to stressors. *Anxiety, stress, and coping* 33(6), 603-622. <https://doi.org/10.1080/10615806.2020.1800655>
 35. Pargament, K. I. (Ed.), Mahoney, A., & Exline, J. J., Jones, J. W. (Eds.), & Shafranske, E. P. (2013). Envisioning an integrative paradigm for the psychology of religion and spirituality. In K. I. Pargament, J. J. Exline, & J. W.

- Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 3-19). American Psychological Association. <https://doi.org/10.1037/14045-001>
36. Pino, O., Cunegatti, F., D'Angelo, M. (2022). The Role of Life Meaning in Psychological Distress and Post-traumatic Growth Among Italian First-Aid Volunteers During the COVID-19 Outbreak. *Trends in Psychol.* <https://doi.org/10.1007/s43076-022-00182-7>
 37. Phillips, T., Wilmoth, J., Wheeler, B., Long, A., Pylate, L., Brink, J. (2023). Religiosity and Well-Being in Emerging Adults. *Religion & Education*, 50(1), 70-81, <https://doi.org/10.1080/15507394.2022.2154105>
 38. Quek, T. T., Tam, W. W., Tran, B. X., Zhang, M., Zhang, Z., Ho, C. S., Ho, R. C. (2019). The Global Prevalence of Anxiety Among Medical Students: A Meta-Analysis. *International journal of environmental research and public health*, 16(15), 2735. <https://doi.org/10.3390/ijerph16152735>
 39. Ramírez, M., González-Arratia, L., Ruíz, A., Oudhof, H., Barcelata, B. (2022). Afrontamiento religioso y espiritualidad como mediadores entre estrés percibido y resiliencia en adultos con diabetes mellitus tipo 2. *Liberabit*, 28(2), e569. <https://doi.org/10.24265/liberabit.2022.v28n2.569>
 40. Rammouz, I., Lahlou, L., Salehddine, Z., Eloumary, O., Laaraj, H., Ouhamou, M., Mouhadi, K., Doufik, J., Aalouane, R., Boujraf, S. (2023). Religiosity, stress, and depressive symptoms among nursing and medical students during the middle stage of the COVID-19 pandemic: A cross-sectional study in Morocco. *Frontiers in psychiatry*, 14, 1123356. <https://doi.org/10.3389/fpsy.2023.1123356>
 41. Rasheed, N., Fatima, I., Tariq, O. (2022). University students' mental well-being during COVID-19 pandemic: The mediating role of resilience between meaning in life and mental well-being. *Acta psychologica*, 227, 103618. <https://doi.org/10.1016/j.actpsy.2022.103618>
 42. Seidel, L., Daniels, J., Ostafin, B. (2023). The role of meaning in life in psychological distress during the COVID-19 pandemic. *Anxiety, stress, and coping*, 36(1), 67-82. <https://doi.org/10.1080/10615806.2022.2113993>
 43. Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine*, 15(3), 194-200. <https://doi.org/10.1080/10705500802222972>
 44. Somos, A. (2020). *The impact of religious coping and resilience on psychological well-being among international students in Hungary* [Dissertação de mestrado, Iscte - Instituto Universitário de Lisboa]. Repositório Iscte. <http://hdl.handle.net/10071/21129>
 45. Steger, M. F., Frazier, P., Oishi, S., Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53(1), 80-93. <https://doi.org/10.1037/0022-0167.53.1.80>
 46. Surzykiewicz, J., Skalski, S. B., Niesiobędzka, M., Konaszewski, K. (2022). Exploring the mediating effects of negative and positive religious coping

- between resilience and mental well-being. *Frontiers in behavioral neuroscience*, 16, 954382. <https://doi.org/10.3389/fnbeh.2022.954382>
47. Schwalm, F. D., Zandavalli, R. B., de Castro Filho, E. D., Lucchetti, G. (2022). Is there a relationship between spirituality/religiosity and resilience? A systematic review and meta-analysis of observational studies. *Journal of health psychology*, 27(5), 1218-1232. <https://doi.org/10.1177/1359105320984537>
 48. Trzebiński, J., Cabański, M., Czarnecka, J. (2020). Reaction to the COVID-19 Pandemic: The Influence of Meaning in Life, Life Satisfaction, and Assumptions on World Orderliness and Positivity, *Journal of Loss and Trauma*, 25(6-7), 544-557. <https://doi.org/10.1080/15325024.2020.1765098>
 49. You, S., Lim, S. A. (2019). Religious Orientation and Subjective Well-being: The Mediating Role of Meaning in Life. *Journal of Psychology and Theology*, 47(1), 34-47. <https://doi.org/10.1177/0091647118795180>
 50. Ward, S., Womick, J., Titova, L., King, L. (2023). Meaning in Life and Coping With Everyday Stressors. *Personality & social psychology bulletin*, 49(3), 460–476. <https://doi.org/10.1177/01461672211068910>
 51. Williams, L. (2022). Building an ecology of resilience through religious practice and community in northern Uganda. *Civil Wars*, 24(2–3), 305-327. doi:10.1080/13698249.2022.2092685
 52. Wnuk, M. (2023). The Indirect Relationship Between Spiritual Experiences and Subjective Wellbeing Through Hope? A Sample of Chilean Students. *Journal of religion and health*, 62(2), 964-983. <https://doi.org/10.1007/s10943-021-01459-4>
 53. Yıldırım, M., Arslan, G. (2021). A Moderated Mediation Effect of Stress-Related Growth and Meaning in Life in the Association Between Coronavirus Suffering and Satisfaction With Life: Development of the Stress-Related Growth Measure. *Frontiers in psychology*, 12, 648236. <https://doi.org/10.3389/fpsyg.2021.648236>
 54. Zilioli, S., Slatcher, R. B., Ong, A. D., Gruenewald, T. L. (2015). Purpose in life predicts allostatic load ten years later. *Journal of psychosomatic research*, 79(5), 451–457. <https://doi.org/10.1016/j.jpsychores.2015.09.013>