

# MITIGATION OF DEPRESSION, ANXIETY, STRESS, AND AGGRESSION VIA RELIGIOSITY/SPIRITUALITY DURING THE 3<sup>RD</sup> WAVE OF COVID-19 AMONG UNIVERSITY STUDENTS

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## Abstract

*Due to the sudden shift in teaching methods, the pandemic has adversely obstructed students' psychological condition. Persons living with mental illness use religion and spirituality to cope, especially in stressful times. Religious-spiritual coping can help reduce depression, anxiety, stress, and aggression. An online quantitative survey was conducted. The DASS21, Buss and Perry BAQ, and Religiosity and Spirituality Scale for youth (RSSY) were used to collect data. The study included 420 university students, of which 48.33% and 51.66 % were males and females respectively. The average age of participants was 21. Third-wave COVID-19 found religion/spirituality to be a significant alleviating factor of depression, anxiety, stress, and aggression. The study also found significant correlations between depression, anxiety, stress, and aggression in males and females. The findings provided insight into how to apply religious/spiritual intervention tactics to mitigate Covid-19's disadvantages.*

**Keywords:** COVID-19; depression; anxiety; stress; aggression; religion; spirituality

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## **Introduction**

The pandemic has cast a pall over the world. Humans were first exposed to Coronavirus illness (COVID-19) in November 2019. SARS-CoV-2 has been declared a global pandemic by the WHO (WHO, 2020; Chakraborty & Maity, 2020). Since then, the globe has seen tremendous changes in physical and mental health, the economy, social security, and environmental issues (Chakraborty & Maity, 2020; Jiang et al., 2020). Covid-19 has infected approximately 47 million individuals and killed almost 4 million of them (Worldometer, 2020; He F, 2019). Until June 2021, Pakistan had 1,265,047 cases, with 28,280 deaths (Direcao Geral da Saude, 2020; Brooks, 2020). It is widely known that the epidemic has damaged the mental health of the general populace (Passos, 2020; Fiorillo, 2020).

PTSD, anxiety, distress, depression panic, phobias, and substance abuse have been reported in previous human crises (Mason et al., 2010; Lake, 2020; Acierno et al., 2007). The global spread of the Pandemic and rising death tolls has had a devastating effect on global mental health (Direcao Geral da Saude, 2020; Brooks, 2020; Passos, 2020; Lai, 2019). Due to the outbreak, social gatherings have been restricted globally, causing depression, low mood, loneliness, worry, and anxiety. Anxiety and depression are linked to disease severity perception (Direcao Geral da Saude, 2020; Brooks, 2020).

Individuals' physical health and ability to cope with pandemic infectious diseases like COVID-19 are affected (Yang, 2018). While the terms religiosity and spirituality appear similar, their meanings differ. "The sacred is sought through subjective feelings, thoughts, and behavior" (Pew Research Center, 2018; Chatters, 2003). Visiting religious temples, praying, and reading sacred scriptures are examples of religious behavior (Sulmasy, 2009; Seeman, 2003; Kalra, 2007; Hill, 2006). Intrinsic religiosity is defined as a strong tie with the embraced credo that exists between personal beliefs/values and religious ones (Allport, 1967; Koenig, 2010; Person, 2004; Al Eid N, 2020). "Extrinsic religiosity" indicates using religion to meet one's wants (e.g., social relations, personal comfort) (Allport, 1967; Koenig, 2010; Masters 2013; Puchalski, 2009). It is also an internal belief system that gives life significance (Saad, 2021). "Meditation, relaxation, music, and guided imagery" are examples of spiritual support (Guilherme, 2016).

Depression, anxiety, and stress are significant mental health indicators (Tee et al., 2021). Stress, Depressive, and anxiety-related issues are common among students. Depressed, anxious, and stressed college students have received little investigation despite the huge number of reports during the pandemic (Zheng, 2020; Qiu et al., 2020; Liu et al., 2020; Sahu, 2020; Wu et al., 2009;).

Online classes, virtual offices, and religious and spiritual values can help reduce social isolation (Galea et al., 2020; Koenig, 2020). Many people use

religion/spirituality to help them cope with stress and adversity (Schuster et al., 2001; Ebadi et al., 2009; ThuneBoyle et al., 2006).

Religious/spiritual persons are physically and mentally healthy (Miller, 2002; Levin, 2002). Spirituality and religion are well-known coping methods for both physical and psychological problems (Sulmasy, 2007; Seeman, 2003; Soper, 2020; Saad, 2021; Koenig, 1998; Tix, 1998; Hair, 2017), particularly intense situations (Ano, 2005). When coping with life situations that are out of one's control, spiritual-religious coping is used (Koenig, 2002). Positive religious coping has been linked to lower levels of despair and anxiety, as well as enhanced mental health (Tix, 1998). (Pirutinsky, 2020; Kang, 2019).

Based on prior research, religion and spirituality may help the populace cope with the new epidemic existence. Nevertheless, while some writers have advocated religious/spiritual interventions in the covid-19 situation (Ferrell et al., 2020; Del Castillo et al., 2020), little research has examined how these beliefs are deployed and whether they might reduce social seclusion.

More spiritual-religious coping led to more hopefulness and less anxiety, concern, and depression, according to a recent Brazilian cross-sectional study (Lucchetti, 2020; Chin, 2001). Several life outcomes are predicted by religiosity. More religious people have more ego power (love, purpose, will, hope, etc.) (Markstrom 1999), self-control (Laird, Marks, & Marrero, 2011), and better health (Brown & Gary, 1994).

Despite several articles on the significance of assessing and responding to patients' religious needs, little is known about how religion affects the treatment delivered by health professionals (Bjarnason, 2007). The number of studies addressing health and religion in the psychological and behavioral sciences has multiplied (Chatters, 2020; Pew Research Center, 2018).

Previous research highlighted the effect of religion on health outcomes. Religion and health: cardiovascular, neuroendocrine, and immunological function (Seeman, 2003; Sulmasy, 2009). Preventive care use, vitamin use, uncommon bar use, and seat belt usage is linked to regular religious attendance (Hill, 2006; Kalra, 2007). Daily spiritual encounters correlated with more significant health habits than religion (Person, 2004; Allport, 1967).

After a year of the pandemic, Pakistan is now facing the third wave in its major cities. Compared to the first and second waves, hospitalizations increased dramatically. The country's third wave of coronavirus infections has prompted a new ban on all gatherings in high-case areas. It concerns Pakistan, a developing nation with limited medical resources. With the quick rise of probable COVID-19 cases, the Pakistani community will likely interpret the danger and worry of this respiratory disorder as dangerous and vital.

A new study links religion to reduced depression, anxiety, and general happiness. (Puchalski, 2009) The COVID-19 epidemic puts students at greater risk of disease and psychological issues than other age groups. To assess the influence of the pandemic severity on Pakistani pupils' psychological health,

A religious/spiritual component was examined in relation to COVID-19 severity and Pakistani students' mental health. This research is unique in that it will explore the influential role of religiosity/spirituality in reducing COVID-19-related psychological difficulties in the context of Pakistani culture.

## **Hypotheses**

- H<sub>1</sub>. Religiosity/Spirituality will mitigate aggression, stress, anxiety, and depression among university students.
- H<sub>1</sub>. There will be a significant correlation between aggression, stress, anxiety, and depression among university students.
- H<sub>1</sub>. There will be no significant differences between male and female students.

## **Method**

### **Design and Participants**

This was a quantitative study based on an exploratory research design carried out in March and April 2021. Due to the pandemic, all educational institutions were closed. The study participants were approached online and asked to submit an online consent form. By sending the link to students via WhatsApp and Facebook groups, we formed an online poll. 420 students were chosen for study. The students came from all throughout Pakistan.

### **Inclusion criteria**

Participants must be enrolled at a Pakistani institution and suffer from the COVID-19 epidemic to be considered.

### **Procedures**

Participants were recruited using social media and email. The researchers used email and social media to reach as many college students as possible. The survey ran for four full workdays.

### **Measures**

#### **Depression, Anxiety and Stress Scale (DASS-21)**

This 21-item self-report questionnaire was produced by Lovibond & Lovibond (1995). They're frequently employed to determine sadness, anxiety, and stress. We're talking about the DASS-21 item in this example (Lovibond et al. 1994). This self-reported exam consists of seven items for DAS on a

four-point Likert scale ranging from 0 ("never") to 3 ("always"). Summing the subscale scores (depression, anxiety, and stress) and multiplying by two yields the sum scores. DAS was measured using the Bangla DASS-21 (Alim et al. 2017). Normal (depression 0–9), mild (depression 10–13, anxiety 8–9, and stress 15–18), moderate (depression 14–20, anxiety 10–14, and stress 19–25), and severe (depression 21–27, anxiety 15–19, and stress 26–33) were used to categorize the DAS. For depression ( $=70$ ), anxiety ( $=0.70$ ), and stress ( $=0.70$ ), the short form DASS subscales were determined to be trustworthy.

**Aggression**

Physical aggression and rage subscales from the Buss and Perry Brief Aggression Questionnaire (BAQ) are used to assess aggressiveness (Bryant and Smith, 2001; Webster et al., 2014, 2015). There are three subscales in the instrument, each with three items ranging from extremely unlike me (1) to very like me (5). The scale's current Cronbach alpha reliability is 0.82.

**Religiosity and Spirituality Scale for youth (RSSY)**

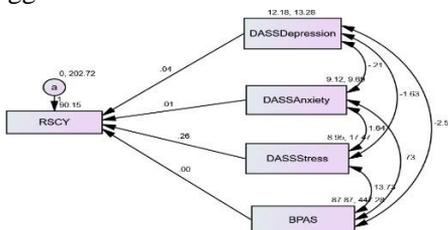
Different academics have devised a variety of scales to measure and investigate religious beliefs, religious behavior religious, social support, and religiousness. However, the RSSY scale proposed by Brittany Cornell Hernandez (2011) was the most appropriate for this study. This measure consists of 26 questions, each of which was graded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (strongly agree).

**Results**

The final analysis includes 420 participants from a total of 500 responses in the MS Forms. Female students (51.66 percent) and male students (48.33 percent) made up the sample, averaging 21 years.

**Model**

Pathway diagram of Religiosity and Spirituality mitigating Depression, Anxiety, Stress, and Aggression in 3<sup>rd</sup> wave of Covid-19



**Table-1: Frequencies of Respondents Score on Variables of the Study during the 3<sup>rd</sup> Wave of Covid-19**

<b>Variables</b>	<b>Strength</b>	<b>Frequency</b>	<b>Percentage</b>
Depression	Normal	104	24.8%
	Mild	127	30.2%
	Moderate	189	45.0%
	Severe	0	
	Extremely Severe	0	
Anxiety	Normal	366	87.1%
	Mild	54	54%
	Moderate	0	
	Severe	0	
	Extremely Severe	0	
Stress	Normal	122	29%
	Mild	133	31.7%
	Moderate	141	33.6%
	Severe	24	5.7%
	Extremely Severe	0	
	Total	420	100%

Table 1 shows the strength of the prevalence of depression, anxiety, and stress and the majority of the respondents are lying at a moderate level of depression, normal anxiety, and moderate at stress level.

**Table-2: Difference of scores on gender basis on DASS during 3<sup>rd</sup> wave of Covid-19**

Variables	Strength	Male	Female
Depression	Normal	52	52
	Mild	62	65
	Moderate	89	100
	Severe	0	
	Extremely Severe	0	
	Total	203	217
Anxiety	Normal	54	68
	Mild	54	79
	Moderate	88	53
	Severe	7	17
	Extremely Severe	0	
	Total	203	217
Stress	Normal	170	196
	Mild	33	21
	Moderate	0	0
	Severe	0	0
	Extremely Severe	0	0
	Total	203	217

Table 2 indicates gender-wise scores on depression, anxiety, and stress and revealed that there is no significant difference between males and females.

**Table-3: Evaluation Table of Correlation Among Variables of the Study During 3<sup>rd</sup> Wave of Covid-19**

Variable	Mean	SD	1	2	3	4
Aggression	87.86	21.17	--	.263**	.387**	.288**
Depression	12.77	5.90		-	.287**	.191**
Anxiety	13.36	6.11			-	.390**
Stress	11.20	5.87				-

$p < .001$

Table 3 revealed that there is a significant correlation between aggression, depression, anxiety, and stress.

**Table-4: Means, Standard Deviations and t-value of the Male (n=203) and Female (n=217) Students (N=420)**

Variables	Male (n=203)		Female (n=217)				95% CI		Cohen's d
	M	S.D	M	S.D	t	p	LL	UL	
Religiosity	99.21	26.45	99.76	29.29	-.201	.841	-5.922	4.825	0.025
Aggression	87.11	22.10	88.57	20.28	-.707	.480	-5.529	2.603	0.039
Depression	12.87	5.77	12.67	6.04	.345	.730	-.933	1.334	0.284
Anxiety	12.98	6.19	13.71	6.03	-1.23	.220	-1.907	.440	0.072
Stress	11.35	5.76	11.06	5.98	.497	.619	-.841	1.412	0.001

*p*<.001

## Discussion

COVID-19 has a huge social impact. The pandemic caused massive global transience and disease. The COVID-19 outbreak wreaked havoc on people's mental health. In this dreadful condition, people struggle with worry, despair, fear, stress, and loss (Kar et al., 2020). Humans resort to religion for solace and explanation in times of uncertainty. People resort to religion to cope with life's unexpected challenges (Sinding Bentzen, 2019). Anger, despair, anxiety, and stress were all investigated in this study.

It was hypothesized in this study that religiosity/spirituality would reduce aggression, tension, anxiety, and depression, among university students. In the COVID-19 pandemic, religiosity/spirituality has become a significant resource for improving health and population well-being (Koenig, 2020); Religion has been proven to help people cope with stressful events, reduce anxiety, and promote hope and life satisfaction in several studies. (Park et al., 2012; Koenig, 2020; Salmani et al., 2020).

These findings come from a study that looked into the relationship between depression, anxiety, stress, and violence among Pakistani university students. Depression, anxiety, stress, and aggression were all linked in our study. Natural calamities have been demonstrated to affect religious beliefs carried down through generations (Sinding Bentzen, 2019). The COVID-19 outbreak may have similar long-term repercussions. Religion is seen as a refuge from life's stresses. As a result, religion has been demonstrated to relieve stress and promote mental health (Pew Research Center, 2020; Chatter, 2020). Pollner (1989) identified a relationship between religion and

happiness. Religiousness contributes to psychological well-being via specialized coping tools, a healthy lifestyle, behavior control, positive self-perception, and emotions, according to Chang et al. According to Levin (2001), people's health and happiness improve when they feel loved by God.

A study by Quintana (2013) found that religion influences the link between stigma and mental health. Religion also increases psychological well-being by promoting hope and purpose, according to Wagner et al. (2014). According to Sheretta et al. (2018), a relationship with God has a positive effect on one's psychological well-being and a negative effect on racial stigma. As a result, a spiritual connection is seen as a healthy coping mechanism.

Indeed, religion/spirituality has been recommended as a crucial instrument for dealing with trauma and stress-related suffering, based on unique coping mechanisms known as religious/spiritual coping (Harrison et al., 2001). Several previous research has also revealed that religiosity can help people with mental health issues like anxiety, despair, tension, and hopelessness (Karla, 2007; Dein, 2010; Allport, 1967; Person, 2004; Hill, 2006; Hakak, 2014). Religion has also been proven to help people cope with adversity, according to studies. People believe that engaging in various religious actions, like as praying five times a day (Salah), relieves anxiety and depression and keeps people hopeful for better outcomes (Abdel-Khalek, 2019; Al-Eid, 2020; Koenig, 2010; Masters, 2013; Smith, 2004).

Religiousness explains 57 percent of mental health inequality, according to Saleem et al. (2021), indicating that the intervening variable is useful (Chin, 2001; Lucchetti, 2020). The relationship between perceived harshness and religion was significantly associated with psychological wellbeing ( $= 0.425$ ,  $t = 5.904$ ). (Saleem et al., 2021). The data revealed that religion is a significant intervening variable in the relationship between perceived risk of infection and mental health among Pakistani university students (Saleem et al., 2021).

The findings of the mediation research establish the idea that religion is a considerable mediator between the apparent seriousness of contracting a contagious virus (i.e., COVID-19) and mental health (Saleem et al., 2021). The findings are aligned with prior studies, which found a vital link between religious beliefs and mental health (Puchalski, 2009; Koenig, 2019; Mansor, 2012; Chen, 2020; Levin, 2001) and religious activities (Koenig, 2010; Al Eid, 2020; Abdel-Khalek, 2019; Zhang, 2013; Bentzen, 2020) help people avoid psychological health issues like hopelessness, anxiety, and depression.

This study found no significant differences between men and women in terms of depression, anxiety, stress, and aggression. It echoes previous findings on life satisfaction (Gutierrez et al., 2014). Males' quality of life and health have been connected to spirituality in studies (Zavala et al., 2009). Other studies emphasize the need for more research on adult religiosity/spirituality and gender roles (Zadworna-Cieslak, 2020). The evidence shows no variations in magnitude, possibly because both genders are

equally exposed to the COVID-19 pandemic (Castellanos-Torres et al., 2020), despite men having a higher death risk (Elgendy and Pepine, 2020). However, some study on gender spirituality suggests significant differences between the two (Kent, 2020; Roznowski and Zar-zycka, 2020).

Our findings suggest that good religious coping during the epidemic can help mental health as well as religion. Because spirituality is an individual, personal, and subjective experience with a higher entity (Fonseca Canteros, 2016), it is immediately tied to life fulfillment (Rivera-Ledesma and Montero, 2005; Fonseca Canteros, 2016). The study found that doctors who practice practical spirituality are less prone to grow fatigued.

## **Conclusion**

The current study shows that religiosity/spirituality can be used as a powerful coping technique for all believers in the face of despair, anxiety, stress, aggression, and the COVID-19 pandemic's negative impacts.

## **Future Avenues of Study**

This study will open avenues for researchers to go for rigorous studies to make a relationship between religiosity/spirituality with other life aspects which can be adversely by a disaster like the Covid-19 pandemic.

## **Study Limitations**

As an initial investigation for COVID-19, this study has significant limitations, including insufficient literature support. Since the pandemic is spreading globally and is a public health crisis, we hope to expand our study to include other countries for data collection and enhance our results. However, the findings of this study can help guide future investigations. This study also has the advantage of large sample size and multi-centered data collecting.

## **Applied Significance of the Study**

Religiosity/spirituality plays an essential role in boosting Pakistani students' mental health and reducing the adversities of COVID-19. The findings help to comprehend and organize mental health in Pakistan. To decrease the immediate and long-lasting impact of the COVID-19 epidemic on mental health, the government of Pakistan and the media, which consider the fourth pillar of the state, might appeal to Pakistanis' religious beliefs. The study also lays the groundwork for future research into how a society's social and cultural values might help avert disasters.

## Compliance with Ethical Standards

It is submitted that during the process of this study, all ethical standards were kept in consideration.

## Funding

It is declared that there is no funding received for the current project.

## Conflict of Interest

There is no conflict of interest of any sort.

## Ethical Approval and Informed Consent

It is submitted that informed consent was achieved and there is no formal ethical committee available at our institute but still authors took care of all the ethical standards.

## References

- Abdallah, A., & Gabr, H. (2014). Depression, anxiety, and stress among first year medical students in an Egyptian public university. *International Research Journal of Medicine and Medical Science*, 2(1), 11–19.
- Abd-El-Fattah, S.M. (2013). A cross-cultural examination of the aggression questionnaire-short form among Egyptian and Omani adolescents. *Journal of Personality Assessment*, 95, 539–548. doi: 10.1080/00223891.2013.791828
- Abdel-Khalek, A.M., Nuño, L., Gómez-Benito, J., & Lester, D. (2019). The relationship between religiosity and anxiety: a meta-analysis. *Journal of Religion and Health*, 58, 1847–56. doi: 10.1007/s10943-019-00881-z
- Acierno, R., Ruggiero, K.J., Galea, S., Resnick, H.S., Koenen, K., Roitzsch, J., de Arellano, M., Boyle, J., & Kilpatrick, D.G. (2007). Psychological sequelae resulting from the 2004 Florida hurricanes: Implications for post disaster intervention. *American Journal of Public Health*, 97(Suppl 1), S103–S108
- Al Eid, N., Alqahtani, M., Marwa, K., Arnout, B., Alswailem, H., Al & Toaimi, A. (2020). Religiosity, Psychological Resilience, and Mental Health among Breast Cancer Survivors in the Kingdom of Saudi Arabia. *Breast Cancer. Journal of Basic and Clinical Research*, 17, 1-13.
- Alim, S.M., Kibria, S., Islam, M., Uddin, M., Nessa, M., ..., Wahab, M. (2017). Translation of DASS 21 into Bangla and validation among medical students. *Bangladesh Journal of Psychiatry*, 28, 67–70. <https://doi.org/10.3329/bjpsy.v28i2.32740>

- Allport, G.W. & Ross, J.M. (1967). Personal Religious Orientation and Prejudice. *Journal of Personality and Social Psychology*, 5, 432–443.
- Ano, G.G. & Vasconcelles, E.B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, 61, 461–480.
- Bentzen, J.S. (2020). In crisis, we pray: Religiosity and the COVID-19 pandemic. *Covid Econ*, 20, 52–108.
- Bjarnason, D. (2007). Concept Analysis of Religiosity. *Home Health Care Management & Practice*, 19(5):350-5. <https://doi.org/10.1177/1084822307300883>
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., ... Greenberg N. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *SSRN Electronic Journal*, 395, 912–20. doi: 10.2139/ssrn.3532534
- Brown, D.R., & Gary, L.E. (1994). Religious involvement and health status among African-American males. *Journal of the National Medical Association*, 86, 825–831.
- Bryant, F.B., & Smith, B.D. (2001). Refining the architecture of aggression: a measurement model for the buss–perry aggression questionnaire. *Journal of Research in Personality*, 35, 138–167. doi: 10.1006/jrpe.2000.2302
- Castellanos-Torres, E., Tom as Mateos, J., & Chilet-Rosell, E. (2020). COVID-19 en clave de genero. *Gaceta Sanitaria*, 34(5), 419–421.
- Chakraborty, I. & Maity, P. (2020). COVID-19 outbreak: Migration, effects on society, global environment and prevention. *Science of the Total Environment*, 728, 138882.
- Chang, E.C. (1998). Hope, problem-solving ability, and coping in a college student population: Some implications for theory and practice. *Journal of Clinical Psychology*, 54(7): 953-62.
- Chatters, L.M. (2020). Religion and health: public health research and practice. *Annual Review of Public Health*, 21, 335-67.
- Chen, Y., Koh, H.K., Kawachi, I., Botticelli, M., & VanderWeele, T.J. (2020). Religious Service Attendance and Deaths Related to Drugs, Alcohol, and Suicide among US Health Care Professionals. *JAMA Psychiatry*, 77, 737–44.
- Cheng, S.K., Chong, G.H., Chang, S.S., Wong, C.W., Wong, C.S., ... Wong, M. T. (2006). Adjustment to Severe Acute Respiratory Syndrome (SARS): roles of appraisal and post-traumatic growth. *Psychology and Health*, 21:301–17. doi: 10.1080/14768320500286450
- Chin, W.W. (2001). *PLS-Graph Users Guide*. CT Bauer College of Business. University of Houston. 1–16.
- Choudhary, S., Sharma, A., Jabeen, N., & Magotra, R. (2019). Study of incidence of depression, anxiety, and stress among the first-year medical students in government medical college. *JK Science*, 21(2), 76–80.

- Dalky, H., & Gharaibeh, A. (2019). Depression, anxiety, and stress among college students in Jordan and their need for mental health services. *Nursing Forum*, *54*(2), 205–212. <https://doi.org/10.1111/nuf.12316>
- Dein, S., Cook, C.C., Powell, A., & Eagger, S. (2010). Religion, spirituality, and mental health. *Psychiatrist*, *34*, 63–4. doi: 10.1192/pb.bp.109.025924
- Del Castillo, F.A., Biana, H.T., & Joaquin, J.J.B. (2020). Church Inaction: The role of religious interventions in times of COVID-19. *Journal of Public Health*, *42*(3), 633–634. <https://doi.org/10.1093/pubmed/fdaa086>
- Diamond, P.M., & Magaletta, P.R. (2006). The short-form buss-perry aggression questionnaire (BPAQ-SF): a validation study with federal offenders. *Assessment*, *13*, 227–240. doi: 10.1177/1073191106287666
- Doolittle, B.R., Windish, D.M., & Seelig, C.B. (2013). Burnout, coping, and spirituality among internal medicine resident physicians. *Journal of Graduate Medical Education*, *5*(2), 257–261.
- Ebadi, A., Ahmadi, F., Ghanei, M., & Kazemnejad, A. (2009). Spirituality: A key factor in coping among Iranians chronically affected by mustard gas in the disaster of war. *Nursing & Health Sciences*, *11*(4), 344–350.
- Ferrell, B.R., Handzo, G., Picchi, T., Puchalski, C., & Rosa, W.E. (2020). The urgency of spiritual care: COVID-19 and the critical need for whole-person palliation. *Journal of Pain and Symptom Management*, *60*(3), e7–e11. <https://doi.org/10.1016/j.jpainsymman.2020.06.034>
- Fiorillo, A., & Gorwood, P. (2020). The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *European Psychiatry*, *63*, 35. doi:10.1192/j.eurpsy.2020.35
- Fonseca Canteros, M. (2016). Importancia de los aspectos espirituales y religiosos en la atencion de pacientes quirúrgicos. *Revista Chilena Cirugía*, *68*(3), 258–264.
- Galea, S., Merchant, R.M., & Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*, *180*(6), 817–818
- Guilherme, C., Ribeiro, G., Caldeira, S., Zamarioli, C., de Souza Oliveira-Kumakura, A., Almeida, A., & de Carvalho, E. (2016). Effect of the “Spiritual Support” Intervention on Spirituality and the Clinical Parameters of Women Who Have Undergone Mastectomy: A Pilot Study. *Religions*, *7*, 26.
- Gutierrez, M., Galiana, L., Tom as, J.M., Sancho, P., & Sanchís, E. (2014). La prediccion de la satisfaccion con la vida en personas mayores de Angola: el efecto moderador del genero. *Psychosocial Intervention*, *23*(1), 17–23.

- Hair, J., Sarstedt, M., Ringle, C., & Gudergan, S. (2017). *Advanced Issues in Partial Least Squares Structural Equation Modeling*. Thousand Oaks, CA: SAGE Publications.
- Hakak, R.R. (2014). *The relationships among religiosity, ethnic identity, social support, and mental health in Jewish young adults*. (Ph.D. Dissertation) Alliant International University, ProQuest Dissertations Publishing.
- He F., Deng, Y., & Li, W. (2020). Coronavirus disease 2019 (COVID-19): what we know? *Journal Medical Virology*, 92, 719–25. doi: 10.1002/jmv.25766
- Hill, P.C., Pargament, K.I., Hood, R.W., Jr., McCullough, M.E., Swyers, J. P., Larson, D. B., & Zinnbauer, B. J. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour*, 30, 51–77. <http://dx.doi.org/10.1111/1468-5914.00119>
- Hill, T.D., Burdette, A.M., Ellison, C.G., & Musick, M.A. (2006). Religious attendance and the health behaviors of Texas adults. *Preventive Medicine*, 42(2), 309-12. DOI: 10.1016/j.
- Jiang, S., Shi, Z., Shu, Y., Song, J., Gao, G.F., ... Tan, W. (2020). A distinct name is needed for the new coronavirus. *Lancet*, 395, 949. doi: 10.1016/s0140-6736(20)30419-0
- Kalra, L. (2007). Faith under the microscope. *Stroke*, 38, 848–849.
- Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., ... Yang, B.X. (2020). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatry*. 7, e14. doi: 10.1016/S2215-0366(20)30047-X
- Kar, S.K., Yasir Arafat, S.M., Kabir, R., Sharma, P., & Saxena, S.K. (2020). Coping with mental health challenges during COVID-19. In S.K. Saxena (Ed.), *Coronavirus disease 2019 (COVID-19)* (pp. 199–213). Springer. [https://doi.org/10.1007/978-981-15-4814-7\\_16](https://doi.org/10.1007/978-981-15-4814-7_16).
- Kent, B.V. (2020). Religion/spirituality and gender-differentiated trajectories of depressive symptoms age 13–34. *Journal of Religion and Health*, 59, 2064–2081.
- Koenig, H.G. (2002). *Spirituality in Patient Care: Why, How, When, and What*; Templeton Foundation Press: Radnor, PA, USA.
- Koenig, H.G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry*, 2012, 1–33.
- Koenig, H.G. (2020). Maintaining health and well-being by putting faith into action during the COVID-19 pandemic. *Journal of Religion and Health*, 59(5), 2205–2214.
- Koenig, H.G. (2020). Ways of protecting religious older adults from the consequences of COVID-19. *American Journal of Geriatric Psychiatry*, 28 (7), 776–779.

- Koenig, H.G., & Büssing, A. (2010). The Duke University Religion Index (DUREL): A Five-Item Measure for Use in Epidemiological Studies. *Religions, 1*, 78–85.
- Koenig, H.G., A.I., & Shohaib S.S. (2019). Religiosity and mental health in Islam. In: Moffic H, Peteet J, Hankir A, Awaad R, editors. *Islamophobia and Psychiatry*. 55-65.
- Koenig, H.G., Cohen, H.J., Blazer, D.G., Pieper, C., Meador, K.G., Shelp, F., Goli, V., & Di Pasquale, B. (1992). Religious coping and depression among elderly, hospitalized medically ill men. *American Journal of Psychiatry, 149*, 1693–1700.
- Koenig, H.G., George, L.K., & Peterson, B.L. (1998). Religiosity and remission of depression in medically ill older patients. *American Journal of Psychiatry, 155*, 536–542.
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T.,... Li, R. (2020). Factors Associated with Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Network Open, 3*, e203976.
- Laird, R.D., Marks, L.D., & Marrero, M.D. (2011). Religiosity, self-control, and antisocial behavior: Religiosity as a promotive and protective factor. *Journal of Applied Developmental Psychology, 32*, 78–85. <http://dx.doi.org/10.1016/j.appdev.2010.12.003>
- Levin J. (2001). God, love, and health: Findings from a clinical study. *Review of Religious Research, 42*(3), 277-93.
- Liu, N., Zhang, F., Wei, C., Jia, Y., Shang, Z., Sun, L., Wu, L., Sun, Z., Zhou, Y., Wang, Y., & Liu, W. (2020). Prevalence and predictors of PTSS during COVID-19 Outbreak in China hardest-hit areas: Gender differences matter. *Psychiatry Research, 287*, 112921. <https://doi.org/10.1016/j.psychres.2020.112921>
- Lovibond, S.H., & Lovibond, P.F. (1995). *Manual for the depression anxiety stress scales*. 2nd ed. Sydney: Psychology Foundation of Australia.
- Lucchetti, G., Góes, L.G., Amaral, S.G., Ganadjian, G.T., Andrade, I., de Araújo Almeida, P.O., do Carmo, V.M., & Manso, M.E.G. (2020). Spirituality, religiosity, and the mental health consequences of social isolation during Covid-19 pandemic. *International Journal of Social Psychiatry*.
- Mansor, N., & Khalid, N.S. (2012). Spiritual well-being of INSTED. IIUM Students' and its relationship with college adjustment. *Prosocial Behavior Science, 69*, 1314–23. doi: 10.1016/j.sbspro.2012.12.068
- Markstrom, C.A. (1999). Religious involvement and adolescent psychosocial development. *Journal of Adolescence, 22*, 205–221. <http://dx.doi.org/10.1006/jado.1999.0211>
- Mason, V., Andrews, H., & Upton, D. (2010). The psychological impact of exposure to floods. *Psychology, Health & Medicine, 15*(1), 61–73.

- Masters, K.S. (2013). Extrinsic Religiousness (Religiosity). In *Encyclopedia of Behavioral Medicine*; Gellman, M.D., Turner, J.R., Eds.; Springer: New York, NY, USA.
- Miller, L., & Gur, M. (2002). Religiosity, Depression, and Physical Maturation in Adolescent Girls. *Journal of the American Academy of Child and Adolescent Psychiatry*, 41, 206–214.
- Park, J., Roh, S., & Yeo, Y. (2012). Religiosity, social support, and life satisfaction among elderly Korean immigrants. *Gerontology*, 52 (5), 641–649.
- Passos, L.; Prazeres, F.; Teixeira, A.; Martins, C. (2020). Impact on Mental Health Due to COVID-19 Pandemic: Cross-Sectional Study in Portugal and Brazil. *International Journal of Environment Research and Public Health*, 17, 6794.
- Person, B., Sy, F., Holton, K., Govert, B., & Liang, A. (2004). The NCID/SARS Community Outreach Team. Fear and Stigma: The Epidemic within the SARS Outbreak. *Emerging Infectious Diseases* • www.cdc.gov/eid • 10, 2.
- Pew Research Center. (2018). Religion & Public Life. Eastern and Western Europeans Differ on Importance of Religion, Views of Minorities, and Key Social Issues. Available online: <https://www.pewforum.org/2018/10/29/eastern-and-western-europeansdiffer-on-importance-of-religion-views-of-minorities-and-key-social-issues/> (accessed on 28 November 2020).
- Pirutinsky, S., Cherniak, A.D., & Rosmarin, D.H. (2020). COVID-19, mental health, and religious coping among American Orthodox Jews. *Journal of Religion and Health*, 59(5), 2288–2301. <https://doi.org/10.1007/s10943-020-01070-z>
- Pollner, M. (1989). Divine relations, social relations, and PWB. *Journal of Health and Social Behavior*, 30(2):92-104.
- Puchalski, C., Ferrell, B., Virani, R., .... Prince-Paul, M. (2009) Improving the quality of spiritual care as a dimension of palliative care: The report of the consensus conference. *Journal Palliative Medicine*, 12, 885–904.
- Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *General Psychiatry*, 33, 1–2. <https://doi.org/10.1136/gpsych-2020-100213>
- Quintana, F.J. (2013). The Influence of Religiosity and Stigma on Mental Health Outcomes for an African American and Latino Clinical Sample. *Doctoral Dissertations*. 224.
- Rivera-Ledesma, A., & Montero, M. (2005). Espiritualidad y religiosidad en adultos mayores Mexicanos. *Salud Ment* 28 (6), 51–58. Retrieved from. [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=4S0185-33252005000600051](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=4S0185-33252005000600051).

- Roznowski, B., & Zarzycka, B. (2020). Centrality of religiosity as a predictor of work \_ orientation styles and work engagement: a moderating role of gender. *Religions*, *11*(8), 387.
- Saad, M.; Medeiros, R. (2021). Spiritual-Religious Coping—Health Services Empowering Patients’ Resources. In *Complementary Therapies for the Contemporary Healthcare*; Intech Open: London, UK, 2012. *International Journal of Environ. Research and Public Health*, *18*, 220.
- Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, *7541*, 1–6. <https://doi.org/10.7759/cureus.7541>
- Saleem, M., Bakar, A., Durrani, A.K & Manzoor, Z. (2021). Impact of Perceived Severity of COVID-19 (SARS-COV-2) on Mental Health of University Students of Pakistan: The Mediating Role of Muslim Religiosity. *Frontiers in Psychiatry*, *12*, 560059. doi: 10.3389/fpsy.2021.560059
- Salmani, S., Biderafsh, A., & Aliakbarzadeh Arani, Z. (2020). The relationship between spiritual development and life satisfaction among students of qom university of medical sciences. *Journal of Religion and Health*, *59*(4), 1889–1896.
- Schuster, M.A., Stein, B.D., Jaycox, L.H., Collins, R.L., Marshall, G.N., Elliott, M.N., Zhou, A.J., Kanouse, D.E., Morrison, J.L., & Berry, S.H. (2001). A national survey of stress reactions after the September 11, 2001, terrorist attacks. *New England Journal of Medicine*, *345*(20), 1507–1512.
- Seeman, T.E., Dubin, L.F., & Seeman, M. (2003). Religiosity/spirituality and health. A critical review of the evidence for biological pathways. *The American Psychologist*, *58*(1):53-63
- Sheretta, T., Pamela, P., Elan, C., Nikeea, C., & Marquisha, L. (2018). Religiosity and Coping: Racial Stigma and PWB among African American Girls. *Journal of Religion and Health*, *57*, 1980-95.
- Smith, T.B., McCullough, M.E., & Poll, J. (2004). Religiousness and depression: evidence for a main effect and the moderating influence of stressful life events’: correction to Smith et al. *Psychology Bulletin*, *130*, 65. doi: 10.1037/h0087878
- Soper, D.S. (2020). *A-Priori Sample Size Calculator for Structural Equation Models [Software]*. Available online at: [www.danielsoper.com/statcalc](http://www.danielsoper.com/statcalc) (accessed April 4, 2020).
- Sulmasy, D.P. (2009). Spirituality, religion, and clinical care. *Chest*, *135*, 1634–1642.
- Tee, M., Wang, C., Tee, C., Pan, R., Reyes, P., Wan, X., Anlacan, J., Tan, Y., Xu, L., Harijanto, C., Kuruchittham, V., Ho, C., & Ho, R. (2021). Impact of the COVID-19 pandemic on physical and mental Health in lower and upper middle-income Asian countries: A comparison between the Philippines and China. *Frontiers in Psychiatry*, *9*(11), 568929. <https://doi.org/10.3389/fpsy.2020.568929>

- Thune-Boyle, I. C., Stygall, J.A., Keshtgar, M.R., & Newman, S.P. (2006). Do religious/spiritual coping strategies affect illness adjustment in patients with cancer? A systematic review of the literature. *Social Science & Medicine*, 63(1), 151–164.
- Tix, A.P., & Frazier, P.A. (1998). The use of religious coping during stressful life events: Main effects, moderation, and mediation. *Journal of Consulting Clinical Psychology*, 66, 411–422.
- Vitoratou, S., Ntzoufras, I., Smyrnis, N., & Stefanis, N.C. (2009). Factorial composition of the aggression questionnaire: a multi-sample study in Greek adults. *Psychiatry Research* 168, 32–39. doi: 10.1016/j.psychres.2008.01.016
- Von Collani, G., & Werner, R. (2005). Self-related and motivational constructs as determinants of aggression. An analysis and validation of a German version of the Buss-Perry Aggression Questionnaire. *Personality and Individual Differences* 38, 1631–1643. doi: 10.1016/j.paid.2004.09.027
- Wagner, A.C., Hart, T.A., Mc Shane, K.E., Margoles, S., & Girard, T.A. (2014). Health care provider attitudes and beliefs about people living with HIV: Initial validation of the health care provider HIV/AIDS Stigma Scale (HPASS). *AIDS Behavior* 18, 2397-408.
- Webster, G.D., DeWall, C.N., Pond, R.S. Jr., Deckman, T., Jonason, P.K., ..., Le, B.M. (2014). The brief aggression questionnaire: psychometric and behavioral evidence for an efficient measure of trait aggression. *Aggressive Behavior*, 40, 120–139. doi: 10.1002/ab.21507
- Webster, G.D., DeWall, C.N., Pond, R.S. Jr., Deckman, T., Jonason, P.K., ... Le, B.M. (2015). The brief aggression questionnaire: structure, validity, reliability, and generalizability. *Journal of Personality Assessment*, 97, 638–649. doi: 10.1080/00223891.2015.1044093
- Weinberger-Litman, S.L., Litman, L., Rosen, Z., Rosmarin, D.H., & Rosenzweig, C. (2020). A look at the first quarantined community in the USA: Response of religious communal organizations and implications for public health during the COVID-19 pandemic. *Journal of Religion and Health*, 59(5), 2269–2282. <https://doi.org/10.1007/s10943-020-01064-x>
- WHO. WHO Director-General’s Opening Remarks at the Media Briefing on COVID-19—11 March 2020. Available online: [https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19 --11-march-2020](https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19--11-march-2020) (accessed on 3 August 2020).
- Worldometer. Coronavirus Cases. Available online: <https://www.worldometers.info/coronavirus/> (accessed on 12 September 2020). Direção Geral da Saúde. Ponto de Situação Atual em Portugal—COVID-19. Available online: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/> (accessed on 1 December 2020).

- Wu, P., Fang, Y., Guan, Z., ... Fan, B. (2009). The psychological impact of the SARS epidemic on hospital employee in China: Exposure, risk, perception, and altruistic acceptance of risk. *Canadian Journal of Psychiatry, 54*(5), 302–311.
- Yang, J.Z., & Chu, H. (2018). Who is afraid of the Ebola outbreak? The influence of discrete emotions on risk perception. *Journal Risk Research, 7*, 834–53. doi: 10.1080/13669877.2016.1247378
- Zadworna-Cieslak, M. (2020). Spirituality, satisfaction with life and health-related behavior of older residents of long-term care institutions—a pilot study. *Explore, 16*(2), 123–129.
- Zavala, M.W., Maliski, S.L., Kwan, L., Fink, A., ..., Litwin, M.S. (2009). Spirituality and quality of life in low-income men with metastatic prostate cancer. *Psychology Oncology, 18*(7), 753–761.
- Zhang, A.Y., Gary, F., & Zhu, H. (2013). Initial evidence of religious practice and belief in depressed African American cancer patients. *Open Nursing Journal, 7*, 1–5. doi: 10.2174/1874434601307010001
- Zheng, W. (2020). Mental health and a novel coronavirus (2019-nCoV) in China. *Journal of Affective Disorder, 269*, 201–202. <https://doi.org/10.1016/j.jad.2020.03.041>
- Zimonyi, S., Kasos, K., Halmai, Z., Csirmaz, L., Stadler, H., ..., Rózsa, S. (2021). Hungarian validation of the buss–perry aggression questionnaire—is the short form more adequate? *Brain Behavior, 11*, e02043. doi: 10.1002/brb3.2043