



Faith in Mind: Islam's Role in Mental Health

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Introduction

At Yaqeen, we consider Muslim mental health research to be a top priority. In the current study we examined the role of religiosity in Muslim mental health and well-being. Traditionally, the roles of religiosity and spirituality have been left out of definitions of mental health.¹ However, as Muslims we know that our purpose in life is to worship Allah,² and that the serenity of our souls is tied to our remembrance of Him.³ Therefore, we want to start the conversation about mental health with God in mind. For the believer, spiritual health cannot be divorced from this equation, as religiosity and spirituality are indispensable components of thriving and healing.⁴

Religiosity and mental health

Religiosity and mental health are intertwined. Religious beliefs and practices give followers a clear purpose in life, and purpose in life is a major predictor of mental health.⁵ Although meaning and purpose can be sought in many ways, Islam alone

¹ For example, the United Nations defines mental health as “a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community.” “Mental Health and Human Rights Report of the United Nations High Commissioner for Human Rights,” United Nations, January 31, 2017, https://www.un.org/disabilities/documents/reports/ohchr/a_hrc_34_32_mental_health_and_human_rights_2017.docx#:~:text=Mental%20health%20may%2C%20in%20its,to%20his%20or%20her%20community%E2%80%9D.

Psychology is beginning to acknowledge the role of religion and spirituality in mental health. For example, the American Psychological Association (APA), has a division (36) that promotes psychological theory, research, and clinical practice to understand the significance of religion and spirituality in people's lives and in the discipline of psychology. “Div. 36: Society for the Psychology of Religion and Spirituality,” APA Divisions, <https://www.apadivisions.org/division-36>. Furthermore, an example of an organization that acknowledges the role of religion in counseling is ASERVIC, an organization of counselors and human development professionals who believe that spiritual, ethical, and religious values are essential to the overall development of the person and are committed to integrating these values into the counseling process. <https://aservic.org/>.

² Qur'an 51:56.

³ Qur'an 13:28.

⁴ Gene B. Ano and Erin B. Vasconcelles, “Religious Coping and Psychological Adjustment to Stress: A Meta-Analysis,” *Journal of Clinical Psychology* 61, no. 4 (2005): 461–80; Harold Koenig, Harold George Koenig, Dana King, and Verna B. Carson, *Handbook of Religion and Health* (New York: Oxford University Press, 2012).

⁵ Gary T. Reker, Edward J. Peacock, and Paul T. P. Wong, “Meaning and Purpose in Life and Well-Being: A Life-Span Perspective,” *Journal of Gerontology* 42, no. 1 (1987): 44–49; Naser Aghababaei and Agata Błachnio, “Purpose in Life Mediates the Relationship between Religiosity and Happiness: Evidence from Poland,” *Mental Health, Religion & Culture* 17, no. 8 (2014): 827–31.

provides complete answers to the existential questions that we all encounter at some point in life.⁶ Additionally, the Qur'an, Sunnah, and the Islamic tradition are replete with guidance on inculcating spiritual and psychological resilience, uncertainty tolerance, and other virtues. As Allah tells us in *Sūrah Tā Ha*, “We have not revealed the Qur'an upon you to cause distress.”⁷ Applying the legal principle of *mafhūm al-mukhālafah*, or the inverse implication (argumentum e contrario), Allah therefore sent down the Qur'an to bring comfort and contentment. This places the Qur'an at the center of conversations about Muslim mental health.

The Prophet Muhammad ﷺ also highlighted the need to turn to Allah for our mental health needs when he said, “Ask your Lord for forgiveness and wellness in this world and the Hereafter. If you are given forgiveness and wellness in the world and the Hereafter, you have succeeded.”⁸ Islam encourages us to remove any physiological or psychological barriers that reduce our ability to focus on Allah. Thus, we find the Prophet ﷺ teaching us not to pray when a meal is presented or when we need to relieve ourselves,⁹ as the bodily urges to eat and use the bathroom would consume our minds and diminish the quality of our remembrance. If religious experiences are compromised when we are not in a state of physiological equilibrium, how much more important is it to be in a healthy mental state that facilitates a deep spiritual focus (*khushū'*)?

The Prophet ﷺ taught us to seek halal treatment for whatever ails us,¹⁰ and this includes both physical health and mental health. In addition to the Qur'an and Sunnah, entire genres of classical literature on purification of the soul (*tazkiyat al-nafs*), Islamic psychology (*'ilm al-nafs*), and theology address the teleological and psychospiritual dimensions of contentment in this life and in the afterlife.¹¹ For instance, the great classical scholar, al-Balkhī, wrote extensively on mental

⁶ Kenneth I. Pargament, *The Psychology of Religion and Coping: Theory, Research, Practice* (New York: Guilford Press, 2001).

⁷ Qur'an 20:2.

⁸ *Sunan Ibn Mājah*, no. 3848.

⁹ *Ṣaḥīḥ Muslim*, no. 560.

¹⁰ *Sunan Abī Dāwūd*, no. 3874.

¹¹ For example, great scholars such as al-Ghazālī (d. 510 AH/1111 CE) and Ibn al-Qayyim al-Jawziyya all wrote extensively on mental health and faith.

disorders, including depression and anxiety, and their medical and religious treatments.¹² Important for the recovery process are medications and/or valid mental health therapies such as cognitive behavioral therapy (CBT), which has developed effective methods and procedures to increase psychological flexibility, improve emotion regulation, alter cognitive distortions, among other positive outcomes.¹³ Yet for the Muslim, the Qur'an and Sunnah are ultimately the fundamental sources of healing and, as religiosity and mental health are inextricably linked, faith is a **necessary** component of healing and recovery for Muslims.

As Allah is our Creator, the logical conclusion is that His guidance will facilitate optimal human functioning. The Qur'an affirms this notion by rhetorically asking, "Does He who created not know, while He is the Subtle, the Acquainted?"¹⁴ The Qur'an clearly states that the remembrance of Allah is a fundamental means of finding comfort and contentment.

Allah says,

الَّذِينَ آمَنُوا وَتَطْمَئِنُّ قُلُوبُهُمْ بِذِكْرِ اللَّهِ أَلَا بِذِكْرِ اللَّهِ تَطْمَئِنُّ الْقُلُوبُ

Those who have believed and whose hearts are comforted by the remembrance of Allah. Unquestionably, by the remembrance of Allah do hearts find comfort and contentment.¹⁵

¹² Rania Awaad, Danah Elsayed, and Hosam Helal, "Holistic Healing: Islam's Legacy of Mental Health," May 27, 2021, <https://yaqeeninstitute.org/read/paper/holistic-healing-islams-legacy-of-mental-health>; Malik Badri, *Abu Zayd al-Balkhi's Sustenance of the Soul: The Cognitive Behavior Therapy of a Ninth Century Physician* (London: International Institute of Islamic Thought, 2013).

¹³ Richard Beck and Ephrem Fernandez, "Cognitive-Behavioral Therapy in the Treatment of Anger: A Meta-Analysis," *Cognitive Therapy and Research* 22, no. 1 (1998): 63–74; Roger Covin, Allison J. Ouimet, Pamela M. Seeds, and David J. A. Dozois, "A Meta-Analysis of CBT for Pathological Worry among Clients with GAD," *Journal of Anxiety Disorders* 22, no. 1 (2008): 108–116; Keith S. Dobson, "A Meta-Analysis of the Efficacy of Cognitive Therapy for Depression," *Journal of Consulting and Clinical Psychology* 57, no. 3 (1989): 414.

¹⁴ Qur'an 67:14.

¹⁵ Qur'an 13:28.

Another major component of mental health is a sense of community.¹⁶ This corresponds to the Islamic concept of an *ummah* comprising a tight-knit community of believers responsible for one another. Fully identifying with and belonging to the *ummah* provides a sense of relatedness that fulfills a fundamental human need.¹⁷ Islam thus provides the interpersonal (between people) and intrapersonal (within a person) tools necessary for the mental and spiritual health that enables people to overcome the many challenges of the human experience.¹⁸

We are not advocating for an individualistic, personalized notion of religiosity as the key to human flourishing. Rather, the actualization of human potential requires deep personal commitment to the Islamic lifestyle, embeddedness in functional communities, and rule by just governments that facilitate the proper conditions for human flourishing. However, as Muslims today function outside of any semblance of a true Islamic government, the association between religiosity and mental health may be more modest than the asymptotic ideal.

Measuring religiosity

What exactly do we mean by religiosity? Religiosity is often measured by superficial or limited aspects of belief or practice, such as people's self-reported importance of religion, frequency of service attendance,¹⁹ or belief in God. These limited definitions do not encapsulate the all-encompassing concept of “*dīn*” (faith as a way of life) for Muslims.²⁰ It is likely that the use of limited definitions of religiosity masks the true effects of religiosity on mental health and well-being.

¹⁶ Bonnie M. K. Hagerty and Kathleen Patusky, “Developing a Measure of Sense of Belonging,” *Nursing Research* 44, no. 1 (1995): 9–13.

¹⁷ Bonnie M. K. Hagerty, Judith Lynch-Sauer, Kathleen L. Patusky, Maria Bouwsema, and Peggy Collier, “Sense of Belonging: A Vital Mental Health Concept,” *Archives of Psychiatric Nursing* 6, no. 3 (1992): 172–77; Edward L. Deci and Richard M. Ryan, “Self-Determination Theory: A Macrotheory of Human Motivation, Development, and Health,” *Canadian Psychology/Psychologie Canadienne* 49, no. 3 (2008): 182.

¹⁸ Islam's detailed guidance on relationships with parents, children, spouses, neighbors, and community members demonstrates the emphasis that Islam puts on interpersonal matters.

¹⁹ “Measuring Religion in Pew Research Center's American Trends Panel,” Pew Research Center, <https://www.pewforum.org/2021/01/14/measuring-religion-in-pew-research-centers-american-trends-panel/>.

²⁰ Furthermore, Muslim women are not obligated to attend the Friday prayer, so we have found service attendance to be a poor indicator of religiosity for Muslims.

We addressed this issue at Yaqeen by creating the BASIC survey, a holistic, multidimensional measure of Muslim religiosity that includes beliefs, attitudes, spiritual practices and connection to Allah, institutional connections, and contributions to society.²¹ The BASIC survey measures the role of (B)eliefs, (A)ttitudes towards unpredictable life events and the decree of Allah, (S)piritual behaviors and connection to Allah (i.e., prayer and Quran reading and awareness of Allah), (I)nstitutional connection and attachment to the Muslim community, and (C)ontribution to society. We derived these dimensions from numerous verses and *aḥādīth* that discuss the comprehensive nature of faith and righteousness.²²

Mental health: What exactly do we mean?

Just as religiosity is a nebulous term in need of clear definition, “mental health” is defined by psychiatrists, epidemiologists, psychologists, and religious scholars in varying and sometimes incommensurable ways. For example, psychiatry is the study and treatment of mental illness, emotional disturbance, and abnormal behavior. As a result, psychiatrists often focus on psychopathology, which refers to the scientific study of mental illnesses, including depression and anxiety disorders. In contrast, psychologists may expand the term to include psychological thriving and well-being (i.e., positive psychology). Thus, we can see that mental health encompasses both mental disorders (psychopathology) and positive psychological outcomes.

Research on religiosity and mental health has steadily increased over the past few decades.²³ Although some anti-religious Western academics have speculated that religiosity negatively influences mental health,²⁴ the scientific literature tells a different story. The majority of research studies find a positive relation between religiosity and mental health (with some studies finding either no relation or a

²¹ Tamer Desouky and Osman Umarji, “The Impact of Muslim Religiosity on Well-Being Outcomes,” September 15, 2021, <https://yaqeeninstitute.org/read/data/reports/a-holistic-view-of-muslim-religiosity-introducing-basic>.

²² Qur'an 2:177.

²³ William R. Miller and Carl E. Thoresen, “Spirituality, Religion, and Health: An Emerging Research Field,” *American Psychologist* 58, no. 1 (2003): 24.

²⁴ These opinions can be found in the writings of Sigmund Freud, Albert Ellis, Wendell Waters, and others. However, these authors do not present any evidence to support their claims.

negative relation). The inconsistency of these results likely stems from differences in how religiosity was measured, the religious groups being studied, and the specific mental health outcome studied and its measurement.²⁵ Researchers who reviewed 139 studies on the subject concluded that how religiosity is measured explains most of the neutral findings, because inadequate measurement is generally associated with unreliability and the probability of deflated correlations.²⁶ Nonetheless, taken collectively, the body of research suggests religion's positive relation with mental health.²⁷ We find it useful to investigate religiosity's relationship with psychopathology and positive psychology separately. This categorization helps us understand how religiosity both protects against mental illness and promotes thriving and flourishing.

Religiosity and psychopathology (depression and anxiety)

The most frequently studied mental health outcome is depression, which refers to a mood disorder that affects how a person feels, thinks, and handles daily activities.²⁸ Some common symptoms include persistent sadness, low energy, hopelessness, pessimism, and loss of interest in life. According to a systematic review of 101 studies on religiosity and depression, approximately two in three studies found that religiosity relates to lower levels of depression or depressive symptomatology.²⁹ Furthermore, in studies following depressed people over time, religiosity was associated with overcoming depression faster.³⁰ Although studies of Muslim samples are not as common, many of them have found similar results.³¹

²⁵ Kevin S. Seybold and Peter C. Hill, "The Role of Religion and Spirituality in Mental and Physical Health," *Current Directions in Psychological Science* 10, no. 1 (2001): 21–24.

²⁶ David B. Larson, Kimberly A. Sherrill, John S. Lyons, Frederic C. Craigie, Samuel B. Thielman, Mary A. Greenwald, and Susan S. Larson, "Associations between Dimensions of Religious Commitment and Mental Health Reported in the American Journal of Psychiatry and Archives of General Psychiatry: 1978–1989," *American Journal of Psychiatry* 149, no. 4 (1992): 557–59.

²⁷ Larson et al., "Associations between Dimensions of Religious Commitment."

²⁸ "Depression," National Institute for Mental Health, <https://www.nimh.nih.gov/health/topics/depression>.

²⁹ Harold G. Koenig and David B. Larson, "Religion and Mental Health: Evidence for an Association," *International Review of Psychiatry* 13, no. 2 (2001): 67–78.

³⁰ Koenig and Larson, "Religion and Mental Health."

³¹ Sasan Vasegh and Mohammad-Reza Mohammadi, "Religiosity, Anxiety, and Depression among a Sample of Iranian Medical Students," *The International Journal of Psychiatry in Medicine* 37, no. 2 (2007): 213–27, <https://doi.org/10.2190/J3V5-L316-0U13-7000>; Ahmed M. Abdel-Khalek, "Religiosity and Well-Being in a Muslim Context," in *Religion and Spirituality across Cultures* (Dordrecht: Springer, 2014), 71–85.

The relation between religiosity and anxiety is also well studied, with significantly more research on non-Muslim samples. In a review of 69 observational studies, half (35 studies) found that religiosity was related to lower levels of anxiety or fear, a third (24) found no relationship between the two, and 15% found religiosity was related to higher levels of anxiety. The same review found that six out of seven randomized control trials of religious interventions in patients with anxiety disorders were effective at reducing anxiety—even more effective than secular interventions.³² Although fewer studies of Muslims exist, in a meta-analysis of studies of Muslims in the Middle East, nine out of 10 studies found that religiosity was related to lower levels of anxiety.³³ In our own research at Yaqeen during the COVID-19 pandemic, we also found that aspects of religiosity were associated with reduced anxiety in Muslims worldwide.³⁴

Religiosity and positive psychology

Some of the most common positive psychological outcomes researched include psychological well-being, life satisfaction, and purpose in life. Psychological well-being broadly relates to perceptions of happiness and thriving.³⁵ Life satisfaction is a positive mental health outcome measuring how rich and meaningful one finds their life.³⁶ Purpose in life captures whether one perceives their life as having meaning and the extent to which one engages in activities that are personally valued.³⁷ In a systematic review of 100 studies, almost 80% (79

³² Abdel-Khalek, Ahmed M. "Religiosity and well-being." *Encyclopedia of personality and individual differences* (2019): 1-8.

³³ Ahmed M. Abdel-Khalek, Laura Nuño, Juana Gómez-Benito, and David Lester, "The Relationship Between Religiosity and Anxiety: A Meta-Analysis," *Journal of Religion and Health* 58 (2019): 1847–56.

³⁴ Osman Umarji and Hassan Elwan, "Embracing Uncertainty: How to Feel Emotionally Stable in a Pandemic," *Yaqeen*, March 30, 2020,

<https://yaqeeninstitute.org/read/paper/embracing-uncertainty-how-to-feel-emotionally-stable-in-a-pandemic>

³⁵ Ed Diener and Katherine Ryan, "Subjective Well-Being: A General Overview," *South African Journal of Psychology* 39, no. 4 (2009): 391–406.

³⁶ Edward F. Diener, "Pioneer in Subjective Quality of Life Research: Edward F. Diener," *Applied Research Quality Life* 9 (2014): 137–38, <https://doi.org/10.1007/s11482-013-9284-0>.

³⁷ Michael F. Scheier, Carsten Wrosch, Andrew Baum, Sheldon Cohen, Lynn M. Martire, Karen A. Matthews, Richard Schulz, and Bozena Zdaniuk, "The Life Engagement Test: Assessing Purpose in Life," *Journal of Behavioral Medicine* 29, no. 3 (2006): 291–98.

studies) found religiosity to predict higher life satisfaction and happiness.³⁸ Furthermore, religiosity was associated with higher levels of hope, optimism, and purpose in life in 12 of 14 studies. In no study was religiosity related to lower levels of hope and optimism.³⁹

The positive impact of religiosity has also been detected in Muslim samples globally.⁴⁰ However, nearly all of the studies we found only looked at simple correlations and did not investigate other demographic or psychological factors. One exception was a study of 1000 Pakistani Muslims that found religiosity was related to greater life satisfaction, even after accounting for many other factors.⁴¹ Overall, the dearth of studies with large Muslim samples and robust measures of both religiosity and mental health is a major limitation.

Previous research clearly demonstrates that religiosity and mental health are positively related, even in overwhelmingly non-Muslim samples. As believers, we should be that much more optimistic and motivated to think about the positive effects of religiosity on mental health for Muslims, as Islam is indeed the ultimate truth.

Religious doubt and mental health

Although research has found that religiosity is related to better mental health, we know very little about how mental health is affected by religious doubt (*shakk*).

³⁸ Koenig and Larson, "Religion and Mental Health."

³⁹ Koenig and Larson, "Religion and Mental Health."

⁴⁰ Ahmed M. Abdel-Khalek and Ghada K. Eid, "Religiosity and Its Association with Subjective Well-Being and Depression among Kuwaiti and Palestinian Muslim Children and Adolescents," *Mental Health, Religion and Culture* 14, no. 2 (2011): 117–27; Ahmed M. Abdel-Khalek, "Religiosity, Subjective Well-Being, and Neuroticism," *Mental Health, Religion and Culture* 13, no. 1 (2010): 67–79; Ahmed M. Abdel-Khalek, "Religiosity and Subjective Well-Being in the Arab Context: Addendum and Extrapolation," *Mental Health, Religion and Culture* 22, no. 8 (2019): 860–69; Fouzia Gull and Saima Dawood, "Religiosity and Subjective Well-Being amongst Institutionalized Elderly in Pakistan," *Health Promotion Perspectives* 3, no. 1 (2013): 124; Ali Ayten and Sezai Korkmaz, "The Relationships between Religiosity, Prosociality, Satisfaction with Life and Generalized Anxiety: A Study on Turkish Muslims," *Mental Health, Religion and Culture* 22, no. 10 (2019): 980–93; Khadeeja Munawar and Omama Tariq, "Exploring Relationship between Spiritual Intelligence, Religiosity and Life Satisfaction among Elderly Pakistani Muslims," *Journal of Religion and Health* 57, no. 3 (2018): 781–95.

⁴¹ Kauser Suhail and Haroon Rashid Chaudhry, "Predictors of Subjective Well-Being in an Eastern Muslim Culture," *Journal of Social and Clinical Psychology* 23, no. 3 (2004): 359–76.

Religious doubt refers to feelings of uncertainty towards, and a questioning of, religious teachings and beliefs. The experience of religious doubt can push a person into a deep existential crisis if not properly addressed. Thus, religious doubt is a process intricately tied to the psychological, social, and emotional dimensions of a person's life.⁴² Within primarily Christian samples, religious doubt has been found to relate to higher levels of depression, anxiety, and psychological distress.⁴³ These studies suggest that religious doubts stemming from confusion about suffering and evil in the world are especially related to psychopathology. Another line of research has found that doubts concerning "divine struggles" (i.e., negative perceptions about God) or the meaning of life are also related to depression, anxiety, and anger.⁴⁴ However, we cannot draw conclusions about the Muslim context, as most of these studies either include no Muslims or incredibly small sample sizes of Muslims.⁴⁵ One of the only known studies of a Muslim sample—consisting of 139 Palestinians—related religious and spiritual struggles to depressive symptoms and anxiety, but not to life satisfaction.⁴⁶ The types of doubts most associated with psychopathology in Muslims were negative interpretations of difficult life events (i.e., feeling attacked by supernatural forces or being punished by Allah) and doubts pertaining to the ultimate meaning of life (i.e., existential questions).

⁴² Zohair Abdul-Rahman and M. Nazir Khan, "Shakk (2): The Psychology of Doubt," *Spiritual Perception*, September 17, 2017, <https://spiritualperception.org/shakk-2-the-psychology-of-doubt/>.

⁴³ Christopher G. Ellison and Jinwoo Lee, "Spiritual Struggles and Psychological Distress: Is There a Dark Side of Religion?," *Social Indicators Research* 98 (2010): 501–517, <https://doi.org/10.1007/s11205-009-9553-3>; Luke William Galen and James D. Kloet, "Mental Well-Being in the Religious and the Non-Religious: Evidence for a Curvilinear Relationship," *Mental Health, Religion and Culture* 14, no. 7 (2011): 673–89, <https://doi.org/10.1080/13674676.2010.510829>; Kathleen Galek, Neal Krause, Christopher G. Ellison, Taryn Kudler, and Kevin J. Flannelly, "Religious Doubt and Mental Health across the Lifespan," *Journal of Adult Development* 14, no. 1 (2007): 16–25.

⁴⁴ Julie J. Exline, Kenneth I. Pargament, Joshua B. Grubbs, and Ann Marie Yali, "The Religious and Spiritual Struggles Scale: Development and Initial Validation," *Psychology of Religion and Spirituality* 6, no. 3 (2014): 208.

⁴⁵ James Henrie and Julie Hicks Patrick, "Religiousness, Religious Doubt, and Death Anxiety," *The International Journal of Aging and Human Development* 78, no. 3 (2014): 203–227, <https://doi.org/10.2190/AG.78.3.a>; Galek et al., "Religious Doubt and Mental Health"; Laura Upenieks, "Changes in Religious Doubt and Physical and Mental Health in Emerging Adulthood," *Journal for the Scientific Study of Religion*, 2021.

⁴⁶ Hisham Abu-Raiya, Julie J. Exline, Kenneth I. Pargament, and Qutaiba Agbaria, "Prevalence, Predictors, and Implications of Religious/Spiritual Struggles among Muslims," *Journal for the Scientific Study of Religion* 54, no. 4 (2015): 631–48.

When we turn to the Prophetic tradition, we find that the companions often felt distressed when experiencing doubt and sought guidance from the Prophet ﷺ. Therefore, we find numerous prophetic narrations affirming that Muslims *do* experience religious doubt, and that this is normal and far from blameworthy. A companion once came to the Prophet ﷺ and said, “O Messenger of Allah! One of us has thoughts of such nature that he would rather be reduced to charcoal than speak about them.” The Prophet ﷺ replied, “Allahu Akbar! Allahu Akbar! Allahu Akbar! Praise be to Allah who has reduced the evil of the devil to only suggestions and whisperings.”⁴⁷ In this narration, we see the distress that religious doubt brought upon the companion, yet we also see how the Prophet ﷺ acknowledged the doubt and praised the companion. We learn that when we're faced with doubts, we need to tackle them head on by seeking Allah's protection from and clarity on the questions with which we're grappling. This is how we bolster our *yaqīn* (certainty).

In another narration, some companions came to the Prophet ﷺ and lamented, “O Messenger of Allah, sometimes we have these thoughts, we hate having these thoughts, we would never dare to speak of them and we just want them to go away.” Our Prophet ﷺ replied, “That is clear faith.”⁴⁸ Our *dīn* is so merciful that it recognizes that having religious doubts but not improperly acting upon them is a sign of clear faith (*īmān*), and our merciful Lord rewards us for the discomfort we feel over those doubts. We are also given practical instruction to deal with our doubts by saying, “*Āmantu billāh*” (I believe in Allah), and to remind ourselves that doubts are just evidence of Shayṭān's persistence, rather than a sign of our own wickedness.

Uncertainty intolerance and mental health

One of the primary determinants of a person's mental health is their attitude towards uncertainty. People comfortable with uncertainty will function better in life than those obsessed with control. The nature of life is uncertain, so expecting

⁴⁷ *Sunan Abi Dawud*, no. 5112.

⁴⁸ *Sunan Abi Dawud*, no. 5111.

certainty from that which Allah has made uncertain will naturally lead to distress. Uncertainty intolerance is a cognitive bias that negatively affects how a person perceives, interprets, and responds to uncertain situations cognitively, emotionally, and behaviorally. Studies have repeatedly related uncertainty intolerance to increased levels of depression, anxiety, and stress.⁴⁹

Our research at Yaqeen has found that in addition to its deleterious effects on mental health, uncertainty intolerance is related to religious doubts.⁵⁰ Additionally, a person's tolerance for uncertainty is likely related to their understanding and practice of religious concepts such as *tawakkul* (trust and reliance on Allah) and *ṣabr* (patience). Allah has woven uncertainty into the fabric of the universe, even in the Qur'an itself:

It is He who has sent down to you [O Muhammad] the Book; in it are verses that are clear-cut—they are the foundation of the Book—and others that are unspecific and ambiguous. As for those in whose hearts is deviation [from truth], they will follow the unspecific and ambiguous, seeking discord and seeking an interpretation [suitable to them]. And no one knows its [true] interpretation except Allah. But those firm in knowledge say, “We believe in it. All of it is from our Lord.” And no one will be reminded except those of understanding.⁵¹

This verse establishes that Allah, in His infinite wisdom, purposely placed verses in the Qur'an that contain a degree of uncertainty. Only God knows the full wisdom of His words, but we can surmise that this modicum of ambiguity pushes people to study the Qur'an more deeply, seeking to uncover its gems.⁵² Our

⁴⁹ Juanita Lowe and Lynne M. Harris, “A Comparison of Death Anxiety, Intolerance of Uncertainty and Self-Esteem as Predictors of Social Anxiety Symptoms,” *Behaviour Change* 36, no. 3 (2019): 165–79; Seco Ferreira, Diogo Conque, Walter Lisboa Oliveira, Zenith Nara Costa Delabrida, André Faro, and Elder Cerqueira-Santos, “Uncertainty and Mental Health in Brazil during the Covid-19 Pandemic,” *Suma Psicológica* 27, no. 1 (2020): 62–69; Umarji and Elwan, “Embracing Uncertainty.”

⁵⁰ Osman Umarji and Tamer Desouky, “Doubt Among Generations: How Uncertainty Tolerance Affects Religiosity,” *Yaqeen*, September 15, 2021, <https://yaqeeninstitute.org/read/data/reports/a-holistic-view-of-muslim-religiosity-introducing-basic>.

⁵¹ Qur'an 3:7.

⁵² For example, scholars have mentioned that one of the lessons we can derive from the presence of “mystical letters” (e.g., *alif-lam-mim*) in the Qur'an is that our inability to comprehend their meaning helps us to appreciate Allah's infinite knowledge and supremacy, thereby increasing our *tawakkul* or reliance upon Him.

epistemic humility is tested by these uncertain verses, as we have to choose between stubbornly questioning them or accepting that their true meaning is only known to Allah and that our knowledge of them is probable at best. Allah describes the obsession with the uncertain aspects of Islam as a type of spiritual deviation, as its clear-cut aspects constitute the overwhelming majority of scripture and provide sufficient guidance for humanity.

Arguably, the entire basis of faith is belief in the unseen (e.g., Allah, angels), and the details of the unseen are often unknown (e.g., when the Day of Judgment will occur). Allah begins *Sūrah Al-Baqarah* by describing those who are mindful of Allah as those “who believe in the unseen (*ghayb*), keep up the prayer, and give out of what We have provided for them, those who believe in the revelation sent down to you [Muhammad], and in what was sent before you, those who have firm faith in the Hereafter.”⁵³ It is precisely because believing, even amid such uncertainty, is so difficult that the believer is richly rewarded with Paradise.

Thus, uncertainty intolerance can destabilize our connection to our Lord, which in turn may impact our mental health. A few studies with non-Muslim samples have investigated the relationship between uncertainty intolerance, religiosity, and depression, finding that religiosity has a buffering effect that reduces the impact of uncertainty intolerance on depressive symptoms.⁵⁴ This suggests that religion provides believers with means of coping with the uncertainty of life.

Social determinants of mental health

⁵³ Qur'an 2:3–4.

⁵⁴ Joseph R. Bardeen and Jesse S. Michel, “The Buffering Effect of Religiosity on the Relationship between Intolerance of Uncertainty and Depressive Symptoms,” *Psychology of Religion and Spirituality* 9, no. S1 (2017): S90; Ashley N. Howell, R. Nicholas Carleton, Samantha C. Horswill, Holly A. Parkerson, Justin W. Weeks, and Gordon J. G. Asmundson, “Intolerance of Uncertainty Moderates the Relations among Religiosity and Motives for Religion, Depression, and Social Evaluation Fears,” *Journal of Clinical Psychology* 75, no. 1 (2019): 95–115.

In addition to individual religiosity and psychological traits, there are other genetic⁵⁵ and environmental factors related to mental health.⁵⁶ Some of the well-established sociodemographic factors include age, gender,⁵⁷ marital status,⁵⁸ and socioeconomic status (i.e., income and education).⁵⁹ Adolescents and young adults experience higher rates of mental illness, stress, worry, and anger.⁶⁰ However, the relationship between age and well-being is less consistent, and some research has found well-being to follow a U-shaped pattern with age. This means that well-being dips during middle age but increases after the age of 50.⁶¹ Women have been found to experience anxiety and depression at higher rates than men, although such findings are inconsistent.⁶² Married people report higher rates of well-being and lower levels of depressive symptoms than unmarried people.⁶³ The positive effects of marriage on mental health are not observed in cohabitation,

⁵⁵ Justine M. Gatt, Karen L. O. Burton, Peter R. Schofield, Richard A. Bryant, and Leanne M. Williams, "The Heritability of Mental Health and Wellbeing Defined Using COMPAS-W: A New Composite Measure of Wellbeing," *Psychiatry Research* 219, no. 1 (2014): 204–13.

⁵⁶ Juha Mikkonen, *The Canadian Facts* (Toronto: York University School of Health Policy and Management, 2010).

⁵⁷ Ann Pederson, Dennis Raphael, Ellisa Johnson, T. Bryant, and M. H. Rioux, "Gender, Race, and Health Inequalities," in *Staying Alive: Critical Perspectives on Health, Illness, and Health Care*, ed. Dennis Raphael, Marcia H. Rioux, and Toba Bryant, 2nd ed. (Toronto: Canadian Scholars' Press, 2010), 205–237.

⁵⁸ Akihide Inaba, Peggy A. Thoits, Koji Ueno, Walter R. Gove, Ranae J. Evenson, and Melissa Sloan, "Depression in the United States and Japan: Gender, Marital Status, and SES Patterns," *Social Science and Medicine* 61, no. 11 (2005): 2280–92; Andrew G. M. Bulloch, Jeanne V. A. Williams, Dina H. Lavorato, and Scott B. Patten, "The Depression and Marital Status Relationship Is Modified by Both Age and Gender," *Journal of Affective Disorders* 223 (2017): 65–68.

⁵⁹ Nathalie Auger and Carolyne Alix, "Income, Income Distribution and Health in Canada," in *Social Determinants of Health: Canadian Perspectives* (Toronto: Canadian Scholars' Press, 2009): 61–74; Barbara Ronson McNichol and Irving Rootman, "Literacy and Health Literacy: New Understandings about Their Impact on Health," in *Social Determinants of Health: Canadian Perspectives*, 2nd ed. (Toronto: Canadian Scholars' Press, 2016), 170–86, 261–90; Mel Bartley, Jane Ferrie, and Scott M. Montgomery, "Health and Labour Market Disadvantage: Unemployment, Non-Employment, and Job Insecurity," in *Social Determinants of Health* 2 (2006): 78–96; James R. Dunn, "Housing and Health Inequalities: Review and Prospects for Research," *Housing Studies* 15, no. 3 (2000): 341–66; Valerie Tarasuk, "Health Implications of Food Insecurity," in *Social Determinants of Health: Canadian Perspectives* (Toronto: Canadian Scholars' Press, 2004): 187–200, 321.

⁶⁰ Giovanni De Girolamo, Jessica Dagani, R. Purcell, Angelo Cocchi, and P. D. McGorry, "Age of Onset of Mental Disorders and Use of Mental Health Services: Needs, Opportunities and Obstacles," *Epidemiology and Psychiatric Sciences* 21, no. 1 (2012): 47–57; James Horley and J. John Lavery, "Subjective Well-Being and Age," *Social Indicators Research* 34, no. 2 (1995): 275–82.

⁶¹ Arthur A. Stone, Joseph E. Schwartz, Joan E. Broderick, and Angus Deaton, "A Snapshot of the Age Distribution of Psychological Well-Being in the United States," *Proceedings of the National Academy of Sciences* 107, no. 22 (2010): 9985–90.

⁶² Mustafa Afifi, "Gender Differences in Mental Health," *Singapore Medical Journal* 48, no. 5 (2007): 385; Brett Roothman, Doret K. Kirsten, and Marié P. Wissing, "Gender Differences in Aspects of Psychological Well-Being," *South African Journal of Psychology* 33, no. 4 (2003): 212–18.

⁶³ Hyoun K. Kim and Patrick C. McKenry, "The Relationship between Marriage and Psychological Well-Being: A Longitudinal Analysis," *Journal of Family Issues* 23, no. 8 (2002): 885–911.

suggesting that the marital bond is distinct in its positive effects. Divorce has also been found to relate to increases in depressive symptoms. In addition to examining the role of religiosity, we included many of these important social factors in our study to understand their contributions to Muslim mental health.

Global research study on Muslim mental health

Rationale and research questions

As Islam is a comprehensive way of life, we would be remiss if we ignored the role that religiosity plays in mental health. Unfortunately, due perhaps to secular and anti-religious origins of Western psychology, conversations about mental health have historically been considered taboo in the Muslim community. However, we worry that the recent normalization of mental health discourse has swung the pendulum too far in the opposite direction. The secularization of mental health as a field has encouraged Muslims to ignore religious and spiritual guidance in favor of secular counseling and therapy for treatment. In order to improve the condition of the *ummah*, we need to understand the factors that influence Muslim mental health. Therefore, our study aimed at determining the roles of sociodemographic, religious, and psychological factors in multiple mental health outcomes, including psychopathology and well-being. Our findings support the centrality of religiosity in Muslim mental health and recovery, and the critical need for Islamically-integrated mental health care.

We addressed the following research question:

To what extent are demographic factors (age, gender, education, and marital status), religious factors (religiosity and religious doubt), and uncertainty intolerance associated with psychopathological (depression and anxiety) and positive (life satisfaction, purpose in life, and well-being) psychological outcomes for Muslims worldwide?

Methods

The data used in this study come from a global sample of Muslims collected by the Yaqeen Institute for Islamic Research in 2021. The cross-sectional study focused on creating and validating a new measure of religiosity, referred to as BASIC (Beliefs, Attitudes, Spirituality, Institutional connections, and Contributions to society). The entire sample included over 4,000 respondents.⁶⁴ The analysis sample included 3,551 participants with complete data.⁶⁵

We used multiple regression to analyze the data. Multiple regression allows us to investigate the unique role of each predictor variable on the outcome variable, while accounting for the effect of other predictor variables in the analysis. We ran a separate regression analysis for each of the five mental health related outcomes.

Measures

Our study included demographic, psychological, and religious questions. Demographic questions included age, gender, highest level of education completed, continent of residence, racial background, and marital status. Previously validated survey items measured the following psychological constructs: depression (PHQ-2),⁶⁶ anxiety (GAD-2),⁶⁷ purpose in life (Life Engagement Test),⁶⁸ life satisfaction (Satisfaction With Life Scale),⁶⁹ well-being

⁶⁴ The sample was recruited online, primarily through emails to Yaqeen's global listserv.

⁶⁵ There were no significant differences between those with complete data and those dropped from the study due to missing data.

⁶⁶ Bernd Löwe, Kurt Kroenke, and Kerstin Gräfe, "Detecting and Monitoring Depression with a Two-Item Questionnaire (PHQ-2)," *Journal of Psychosomatic Research* 58, no. 2 (2005): 163–71.

⁶⁷ Lauren G. Staples, Blake F. Dear, Milena Gandy, Vincent Fogliati, Rhiannon Fogliati, Eyal Karin, Olav Nielssen, and Nickolai Titov, "Psychometric Properties and Clinical Utility of Brief Measures of Depression, Anxiety, and General Distress: The PHQ-2, GAD-2, and K-6," *General Hospital Psychiatry* 56 (2019): 13–18.

⁶⁸ Michael F. Scheier, Carsten Wrosch, Andrew Baum, Sheldon Cohen, Lynn M. Martire, Karen A. Matthews, Richard Schulz, and Bozena Zdaniuk, "The Life Engagement Test: Assessing Purpose in Life," *Journal of Behavioral Medicine* 29, no. 3 (2006): 291.

⁶⁹ Ed Diener, Robert A. Emmons, Randy J. Larsen, and Sharon Griffin, "The Satisfaction with Life Scale," *Journal of Personality Assessment* 49, no. 1 (1985): 71–75.

(short for Warwick-Edinburgh mental well-being scale),⁷⁰ uncertainty intolerance (intolerance of uncertainty scale),⁷¹ and religious doubt (doubt subscale from the religious and spiritual struggles scale).⁷² Religiosity was measured with our new and validated BASIC measure.⁷³ See our report for details about the survey items used in this study.⁷⁴

Results

Our global sample included many age groups, education levels, and other demographic groups. Seventy-two percent of the participants were female, the median age group was 25-34, the median education level was a bachelor's degree, and 45% were married. The ethnic composition of the participants was 6% White, 11% Black, 48% South Asian, and 14% Arab. The participants resided in North America (41%), South America (0.2%), Europe (20%), Asia (27%), Africa (10%), and Australia/New Zealand (2%). See Table 1 for complete demographic information about the sample and Table 2 for descriptive statistics.

The Muslims in our sample were doing quite well overall. The vast majority expressed high levels of purpose in life, with well-being and life satisfaction skewed towards higher levels as well. See Tables 2 and 3 for detailed descriptive statistics and correlations. Religiosity, religious doubt, and uncertainty intolerance were correlated with all mental health outcomes. Uncertainty intolerance was also correlated with lower religiosity and increased religious doubt. Rates of depression and anxiety disorders were high, presumably due to the COVID-19 pandemic. Overall, 23% of Muslims met the criteria for depression and almost 27% for

⁷⁰ Linda Ng Fat, Shaun Scholes, Sadie Boniface, Jennifer Mindell, and Sarah Stewart-Brown, "Evaluating and Establishing National Norms for Mental Wellbeing Using the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS): Findings from the Health Survey for England," *Quality of Life Research* 26, no. 5 (2017): 1129–44.

⁷¹ Kristine Buhr and Michael J. Dugas, "The Intolerance of Uncertainty Scale: Psychometric Properties of the English Version," *Behaviour Research and Therapy* 40, no. 8 (2002): 931–45.

⁷² Exline et al., "Religious and Spiritual Struggles Scale," 208.

⁷³ Full psychometric evaluation of the BASIC Islamic religiosity measure is currently in the process of being published.

⁷⁴ Desouky and Umarji, "Impact of Muslim Religiosity."

anxiety disorder.⁷⁵ Women and younger people had higher rates of psychopathological outcomes than males and younger participants. Eighteen percent of men met the criteria for depression and 19% for generalized anxiety disorder, whereas nearly 25% of women met the criteria for depression and almost 30% for generalized anxiety disorder. Thirty-one percent of Muslims under the age of 35 met the criteria for depression and 34% for anxiety, whereas 12% of Muslims over 35 met the criteria for depression and almost 17% for anxiety.

Using data from the Centers for Disease Control (CDC) in the United States, we compared how American Muslims differ from the national average on depression and anxiety symptoms. Our study flagged 18.3% of American Muslims for depression, whereas the U.S. national average is 28.4%.⁷⁶ Similarly, our study flagged 23.7% of American Muslims for anxiety disorder, whereas the U.S. national average is 35.8%. The prevalence of these two mental health illnesses were substantially lower for Muslims than non-Muslims in America.

⁷⁵ As we relied on two-item screeners that are not as precise as full nine-item scales for depression and seven-item scales for anxiety, these estimates should not be taken to be exact. Typically, individuals flagged for depression and anxiety would take longer surveys to accurately diagnose the existence of depression and anxiety disorders.

⁷⁶ This data comes from the CDC and was collected in January of 2021, which is the same time our survey was administered. "Anxiety and Depression: Household Pulse Survey," CDC, <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>.

Table 1:**Demographics of the Sample**

Demographic	% of sample
Location	
<i>North America</i>	41%
<i>South America</i>	0.2%
<i>Europe</i>	20%
<i>Asia</i>	27%
<i>Africa</i>	10%
<i>Australia/New Zealand</i>	2%
Race	
<i>White</i>	6%
<i>Black/African American</i>	11%
<i>Hispanic</i>	0.5%
<i>South Asian</i>	48%
<i>Other Asian</i>	10%
<i>Arab</i>	14%
<i>Other</i>	11%
Gender	
<i>Male</i>	27%
<i>Female</i>	73%
Education	
<i>Less than high school</i>	4%
<i>High school graduate</i>	9%
<i>Some college but no degree</i>	13%
<i>Bachelor's degree</i>	38%
<i>Master's degree</i>	24%
<i>Doctoral (PhD) or Professional degree</i>	12%
Marital Status	
<i>Single, never married</i>	47%
<i>Married</i>	44%
<i>Divorced</i>	6%
<i>Widowed</i>	1%
<i>Separated</i>	1%
Age	
<i>Under 18</i>	4%
<i>18-24</i>	23%
<i>25-34</i>	30%
<i>35-44</i>	19%
<i>45-54</i>	14%
<i>55+</i>	10%

Table 2:
Descriptive Statistics for Study Variables

	Mean	SD	Min	Max
Depressive symptoms	1.65	1.74	0	6
Anxiety symptoms	1.93	1.84	0	6
Purpose in life	3.98	0.83	1	5
Life satisfaction	3.42	0.90	1	5
Well-being	3.54	0.72	1	5
Age groups	3.45	1.34	1	6
Female	0.73	0.44	0	1
Education	4.04	1.25	1	6
Married	0.45	0.50	0	1
Religiosity	106.24	15.84	28	140
Religious doubts	1.45	0.72	1	5
Uncertainty Intolerance	2.56	1.08	1	5
N	3551			

Table 3:
Correlations for All Study Variables

	Depressive symptoms	Anxiety symptoms	Purpose in life	Life satisfaction	Well-being	Age groups	Female	Education	Married	Religiosity	Religious doubts	Uncertainty tolerance
Depressive symptoms	1.00											
Anxiety symptoms	0.71***	1.00										
Purpose in life	-0.48***	-0.37***	1.00									
Life satisfaction	-0.46***	-0.39***	0.46***	1.00								
Well-being	-0.62***	-0.59***	0.57***	0.54***	1.00							
Age groups	-0.28***	-0.24***	0.20***	0.15***	0.29***	1.00						
Female	0.10***	0.15***	-0.03	-0.03	-0.13***	-0.08***	1.00					
Education	-0.17***	-0.10***	0.11***	0.10***	0.15***	0.37***	-0.05**	1.00				
Married	-0.27***	-0.23***	0.19***	0.23***	0.24***	0.53***	-0.15***	0.28***	1.00			
Religiosity	-0.29***	-0.25***	0.47***	0.37***	0.47***	0.20***	-0.05**	0.06***	0.16***	1.00		
Religious doubts	0.30***	0.28***	-0.32***	-0.24***	-0.28***	-0.24***	-0.01	-0.13***	-0.22***	-0.38***	1.00	
Uncertainty Intolerance	0.41***	0.50***	-0.39***	-0.29***	-0.44***	-0.17***	0.05**	-0.04*	-0.14***	-0.28***	0.28***	1.00

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

What demographic and psychospiritual factors predicted these mental health related outcomes? See Table 3 for correlations, Table 4 for a summarized regression table, and Figures 1 through 5 for visuals of the results.⁷⁷

Demographic Factors

We found that age, gender, education, and marital status all related to Muslim mental health. Higher age predicted lower levels of depression ($B=-.09$) and anxiety ($B=-.07$), and higher levels of well-being ($B=.11$), but was not related to purpose in life. Women had higher levels of depression ($B=.06$) and anxiety ($B=.11$) and reported lower levels of well-being ($B=-.08$) relative to men. However, gender did not relate to purpose in life or life satisfaction. Higher education predicted less depression ($B=-.07$) but did not relate to anxiety. Education also positively predicted all positive mental health outcomes. Married people had lower levels of depression ($B=-.11$) and anxiety ($B=-.08$) and higher levels of all positive outcomes, especially life satisfaction ($B=.17$) relative to unmarried individuals.

Psychospiritual Factors

Religiosity was predictive of all mental health outcomes. It was related to lower levels of depression ($B=-.11$) and anxiety ($B=-.06$), and higher levels of life purpose ($B=.34$), life satisfaction ($B=.28$), and well-being ($B=.34$). Religious doubt, meanwhile, was related to higher levels of depression ($B=.12$) and anxiety ($B=.10$), and lower levels of life purpose ($B=-.09$) and life satisfaction ($B=-.05$).

Uncertainty intolerance (UI) was also predictive of all outcomes. It was related to higher levels of depression ($B=.31$) and anxiety ($B=.42$), and lower levels of life purpose ($B=-.25$), life satisfaction ($B=-.18$), and well-being ($B=-.31$).

⁷⁷ See the appendix for the complete regression analysis.

Table 4:
Predictors of Muslim Mental Health Outcomes

	Depressive symptoms	Anxiety symptoms	Purpose in life	Life satisfaction	Well-being
Demographics	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>
Age	-0.09***	-0.07***	0.01	-0.05**	0.11***
Female	0.06***	0.11***	0.01	0.02	-0.08***
Education	-0.07***	-0.02	0.05***	0.04**	0.06***
Married	-0.11***	-0.08***	0.07***	0.17***	0.05**
Psychospiritual					
Religiosity	-0.11***	-0.06***	0.34***	0.28***	0.34***
Doubts	0.12***	0.10***	-0.09***	-0.05**	-0.02
UI	0.31***	0.42***	-0.25***	-0.18***	-0.31***
<i>R</i> ²	0.263	0.304	0.307	0.204	0.365
<i>N</i>	3551				

Note: All coefficients are standardized Beta coefficients.
* implies statistical significance. **p*<0.05 ***p*<0.01 ****p*<0.001

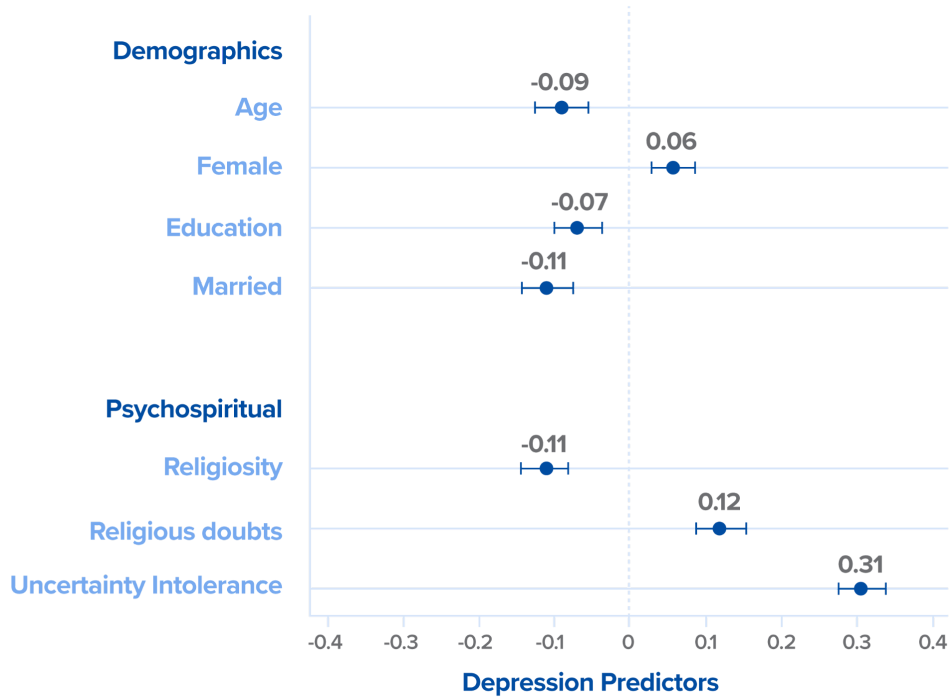


Figure 1: Predictors of Depressive Symptoms

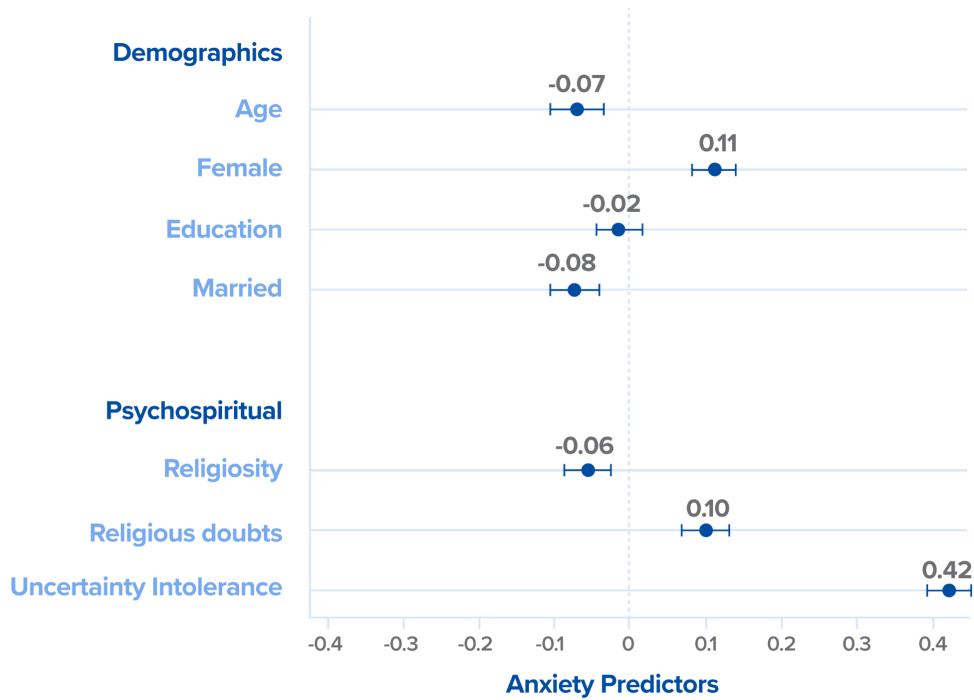


Figure 2: Predictors of Anxiety Symptoms

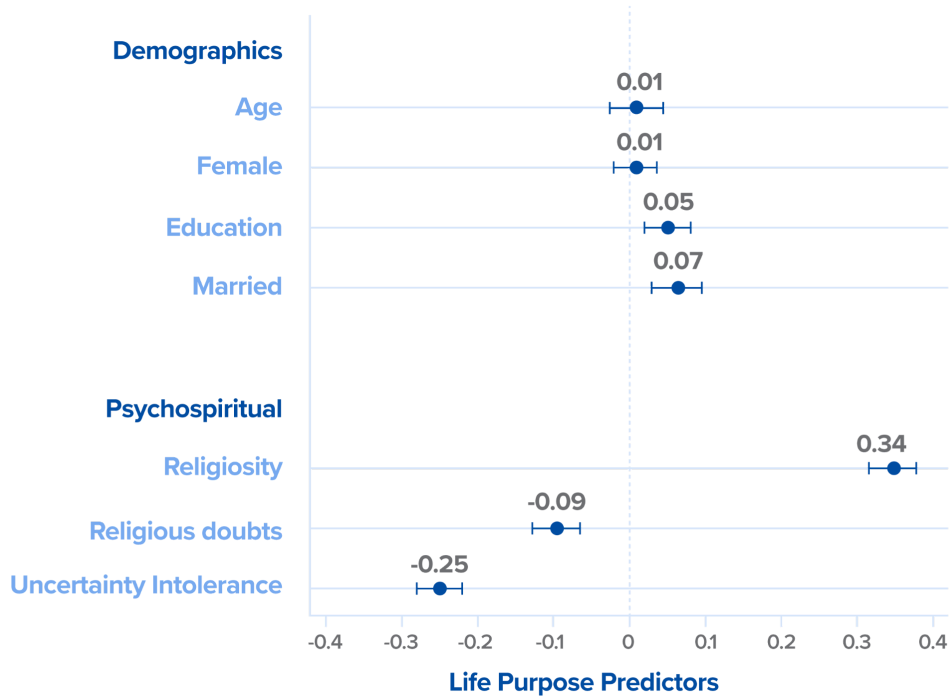


Figure 3: Predictors of Purpose in Life

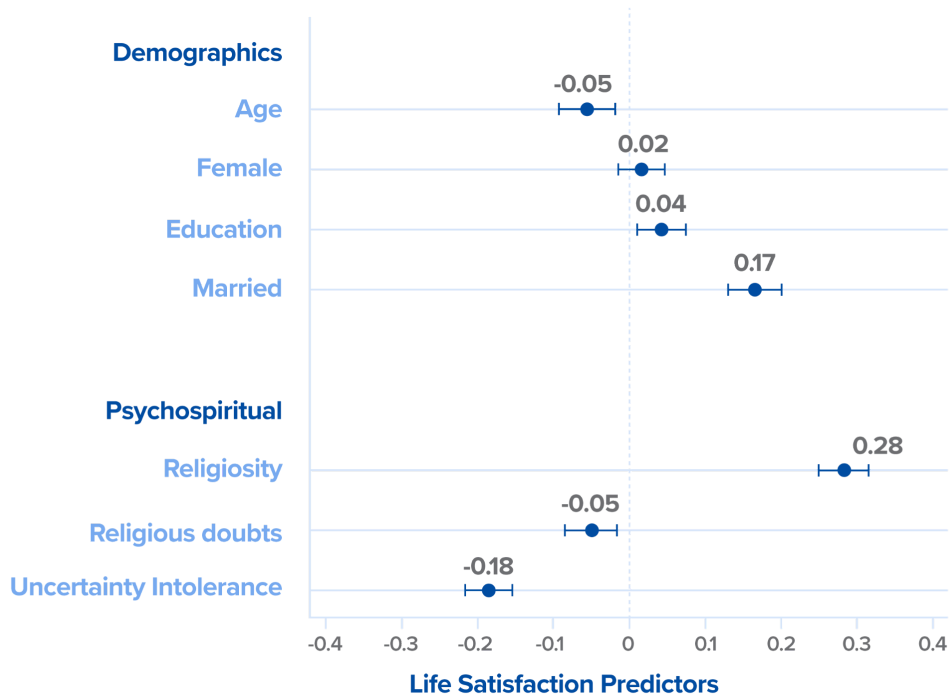


Figure 4: Predictors of Life Satisfaction

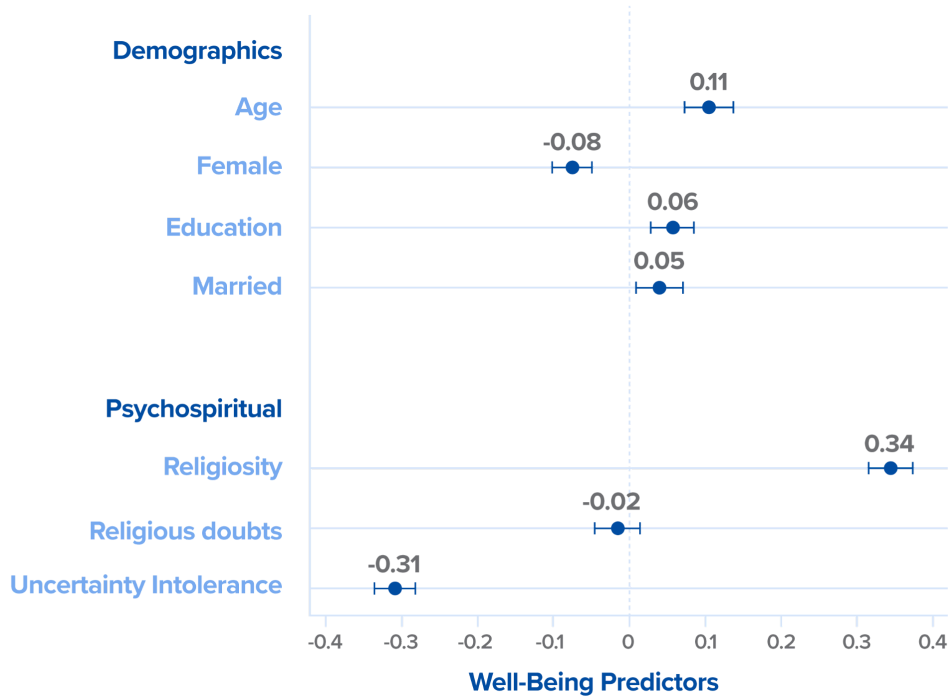


Figure 5: Predictors of Well-Being

The central role of religiosity in Muslim mental health

We believe our study of how religiosity relates to mental health outcomes, based on a global sample of Muslims, has important implications for individuals, communities, imams, chaplains, mental health therapists, and researchers. Here are some of the key takeaways:

1. Religiosity was related to all mental health outcomes, including lower levels of psychopathology and higher levels of positive mental health outcomes.
2. The effect of psychospiritual variables (e.g., religiosity, doubts, and uncertainty intolerance) on mental health was significantly greater than the effect of demographic variables.

3. Uncertainty intolerance was associated with higher levels of religious doubt and lower levels of religiosity.
4. Uncertainty intolerance was the best predictor of psychopathology, whereas religiosity was the best predictor of positive psychological outcomes.
5. Religious doubt was related to increased psychopathology, less purpose in life, and less life satisfaction.

The biggest takeaway from our study is that religiosity plays a vital role in our well-being and is inextricably linked to mental health. Our faith is a complete way of life that provides us with a source of purpose, meaning, and guidance to living a productive life characterized by meaningful contributions to society. Emotional and mental health, then, cannot be divorced from religiosity. As Iqbal's father once said to him, "Son! Whenever you recite the Qur'an, do so as if it is being revealed to your heart. By reading the Qur'an like this, it will soon permeate your very being."

⁷⁸ That deep personal connection is how we commune with our Creator. Religious beliefs, communal connection, and societal contributions for the sake of Allah work synergistically to bolster human flourishing in this life and the next. The holistic practice of Islam provides mental health benefits where the effect is greater than the sum of their separate parts.

We believe the attempt to secularize mental health has had catastrophic consequences. First, the purge of religious concepts from the mental health conversation functionally severs our spiritual lifeline, removing Allah as our source of comfort to turn to, rely upon, and confide in. It also removes the stories of the prophets and righteous who inspire us through their incredible character even amid the challenges they faced. Third, it leads to the erroneous conclusion that the secular world provides the best and only solutions for thriving and healing.

Uncertainty tolerance is a spiritual issue

We found that religiosity was the best predictor of positive mental health outcomes, including purpose in life, life satisfaction, and well-being. However, the strongest

⁷⁸ Sayyid Nazir Niyazi, *Iqbal kay Huzur*, trans. Ahmed Afzaal (Lahore: Iqbal Academy, 1971), 60–61.

predictor of depression and anxiety was uncertainty intolerance. We believe this distinction is important to understanding Muslim mental health. Religiosity does not make depression and anxiety disappear. Highly religious people may experience depressive symptoms and depression at some point in their lives. Mental illness is impacted by a host of non-religious factors including genetics,⁷⁹ trauma,⁸⁰ and other environmental factors. However, religiosity can be an integral factor in coping,⁸¹ healing, and recovery, and has been found to reduce depressive symptoms and help people overcome depression much faster.⁸²

Uncertainty intolerance is far more central in predicting both depression and anxiety. While uncertainty intolerance may not seem like a religious issue on the surface, it in fact deeply relates to spiritual matters such as *tawakkul* and acceptance of the decrees of Allah (decrees that relate to the events of life and decrees that relate to His speech and commands). We have written about uncertainty intolerance (UI) in detail previously, highlighting how it skews how we feel, think, and behave (i.e., cope), leading to increased anxiety and stress, negative thinking, and maladaptive coping.⁸³ Furthermore, in the present study, we have further support that UI also relates to more religious doubt and less religiosity, both of which relate to psychopathology. Thus, it appears that uncertainty intolerance adversely affects our emotions and thoughts, causing us to think in maladaptive ways (e.g., polarized thinking, catastrophizing, overgeneralizing, jumping to conclusions) that diminish mental health and potentially increase religious doubts.

Muslim scholars and mental health practitioners should continue to collaborate and incorporate faith-based approaches that address uncertainty intolerance and religiosity. For example, religious coping has been found to be especially helpful in treating depression, as coping relates to one's beliefs about themselves, others, and

⁷⁹ Kenneth S. Kendler, Margaret Gatz, Charles O. Gardner, and Nancy L. Pedersen, "A Swedish National Twin Study of Lifetime Major Depression," *American Journal of Psychiatry* 163, no. 1 (2006): 109–114; Matt McGue and Kaare Christensen, "The Heritability of Depression Symptoms in Elderly Danish Twins: Occasion-Specific versus General Effects," *Behavior Genetics* 33, no. 2 (2003): 83–93.

⁸⁰ Radu V. Saveanu and Charles B. Nemeroff, "Etiology of Depression: Genetic and Environmental Factors," *Psychiatric Clinics* 35, no. 1 (2012): 51–71.

⁸¹ Pargament, *Psychology of Religion and Coping*.

⁸² Koenig and Larson, "Religion and Mental Health."

⁸³ Umarji and Elwan, "Embracing Uncertainty."

the world.⁸⁴ Healthy coping strategies may be categorized as active (efforts to directly target the source of stress) and accommodative (efforts to accept or adapt to the source of stress), with research finding that the ability to flexibly apply active strategies for controllable stressors and accommodative strategies for uncontrollable stressors relates to better mental health.⁸⁵

Clinical and community implications

Preventing and treating psychopathology, and promoting thriving and flourishing, are two sides of Muslim mental health. At the root of each is establishing a worldview and lifestyle built on the Qur'an, Sunnah, and centuries of Islamic practice. Additionally, drawing from the best of faith-congruent aspects of psychiatry, pharmacology, psychology, and counseling is in line with Prophetic guidance on seeking expertise and medical treatment for ailments. The need to reiterate faith-congruent aspects is essential, because not every type of therapy aligns with Islamic values.⁸⁶

There is tremendous potential in religious scholars working with mental health practitioners to create Islamic therapies that address the needs of the Muslim community.⁸⁷ Mainstream practitioners trained in secular psychiatry and psychology programs need to know the limitations of the atheistic attitudes prevalent in these fields. For example, those who are trained in Freudian psychology need to be aware that Sigmund Freud dismissed religion as “a system of wishful illusions together with a disavowal of reality.”⁸⁸ Albert Ellis, ranked as the second most influential psychotherapist of all time, devoted an entire book to arguing that religion is harmful to mental health.⁸⁹

⁸⁴ Kelsey T. Laird, Beatrix Krause, Cynthia Funes, and Helen Lavretsky, “Psychobiological Factors of Resilience and Depression in Late Life,” *Translational Psychiatry* 9, no. 1 (2019): 1–18.

⁸⁵ Laird et al., “Psychobiological Factors of Resilience and Depression.”

⁸⁶ Altaf Husain and David R. Hodge, “Islamically Modified Cognitive Behavioral Therapy: Enhancing Outcomes by Increasing the Cultural Congruence of Cognitive Behavioral Therapy Self-Statements,” *International Social Work* 59, no. 3 (2016): 393–405.

⁸⁷ Wahiba Abu-Ras, Ali Gheith, and Francine Cournos, “The Imam's Role in Mental Health Promotion: A Study at 22 Mosques in New York City's Muslim Community,” *Journal of Muslim Mental Health* 3, no. 2 (2008): 155–76.

⁸⁸ Sigmund Freud and James Strachey, *The Future of an Illusion* (New York: Norton, 1961).

⁸⁹ Albert Ellis, “Is Religiosity Pathological?,” *Free Inquiry* 8, no. 2 (1988).

Therefore, practitioners may need to intentionally re-examine their own biases, beliefs, and potentially Islamophobic attitudes. Mental health professionals should realize that all forms of therapy are value-laden, and that spirituality and religiosity do indeed facilitate the recovery of Muslim clients. When working with a Muslim client for whom Islam is an important source of strength, disparaging the use of faith or simply being silent about it can hamper their recovery. In one case study, a practitioner did not see marked improvement in his Muslim client until *ṣalāh* (prayer) and faith was incorporated into therapy.⁹⁰

Therapists may also benefit from learning how to address religious doubts in clients who are experiencing mental health challenges. As prior literature has found, doubts related to incorrect perceptions of Allah as punishing are related to psychopathology. We are currently investigating how perceptions of Allah influence well-being, and preliminary results confirm that Muslims who have an imbalanced view of Allah as distant, cold, and punishing, rather than near, warm, and loving, experience more negative mental health outcomes. Therapists and imams are encouraged to work in tandem to uncover how clients think about and perceive Allah, and discuss ways to deepen their attachment to Allah by cultivating a more balanced perception of Him.

Divorcing religiosity from mental health can have potentially deleterious effects on Muslim clients by silencing conversation about their faith and making it a source of shame. Forcing someone to compartmentalize their *dīn*, especially if it is an integral part of their identity, goes against the desired goal of the therapeutic process and may cause further distress for Muslims who draw upon their *dīn* for strength and healing. Therapists should consider “social prescriptions” for their Muslim clients to help boost their religiosity and thus their mental health, such as volunteering at the mosque or a Muslim community event. Through offering faith-integrated care, the therapist will support the values of the client and likely see a favorable outcome.

⁹⁰ Hani M. Henry, “Spiritual Energy of Islamic Prayers as a Catalyst for Psychotherapy,” *Journal of Religion and Health* 54 (2015): 387–98, <https://doi.org/10.1007/s10943-013-9780-4>.

The results of this study should encourage those working in a religious capacity (e.g., imams, chaplains, religious educators) to appreciate the indivisible link between spiritual and mental health. Imams, scholars, and other spiritual professionals should reach out to Muslim mental health professionals who appreciate the role of Islam in therapy and request training so they can better help congregants seeking answers to religious doubts and other spiritual issues. Our results find that religious doubts and mental health are related, which means that religious doubts may cause mental health challenges, mental health challenges may cause religious doubts, or both. Therefore, religious scholars should understand how to talk to people about their religious doubts, while realizing that other mental health challenges may underlie these doubts. If the religious scholar only treats religious doubt from an intellectual perspective, ignoring emotion and affect, they will likely not succeed in helping the congregant. Additionally, a religious professional who is unable to offer the required mental health counseling would benefit from having a referral list of mental health professionals who integrate Islam into their practice. This synergy between religious care and mental health care is critical for addressing the needs of the Muslim community.

From an Islamic perspective, many active coping strategies have been found to be therapeutic (but are far more than just therapeutic), including turning to Allah in prayer and supplication,⁹¹ reading and listening to the Qur'an,⁹² seeking community support, and engaging in prosocial behavior (i.e., helping others).⁹³

⁹¹ See Qur'an 15:97–98. The Prophet ﷺ was commanded to praise Allah and prostrate to Him when he was feeling distressed by the ridicule of the disbelievers. Shahid Ijaz, Muhammad Tahir Khalily, and Irshad Ahmad, "Mindfulness in Salah Prayer and Its Association with Mental Health," *Journal of Religion and Health* 56, no. 6 (2017): 2297–2307. Henry, "Spiritual Energy of Islamic Prayers."

⁹² Batoul Jabbari, Mojgan Mirghafourvand, Fahimeh Sehhatie, and Sakineh Mohammad-Alizadeh-Charandabi, "The Effect of Holy Qur'an Voice with and without Translation on Stress, Anxiety and Depression during Pregnancy: A Randomized Controlled Trial," *Journal of Religion and Health* 59, no. 1 (2020): 544–54; Musthika Wida Mashitah, "Qur'an Recitation Therapy Reduces the Depression Levels of Hemodialysis Patients," *International Journal of Research in Medical Sciences* 8, no. 6 (2020): 2222–27.

⁹³ See *Sūrah al-Duha*. When the Prophet ﷺ was distressed by not receiving revelation, he was instructed to remember the blessings upon him from Allah and to be in service to the orphans and needy. See *Sūrah al-Qasas*. While Musa was in a state of distress after fleeing Egypt, he came to the aid of two young women just as he arrived in Madyan. Allah's relief came immediately after he helped them. Hannah L. Schacter and Gayla Margolin, "When It Feels Good to Give: Depressive Symptoms, Daily Prosocial Behavior, and Adolescent Mood," *Emotion* 19, no. 5 (2019): 923; Elizabeth B. Raposa, Holly B. Laws, and Emily B. Ansell, "Prosocial Behavior Mitigates the Negative Effects of Stress in Everyday Life," *Clinical Psychological Science* 4, no. 4 (2016): 691–98.

Accommodative coping strategies, especially those targeting uncertainty tolerance, may include Islam-based cognitive behavioral therapies, such as reframing challenges as opportunities for growth and forgiveness from Allah; learning to trust in Allah and recognizing there is a purpose behind one's suffering; and thinking positively of Allah (*ḥusn al-ẓann*) as benevolent and wise in His decree. We especially believe the stories of the prophets yield active and accommodative coping strategies that can be made into interventions for patients.

You may ask, how can the findings from this study be practically integrated into your life? We recommend the following practices to promote thriving (and hope that religious scholars and mental health professionals can also use these recommendations to encourage their congregants and clients):

1. Reciting and Listening to the Qur'an

وَنُنَزِّلُ مِنَ الْقُرْآنِ مَا هُوَ شِفَاءٌ وَرَحْمَةٌ لِّلْمُؤْمِنِينَ ۖ وَلَا يَزِيدُ الظَّالِمِينَ إِلَّا خَسَارًا

And We send down in the Qur'an that which is healing and mercy for the believers, but it does not increase the wrongdoers except in loss.⁹⁴

The Qur'an and the Sunnah of the Prophet ﷺ have encouraged engaging with the Qur'an as a means of finding tranquility. Although the Qur'an is at its core a book of guidance, it also has the intrinsic ability to heal.⁹⁵ Numerous studies have found that listening to the recitation of the Qur'an is therapeutic and reduces stress, anxiety, and depressive symptomatology.⁹⁶ Clients can be encouraged to recite and listen to the Qur'an to understand God's message to humanity, as well as to find hope and comfort. They can further unlock the healing nature of the Qur'an by reading its translation and studying its verses.

⁹⁴ Qur'an 17:82.

⁹⁵ *Sahih al-Bukhari*, no. 5736.

⁹⁶ Ashraf Ghiasi and Afsaneh Keramat, "The Effect of Listening to Holy Quran Recitation on Anxiety: A Systematic Review," *Iranian Journal of Nursing and Midwifery Research* 23, no. 6 (2018): 411; Amjad M. R. Alzeer Alhouseini, Imad Fakhri Al-Shaikhli, Abdul Wahab bin Abdul Rahman, Khamis Alarabi, and Mariam Adawiah Dzulkifli, "Stress Assessment While Listening to Qur'an Recitation," 2014 International Conference on Computer Assisted System in Health, 2014, 67–72, <https://doi.org/10.1109/CASH.2014.14>; Iqra Ashfaq, "An Exploration of Stress Reactivity, Stress Recovery, Mindfulness Meditation and Prayer with the Use of Heart Rate Variability" (master's thesis, York University, 2016), <https://yorkspace.library.yorku.ca/xmlui/handle/10315/33473>.

2. Deep mindful prayer

الَّذِينَ آمَنُوا وَتَطْمَئِنُّ قُلُوبُهُمْ بِذِكْرِ اللَّهِ أَلَا بِذِكْرِ اللَّهِ تَطْمَئِنُّ الْقُلُوبُ

Those who have believed and whose hearts are comforted by the remembrance of Allah. Unquestionably, by the remembrance of Allah do hearts find comfort and contentment.⁹⁷

The closest a servant can be to Allah is in a state of prayer, as prayer (*ṣalāh*) is the connection between a servant and their Lord. A mindful prayer is one in which the servant is singularly focused on Allah and deeply contemplates what is recited in every phase of *ṣalāh*. Such mindful prayer has been found to influence brain regions associated with emotion regulation and to reduce anxiety.⁹⁸ Interestingly, turning to Allah in prayer was exactly what Allah prescribed for the Prophet Muhammad ﷺ when he was psychologically distressed by the verbal abuse he was receiving from the enemies of Islam. “Indeed, we know well that your heart is distressed by what they say [to you]. So glorify the praises of your Lord and be of those who prostrate [to Him].”⁹⁹ What stands out in this incident is that Allah, in His infinite wisdom, could have removed the cause of the Prophet’s ﷺ distress but instead taught His beloved a better method of coping, which is to connect with Allah and be near to Him.

3. Engaging in prosocial behaviors (Helping others)

Whoever relieves a Muslim of a burden from the burdens of the world, Allah will relieve him of a burden from the burdens on the Day of Judgment. And whoever helps ease a difficulty in the world, Allah will grant him ease from a difficulty in the world and in the Hereafter. And whoever covers the faults of a Muslim, Allah will cover (his faults) for him in the world and the Hereafter. And Allah is engaged in helping the worshiper as long as the worshiper is engaged in helping his brother.¹⁰⁰

⁹⁷ Qur'an 13:28.

⁹⁸ Andrew B. Newberg, Nancy A. Wintering, David B. Yaden, Mark R. Waldman, Janet Reddin, and Abass Alavi, “A Case Series Study of the Neurophysiological Effects of Altered States of Mind during Intense Islamic Prayer,” *Journal of Physiology-Paris* 109, nos. 4–6 (2015): 214–20.

⁹⁹ Qur'an 15:97–98.

¹⁰⁰ *Jami' at-Tirmidhi*, no. 1930, bk. 27, hadith 36.

One of the most effective ways to improve one's state of well-being is to improve the well-being of others.¹⁰¹ The aforementioned hadith confirms that Allah helps those who help others. One of the most beautiful demonstrations of this truth can be found in the story of Mūsā when he fled from Egypt to the land of Madyan. Despite traveling for days and experiencing incredible hunger, thirst, and exhaustion, never mind the intense fear of being apprehended, the first thing Mūsā did when he arrived was assist two young women who needed help.¹⁰² Immediately after he was in the service of others, Allah relieved him of his physical and psychological ailments. Human beings have a psychological need to assist the needy, and Allah has made helping others a path to helping ourselves in this life and the next.

4. Embracing uncertainty

Indeed, Allah [alone] has knowledge of the Hour and sends down the rain and knows what is in the wombs. And no soul perceives what it will earn tomorrow, and no soul perceives in what land it will die. Indeed, Allah is Knowing and Acquainted.¹⁰³

Allah has purposely made the world uncertain, and Allah does everything with infinite wisdom. Wind, for example, has the power to extinguish a flame or energize a fire. Rather than avoid the uncertainty of the wind, humanity has sought to harness it to benefit from the fire.¹⁰⁴ Thus, exposing ourselves to and embracing uncertainty can make us stronger. The technology of the modern world has attempted to expunge uncertainty from our lives, giving us false expectations of predictability. Slowly exposing ourselves to uncertainty may allow us to realize that not only will unexpected bad things likely not happen, unexpected good things may actually occur.

¹⁰¹ Daye Son and Laura M. Padilla-Walker, "Happy Helpers: A Multidimensional and Mixed-Method Approach to Prosocial Behavior and Its Effects on Friendship Quality, Mental Health, and Well-Being during Adolescence," *Journal of Happiness Studies* 21, no. 5 (2020): 1705–1723.

¹⁰² Qur'an 28:23–25.

¹⁰³ Qur'an 31:34.

¹⁰⁴ Nassim Nicholas Taleb, *Antifragile: Things that Gain from Disorder*, vol. 3 (New York: Random House, 2012).

How do we expose ourselves to uncertainty? One simple suggestion is to leave our smartphones at home when making a trip to the grocery store or running an errand. Upon returning home, journaling about how the experience felt may help increase our tolerance for uncertainty. Another technique is to spend time in the wilderness, where conditions are often unpredictable. The weather may change, wildlife may suddenly appear, and an infinite number of other unknowns may spontaneously arise, many constituting unexpected sources of pleasure. Being in nature, ultimately, is a source of psychological and physiological well-being.¹⁰⁵ It reduces anger, fear, stress, and feelings of pain, and increases awe, calm, and positivity. Moreover, fostering vulnerability and humility can help counteract the need for control inherent to uncertainty intolerance. Crying in front of our Lord (especially during *tahajjud*) and deeply reflecting on how we are not self-sufficient can raise our tolerance for uncertainty.

5. Living an active lifestyle

The strong believer is better and more beloved to Allah than the weak believer, although both are good.¹⁰⁶

Spiritual strength and physical strength benefit the believer in many ways. The Prophet Muhammad ﷺ was in such excellent physical shape that he defeated an expert non-Muslim wrestler who challenged him (and then became Muslim).¹⁰⁷ Mūsā was hired as a shepherd on account of both his integrity and formidable bodily strength. Scientific research has found a connection between exercise and positive mental health, including less stress and less depressive symptomatology, so it's unsurprising that the Prophet ﷺ also advised us to practice horseback riding, archery, and swimming.¹⁰⁸ In addition to this Prophetic advice, we suggest

¹⁰⁵ Lucy E. Keniger, Kevin J. Gaston, Katherine N. Irvine, and Richard A. Fuller, "What Are the Benefits of Interacting with Nature?," *International Journal of Environmental Research and Public Health* 10, no. 3 (2013): 913–35.

¹⁰⁶ *Sahih Muslim*, no. 2664.

¹⁰⁷ *Sunan Abi Dawud*, no. 4078.

¹⁰⁸ Estelle Malcolm, Sara Evans-Lacko, Kirsty Little, Claire Henderson, and Graham Thornicroft, "The Impact of Exercise Projects to Promote Mental Wellbeing," *Journal of Mental Health* 22, no. 6 (2013): 519–27; Sandra Klaperski, Elena Koch, Daniel Hewel, Anja Schempp, and Jana Müller, "Optimizing Mental Health Benefits of Exercise: The Influence of the Exercise Environment on Acute Stress Levels and Wellbeing," *Mental Health and Prevention* 15 (2019): 200173; Gary M. Cooney, Kerry Dwan, Carolyn A. Greig, Debbie A. Lawlor, Jane Rimer,

finding a physical activity that one enjoys and can regularly practice, including walking, running, swimming, horseback riding, strength training (e.g., lifting weights, calisthenics), team sports, or martial arts. Through regular exercise, people improve their health, mood, energy, sleep, and resilience, which all relate to general well-being.¹⁰⁹

6. *Murāqabah* and *tafakkur*

...Be mindful of Allah and He will protect you. Be mindful of Allah and you will find Him before you.¹¹⁰

The concept of Islamic mindfulness, or *murāqabah*, can be understood as a “complete state of vigilant self-awareness in one’s relationship with Allah in heart, mind, and body.”¹¹¹ *Murāqabah* necessarily includes mindfulness of one’s own intentions, thoughts, emotions, and other inner states.¹¹² Awareness, however, must extend past our inner states to what is beyond us. Dr. Malik Badri, the father of modern Islamic psychology, translates *tafakkur* as contemplation, where deep reflection upon Allah (and His creation) leads to a path of self-knowledge and healing.¹¹³ This includes contemplating the beautiful names and attributes of Allah, as well as the splendor and intricacy of the natural world around us.

Murāqabah and *tafakkur* are burgeoning practices at the nexus of religiosity and mental health. For instance, several Muslim group therapy programs have already incorporated *murāqabah*.¹¹⁴ The recent development of Muslim e-mental health apps for guiding *murāqabah* and *tafakkur*¹¹⁵ offers a great opportunity for both

Fiona R. Waugh, Marion McMurdo, and Gillian E. Mead, “Exercise for Depression,” *Cochrane Database of Systematic Reviews* 9 (2013).

¹⁰⁹ Patricia A. Deuster and Marni N. Silverman, “Physical Fitness: A Pathway to Health and Resilience,” *US Army Medical Department Journal* (2013).

¹¹⁰ *Sunan al-Tirmidhī*, no. 2516.

¹¹¹ Justin Parrott, “How to Be a Mindful Muslim: An Exercise in Islamic Meditation,” *Yaqeen*, 2017, <https://yaqeeninstitute.ca/read/paper/how-to-be-a-mindful-muslim-an-exercise-in-islamic-meditation>.

¹¹² Parrott, “How to Be a Mindful Muslim.”

¹¹³ Malik Badri, *Contemplation: An Islamic Psychospiritual Study* (London: International Institute of Islamic Thought, 2000), <https://doi.org/10.2307/j.ctvk8w1xc>.

¹¹⁴ Mindfully Muslim, <https://www.mindfullymuslim.com/>.

¹¹⁵ See the Ruh, Sakeenah, Muraqabah, and Noor Meditation apps.

Muslim scholars and mental health practitioners to concretely incorporate religiosity into Muslim mental health and well-being.

Limitations and future research

As perfection is only reserved for Allah, our study has some limitations that should be kept in mind. The study relied on a convenience sample of Muslims during the COVID-19 pandemic. The rates of psychopathology are therefore likely to be elevated and not generalizable to other years. The data used was cross-sectional, which does not allow us to make strong causal claims about the relations between variables. We also relied on shortened questionnaires for measuring psychopathology and uncertainty intolerance, which likely led to some measurement error and misclassification of depression and anxiety. Future longitudinal research would allow us to make stronger causal claims about religiosity and mental health.

In future research, we intend to build upon our findings here and investigate the role of relationships in Muslim mental health. This includes people's perceptions of Allah and their attachment to Him, as well as relationships with parents and friends. Despite the limitations of this study, we believe its results have beneficial implications for the *ummah* and ask Allah to provide comfort and contentment to Muslims all over the world.

Appendix

Full regression models for Muslim mental health outcomes

	Depressive symptoms	Anxiety symptoms	Purpose in life	Life satisfaction	Well-being
Demographics	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>
Age	-0.09***	-0.07***	0.01	-0.05**	0.11***
	(-4.89)	(-4.24)	(0.61)	(-2.84)	(6.37)
Female	0.06***	0.11***	0.01	0.02	-0.08***
	(3.85)	(7.58)	(0.69)	(1.18)	(-5.63)
Education	-0.07***	-0.02	0.05***	0.04**	0.06***
	(-4.30)	(-1.09)	(3.38)	(2.70)	(4.05)
Married	-0.11***	-0.08***	0.07***	0.17***	0.05**
	(-6.37)	(-4.59)	(3.90)	(9.38)	(3.02)
Psychospiritual					
Religiosity	-0.11***	-0.06***	0.34***	0.28***	0.34***
	(-6.96)	(-3.74)	(22.19)	(16.87)	(22.81)
Doubts	0.12***	0.10***	-0.09***	-0.05**	-0.02
	(7.25)	(6.12)	(-5.88)	(-2.81)	(-1.29)
UI	0.31***	0.42***	-0.25***	-0.18***	-0.31***
	(19.78)	(28.20)	(-16.67)	(-11.47)	(-21.79)
<i>R</i> ²	0.263	0.304	0.307	0.204	0.365
<i>N</i>	3551				

Note: All effect sizes are standardized Beta coefficients; *t* statistics in parentheses

p*<0.05 *p*<0.01 ****p*<0.001