Mental Health, Religion & Culture

ISSN: 1367-4676 (Print) 1469-9737 (Online) Journal homepage: www.tandfonline.com/journals/cmhr20

The relationship between mindfulness and religious faith: validation of the Mindfulness during Worship Scale (MWS) in a British Muslim sample

Omar Yousaf, Steven Love & Jonathan E. Ramsay

To cite this article: Omar Yousaf, Steven Love & Jonathan E. Ramsay (03 Mar 2025): The relationship between mindfulness and religious faith: validation of the Mindfulness during Worship Scale (MWS) in a British Muslim sample, Mental Health, Religion & Culture, DOI: 10.1080/13674676.2024.2374353

To link to this article: https://doi.org/10.1080/13674676.2024.2374353

Published online: 03 Mar 2025.

MENTAL HEALTH, RELIGION & CULTURE
https://doi.org/10.1080/13674676.2024.2374353

Routledge
Taylor & Francis Group

The relationship between mindfulness and religious faith: validation of the Mindfulness during Worship Scale (MWS) in a British Muslim sample

Omar Yousaf [a], Steven Love[b] and Jonathan E. Ramsay[c]

[a]Department of Psychology, University of Hertfordshire, College Lane Campus, Hatfield, UK; [b]Road Safety Research Collaboration, University of the Sunshine Coast, Queensland, Australia; [c]School of Social and Health Sciences, James Cook University, Singapore, Singapore

ABSTRACT

The aim of this study was to validate the Mindfulness during Worship Scale (MWS) in a British Muslim sample (n = 122). Confirmatory factors analysis and reliability analysis were used to test the internal validity of the MWS, while bivariate correlations were used to test the external validity. The results showed that the MWS factor structure (which was originally validated in a Christian sample) retained its validity in a Muslim sample, also demonstrating good internal consistency. In addition, the MWS subscales (concentration, presence and absorption) were significantly related to both a dispositional mindfulness measure and the strength of religious faith. Finally, the results also indicated that stronger experiences of presence and absorption during worship are associated with more frequent religious practices, more favourable attitudes towards religious practices and a stronger belief in God.

ARTICLE HISTORY
Received 24 January 2024
Accepted 25 June 2024

KEYWORDS
Prayer; mindfulness; worship; *salah*; Muslim

Introduction

In the past two decades, mindfulness has become one of the most extensively studied phenomena in clinical and positive psychology (Gu et al., 2015). Defined contemporarily as a non-judgmental and deliberate attentiveness to the present moment (Bishop et al., 2004), the concept of mindfulness originated as one of the foundational practices of the Buddhist Noble Eightfold Path (Purser & Milillo, 2015), before being adapted and used as a clinical tool in the form of mindfulness-based stress reduction (MBSR) by Kabat-Zinn (1994). Following this transition into the clinical domain, extensive research has found mindfulness to promote a variety of positive mental health outcomes (Enkema et al., 2020; Gu et al., 2015), both in its dispositional form (Tomlinson et al., 2018) and when nurtured through therapeutic mindfulness-based programs (MBPs), such as mindfulness based cognitive therapy (MBCT; Segal et al., 2018) and mindful self-compassion (MSC;

CONTACT Omar Yousaf o.yousaf@herts.ac.uk

Germer & Neff, 2013). Based on a review of 93 empirical articles, Tomlinson et al. (2018) presented a taxonomy of some of the key associations between dispositional mindfulness and various cognitive and emotional outcomes such as reduced psychopathological symptoms (e.g., depression, anxiety, post-traumatic stress, and eating disorder symptoms), reduced rumination and pain catastrophising, as well as better emotional regulation, emotional stability, and overall well-being. Based on the evidence presented in the articles of the review, these potential benefits of mindfulness might be related to the cognitive and emotional habits when dealing with daily challenges; individuals who score high on dispositional mindfulness tend to be less judgmental of, and therefore emotionally less affected by adverse and unfavourable life events. In addition, mindfulness has psychophysiological benefits such as reducing stress markers (Pascoe et al., 2017).

Mindfulness in religion

While mindfulness in its more secularised clinical form has grown in popularity, and perhaps drifted further from its original meaning (Tse, 2022), researchers in the psychology of religion and spirituality have grown increasingly interested in returning to the roots of mindfulness by examining its religious applications. While some of these applications have been examined among practicing and cultural Buddhists (Charoensukmongkol, 2014; Jarunratanakul & Jinchang, 2018), a larger and growing literature has examined the application of mindfulness in other faiths such as Christianity. Although there are disagreements over the appropriateness of Christians adopting of Buddhist-derived practices (Garzon & Ford, 2016), many have readily embraced the secularised form of mindfulness given its clinical applications (Tan, 2011). Similarities have also been identified between secularised mindfulness and contemplative/meditative Christian practices, such as centering prayer (Knabb, 2012) and meditative praying (Jankowski & Sandage, 2011). Both of these practices leverage mindfulness-like principles of quietening the mind and attending to the present moment in order to heighten the effectiveness of prayer and move closer to God. Given the well-established links between religiosity and well-being (Hoogeveen et al., 2022), as well as the proven effectiveness of MBPs (Spijkerman et al., 2016), there is a clear need to examine possible interactive effects of mindfulness and religious practice on mental health outcomes.

The Mindfulness during Worship Scale

Yousaf and colleagues (2022) recently developed the Mindfulness during Worship Scale (MWS) specifically to measure mindfulness during prayer and worship. They identified three components of mindfulness during worship – *concentration* (the ability to remain focused on worship and avoid lapses in concentration), *presence* (awareness of the thoughts, feelings, and physical sensations experienced), and *absorption* during worship (a sense of self-transcendence and connectedness with the divine) in a large ($N = 521$) sample of Christians in the United Kingdom. The MWS exhibited good concurrent validity, with the aggregate and subscale scores exhibiting positive significant and positive correlations with various facets of mindfulness as well as with religiosity and intrinsic spirituality (Hodge, 2003). Regularity of worship predicted higher scores on all three subscales, while greater frequency of scripture reading and meditation predicted

higher scores on presence during worship and absorption during worship, respectively. While this study provides preliminary evidence of the validity of the MWS in a Christian population, evidence of validity in other religious groups is thus far lacking.

Aim of the present study

Despite their initial focus on Christian participants, the initial validation study positioned the MWS as a measure with broad applicability to any religion that involves worship and prayer, such as Islam. As members of the Abrahamic family of religions, Islam and Christianity share many common practices (in addition to their theological similarities) such as collective worship and individual prayer (Koenig et al., 2012). The Islamic ritual prayer (in Arabic: salah; Katz, 2013), which Muslims engage in five times a day, consists of a worship element where verses from the Quran are recited during physical movements including prostration (i.e., sajdah in Arabic), followed by supplications (e.g., du'a in Arabic). Mindfulness during prayer has been studied among Muslims in both Pakistan (Ijaz et al., 2017) and Canada (Albatnuni & Koszycki, 2020), while recent scholarship has also sought to integrate mindfulness-related concepts with Islamic Sufi mysticism and Muslim-oriented therapeutic practice (Isgandarova, 2019). These trends speak to a need to validate the MWS in Muslim populations, such that mindfulness during the Islamic prayer and its potential psychological consequences can be further explored.

The primary aim of this study was therefore to validate the MWS in a Muslim sample. Specifically, we first aimed to confirm the factor structure and internal consistency of the MWS. Second, we aimed to test the concurrent validity of the MWS. Third, we aimed to examine which religious beliefs and practices are associated with increased mindfulness experiences during worship.

Method

Participants and procedure

Following institutional ethics approval, two independent samples were collected for the purpose of this study by two different researchers in two different cities in the UK in order to cover different sociodemographic groups. For both samples, data were collected by sharing an online survey to members of the Muslim community in the United Kingdom. Twelve different mosques and community centres were approached, and the gatekeepers were asked if they could circulate the ad for the study in the weekly newsletter or by other means through mailing lists. The inclusion criteria were that participants had to identify as Muslims, be currently living in the UK, be 18 or above, and proficient in English. Each participant was presented with a research project information sheet, a consent form and a number of questions relating to: demographical information, religious practices and the MWS. In addition, each phase also contained an additional measure to be used for testing concurrent validity. Sample one included the Five Facet Mindfulness Questionnaire (FFMQ-15; Gu et al., 2016) and the Santa Clara Strength of Religious Faith Questionnaire (SCSORF; Freiheit et al., 2006). Sample two included the Intrinsic Spirituality Scale (ISS; Hodge, 2003), and the Religious Life and Orientation Scale (RLOS; Voci et al., 2017). Table 1 outlines the demographic details and characteristics of each sample.

Measures

Mindfulness during Worship

The MWS is a questionnaire designed to measure the extent to which religious individuals are mindful during acts of worship. The MWS contains 15 items which make up three subscales: (a) concentration during worship (MWS-Concentration during Worship Subscale; e.g., "At times during worship, I engage my thoughts in matters unrelated to the worship"); (b) presence during worship (MWS-Presence during Worship Subscale; e.g., "I am usually very aware of how worship affects me mentally when it is taking place"); and (c) absorption during worship (MWS-Absorption into Worship Subscale; e.g., "I often find myself in a heightened state of mindfulness during worship"). Each item of the MWS is scored on a five-point Likert scale (1 = Disagree very much, 2 = Disagree, 3 = Not sure, 4 = Agree, and 5 = Strongly agree), with higher scores indicating a stronger tendency to engage in worship mindfully, except for the MWS-CW items, which are

Table 1. Participant demographic characteristics.

Descriptor	Variable	Sample 1	Sample 2	Total
Sample Size	*N*	61	61	122
Sex	Male	42.6%	65.6%	54.1%
	Female	57.4%	34.4%	45.9%
Age	Mean	30.66	36.49	33.57
	SD	12.70	16.03	14.70
Marital Status	Single	50.8%	54.1%	52.5%
	Partner	13.1%	0.0%	6.6%
	Married	36.1%	44.3%	40.2%
	Widowed	0.0%	1.6%	0.8%
Ethnicity	Middle Eastern	39.3%	65.6%	52.4%
	African	31.1%	6.6%	18.9%
	Mixed	13.2%	19.6%	16.4%
	British	9.8%	6.6%	8.2%
	Other	6.6%	1.6%	4.1%
Education	GSCE or lower	9.8%	4.9%	7.4%
	A levels	23.0%	31.1%	27.0%
	Cert after A levels	3.3%	4.9%	4.1%
	Diploma after A levels	13.1%	0.0%	6.6%
	BA or BSc Degree	32.8%	19.7%	26.2%
	MA or MSc Degree	11.5%	21.3%	16.4%
	PhD or MD	4.9%	13.1%	9.4%
	Other	1.6%	4.9%	3.3%
Employment	Unemployed	6.6%	4.9%	5.7%
	Student	37.7%	29.5%	33.6%
	Employed	52.5%	60.7%	56.6%
	Retired	3.3%	4.9%	4.1%
Introduction to Religion	From birth	93.4%	93.4%	93.4%
	Converted	6.6%	6.6%	6.6%
Worship and Prayer	Less than half an hour monthly	27.9%	47.5%	37.7%
	10–60 min weekly	29.5%	36.1%	32.8%
	10–30 min daily	32.8%	11.5%	22.1%
	Above 30 min daily	9.8%	4.9%	7.4%
Scripture Reading	Less than half an hour monthly	8.2%	19.7%	13.9%
	10–60 min weekly	14.8%	24.6%	19.7%
	10–30 min daily	49.2%	34.4%	41.8%
	Above 30 min daily	27.9%	21.4%	24.6%
Communal Activities	Less than half an hour monthly	8.2%	26.2%	17.2%
	10–60 min weekly	11.5%	8.2%	9.8%
	10–30 min daily	55.7%	21.3%	38.5%
	Above 30 min daily	24.6%	44.3%	34.4%

reverse scored. Initial validation of the MWS showed that the measures contains a good internal consistency for the total scale ($\alpha = .81$) and individual subscales ($\alpha = .70$ to .80), as well as external validity to existing measure of mindfulness and intrinsic religious experiences (Yousaf et al., 2022).

Dispositional mindfulness

Trait mindfulness was measured using the 15-item version of the FFMQ (Gu et al., 2016), which is a shortened version of the original 39-item FFMQ (Baer et al., 2006). The FFMQ-15 measures five facets of mindfulness: (a) observing the present moment (FFMQ-Observe Subscale; e.g., "I notice how foods and drinks affect my thoughts, bodily sensations, and emotions"), describing thoughts and feelings (FFMQ-Describe Subscale; e.g., "I'm good at finding words to describe my feelings"), acting with awareness (FFMQ-Acting with Awareness Subscale; e.g., "I do jobs or tasks automatically without being aware of what I'm doing"), non-judging of thoughts and feelings (FFMQ-Non-Judge Subscale; e.g., "I believe some of my thoughts are abnormal or bad and I shouldn't think that way"), and non-reactivity to inner experience (FFMQ-Non-React Subscale; e.g., "When I have distressing thoughts or images I am able just to notice them without reacting"). Each statement is scored on a scale of 1 ("Never or rarely true") to 5 ("Very often or always true"), with higher scores representing higher levels of mindful practices (after accounting for reverse scored items). The FFMQ-15 has shown a comparable model fit to its predecessor, and good reliability ($\alpha = .75$ to .87; Baer et al., 2006; Gu et al., 2016).

Religious orientation

The RLOS (Voci et al., 2017) was used to measure participants' religious perspectives and orientations. The RLOS contains 18 items, which measure three orientations: (a) religion as an end (RLOS-End) (eight items; e.g., "I carry religion into all dealings in life"); (b) religion as a means RLOS-Means (five items; e.g., "Religion satisfies needs for fellowship and security"); and (c) religion as a quest RLOS-Quest (five items; e.g., "Doubting is an important part of being religious"). Participants are asked to rate each item from 1 ("Not describing me at all") to 7 ("Describing me very well") based on how well they think each items describes their orientation to religion. Higher scores on the RLOS indicate a stronger orientation to the corresponding subscale. The RLOS has demonstrated to have a good validity and reliability for all three subscales ($\alpha = .72$ to .84; Voci et al., 2017).

Religiosity and faith

To measure the strength of participants' religious faith, the SCSORF (Freiheit et al., 2006) was used. The SCSORF contains 10 items (e.g., "I look to my faith as providing meaning and purpose in my life") which participants must rate on a four-point scale of agreeableness (1 = Strongly disagree; 4 = Strongly agree). Higher scores on the SCSORF indicate higher levels of faith and religiosity. The SCSORF has demonstrated to have good validity, strong correlations with other measures of religious spirituality, and a very high internal consistency ($\alpha = .95$; Freiheit et al., 2006).

Intrinsic spirituality

To measure the degree to which participants' spirituality functions as a key motive in their lives, the ISS (Hodge, 2003) was used. The ISS contains six-items that are formatted using

the phrase completion methodology. As such, participants are presented with a phrase (e.g., "In terms of the questions I have about life, my spirituality answers … ") and an option of responses along an 11-point scale to complete this phrase (e.g., 0 = "No questions"; 10 = "Absolutely all my questions"). The ISS has shown excellent internal consistency in its original validation ($\alpha = .96$), and in subsequent studies with samples of Alzheimer's caregivers ($\alpha = .92$; Gough et al., 2010) and Muslims ($\alpha = .89$ to .95; Hodge et al., 2015).

Religious beliefs and practices

In order to understand how religious beliefs and practices predicted the MWS subscales, seven items were developed for the purpose of this study and were scored on various four-point scales. Specifically, one question was related to how strongly participants believed in God (1 = Somewhat or less, 4 = Very strongly); three questions were concerned with how important participants perceived their religious teachings, worship/prayer, and religious learning to be (1 = Unimportant; 4 = Very important); and three questions were related to how often participants engaged in: prayer/worship; reading or listening to scripture; and communal religious activities (1 = Less than half an hour monthly; 2 = 10–60 min weekly; 3 = 10–30 min daily; 4 = Above 30 min daily). These items were developed as an extension of the questions used by Yousaf et al. (2022), so that more specific aspects of religious beliefs could be distinguished. Higher scores on all items indicate either stronger religious beliefs or more frequent religious practices.

Demographical and general information

Participants' demographic information was also recorded to identify the characteristics of the sample, including: gender, age, religion, country, marital status, experience with meditation and initiation to religion (i.e., being born into it; having converted into religion).

Data analyses

Following the completion of the data collection, the data samples were combined and the MWS items were transferred into statistical analysis software SPSS AMOS (version 28). A CFA model was drawn representing the factor structure previous identified by Yousaf et al. (2022). Statistical fit values were based previously established guidelines (Byrne, 2016; Hu & Bentler, 1999), including: (a) RMSEA, values < .06 = good fit, < .08 = acceptable fit, and > .08 to .10 = marginal fit; (b) good fit index (GFI), comparative fit index (CFI) and Tucker-Lewis index (TLI), values ≥ .95 = good fit, and ≥ .90 = acceptable fit; and (c) standardised root mean square residual (SRMR), values (SRMR < .08). As a minimum sample size for CFA, Kyriazos (2018) suggest that a sample of 100–150 participants is acceptable, particularly where the data is normally distributed and there are more than three observed variables per latent variable.

Next, the data were transferred into SPSS (version 28) where the variables were transformed and examined for normality using descriptive statistics. Reliability analyses were also performed on the data to test the internal consistency of the variables. Finally, to test the concurrent validity of the MWS and to examine how religious beliefs and practices related to mindfulness during worship, bivariate correlations were performed on the data. Regarding concurrent validity, the FFMQ variables, SCSCORF, ISS, RLOS-Religion as an

Ends, and RLOS-Religion as a Means were used to test convergent validity, whilst RLOS-Religion as a Quest was used for discriminant validity. Interpretations of the correlations were based on suggestions by Cohen (1988) Pearson's *r as* .10 = small, .30 = medium, and .50 = large. Power analysis using GPower (version 3.1.9.7) indicated that the current sample would be able to accurately detect small to medium effect sizes ($r = .25$, $1-\beta = .80$) for the correlational analyses.

Results

The CFA showed that the proposed three factor model for the MWS was significantly different from the data ($X^2 = 153.25$, $Df = 87$, $p < .001$). However, previous literature explains that chi square is not alone a reliable indicator of good fit (Schumacker & Lomax, 2004). Therefore, alternative fit indices were examined. Based on these indices, the model continued to demonstrate questionable fit to the data (GFI = .859, TLI, = .910, CFI = .925, RMSEA = .079, SRMR = .063). To account for the covariance from within the subscales, modification indices were examined. With consideration of the theoretical similarities between the items showing covariances, several restraints were placed on variable errors within the concurring latent constructs. Specifically, error correlations with modification indices over 3.84 were considered, as this value resembles a significant change in model fit ($p < .05$). The items which received covariance restraints included, between items: 2-5, 2-8, 2-14, and 12-13.

The CFA was then re-run and the revised model (Figure 1) with covariances added demonstrated that the model was a good fit to the data (GFI = .879, TLI, = .933, CFI = .947, RMSEA = .069, SRMR = .059), except for the GFI value, which was marginally below an acceptable cut-off (.900). However, considering that the remainder of the fit indicators suggested an acceptable fit, and the theoretical relatedness between the subscales of the MWS, the structure was considered adequate. Factor loadings of the final model were also acceptable and ranged from .59 to .83 for MWS-CW, .42 to .78 for MWS-PW, and .68 to .78 for MWS-AW. Figure 1 represents the model structure, standardised estimates and correlated errors of the CFA. Finally, to test the internal consistency of the MWS, reliability tests were performed on the final factor solution and the total scale. The results showed that had a good internal consistency for: MWS-CW (α = .86), MWS-AW (α = .88), MWS-PW (α = .76) and the total MWS (α = .90).

Research aim 2: concurrent validity of the mindful worship scale

Bivariate correlations were then performed between the MWS with the variables used for concurrent validity (i.e., the FFMQ; the ISS; the RLOS; the SCSORF). The results showed that firstly, there were medium to large positive correlations were present between the MWS subscales ($r = .43$ to $.85$). There was also evidence for concurrent validity for the MWS in the current sample, as: (a) MWS-CW (Concentration during Worship subscale), which related to maintaining focus during worship, was positively related to Five Facet Mindfulness Questionnaire (Acting with Awareness) ($r = .36$, $p = .004$), Five Facet Mindfulness Questionnaire (Non-Judge) ($r = .42$, $p = .001$), Five Facet Mindfulness Questionnaire (Non-React) ($r = .27$, $p = .034$), RLOS-Quest ($r = .41$, $p = .001$), RLOS-Means ($r = .45$, $p < .001$), RLOS-Ends ($r = .40$, $p = .002$), and ISS ($r = .27$, $p = .034$); (b) MWS-PW (Presence during

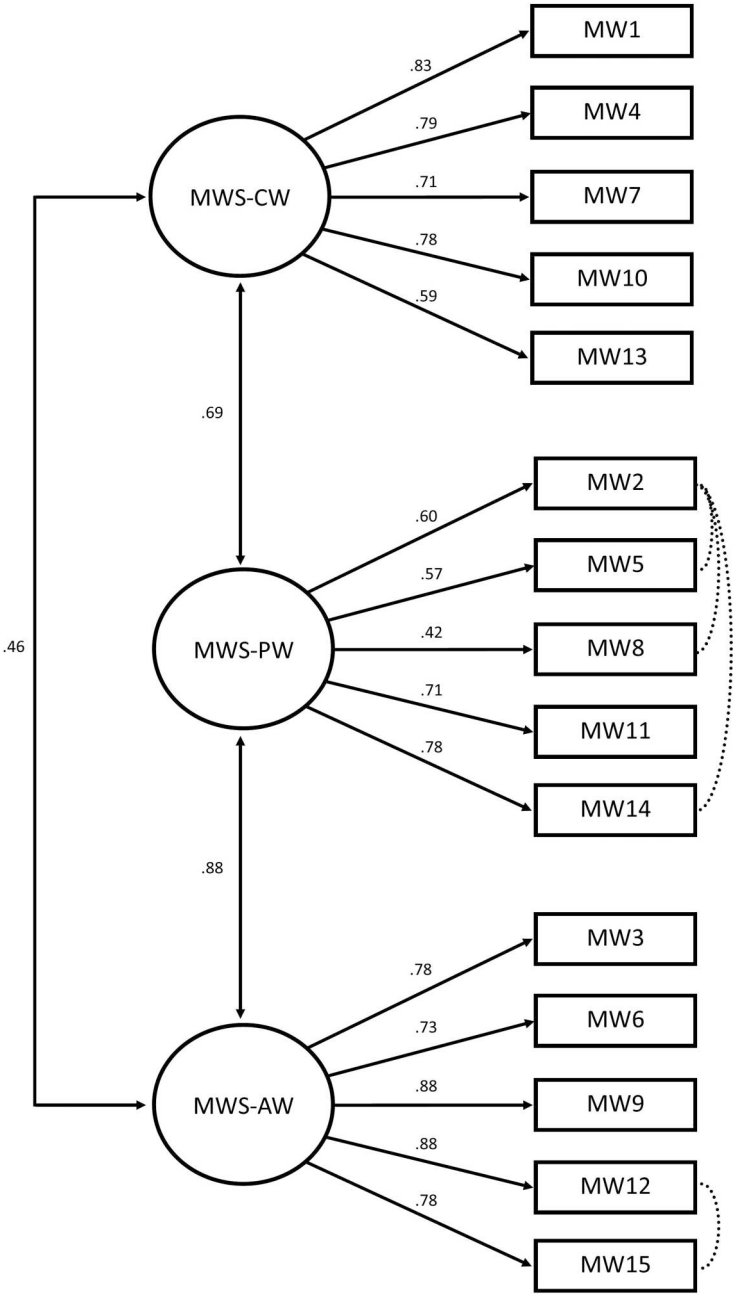

Figure 1. The factor structure and factor loadings of the CFA performed on the MWS.

Worship subscale), which contained items relating to the an awareness and presence during worship, was positively related to FFMQ-AA ($r = .33$, $p = .009$), FFMQ-NJ ($r = .31$, $p = .015$), FFMQ-NR ($r = .51$, $p < .001$), RLOS-Means ($r = .51$, $p < .001$), RLOS-Ends ($r = .55$, $p < .001$), SCSORF ($r = .46$, $p < .001$), and ISS ($r = .58$, $p < .001$); and (c) MWS-AW (Absorption into Worship subscale), which contained items relating to the absorption during worship and an increased level of awareness, was positively related to FFMQ-NR ($r = .44$, $p < .001$),

Table 2. Descriptive statistics and bivariate correlations between the MWS and concurrent validity variables.

Variable	*N*	*M*	*SD*	*α*	MWS-CW	MWS-PW	MWS-AW	Total MWS
MWS-CW	122	2.91	.89	.86	-			
MWS-PW	122	3.62	.68	.88	.50***	-		
MWS-AW	122	3.52	.83	.76	.43***	.72***	-	
Total MWS	122	3.35	.67	.90	.79***	.86***	.85***	-
FFMQ-AA	61	3.20	.92	.83	.36**	.33**	.08	.33*
FFMQ-OBS	61	3.63	.70	.64	.03	.24	.13	.17
FFMQ-DES	61	3.46	.81	.79	.15	.25	.22	.26*
FFMQ-NJ	61	3.26	.88	.71	.42***	.31*	.13	.36**
FFMQ-NR	61	3.33	.83	.78	.27*	.51***	.44***	.52***
RLOS-Quest	61	3.93	1.58	.83	-.41***	-.48***	-.35**	-.46***
RLOS-Means	61	3.99	1.26	.76	.45***	.51***	.55***	.57***
RLOS-Ends	61	4.91	1.58	.92	.40**	.55***	.69***	.61***
SCSORF	61	3.63	.54	.91	-.01	.46***	.45**	.39**
ISS	61	6.49	2.08	.93	.27*	.58***	.40***	.46***

*$p < .05$, **$p < .01$, ***$p = <.001$.

RLOS-Means ($r = .55$, $p < .001$), RLOS-Ends ($r = .69$, $p < .001$), SCSORF ($r = .45$, $p < .001$) and ISS ($r = .40$, $p = .001$).

The total MWS also demonstrated positive relationships with FFMQ-AA ($r = .33$, $p = .010$), FFMQ-DES ($r = .26$, $p = .042$), FFMQ-NJ ($r = .36$, $p = .004$), FMMQ-NR ($r = .52$, $p < .001$), RLOS-Means ($r = .57$, $p < .001$), RLOS-Ends ($r = .61$, $p < .001$), SCSORF ($r = .39$, $p = .002$), and the ISS ($r = .55$, $p < .001$). Relationships ranged from small to large in size. Notably, evidence for divergent validity was also present within the correlations, in that RLOS-Quest (which contains items relating to the questioning of one's religious beliefs) shared medium negative relationships to all of the MWS subscales ($r = -.35$ to $-.48$, $p = .006$ to $< .001$) and the total scale ($r = -.46$, $p < .001$). While there were some non-significant correlations between some subscales of the FFMQ and the MWS subscales, it was not clear whether this was from a lack of association or lacking in ability to detect small effects. Descriptive statistics, correlations and reliability coefficients are displayed in Table 2.

Research aim 3: associations between religious beliefs and practices with mindfulness during worship

To examine how religious beliefs and practices, and demographic variables were associated with the MWS, additional bivariate correlations were conducted. The results showed that MWS-CW was only positively associated with engaging in religious communal activities ($r = .29$, $p < .001$). Alternatively, both MWS-PW and MWS-AW shared small to large positive associations ($r = .22$ to $.51$, $p = .016$ to $< .001$) with all of the religious beliefs and practices variables, but no associations with the demographic variables. Overall, the results suggested that mindfulness during worship increased with stronger beliefs about the importance of religion and greater frequency of religious practicing. The means, standard deviations and bivariate correlations are displayed in Table 3.

Discussion

The present research sought to provide a preliminary examination of the validity of the MWS among Muslims. Specifically, we sought to investigate validity with respect to

Table 3. Descriptive statistics and bivariate correlations between the MWS with religious beliefs and practices, and demographic variables (N = 122).

Variables	*M*	*SD*	MWS-CW	MWS-PW	MWS-AW	Total MWS
Belief in God	3.43	.86	.01	.32***	.39***	.27**
Importance of Religious teachings	3.43	.82	.12	.46***	.51***	.42***
Importance of prayer/worship	3.39	.86	.09	.45***	.47***	.39***
Importance of religious learning	3.39	.84	.12	.44***	.47***	.40***
Worship frequency	3.26	.85	.03	.31***	.25**	.22*
Scripture reading frequency	2.43	1.04	.15	.29***	.27**	.27**
Communal activities frequency	2.16	1.25	.29***	.28**	.22*	.31***
Gender (1 = Female, 2 = Male)	1.54	.50	.08	.17	.16	.16
Age	33.57	14.70	.11	.18	.08	.14

*$p < .05$, **$p < .01$, ***$p < .001$.

three research aims: (a) Testing the factor structure and internal consistencies of the overall MWS and its subscales; (b) probing concurrent validity by examining relations between MWS, dispositional mindfulness, religious orientation, and religiosity; and (c) investigating relationships between various religious and spiritual practices and scores on the MWS. In each case, we intended to compare results obtained in the Muslim sample with those obtained in a Christian sample by Yousaf et al. (2022) as part of the initial validation of the MWS.

With respect to the first aim, the MWS was found to exhibit the same three-factor structure in the present Muslim sample as initially observed in the initial validation study in a Christian population. Also consistent with the findings of the initial validation study, the proposed three-factor structure initially displayed less than optimal fit to the data before placing constraints on the error covariances. Theoretically, this might be because the subscales of the MWS are measuring similar (yet distinct) constructs of mindfulness experiences during worship. While the small sample size ($N = 122$) places limitations on the strength of conclusions that can be drawn from factor analysis of the present data (further discussed below), the replication of the factor structure observed in the initial validation study, provides preliminary evidence of the validity of the MWS among Muslims. Moreover, the reliabilities of the MWS subscales – concentration, absorption, and presence – were found to be good in the present Muslim sample, with Cronbach's alphas ranging from .76 to .90. Taken together, these findings indicate that the MWS exhibits a comparable structure in Muslims.

The present research provides evidence for the concurrent validity of the MWS in Muslim populations. Replicating the findings of the initial validation study by Yousaf et al. (2022), the total MWS was found to correlate significantly and positively with two theoretically relevant facets of mindful awareness as measured by the FFMQ-15: acting with awareness (AA) and describing thoughts and feelings (DES). Furthermore, total MWS was also found to associate positively with intrinsic religiosity as measured by the RLOS, which might be due to the fact that intrinsic religiosity facilitates a deeper engagement with worship, rather than considering it a means to an end. This latter finding is important, since it both replicates and extends the findings of the initial validation study which observed positive associations between total MWS and intrinsic spirituality: a distinct yet related construct pertaining to motivating properties of spirituality.

Facet-level associations between criterion variables and the three dimensions of MWS to some extent mirror those observed in the initial validation study. As documented previously, acting with awareness (AA) was found to associate positively with concentration and presence but not with absorption. However, in contrast to the initial validation study, previous observations, no MWS dimensions were found to significantly correlate with describing thoughts and feelings (DES) in the present study. This may be due to the comparably low power of this study to detect smaller effects (e.g., correlations in the range of $r = .18$) that were documented in the initial development and validation of the scale. The fact that total MWS and two of the three dimensions were uncorrelated with observing the present moment (OBS) is generally consistent with the results of the initial validation study.

This study also revealed previously undocumented associations between total MWS and several other theoretically relevant constructs. In accordance with the recommendations of Yousaf et al. (2022), we examined the association of total MWS with other aspects of mindfulness (non-judgment and non-reactivity), as well as with alternative religious orientations (extrinsic religiosity and religion as quest). With respect to non-judgment and non-reactivity, total MWS was found to correlate positively with both, suggesting a possible role for these aspects of mindfulness in mindfulness during worship. Interestingly, the correlation between non-reactivity and total MWS was the largest of all the mindfulness facets, a finding that may warrant further investigation in future research. Similarly, correlations between the total MWS and religious orientations other than intrinsic religiosity somewhat deviate from expectations. While slightly smaller than the correlation between total MWS and RLOS-Ends (i.e., intrinsic religiosity), the correlation between total MWS and RLOS-Means (i.e., extrinsic religiosity) was significant, positive, and of a comparable magnitude. This tentatively suggests that mindful prayer and worship are not exclusive to those who view their faith as an end in and of itself and may also be characteristic of those who view religion as a way to meet other social and psychological needs related to religion. For example, those scoring high on extrinsic religiosity might instrumentalize mindfulness during their prayer if they feel that it benefits them psychologically (rather than performing prayer mindfully because it brings them closer to God or because they feel that it is required of them). In keeping with this possibility, total MWS was also found to correlate significantly and positively with scores on the SCSORF: a generalised measure of religiosity consisting mostly of extrinsic religiosity items (e.g., "I look to my faith as a source of comfort" and "I enjoy being around others who share my faith").

The significant negative association between total MWS and religion as quest is also somewhat surprising, given the positive relationship between mindfulness and the broad personality trait of openness to experience (Giluk, 2009) and the prominence of openness in many definitions of the mindfulness construct (e.g., Kabat-Zinn, 1994). In the present sample, MWS was found to be negatively related to RLOS-Quest, both in totality and at the facet level. While this may result from the fact that "persons high in Quest [are] those who have been typically unable to gain much psychological comfort or benefit from formal prayer, precisely because they lack mindfulness skills, and so are those who then embark on a wider, extra religious search for spiritual meaning" (Yousaf et al., 2022, p. 8), further research will be required to substantiate this possibility, both among Muslims and members of other religious groups.

Limitations

This study is not without its limitations. Perhaps the biggest limitation is the comparatively small sample size, which restricts the extent to which firm conclusions can be drawn about the dimensionality and validity of the MWS in Muslim populations. The results of this study should therefore be interpreted as providing preliminary evidence of the suitability and applicability of the MWS construct and measure in followers of Islam. Another limitation, as well as a direction for future research, is the need to examine the validity of the MWS in cultural contexts other than the United Kingdom. Given that the UK is culturally Christian (50% of British people identified as Christians in 2018 according to the Office for National Statistics), with Muslims representing a growing minority (5% of the UK population according to the Office for National Statistics in 2018, making it the largest religious minority), there is a need to examine MWS in cultures that deviate from this faith balance (e.g., cultures where Christians are a minority, cultures where Muslims are the majority).

Conclusion and future directions

In conclusion, the MWS is a brief yet comprehensive self-report instrument that remains valid in both Christian and Muslim samples. The measure has also demonstrated a link to multiple aspects of religious practice and faith. As such, the MWS could be utilised in the future to help identify how aspects of mindfulness during worship could predict religious constructs such as engagement, but also be used to differentiate the experiences of prayer between religions. Moreover, the MWS could be used practically to identify areas of prayer in need of improvement, and to bring religious individuals closer to their respective God through religious guidance and chaplaincy/pastoral services.

While the validation of the MWS in both the original study on Christians (Yousaf et al., 2022) and in the present study on Muslims has provided support for the positive associations between levels of mindfulness during prayer and religious faith, religious practices, and spirituality, there is a need to further explore the links between mindful worship and well-being and mental health. The link between mindfulness and psychological health is well-established in the literature (for a systematic review, refer to Tomlinson et al., 2018), as is the link between religious practices/worship and psychological/physical health (VanderWeele, 2017). However, at present, we know little about the ways in which concentration, presence, and absorption during worship are related to well-being in those who engage in worship regularly. Indeed, individual differences in mindfulness during worship might account for some of the variation in health and well-being within religious populations.

Furthermore, future research could explore the links between mindfulness during worship and guilt-proneness and other negative emotions which can act as emotional hindrances for both Christians and Muslims when it comes to their religious practices (Lau & Ramsay, 2019; Yousaf & Gobet, 2013). It might be the case that higher levels of guilt, whose religion-induced occurrence within religious individuals is well-documented (Faiver et al., 2000; Luyten et al., 1998; Satterly, 2001), impede the achievement of mindfulness during worship due to the interference of guilt-related thoughts and self-criticism. Finally, as per the recommendations of Yousaf et al. (2022), future research could

investigate the extent to which motivations related to the self-concept and self-esteem play a role in one's ability to be mindful during worship. Yousaf and Gobet (2016) showed that the ways in which religious individuals process information related to their religious beliefs and attitudes can be related to their motivational goals at the time. As such, it would be interesting to explore how self-related motivations are associated with mindfulness during worship.

Declarations

Ethical approval for the study was obtained through the psychology department ethics committee at Bath Spa University. Informed consent was obtained from participants, and it made it clear that they could withdraw from the study at any point without having to provide a reason. The raw data will be made available through the corresponding author. There are no competing interests. The project was not funded.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Omar Yousaf http://orcid.org/0000-0002-0879-4971

References

Albatnuni, M., & Koszycki, D. (2020). Prayer and well-being in Muslim Canadians: Exploring the mediating role of spirituality, mindfulness, optimism, and social support. *Mental Health, Religion & Culture*, *23*(10), 912–927. https://doi.org/10.1080/13674676.2020.1844175

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27–45. https://doi.org/10.1177/1073191105283504

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, *11*(3), 230–241. https://doi.org/10.1093/clipsy.bph077

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge. https://doi.org/10.4324/9781315757421

Charoensukmongkol, P. (2014). Benefits of mindfulness meditation on emotional intelligence, general self-efficacy, and perceived stress: Evidence from Thailand. *Journal of Spirituality in Mental Health*, *16*(3), 171–192. https://doi.org/10.1080/19349637.2014.925364

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge.

Enkema, M. C., McClain, L., Bird, E. R., Halvorson, M. A., & Larimer, M. E. (2020). Associations between mindfulness and mental health outcomes: A systematic review of ecological momentary assessment research. *Mindfulness*, *11*(11), 2455–2469. https://doi.org/10.1007/s12671-020-01442-2

Faiver, C. M., O'Brien, E. M., & Ingersoll, R. E. (2000). Religion, guilt, and mental health. *Journal of Counseling & Development*, *78*(2), 155–161. https://doi.org/10.1002/j.1556-6676.2000.tb02573.x

Freiheit, S. R., Sonstegard, K., Schmitt, A., & Vye, C. (2006). Religiosity and spirituality: A psychometric evaluation of the Santa Clara Strength of Religious Faith Questionnaire. *Pastoral Psychology*, *55*(1), 27–33. https://doi.org/10.1007/s11089-006-0029-y

Garzon, F., & Ford, K. (2016). Adapting mindfulness for conservative Christians. *Journal of Psychology and Christianity*, *35*(3), 263–268.

Germer, C. K., & Neff, K. D. (2013). Self-compassion in clinical practice: Self-compassion. *Journal of Clinical Psychology*, *69*(8), 856–867. https://doi.org/10.1002/jclp.22021

Giluk, T. L. (2009). Mindfulness, big five personality, and affect: A meta-analysis. *Personality and Individual Differences*, *47*(8), 805–811. https://doi.org/10.1016/j.paid.2009.06.026

Gough, H. R., Wilks, S. E., & Prattini, R. J. (2010). Spirituality among Alzheimer's caregivers: Psychometric re-evaluation of the Intrinsic Spirituality Scale. *Journal of Social Service Research*, *36*(4), 278–288. https://doi.org/10.1080/01488376.2010.493848

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review*, *37*, 1–12. https://doi.org/10.1016/j.cpr.2015.01.006

Gu, J., Strauss, C., Crane, C., Barnhofer, T., Karl, A., Cavanagh, K., & Kuyken, W. (2016). Examining the factor structure of the 39-item and 15-item versions of the Five-Facet Mindfulness Questionnaire before and after mindfulness based cognitive therapy for people with recurrent depression. *Psychological Assessment*, 28(7), 791–802. https://doi.org/10.1037/pas0000263

Hodge, D. R. (2003). The Intrinsic Spirituality Scale: A new six-item instrument for assessing the salience of spirituality as a motivational construct. *Journal of Social Service Research*, *30*(1), 41–61. https://doi.org/10.1300/J079v30n01_03

Hodge, D. R., Zidan, T., & Husain, A. (2015). Validation of the Intrinsic Spirituality Scale (ISS) with Muslims. *Psychological Assessment*, *27*(4), 1264–1272. https://doi.org/10.1037/pas0000130

Hoogeveen, S., Sarafoglou, A., van Elk, M., & Wagenmakers, E.-J. (2022). A many-analysts approach to the relation between religiosity and well-being. *Religion Brain & Behavior*, *13*(3), 1–47. https://doi.org/10.1080/2153599X.2022.2070255

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Ijaz, S., Khalily, M. T., & Ahmad, I. (2017). Mindfulness in Salah Prayer and its association with mental health. *Journal of Religion and Health*, *56*(6), 2297–2307. https://doi.org/10.1007/s10943-017-0413-1

Isgandarova, N. (2019). Muraqaba as a mindfulness-based therapy in Islamic psychotherapy. *Journal of Religion and Health*, *58*(4), 1146–1160. https://doi.org/10.1007/s10943-018-0695-y

Jankowski, P. J., & Sandage, S. J. (2011). Meditative prayer, hope, adult attachment, and forgiveness: A proposed model. *Psychology of Religion and Spirituality*, *3*(2), 115–131. https://doi.org/10.1037/a0021601

Jarunratanakul, P., & Jinchang, K. (2018). Does sexism affect Thai women's psychological and behavioural responses? The stereotype threat-buffering effect of mindfulness. *Journal of Pacific Rim Psychology*, *12*, 1–14. https://doi.org/10.1017/prp.2018.10

Kabat-Zinn, J. (1994). *Wherever you go. There you are: Mindfulness meditation in everyday life*. Piatkus.

Katz, M. H. (2013). *Prayer in Islamic thought and practice (No. 6)*. Cambridge University Press.

Knabb, J. J. (2012). Centering prayer as an alternative to mindfulness-based cognitive therapy for depression relapse prevention. *Journal of Religion and Health*, *51*(3), 908–924. https://doi.org/10.1007/s10943-010-9404-1

Koenig, H. G., Zaben, F. A., & Khalifa, D. A. (2012). Religion, spirituality and mental health in the West and the Middle East. *Asian Journal of Psychiatry*, *5*(2), 180–182. https://doi.org/10.1016/j.ajp.2012.04.004

Kyriazos, T. A. (2018). Applied psychometrics: Sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology (Savannah, Ga)*, *9*(08), 1–24. https://doi.org/10.4236/psych.2018.98126

Lau, G. P. W., & Ramsay, J. E. (2019). Salvation with fear and trembling? Scrupulous fears inconsistently mediate the relationship between religion and well-being. *Mental Health, Religion & Culture*, *22*(8), 844–859. https://doi.org/10.1080/13674676.2019.1670629

Luyten, P., Corveleyn, J., & Fontaine, J. R. (1998). The relationship between religiosity and mental health: Distinguishing between shame and guilt. *Mental Health, Religion & Culture*, *1*(2), 165–184. https://doi.org/10.1080/13674679808406507

Pascoe, M. C., Thompson, D. R., Jenkins, Z. M., & Ski, C. F. (2017). Mindfulness mediates the physiological markers of stress: Systematic review and meta-analysis. *Journal of Psychiatric Research*, *95*, 156–178. https://doi.org/10.1016/j.jpsychires.2017.08.004

Purser, R. E., & Milillo, J. (2015). Mindfulness revisited: A Buddhist-based conceptualization. *Journal of Management Inquiry*, *24*(1), 3–24. https://doi.org/10.1177/1056492614532315

Satterly, L. (2001). Guilt, shame, and religious and spiritual pain. *Holistic Nursing Practice*, *15*(2), 30–39. https://doi.org/10.1207/s15327574ijt0502_4

Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modelling*. Psychology Press.

Segal, Z., Williams, M., & Teasdale, J. (2018). *Mindfulness-based cognitive therapy for depression*. Guilford Publications.

Spijkerman, M. P. J., Pots, W. T. M., & Bohlmeijer, E. T. (2016). Effectiveness of online mindfulness-based interventions in improving mental health: A review and meta-analysis of randomised controlled trials. *Clinical Psychology Review*, *45*, 102–114. https://doi.org/10.1016/j.cpr.2016.03.009

Tan, S. Y. (2011). Mindfulness and acceptance-based cognitive behavioral therapies: Empirical evidence and clinical applications from a Christian perspective. *Journal of Psychology and Christianity*, *30*(3), 243–249.

Tomlinson, E. R., Yousaf, O., Vittersø, A. D., & Jones, L. (2018). Dispositional mindfulness and psychological health: A systematic review. *Mindfulness*, *9*(1), 23–43. https://doi.org/10.1007/s12671-017-0762-6

Tse, B. (2022). Questioning the Universality of Mindfulness-based programs: Reflections from a self-construal perspective. *Frontiers in Psychology*, *13*, 1–5. https://doi.org/10.3389/fpsyg.2022.908503

VanderWeele, T. J. (2017). Religion and health: A synthesis. In M. J. Balboni, & J. R. Peteet (Eds.), *Spirituality and religion within the culture of medicine: From evidence to practice* (pp. 357–401). Oxford University Press.

Voci, A., Bosetti, G. L., & Veneziani, C. A. (2017). Measuring religion as end, means, and quest: The Religious Life and Orientation Scale. *TPM: Testing, Psychometrics, Methodology in Applied Psychology*, *24(1)*, 83–98.

Yousaf, O., & Gobet, F. (2013). The emotional and attitudinal consequences of religious hypocrisy: Experimental evidence using a cognitive dissonance paradigm. *The Journal of Social Psychology*, *153*(6), 667–686. https://doi.org/10.1080/00224545.2013.814620

Yousaf, O., & Gobet, F. (2016). The effect of personal attitudes on information processing biases in religious individuals. *Journal of Cognitive Psychology*, *28*(3), 366–373. https://doi.org/10.1080/20445911.2015.1135156

Yousaf, O., Love, S., Hampson, P., Hedderly, J., & Rogers, M. (2022). Conceptualising and measuring mindfulness during worship and prayer: Scale development and initial validation of the Mindfulness during Worship Scale (MWS). *Personality and Individual Differences*, *196*, 111683. https://doi.org/10.1016/j.paid.2022.111683