Routledge
Taylor & Francis Group

Mental Health, Religion & Culture

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/cmhr20

The impact of religiosity on the disability, psychological well-being, and somatic health of multiple sclerosis patients

Fahimeh Mohaghegh, Monireh Eslami, Mahboubeh Dadfar, David Lester, Ali Ayten, Amin Rashidizadeh & Fatemeh Shirzad

To cite this article: Fahimeh Mohaghegh, Monireh Eslami, Mahboubeh Dadfar, David Lester, Ali Ayten, Amin Rashidizadeh & Fatemeh Shirzad (2022) The impact of religiosity on the disability, psychological well-being, and somatic health of multiple sclerosis patients, Mental Health, Religion & Culture, 25:5, 519-530, DOI: 10.1080/13674676.2022.2051462

To link to this article: https://doi.org/10.1080/13674676.2022.2051462

MENTAL HEALTH, RELIGION & CULTURE
2022, VOL. 25, NO. 5, 519–530
https://doi.org/10.1080/13674676.2022.2051462

Routledge
Taylor & Francis Group

The impact of religiosity on the disability, psychological well-being, and somatic health of multiple sclerosis patients

Fahimeh Mohaghegh[a], Monireh Eslami [b], Mahboubeh Dadfar [c], David Lester [d], Ali Ayten[e], Amin Rashidizadeh[f] and Fatemeh Shirzad [g]

[a]Department of Neurology, School of Medicine, Hazrat-e Rasool General Hospital, Iran University of Medical Sciences, Tehran, Iran; [b]Nekuyi Hedayati Forghani Hospital, Qom University of Medical Sciences, Qom, Iran; [c]School of Behavioral Sciences and Mental Health (Tehran Institute of Psychiatry), Iran University of Medical Sciences, Tehran, Iran; [d]School of Social and Behavioral Sciences, Stockton University, New Jersey, USA; [e]Psychology of Religion, Marmara University, İstanbul, Turkey; [f]Electrical Engineering Department, Sharif University of Technology, Tehran, Iran; [g]Department of Psychiatry, School of Medicine, Spiritual Health Research Center, Iran University of Medical Sciences, Tehran, Iran

ABSTRACT

The aim of the study was to predict disability, psychological wellbeing, and somatic health in multiple sclerosis (MS) patients with the mediating variable of religiosity. A sample of 128 patients was recruited, and were administered the Expanded Disability Status Scale, the World Health Organization-5 Well-Being Index, the Patient Health Questionnaire-15, and a Self-Rating Scale of Religiosity. Religiosity did not predict disability, psychological well-being, or somatic health. Religiosity was positively associated with MS duration and disability, but only in male patients. The predictors for predicting psychological wellbeing were age, disability, and somatic health. Patients with moderate/severe MS (EDSS >3) obtained higher mean scores on religiosity compared to patients with mild MS (EDSS $\leq$3) and, therefore, the severity of MS was a significant moderator between religiosity and psychological well-being. The findings suggest the importance of focusing on the type of religiosity, God representation, and attachment to God for clarifying the link between psychological well-being and religiosity among patients.

ARTICLE HISTORY
Received 13 February 2021
Accepted 5 March 2022

KEYWORDS
Multiple sclerosis (MS); disability; psychological well-being; somatic health; religiosity

Introduction

Religiosity refers to believing in a religious doctrine and following or practicing the rituals of the religion (Dew et al., 2020; Koenig et al., 2012). Religiosity is a general protective factor that promotes health and is a strong predictor of behaviour and health (Abdel-Khalek, 2007, 2014, 2019a, 2019b; Beshai & Dadfar, 2019; Koenig, 2016). Religiosity increases patients' ability to cope with their disease and increases the patients' desire to survive and their ability to endure pain, depressive symptoms and distress (Bravin et al., 2019; Koenig, 2008; Koenig et al., 2012), and increases their life satisfaction and well-being through positive coping activities (Sağlam-Demirkan, 2020). Religiosity is of interest to many disciplines including medicine (Koenig, 2012, 2015). Religiosity is

CONTACT Mahboubeh Dadfar dadfar.m@iums.ac.ir; mahboubehdadfar@yahoo.com

related to the healing processes in the human body and to promoting and preventing diseases. Religious people have healthier lifestyles, cope better with stress, and live longer and more satisfying lives (Ayten, 2020; Koenig, 2008; Koenig et al., 2012; Pargament, 1997; Turan, 2018).

Religion is a multifaceted structure that involves participation in the beliefs and institutional activities of a particular group of believers. Participation in religious activities and rituals is a general protective factor that promotes health and well-being. Religious activities improve physical and mental health, the ability to cope with physical and mental diseases and with the diseases' complications (Loewenthal, 2000; Villani et al., 2019).

Religion provides this positive contribution to health by means of two main components. Firstly, religion provides positive religious coping activities which help patients to overcome the stresses and pain during diseases. Secondly, religion provides beliefs which promote tools such as humility, self-control, gratitude, and patience that protect patients from illness, facilitate acceptance of the disease, and accelerate recovery process from illness (Ayten & Hussain, 2020).

Religion is one of the most powerful forces in health and illness. Religious activities and religiosity are considered to be an important resource for coping also with *chronic* physical diseases (Addington hall, 2006; Livneh et al., 2004; Roger & Hatala, 2017). Pain and other unpleasant somatic symptoms can motivate people to seek peace in religion through activities such as praying, saying sacred words (i.e., saying the rosary), visiting shrines, or reading the holy book etc. Therefore, patients often use religious activities to cope with their symptoms (Bussing et al., 2009; Sağlam-Demirkan, 2020).

Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system. It causes non-traumatic disability and also neuropsychological impairment and can affect the individual's physical and mental conditions (Brochet & Ruet, 2019; Kheradmand et al., 2019; Shahrbanian et al., 2018). MS requires effective coping strategies in order to face all of the aspects of the disease and to improve psychosocial adjustment (Babaei et al., 2017; Eskandarieh et al., 2017). Psychological well-being may play an important role in coping with the physical and psychosocial challenges faced by patients with MS (Dadfar et al., 2018a, 2020a; Mohagegh et al., 2021). Taghizadeh and Mir Alaei (2013) showed that therapy with a religious and spiritual approach increased resiliency in female patients with relapsing-remitting MS, while Askari and Nikmanesh (2014) found that religious and spiritual activities and coping predicted and improved the quality of life in patients with MS.

Religiosity might be especially effective on some dimensions of psychological well-being such as self-acceptance, developing positive relationships with others and finding and maintaining a meaning in life. Numerous studies have indicated that religiosity has a positive correlation with psychological well-being (Göcen, 2015; Leondari & Gialamas, 2009). The aim of the present study was to predict disability, psychological well-being, and somatic health in MS patients using the mediating variable of religiosity. The research question was whether religiosity can predict disability, psychological well-being, and somatic health in MS patients. There are various studies focusing on the role of religiosity on psychological well-being, and somatic health. However, this is the first study that focuses the associations between religiosity, disability, psychological well-being, and somatic health among MS patients.

Methods

Participants

This was a descriptive cross-sectional study. A sample of 128 patients with multiple sclerosis (MS) was recruited. The sample size was calculated using the G-Power software according to this formula: (Effect Size [ES] = .5, α Error = .5, Power (1-β Error) = .8). Using a convenience sampling method, patients with MS were selected from patients who were referred for follow up for their treatment at an outpatient clinic and from inpatients who were admitted to receive their medication in a neurological diseases ward of the Hazrat Rasoul Akram General Hospital, affiliated with the Iran University of Medical Sciences in Tehran city.

Measures

The Expanded Disability Status Scale (EDSS; Kurtzke, 1983) is a measure of the degree of disability caused by MS. The EDSS is used to describe the severity of MS symptoms and to summarise all of findings in a single score. On the EDSS, the patient's disability is scored from 0 (normal) to 10 (death due to MS). The EDSS score is determined by a neurologist for the patient. It takes 20–30 min to complete the EDSS (Kurtzke, 1983). The EDSS score is classified into three categories: mild (0–3), moderate (3.5–6.5) and severe (more than 7) (Kurtzke, 1983; Linden et al., 2005). In most studies, mild MS refers to an EDSS score of less than 3 (Correale et al., 2012; Moghaddasi et al., 2011; Syed et al., 2021). Prior studies have reported reliability coefficients for the EDSS of .76 (Meyer-Moock et al., 2014), .80 (Sharrack et al., 1999), and .97 (Asghari & Rashedi, 1999).

The World Health Organization-5 Well-Being Index (WHO-5) is a five-item self-report scale that is commonly used to measure subjective psychological and emotional well-being. It is used as a screening tool for depression. Each item is answered on a six-point Likert-type scale that ranges from 0 to 5. Cronbach alphas for the WHO-5 are between .85 and .91 (Chen et al., 2019; Dadfar et al., 2018b; Linton et al., 2016; Perera et al., 2020; Topp et al., 2015). A typical item is "Being cheerful and good spirits". The Farsi version of the WHO-5 was available at the WHO website in 2017. In the present study the Farsi version of the WHO-5, validated by Dadfar et al. (2018b), was used. For the present sample, Cronbach's α was .83.

The Patient Health Questionnaire-15 (PHQ-15; Koenig et al., 2002) is a self-report screening tool for somatic symptom disorders. The symptoms are scored on a three-point scale: not bothered at all (0), bothered a little (1), and bothered a lot (2) (Kroenke et al., 2002). It has been used cross-culturally (de Vroege et al., 2012; Han et al., 2009; Kocalevent et al., 2013; Körber et al., 2011; Lee et al., 2011; Leonhart et al., 2015, 2018). Cronbach alphas for the PHQ-15 were between .79 and .85 (see Dadfar et al., 2018b; Dadfar et al., 2020b). The Farsi version of the PHQ-15 has previously been validated (Dadfar et al., 2020b). A typical item is "Shortness of breath". For the present sample Cronbach's α was .78.

The Self-Rating Scale of Religiosity (SRR; Abdel-Khalek, 2007) is a single item (What is your level of religiosity in general?) answered on an 11-point scale (0–10). High scores indicate a high level of religiosity. The one-week and three-week test–retest reliabilities of the SRR were .87 and .95, respectively (Abdel-Khalek, 2007; Afhami et al., 2017). The SRR correlated (r = .50) with the Hoge Scale of Intrinsic Religious Motivation (Abdel-

Khalek & Lester, 2017, 2018), ($r = .77$) with the Duke University Religion Index (Afhami et al., 2017), ($r = .29$) with the Self-Rating Scale of Happiness (SRH), and ($r = -.25$) with the Suicidal Behavior Questionnaire-Revised (SBQ-R) (Dadfar et al., 2021). In the present study, the Farsi version of the SRR, validated by Dadfar et al. (2021), was used.

Procedure

The study protocol was approved by the Institutional Review Board at the Iran University of Medical Sciences, IR.IUMS.FMD.REC.1399.011. The purpose of the study was explained to the MS patients, and they were assured that the information provided would be kept confidential. The MS patients were invited to participate voluntarily in the study, and they provided written informed consent. The MS patients were administered the scales individually. All MS patients completed the scales fully.

Inclusion criteria included having MS and a willingness to participate in the study and respond to the questionnaires and scales. Exclusion criteria were patients with other demyelinating diseases such as Devic's disease, also called Neuromyelitis optica (NMO), and acute disseminated encephalomyelitis (ADEM). The patients completed an interview conducted by neurologists. Data included demographic characteristics (age, duration of MS disease, sex, educational level, marital status, having a treatment history, a family history of MS, other physical diseases, and psychiatric disorders), and the EDSS scores based on eight areas (pyramidal involvement, cerebellar involvement, brainstem symptoms, sensors involvement, severity of sphincter dysfunction, vision condition, mental condition, and walking condition), were gathered during the interview.

Data analyses

The data were analysed with descriptive statistics, Pearson correlation coefficient, *t*, and multiple regression using SPSS Statistics software version 26.

Results

The mean age of the patients was 37.3 years (SD = 9.4); the mean duration of their disease was 6.2 years (SD = 3.9); 31.3% had a BA degree; 60.2% were female; 59.4% were married; 29.7% were single and 10.9% divorced; 72.7% were taking medication; .7% had a positive family history for MS; 11.7% had a physical disease; 12.5% had a psychiatric disorder; 9.5% had an EDSS score >6 and were wheelchair-bound.

Table 1 presents the descriptive statistics for age, disease duration, and the scales scores for all MS patient.

Table 2 sets out the descriptive statistics and the *t*-values for the comparison of the scores for females and males. Male patients obtained significantly higher mean scores than did females for disability, and female patients had a significantly higher mean score than did males for somatic symptoms.

The EDSS score was positively correlated with the patients' age ($r = .47$, $p < .001$) and MS duration ($r = .59$, $p < .001$), indicating that, with increasing age, the severity of symptoms and the degree of disability of MS patients significantly increased.

Table 1. Mean (M), and standard deviation (SD) for age, disease duration, and the scales for all MS patients ($N = 128$).[1]

	Mean	SD
Age	37.31	9.4
MS duration	6.23	3.9
EDSS	3.0	2.1
WHO-5	16.0	4.6
PHQ-15	7.7	4.7
SRR	5.4	2.4

[1]The Expanded Disability Status Scale (EDSS); the World Health Organization-five Well-Being Index (WHO-5); the Patient Health Questionnaire-15 (PHQ-15); the Self-Rating Scale of Religiosity (SRR).

Table 2. Means (M), standard deviations (SD), and age, disease duration, and the scales for females ($N = 77$) and males ($N = 51$).[1]

	Females		Males		*t*
	Mean	SD	Mean	SD	
Age	37.0	9.5	37.8	9.2	.5
MS duration	6.0	4.0	6.5	3.6	.67
EDSS	2.7	2.2	3.6	1.9	2.49*
WHO-5	16.6	4.0	15.3	5.2	1.59
PHQ-15	8.2	5.2	6.8	3.6	1.71#
SRR	5.6	2.5	5.1	2.3	.16

[1]The Expanded Disability Status Scale (EDSS); the World Health Organization-five Well-Being Index (WHO-5); the Patient Health Questionnaire-15 (PHQ-15); the Self-Rating Scale of Religiosity (SRR).
#$p < .10$.
*$p < .05$.

Table 3 presents the Pearson correlation coefficients for religiosity with age, disease duration, and the scale scores separately for females and males. Religiosity was positively correlated with disease duration, and disability only in males.

Table 4 presents the Pearson correlation coefficients for psychological well-being (WHO-5) with age, disease duration and the scale scores separately for females and males. Psychological well-being was negatively correlated with age, disease duration, and disability s in both sexes. Psychological well-being was also negatively correlated with somatic health in males.

Backward stepwise multiple regression for predicting psychological well-being was conducted for all patients and for females and males. Table 5 presents the results. The

Table 3. Pearson correlations of religiosity with age, disease duration and the scales for females and males.[1]

Religiosity and	Females	Males
Age	.14	.12
MS duration	−.11	.46***
EDSS	.12	.38**
WHO-5	−.03	−.21
PHQ-15	−.06	.13

[1]The Expanded Disability Status Scale (EDSS); the World Health Organization-five Well-Being Index (WHO-5); the Patient Health Questionnaire-15 (PHQ-15).
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 4. Pearson correlations of psychological well-being (WHO-5) with age, duration and the scales for females and males.

WHO-5 and	Females	Males
Age	−.23*	−.53***
MS duration	−.29**	−.37**
EDDS	−.32**	−.54***
PHQ-15	−.14	−.49***
SRR	−.03	−.21

[1]The Expanded Disability Status Scale (EDSS); the World Health Organization-five Well-Being Index (WHO-5); the Patient Health Questionnaire-15 (PHQ-15); the Self-Rating Scale of Religiosity (SRR).
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 5. Backward multiple regressions (betas shown) to predict psychological well-being (WHO-5).[1]

	All Ss	Females	Males
Sex	−.099		
Age	−.162#	−.043	−.423**#
MS duration	−.059	−.143	.142
EDSS	−.264*#	−.219#	−.196
PHQ-15	.157#	−.103	−.301*#
SRR	−.025	−.015	−.110
R-squared	.242	.137	.446

significant ($p < .10$) in backward multiple regression.
[1]The Expanded Disability Status Scale (EDSS); the World Health Organization-five Well-Being Index (WHO-5); the Patient Health Questionnaire-15 (PHQ-15); the Self-Rating Scale of Religiosity (SRR).
*$p < .05$.
**$p < .01$.
***$p < .001$.

predictors of predicting psychosocial well-being for all patients were age, disability, and somatic health, for females was disability, and for males age and somatic health.

The difference between MS patients with mild MS (EDSS $\leq$3) and MS patients with moderate/severe MS (EDSS >3) in the SRR religiosity score was statistically significant (mean for MS patients with moderate/severe MS 5.89, $SD = 1.57$; and mean for MS patients with mild MS 4.98, $SD = 2.94$, $t = 2.17$, $p > .05$). In other words, MS patients with moderate/severe MS (EDSS >3) obtained higher mean scores on religiosity compared to MS patients with mild MS (EDSS $\leq$3).

Discussion

The findings of this study indicated that religiosity did not predict disability, psychological well-being, or somatic health in MS patients as a whole, but religiosity was positively associated with MS duration and disability in male patients. The predictors of psychosocial well-being in MS patients were age, disability, and somatic health (plus disability for MS females, and age and somatic health for MS males). However, Shoaa Kazemi (2009) reported that religious coping and strong religious beliefs had positive associations with mental health in MS patients.

In the sub-discipline of positive psychology, the interest in religion has been driven by the positive relationships of religiosity with physical health, mental health, subjective

well-being, happiness, and love of life (Abdel-Khalek & Lester, 2013, 2018; Ayten, 2020). Abdolahrezaee et al. (2020) found that religious/spiritual well-being was positively associated with mental health and negatively associated with physical health in the elderly. Dadfar et al. (2020c) found that mental patients who had better spiritual health and psychological well-being had more love of life, while Dadfar, Gunn III, et al. (2021a) found that spiritual health and psychological well-being were positively associated with love of life in Iranian clinical samples. Dadfar, Lester, and Abdel-Khalek (2021b) reported that correlation between religiosity and happiness scores for Iranian psychiatric outpatients was positive while, for Iranian employees, the correlation was non-significant. Lewis et al. (1997), Lewis et al. (2000), Lewis and Cruise (2006) have provided additional examples of non-significant findings for association between religion and happiness.

There are three reasons why religiosity did not impact psychological well-being, disability, or somatic health among MS patients. The first reason is perhaps related to the structure of the measurement of religiosity. A single item religiosity scale may not be sufficient to measure religiosity. It misses the intellectual, ritualistic, emotional, and consequential dimensions of religiosity. Furthermore, it might be beneficial that a religiosity scale assesses the positive and negative religious coping activities of people and their representations of God. The second issue is related to the composition of MS disease. MS illness involves non-traumatic disability and also neuropsychological impairment, and it can strongly affect individuals physically, mentally, and even spiritually. There might be other factors which explain the health conditions and well-being of the patients such as physical health conditions, personality, life style, coping style, attachment style, etc. The third concern is related to the progression of illness. Especially in the first years of the MS disease patients, in their coping processes, may have negative appraisals and struggles because of the difficulty and complexity of the illness. Over time, patients may get accustomed to living with the symptoms of the illness, they may become more open to using positive religious coping activities such as praying, fulfilling religious duties and using positive reappraisals, feeling closeness to God, etc. The positive correlation between disease duration, age, and religiosity support this interpretation. Lynch et al. (in press) found higher EDSS scores were associated with older age. The EDSS may be affected by normal aging rather than MS-related disability (Lynch et al., 2021).

The present study had some limitations. The findings were based only on Muslim Iranian MS patients and may not generalise to other cultures. Religiosity was assessed by only a single item. The type of religiosity (i e., intrinsic and extrinsic, etc.) and the role of religiosity in the process of coping were not also considered in the design. Some mediator variables such as complex and long-term stressors, the intensity of stress, personality type, factors such as hope, self-forgiveness, gratitude, self-control, humility, and sense of coherence, resiliency, and coping mechanisms were not taken into account. The psychiatric diagnosis of the patients was not assessed, and there may be differences in the results between, for example, MS patients with psychiatric disorders and those without such disorders. Further research should test the replicability of these results. More recent diagnosed people might be more severely affected by their MS. There was no information on the course of the disease, that is, clinically isolated syndrome (CIS), relapsing-remitting (RR), primary-progressive (PP), secondary-progressive (SP), and progressive-relapsing (PR). These issues need to be addressed in future studies.

Conclusions

The current study examined the influence of religiosity on disability, psychological well-being, and somatic health among MS patients. The findings of the study indicated that religiosity was not a significant predictor of these variables. Age predicted psychological well-being and disability, while age, disability, and somatic health predicted the psychological well-being of the MS patients. The findings of the present study suggested the necessity of focusing on the type of religiosity, God-representation and attachment to God for clarifying the link between psychological well-being and religiosity among MS patients.

Acknowledgement

We thank all of the MS patients for their participation in the study, and the research assistants for helping in the collection of the data.

Disclosure statement

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

Ethical approval statement

This study was performed in line with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board at Iran University of Medical Sciences, IR.IUMS.FMD.REC.1399.011, for the study.

Data availability statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

ORCID

Monireh Eslami http://orcid.org/0000-0002-9503-809X
Mahboubeh Dadfar http://orcid.org/0000-0003-0620-2570
David Lester http://orcid.org/0000-0003-1357-8672
Fatemeh Shirzad http://orcid.org/0000-0001-9233-3854

References

Abdel-Khalek, A. M. (2007). Assessment of intrinsic religiosity with a single-item measure in a sample of Arab Muslims. *Journal of Muslim Mental Health*, *2*(2), 211–215. https://doi.org/10.1080/15564900701614874

Abdel-Khalek, A. M. (2014). Religiosity and well-being in a Muslim context. In C. Kim-Prieto (Ed.), *Religion and spirituality across cultures* (pp. 71–85). Springer.

Abdel-Khalek, A. M. (2019a). *Religiosity and subjective well-being in the Arab context*. Cambridge Scholars Publishing.

Abdel-Khalek, A. M. (2019b). Religiosity and subjective well-being in the Arab context: Addendum and extrapolation. *Mental Health, Religion & Culture*, *22*(8), 860–869. https://doi.org/10.1080/13674676.2019.1687135

Abdel-Khalek, A. M., & Lester, D. (2013). Mental health, subjective well-being and religiosity: Significant associations in Kuwait and USA. *Journal of Muslim Mental Health*, *7*(2), 63–76. https://doi.org/10.3998/jmmh.10381607.0007.204

Abdel-Khalek, A. M., & Lester, D. (2017). The association between religiosity, generalized self-efficacy, mental health, and happiness in Arab college students. *Personality and Individual Differences*, *109* (2017), 12–16. https://doi.org/10.1016/j.paid.2016.12.010

Abdel-Khalek, A. M., & Lester, D. (2018). Subjective well-being and religiosity: Significant associations among college students from Egypt and the United Kingdom. *International Journal of Culture and Mental Health*, *11*(3), 332–337. https://doi.org/10.1080/17542863.2017.1381132

Abdolahrezaee, N., Khanmohammadi, A., Dadfar, M., Rashedi, V., & Behnam, L. (2020). Prediction of hope, physical health, and mental health by mediating variable of religious spiritual well-being in elderly. *Mental Health, Religion & Culture*, *23*(10), 928–940. https://doi.org/10.1080/13674676.2020.1819220

Addington hall, J. (2006). Spiritual needs in health care. *British Medical Journal*, *329*, 123–124.

Afhami, R., Mohammadi-Zarghan, S., & Atari, M. (2017). Self-Rating of Religiosity (SRR) in Iran: Validity, reliability, and associations with the Big five. *Mental Health, Religion & Culture*, *20*(9), 879–887. https://doi.org/10.1080/13674676.2017.1313825

Asghari, E., & Rashedi, I. (1999). *Study of disability (based on EDSS) and other variables in 100 patients with clinically definite multiple sclerosis referring to hospitals of Tehran Medical Sciences University and private centers* [MSc. Thesis]. Tehran Medical Sciences University. https://en.tums.ac.ir/en

Askari, N., & Nikmanesh, Z. (2014). The role of religious coping in predicting quality of life in patients with multiple sclerosis. *Armaghane-danesh, Yasuj University of Medical Sciences Journal*, *19*(5), 470–479.

Ayten, A. (2020). *Din ve Sağlık: Kavram, Kuram ve Araştırma* [Religion and health: Conceptions, theories and research] (2nd ed). Marmara Akademi Yayınları.

Ayten, A., & Hussain, A. (2020). *Psychology and Islam*. İFAV Yayınları.

Babaei, V., Khoshnevis, E., & Shabani, Z. (2017). Determining levels of psychosocial compatibility based on coping strategies and religious orientation in patients with multiple sclerosis. *Scientific Journal of Nursing, Midwifery and Paramedical Faculty*, *2*(4), 1–12. https://doi.org/10.29252/sjnmp.2.4.1

Beshai, J. A., & Dadfar, M. (2019). Review of the book religiosity and subjective well-being in the Arab context by Ahmed M. Abdel-Khalek. *Mental Health, Religion & Culture*, *22*(8), 872–873. https://doi.org/10.1080/13674676.2019.1669148

Bravin, A. M., Trettene, A. S., Andrade, L. G. M., & Popim, R. C. (2019). Benefits of spirituality and/or religiosity in patients with chronic kidney disease: An integrative review. *Revista Brasileira de Enfermagem (Brazilian Journal of Nursing)*, *72*(2), 541–551. https://doi.org/10.1590/0034-7167-2018-0051

Brochet, B., & Ruet, A. (2019). Cognitive impairment in multiple sclerosis with regards to disease duration and clinical phenotypes. *Frontiers in Neurology*, *10*, 261. https://doi.org/10.3389/fneur.2019.00261

Bussing, A., Michalsen, A., Balzat, H. J., Grünther, R. A., Ostermann, T., Neugebauer, E. A., & Matthiessen, P. F. (2009). Are spirituality and religiosity resources for patients with chronic pain conditions? *Pain Medicine*, *10*(2), 327–339. https://doi.org/10.1111/j.1526-4637.2009.00572.x

Chen, Y., Fang, X., Shuai, X., Fritzsche, K., Leonhart, R., Hoschar, S., Li, L., Ladwig, K.-H., Ma, W., & Wu, H. (2019). Psychometric evaluation of the Major Depression Inventory (MDI) as a depression severity scale in Chinese patients with coronary artery disease. Findings from the MEDEA FAR-EAST Study. *Frontiers in Psychiatry*, *10*, 493. https://doi.org/10.3389/fpsyt.2019.00493

Correale, J., Farez, M. F., & Ysrraelit, M. C. (2012). Increase in multiple sclerosis activity after assisted reproduction technology. *Annals of Neurology*, *72*(5), 682–694. https://doi.org/10.1002/ana.23745

Dadfar, M., Abdel-Khalek, A. M., & Lester, D. (2020c). Love of life and its association with well-being in Iranian psychiatric outpatients. *Nursing Open*, *7*(6), 1861–1866. https://doi.org/10.1002/nop2.575

Dadfar, M., Asgharnejad Farid, A., Hosseini, A. F., Nasr Esfahani, M., Lester, D., & Kalibatseva, Z. (2020b). Measuring somatic symptoms with the PHQ-15: A comparative study of three Iranian samples. *Mental Health, Religion & Culture*, *23*(3-4), 289–301. https://doi.org/10.1080/13674676.2020.1718069

Dadfar, M., Eslami, M., Mohagegh, F., Lester, D., & Abdel-Khalek, A. M. (2020a). Love of life in Iranian clinical and non-clinical groups. *Mankind Quarterly*, *61*(1), 23–35. https://doi.org/10.46469/mq.2020.61.1.3

Dadfar, M., Gunn, III,JF, Lester, D., & Abdel-Khalek, A. M. (2021a). Love of life model with Iranian clinical samples: Role of psychological well-being, depression, somatic health, and spiritual health. *Mental Health, Religion & Culture*, *24*(2), 142–150. https://doi.org/10.1080/13674676.2020.1825360

Dadfar, M., Lester, D., & Abdel-Khalek, A. (2021b). Religiosity, happiness and suicidal behavior: A cross-sectional comparative study in Iran. *Mental Health, Religion & Culture*, *24*(2), 128–141. https://doi.org/10.1080/13674676.2020.1767554

Dadfar, M., Moghaddasi, M., Mohebi, N., Mohaghegh, F., & Eslami, M. (2018a). Relationship between love of life and happiness in Iranian patients with multiple sclerosis. *Multiple Sclerosis and Related Disorders*, *26*, 252. https://doi.org/10.1016/j.msard.2018.10.071

Dadfar, M., Momeni Safarabad, N., Asgharnejad Farid, A. A., Nemati Shirzy, M., & Ghazie pour Abarghouie, F. (2018b). Reliability, validity, and factorial structure of the World Health Organization-five Well-Being Index (WHO-5) in Iranian psychiatric outpatients. *Trends in Psychiatry and Psychotherapy*, *40*(2), 79–84. https://doi.org/10.1590/2237-6089-2017-0044

de Vroege, L., Hoedeman, R., Nuyen, J., Sijtsma, K., & van der Feltz-Cornelis, C. M. (2012). Validation of the PHQ-15 for somatoform disorder in the occupational health care setting. *Journal of Occupational Rehabilitation*, *22*(1), 51–58. https://doi.org/10.1007/s10926-011-9320-6

Dew, R. E., Fuemmeler, B., & Koenig, H. (2020). Trajectories of religious change from adolescence to adulthood, and demographic, environmental, and psychiatric correlates. *Journal of Nervous & Mental Disease*, *208*(6), 466–475. https://doi.org/10.1097/NMD.0000000000001154

Eskandarieh, S., Heydarpour, P., Elhami, S. R., & Sahraian, M. A. (2017). Prevalence and incidence of multiple sclerosis in Tehran, Iran. *Iranian Journal of Public Health*, *46*, 699–704.

Göcen, G. (2015). The relationship between gratitude, appreciation, psychological well-being and religiosity: An empirical study with Turkish sample. In Z. Ağılkaya-Şahin, H. Streib, A. Ayten, & R. W. Hood (Eds.), *Psychology of religion in Turkey* (pp. 214–233). Brill.

Han, C., Pae, C. U., Patkar, A. A., Masand, P. S., Kim, K. W., Joe, S. H., & Jung, I. K. (2009). Psychometric properties of the Patient Health Questionnaire-15 (PHQ-15) for measuring the somatic symptoms of psychiatric outpatients. *Psychosomatics*, *50*(6), 580–585. https://doi.org/10.1176/appi.psy.50.6.580

Kheradmand, E., Afshari, M., Nasehi, M. M., Aghaei, I., Shabani, M., Farshidi, F., & Moosazadeh, M. (2019). Prevalence of subtypes of multiple sclerosis and the most common clinical symptoms in Iranian patients: A meta-analysis. *Clinical and Experimental Neuroimmunology*, *10*(1), 33–40. https://doi.org/10.1111/cen3.12489

Kocalevent, R. D., Hinz, A., & Brähler, E. (2013). Standardization of a screening instrument (PHQ-15) for somatization syndromes in the general population. *BMC Psychiatry*, *13*(1), 91. https://doi.org/10.1186/1471-244X-13-91

Koenig, H. (2016). The framework of religious-spiritual counselling: Religion, spirituality, and health: Research, clinical applications, and resources. In A. Ayten, M. Koç, N. Tınaz, & M. Doğan (Eds.), *Religious-spiritual counselling & care*. DEM Yayınları.

Koenig, H. G. (2008). *Medicine, religion, and health: Where science and spirituality meet*. Templeton Foundation Press.

Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *International Scholarly Research Network ISRN Psychiatry*, *2012*(278730), 33. https://doi.org/10.5402/2012/278730

Koenig, H. G. (2015). Religion, spirituality, and health: A review and update. *Advances in Mind-Body Medicine*, *29*(3), 19–26.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford University Press.

Körber, S., Frieser, D., Steinbrecher, N., & Hiller, W. (2011). Classification characteristics of the Patient Health Questionnaire-15 for screening somatoform disorders in a primary care setting. *Journal of Psychosomatic Research*, *71*(3), 142–147. https://doi.org/10.1016/j.jpsychores.2011.01.006

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine*, *64*(2), 258–266. https://doi.org/10.1097/00006842-200203000-00008

Kurtzke, J. F. (1983). Rating neurologic impairment in multiple sclerosis: An Expanded Disability Status Scale (EDSS). *Neurology*, *33*(11), 1444–1444. https://doi.org/10.1212/WNL.33.11.1444

Lee, S., Ma, Y. L., & Tsang, A. (2011). Psychometric properties of the Chinese 15-item Patient Health Questionnaire in the general population of Hong Kong. *Journal of Psychosomatic Research*, *71*(2), 69–73. https://doi.org/10.1016/j.jpsychores.2011.01.016

Leondari, A., & Gialamas, V. (2009). Religiosity and psychological well-being. *International Journal of Psychology*, *44*(4), 241–248. https://doi.org/10.1080/00207590701700529

Leonhart, R., de Vroege, L., Zhang, L., Liu, Y., Dong, Z., Schaefert, R., Nolte, S., Fischer, F., Fritzsche, K., & van der Feltz-Cornelis, C. M. (2018). Comparison of the factor structure of the Patient Health Questionnaire for somatic symptoms (PHQ-15) in Germany, the Netherlands, and China. A transcultural structural equation modeling (SEM) study. *Frontiers in Psychiatry*, *9*, 240. https://doi.org/10.3389/fpsyt.2018.00240

Leonhart, R., Fritzache, K., Fischer, F., & Zhang, L. (2015). Comparison of the factorial structure of the PHQ-15 between Germany and China. *Journal of Psychosomatic Research*, *78*(6), 609–610. https://doi.org/10.1016/j.jpsychores.2015.03.079

Lewis, C. A., & Cruise, S. M. (2006). Religion and happiness: Consensus, contradictions, comments and concerns. *Mental Health, Religion & Culture*, *9*(3), 213–225. https://doi.org/10.1080/13694670600615276

Lewis, C. A., Lanigan, C., Joseph, S., & De Fockert, J. (1997). Religiosity and happiness: No evidence for an association among undergraduates. *Personality and Individual Differences*, *22*(1), 119–121. https://doi.org/10.1016/S0191-8869(97)88910-6

Lewis, C. A., Maltby, J., & Burkinshaw, S. (2000). Religion and happiness: Still no association. *Journal of Beliefs and Values*, *21*(2), 233–236. https://doi.org/10.1080/713675504

Linden, F., Kragt, J. J., Klei, M., Ploeg, H., & Polman, C. H. (2005). Psychometric evaluation of the Multiple Sclerosis Impact Scale (MSIS-29) for proxy use. *Journal of Neurology, Neurosurgery, and Psychiatry*, *76*(12), 1677–1981. https://doi.org/10.1136/jnnp.2005.065227

Linton, M. J., Dieppe, P., & Medina-Lara, A. (2016). Review of 99 self-report measures for assessing well-being in adults: Exploring dimensions of well-being and developments over time. *BMJ Open*, *6*(7), e010641. https://doi.org/10.1136/bmjopen-2015-010641

Livneh, H., Erin, M., & Todd, B. (2004). Psychosocial adaptation to chronic illness and disability: A preliminary study of its factorial structure. *Journal of Clinical Psychology in Medical Settings*, *13*(3), 250–260. https://doi.org/10.1007/s10880-006-9028-5

Loewenthal, K. M. (2000). *The psychology of religion: A short introduction*. One world.

Lynch, S., Baker, S., Nashatizadeh, M., Thuringer, A., Thelen, J., & Bruce, J. (2021). Disability measurement in multiple sclerosis patients 55 years and older: What is the Expanded Disability Status Scale really telling clinicians? *Multiple Sclerosis and Related Disorders*, *49*(2021), 102724. https://doi.org/10.1016/j.msard.2020.102724

Meyer-Moock, S., Feng, Y. S., Maeurer, M., Dippel, F. W., & Kohlmann, T. (2014). Systematic literature review and validity evaluation of the Expanded Disability Status Scale (EDSS) and the multiple sclerosis functional composite (MSFC) in patients with multiple sclerosis. *BMC Neurology*, *58*(14), 1–10. https://doi.org/10.1186/1471-2377-14-58

Moghaddasi, M., Hosseini Nasab, A., Shirali, A., & Soltan Sanjari, M. (2011). Evaluation of relation between the retinal nerve fiber layer and Expanded Disability Status Scale (EDSS) in patients with relapsing-remitting form of multiple sclerosis referring to Rasool Akram Hospital. *Razi Journal of Medical Sciences*, *18*(87), 36–43. http://rjms.iums.ac.ir/article-1-1831-fa.html

Mohagegh, F., Moghaddasi, M., Eslami, M., Dadfar, M., & Lester, D. (2021). Disability and its association with psychological factors in multiple sclerosis patients. *Multiple Sclerosis and Related Disorders*, *49*(2021), 102733. https://doi.org/10.1016/j.msard.2020.102733

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. Guilford Press.;
Perera, B. P. R., Jayasuriya, R., Caldera, A., & Wickremasinghe, A. R. (2020). Assessing mental well-being in a Sinhala speaking Sri Lankan population: Validation of the WHO-5 Well-Being Index. *Health and Quality of Life Outcomes*, *18*(1), 305. https://doi.org/10.1186/s12955-020-01532-8
Roger, K. S., & Hatala, A. (2017). Religion, spirituality & chronic illness: A scoping review and implications for health care practitioners. *Journal of Religion & Spirituality in Social Work: Social Thought*, *37*(1), 24–44. https://doi.org/10.1080/15426432.2017.1386151
Sağlam-Demirkan, F. (2020). *Diyaliz Hastalarında Bağlanma, Dini Başa Çıkma ve Yaşam Memnuniyeti Arasındaki İlişki Üzerine Bir Araştırma* [A study on the link between attachment, religious coping and life satisfaction among dialysis patients] [Doctoral Thesis]. İstanbul University. https://acikbilim.yok.gov.tr/handle/20.500.12812/136337
Shahrbanian, S., Duquette, P., & Mayo, E. N. (2018). Impairment, disability and fatigue in multiple sclerosis. *Caspian Journal of Internal Medicine*, *9*(3), 244–251.
Sharrack, B., Hughes, R. A. C., Soudain, S., & Dunn, G. (1999). The psychometric properties of clinical rating scales used in multiple sclerosis. *Brain*, *122*(1), 141–159. https://doi.org/10.1093/brain/122.1.141
Shoaa Kazemi, M. (2009). The relationship between religious coping strategies and mental health in multiple sclerosis patients (MS). *Journal of Applied Psychology*, *1*(9), 57–66.
Syed, M. J., Shah, Z., Awan, S., Wasay, M., & Fredrikson, S. (2021). Telephone validation of an Urdu translated version of the Extended Disability Severity Scale in multiple sclerosis patients. *Multiple Sclerosis and Related Disorders*, *48*(2021), 102684. https://doi.org/10.1016/j.msard.2020.102684
Taghizadeh, M. E., & Mir Alaei, M. S. (2013). Study of spiritual group therapy on increase of resiliency in female multiple sclerosis patients in Esfahan. *Health Psychology*, *2*(7), 82–102.
Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: A systematic review of the literature. *Psychotherapy and Psychosomatics*, *84*(3), 167–176. https://doi.org/10.1159/000376585
Turan, Y. (2018). Coping with loneliness: Loneliness, religious coping, religiosity, life satisfaction and social media usage. Trans. Ahmet Çekiç. Cumhuriyet İlahiyat Dergisi-Cum-huriyet *Theology Journal*, *22*(9/3), 1711–1745. https://doi.org/10.18505/cuid.491804
Villani, D., Sorgente, A., Iannello, P., & Antonietti, A. (2019). The role of spirituality and religiosity in subjective well-being of individuals with different religious status. *Frontiers in Psychology*, *10*, 1525. https://doi.org/10.3389/fpsyg.2019.01525