



# Relationship Between Spiritual Health and Pain Self-Efficacy in patients with Chronic Pain: A Cross-Sectional Study in West of Iran

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## Abstract

In recent years, the prevalence of chronic diseases has had a growing trend, which has resulted in many health problems. Level of belief in God is effective on people's attitudes to life concepts, social deviations and psychological disorders, and improves them. Therefore, the present research was conducted with the aim of determining the relationship between spiritual health (SH) and pain self-efficacy (PSE) in Ilam City in 2018. This study was a descriptive cross-sectional study in the group of patients with chronic pain (CP). In this study, the study population was patients with CP in Ilam City and the study sample was 150 patients with CP referring to public and private health centers in Ilam, which had all the criteria for participation in the study. The findings showed mean (SD) of the total score of SH variables was 65.16 (9.88), and PSE was 34.48 (4.08). According to Pearson statistical analysis, there is a significant relationship between SH and PSE ( $r=0.442$ ,  $P=0.000$ ). Also, the standard beta and non-standard beta coefficients for SH variables in PSE show that the non-standard beta coefficient in SH is equal to 0.183. The results of this study showed that SH is a predictor of pain acceptance, so that patients who were more religious were more likely to tolerate CP. For this reason, it is suggested that religious interventions be performed to reduce pain in patients with CP, in order to provide the necessary context for pain reduction in this group of patients.

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**Keywords** Spiritual health · Pain self-efficacy · Chronic pain

## Introduction

In recent years, the prevalence of chronic diseases has had a growing trend, which has resulted in many health problems (Mehrpooya et al. 2018; Sepahvand et al. 2015; Karimi et al. 2018), such as decreased quality of life (Strand et al. 2019; Ahmadzade et al. 2017), decreased life satisfaction (Goerlitz et al. 2018), decreased mental health (Sher 2019), decreased life expectancy (Bower et al. 2016), as well as increased stress, anxiety, depression (Gerogianni et al. 2019), increased chronic pain (Gerhart et al. 2018) and retinopathy (Mohammadi et al. 2019). One of the challenges of chronic patients is the presence of chronic pain that affects their quality of life (Bernfort et al. 2015). In fact, chronic pain (CP) is defined as a pain that lasts more than 6 months or more than the expected duration (Meredith et al. 2008). Chronic pain affects 20–30% of the western populations (Simon 2012), which is why paying attention to these patients is very important (Geneen et al. 2017).

Despite the advances in medical science, such as improvements in pain neurophysiology, as well as in psycholeptics, no measure is yet done to fully heal the pain in these patients and that's why pain causes physical disabilities and emotional problems for this group of patients (Dansie and Turk 2013). On the other hand, the apoeutic treatments available for reducing pain have various side effects for these patients, which is why non-pharmacotherapy and palliative medicine are needed to reduce pain (Piatt et al. 2018). Also, today, non-pharmacological treatments are given special attention (Hatefi et al. 2015). In order to perform necessary interventions in this regard, the factors affecting pain are to be well known (Hooshmand 2018).

Self-efficacy is rooted in social cognitive theory, and it is considered as an important prerequisite for behavior which is of great importance in the process of treatment of chronic diseases (Noroozi et al. 2018). Self-efficacy refers to the belief and ability to successfully performing a behavior and refers to the beliefs of the individual through which the individual can successfully achieve the desired goal (Mojahed and Navidian, 2018; Bandura, 1977). Individuals with low self-efficacy have pessimistic thoughts about their abilities and avoid any situation they consider to be higher than their abilities. In contrast, people with high self-efficacy dominate them against difficult situations and try to maintain it (Bandura 1977; Karademas and Kalantzi-Azizi 2004). Indeed, high self-efficacy is associated with better health, while low self-efficacy is associated with signs of anxiety, depression and psychosomatic symptoms (Schwarzer 2014; Damghanian et al. 2018). Also, increasing self-efficacy and pain management can improve chronic pain problems and decrease the feeling of frustration for patients with chronic pain by increasing the level of social and occupational activity (Archer et al. 2017; Firoozi et al. 2018).

Another variable that is efficient due to the long-term adaptive performance of the physical and psychological well-being of patients with chronic diseases is acceptance (McCracken and Eccleston, 2005). In patients with chronic pain, pain acceptance is of particular importance (Hatefi et al. 2019, 2018). Regarding the failure of chronic patients to control their pain, it seems that the adoption of pain against pain

control has more importance (Veehof et al. 2011). One of the factors that may affect the pain of patients could be considering spirituality and religion (Sollgruber et al. 2018; Harris et al. 2017).

Considering that people who participate in religious activities or have positive religious beliefs have a higher mental health, the relationship between religion and health is important in many ways (Henninggaard and Arnau 2008; You et al. 2019) and religion is considered as one of the factors effective on health (Idler et al. 2009). Level of belief in God is effective on people's attitudes to life concepts, social deviations and psychological disorders, and improves them (Shameli et al. 2012; Rahmati et al. 2017). In fact, religious people who have positive beliefs in God are more likely to come along with living environments, have more resilience and have more resistance to stresses. On the other hand, those who consider God to be far from available and abstract do not have the power to calm down and cope with the tensions of life (Maynard et al. 2001; Tafti et al. 2019).

By creating meaning and concept in life and feeling belonged to God, increasing spirituality in the dimensions of human existence leads to adaptation to disease (Holloway et al. 2011; Oshvandi et al. 2018; Jalali et al. 2019a). The spiritual well-being is defined as the sense of communicating with others, having meaning and purpose in life, having a belief in transcendental power, and communicating with God, which is effective on physical and mental health of the individual (Abbasi et al. 2018; Tavan et al. 2015). Spiritual health (SH) has two dimensions of religious and existential. The religious dimension includes communication with the highest power and the individual's perception of health in spiritual life, and the existential dimension includes the individual's adaptation to himself, the environment and society (Mollaei et al. 2019; Shahrabaki et al. 2017). Spirituality and religion play an important role among different groups of people (Ziapour et al. 2017; Darvishi et al. 2019; Jalali et al. 2019b).

## Aim

Since the country of Iran is an Islamic country, research in the field of religion and health in the patients group of Iran has a special position. On the other hand, due to the importance of pain in patients and also the need to pay attention to the factors affecting pain and lack of sufficient information in this regard, the present research was conducted with the aim of determining the relationship between SH and the status of PSE in patients with CP in Ilam City in 2018.

## Methods

### Design and Participants

This study was a descriptive cross-sectional study in the group of patients with CP.

## Inclusion Criteria

Inclusion criteria included: 1. residence in Ilam City; 2. informed consent for participation in the study; 3. being aged 18–65; 4. being able to communicate verbally; 5. being Shia; 6. a history of complaints of chronic pain; 7. lack of mental disorders; 8. no addiction to any type of drug.

## Exclusion criteria

Exclusion criteria included: 1. patient's tendency to exit from the study at any time of the research; 2. defect in the completion of the questionnaires.

## Questionnaire

### A: Demographic Characteristic

Questions on age, place of living, gender, employment status, education, income and marital status

### B: Religion Well-Being Questionnaire

The questionnaire has 20 items designed by Paloutzian and Ellison. Ten items of this questionnaire are related to religious well-being, and 10 items are related to existential well-being. The scores of this questionnaire are in the form of 6-point Likert scale, and the range of scores for each dimension of this questionnaire is between 10 and 60. The total spirituality score is the sum of the dimensions of these two questionnaires, which is from 20 to 120. If the patients score between 20 and 40, in the low SH group, they will score in the range of 41 to 99 in the SH group and score 99 to 120 in the high SH group. Validity and reliability of this questionnaire have been confirmed in previous studies (Khairy et al. 2018; Rezaei et al. 2009; Aghahoseini et al. 2009; Ebrahimipour et al. 2015).

### C: Chronic Pain Self-Efficacy Questionnaire (PSEQ)

The questionnaire has 10 items, and each item is the patient's assessment of his ability to perform a group of activities despite the pain in 7-point Likert scale (0 to 6). In this study, patients scored between 0 and 60 about PSE; the higher the score, the greater the self-efficacy about pain. This questionnaire has the necessary validity and reliability (McCracken et al. 2004; Nicholas and Asghari, 2006; Firoozi et al. 2018).

## Method of Research

In this study, the study population was patients with chronic disease in Ilam City and the study sample was 150 patients with chronic pain referring to public and private health centers in Ilam, which had all the criteria for participation in the study. After explaining the objectives of the study for the participants in the study, the researchers began to question if the patients had informed consent. In case the patient was in a suitable condition, the questionnaire was given to them and they were asked to answer the questions carefully. Patients were also trained to postpone completing the questionnaire to another time in case of fatigue or any other factor that may affect the process of completing the questionnaire. If the participants in the research did not have the ability to complete the questionnaire, the questionnaire was completed by interview method.

## Statistic Analysis

To analyze the data and SH correlation with PSE with SPSS 16 software, descriptive and analytical tests were used. Descriptive statistical tests were used to assess the status of SH and PSE; statistical analyses were used for their correlation.

## Result

The findings in Table 1 showed that mean (SD) of the total score of SH variables was 65.16 (9.88) and PSE was 34.48 (4.08).

According to Pearson statistical analysis, there is a significant relationship between SH and PSE ( $r=0.442$ ,  $P=0.000$ ) (Table 2).

With the findings in Table 3, the standard beta and non-standard beta coefficients for SH variables in PSE show that the non-standard beta coefficient in SH is equal to 0.183.

## Discussion

The result showed that M(SD) of PSE score in patients with CP was 34.48(4.08). In the study of Boroumand et al., M(SD) of the pain score of patients was 36(9.94) (Boroumand 2012). In Karkkola et al., M(SD) of the PSEQ score was 56.57(10.37) (Karkkola et al. 2019). The result showed that there was a relationship between SH and PSE. As the score of SH increased, the PSE score increased. In the study of Jasemi et al. on a group of burned patients in Urmia in Iran, the result showed significant and inverse relationship between SH and pain severity and with the increase in SH scores, the pain score of patients was reduced (Jasemi et al. 2018). In the qualitative study of Moeini et al. on a group of heart patients in Iran, it was shown that heart patients participating in the study regard pain as divine destiny. Some

**Table 1** Comparison of mean (SD) of the SH and PSE based on demographic variables in patient with CP

| Demographic variables | Sub-categories            | N (%)     | Spiritual health<br>M ± SD | Pain self-efficacy<br>M ± SD |
|-----------------------|---------------------------|-----------|----------------------------|------------------------------|
| Gender                | Male                      | 74(49.3)  | 68.02 ± 8.17               | 36.56 ± 3.29                 |
|                       | Female                    | 76(50.7)  | 62.36 ± 10.63              | 32.44 ± 3.75                 |
| <i>p</i> value        |                           | –         | 0.000                      | 0.000                        |
| Education             | Illiterate                | 46(30.7)  | 66.86 ± 8.70               | 35.00 ± 3.45                 |
|                       | Reading and writing       | 67(44.7)  | 63.83 ± 11.02              | 35.95 ± 4.28                 |
|                       | Diploma and under diploma | 26(17.3)  | 66.23 ± 7.58               | 35.73 ± 3.55                 |
|                       | Academic                  | 11(7.3)   | 63.54 ± 11.74              | 32.54 ± 5.57                 |
| <i>p</i> value        |                           | –         | 0.36                       | 0.07                         |
| Income                | Weak                      | 59(39.3)  | 61.62 ± 11.45              | 33.44 ± 5.06                 |
|                       | Medium                    | 76(50.7)  | 67.23 ± 8.48               | 34.93 ± 3.08                 |
|                       | Excellent                 | 15(10)    | 68.53 ± 4.68               | 36.26 ± 3.34                 |
| <i>p</i> value        |                           | –         | 0.001                      | 0.02                         |
| Marital status        | Single                    | 46(30.7)  | 64.96 ± 9.80               | 35.50 ± 4.16                 |
|                       | Married                   | 104(69.3) | 65.60 ± 10.15              | 34.02 ± 3.98                 |
| <i>p</i> value        |                           | –         | 0.73                       | 0.04                         |
| Employment status     | Employed                  | 62(41.3)  | 67.04 ± 10.65              | 36.98 ± 3.67                 |
|                       | Unemployed                | 88(58.7)  | 63.82 ± 9.12               | 32.71 ± 3.39                 |
| <i>p</i> value        |                           | –         | 0.04                       | 0.000                        |
| Place of living       | Village                   | 100(66.7) | 61.51 ± 9.51               | 33.79 ± 4.15                 |
|                       | City                      | 50(33.3)  | 72.46 ± 5.71               | 35.86 ± 3.59                 |
| <i>p</i> value        |                           | –         | 0.000                      | 0.003                        |

**Table 2** Relationship between spiritual health and PSE

| Model            |            | Sum of squares | Df  | Mean square | F      | Sig.  |
|------------------|------------|----------------|-----|-------------|--------|-------|
| Spiritual health | Regression | 484.937        | 1   | 484.937     | 35.841 | 0.000 |
|                  | Residual   | 2002.503       | 148 | 13.530      |        |       |
|                  | Total      | 2487.440       | 149 |             |        |       |

patients believed in heart medications prescribed by physicians and nurses, and another group of patients believed merely in the power of God and hope and trust in God. Patients also believed that religious actions such as prayer, orison, resorting to the Imams, thanking God, and vowing were an important factor in the relief of pain (Moeini 2014), which is consistent with the results of the present study based on the relationship of SH and pain. On the other hand, in some studies, there was no relationship between SH and pain that is not consistent with the results of the present study. So, Tafazoli et al. showed no relationship between pain severity and SH (Tafazoli et al. 2019), where for the difference between the results of the present

**Table 3** Standardized beta coefficient for assessing the contribution of the spiritual health with PSE

| Model                       |  | Unstandardized coefficients |            | Standardized coefficients |            | T      | Sig.  |
|-----------------------------|--|-----------------------------|------------|---------------------------|------------|--------|-------|
|                             |  | B                           | Std. error | Beta                      | Std. error |        |       |
| Spiritual health (Constant) |  | 22.585                      |            | 11.239                    |            | 11.239 | 0.000 |
|                             |  | 0.183                       | 0.030      | 0.442                     | 0.442      | 5.987  | 0.000 |

study with the study by Tafazoli et al. (2019), the difference in the research population can be mentioned, so that in the current study, chronic patients have been studied, while in the study of Tafazoli et al. (2019) it was not so.

From the strengths of this study, examining the patients with CP may be mentioned, which has been less considered in previous studies. Also, from other strengths of this research, the research sampling method can be pointed out. In this research, we tried to perform the sampling so that it is an introduction of the whole population of the research. Other strengths of this study are its innovativity.

## Conclusion

The results of this study showed that SH is a predictor of pain acceptance, so that patients who were more religious were more likely to tolerate CP. For this reason, it is suggested that religious interventions be performed to reduce pain in patients with CP, in order to provide the necessary context for pain reduction in this group of patients.

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## Compliance with Ethical Standard

**Conflict of interest** All authors declare that they have no conflict of interest.

**Ethical Approval** The study was approved by the First Kermanshah University of Medical Sciences. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** No cost to the patient, Research Ethics Committee of Kermanshah University of Medical Sciences approved this study with ethics code of IR.KUMS.REC.1398.031.

## References

- Abbasi, M., Ghadampour, E., & Amirian, L. (2018). The impact of spiritual well-being on psychological distress in patients with spinal cord injury: The mediating role of loneliness and hopelessness. *Journal of Research on Religion & Health*, 4(4), 82–95.
- Aghahoseini, S., Rahmani, A., Abdollahzadeh, F., & Kermani, I. (2009). Spiritual health of cancer patients and its related factors. *Ghom Journal of Research in Medical Sciences*, 5, 7–12.
- Ahmadzade, A., Ahmadi, S. M., Sadeghi, K., Sanagu, A., Amiri, S. M., Moghadam, A. P., et al. (2017). Effect of narrative writing on quality of life in chronic renal failure patients underwent hemodialysis. *Annals of Tropical Medicine and Public Health*, 10, 1165.
- Archer, K., Coronado, R. A., Ehde, D., Vanston, S., Koyama, T., Phillips, S., et al. (2017). Fear of movement and pain self-efficacy mediate outcomes following a targeted rehabilitation intervention after spine surgery: op14. *Journal of Orthopaedic & Sports Physical*, 47, A3–A4.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191.



- Bernfort, L., Gerdle, B., Rahmqvist, M., Husberg, M., & Levin, L.-Å. (2015). Severity of chronic pain in an elderly population in Sweden—impact on costs and quality of life. *Pain, 156*, 521–527.
- Boroumand, A., Asghari Moghaddam, M. A., Shaeeri, M. R., & Mesgarian, F. (2012). Chronic pain, pain self-efficacy and suicidal ideation: The moderating role of pain self-efficacy on relation between depression and suicidal ideation in chronic pain patients. *Journal of Fundamentals of Mental Health, 14*(2), 152–163.
- Bower, H., Björkholm, M., Dickman, P. W., Höglund, M., Lambert, P. C., & Andersson, T. M.-L. (2016). *Life expectancy of patients with chronic myeloid leukemia approaches the life expectancy of the general population*. Alexandria: American Society of Clinical Oncology.
- Damghanian, M., Pakgohar, M., Tavousi, M., Dehghan Nayeri, N., Najafi, M., Kharaghani, R., et al. (2018). Psychometric analysis of the Broome pelvic floor muscle exercise self-efficacy scale in women with urinary incontinence. *Journal of hayat, 23*, 307–317.
- Dansie, E., & Turk, D. C. (2013). Assessment of patients with chronic pain. *British Journal of Anaesthesia, 111*, 19–25.
- Darvishi, A., Otaghi, M., & Mami, S. (2019). The effectiveness of spiritual therapy on spiritual well-being, self-esteem and self-efficacy in patients on hemodialysis. *Journal of Religion and Health*. <https://doi.org/10.1007/s10943-018-00750-1>.
- Ebrahimipour, H., Vejdani, M., Taghipour, A., Heidarabadi, A. B., & Molavi, Y. (2015). Spiritual health in cancer patients at OMID hospital affiliated with Mashhad University of Medical Sciences-2012. *Journal of Reaserch on Religion & Health, 1*, 3–9.
- Firoozi, M., Besharat, M. A., & Souri, Z. (2018). The predicting effect of attachment styles on pain catastrophizing, self-efficacy and acceptance in patients with chronic pain. *Anesthesiology and Pain, 8*, 55–67.
- Geneen, L. J., Moore, R. A., Clarke, C., Martin, D., Colvin, L. A., & Smith, B. H. (2017). Physical activity and exercise for chronic pain in adults: an overview of Cochrane reviews. *Cochrane Database of Systematic Reviews, 4*, CD011279. <https://doi.org/10.1002/14651858.CD011279.pub3>.
- Gerhart, J. I., Burns, J. W., Bruehl, S., Smith, D. A., Post, K. M., Porter, L. S., et al. (2018). Variability in negative emotions among individuals with chronic low back pain: Relationships with pain and function. *Pain, 159*, 342–350.
- Gerogianni, G., Babatsikou, F., Polikandrioti, M., & Grapsa, E. (2019). Management of anxiety and depression in haemodialysis patients: The role of non-pharmacological methods. *International Urology and Nephrology, 51*, 113–118.
- Goerlitz, D., Dixon, E., Darnall, B., Law, C., Kong, J., Gross, J., et al. (2018). Predictors of satisfaction with life in a chronic low-back pain population. *The Journal of Pain, 19*, S55–S56.
- Harris, J. I., Usset, T., Krause, L., Schill, D., Reuer, B., Donahue, R., et al. (2017). Spiritual/religious distress is associated with pain catastrophizing and interference in veterans with chronic pain. *Pain Medicine, 19*, 757–763.
- Hatefi, M., Jaafarpour, M., Khani, A., Khajavikhan, J., & Kokhazade, T. (2015). The effect of whole body massage on the process and physiological outcome of trauma ICU patients: a double-blind randomized clinical trial. *Journal of clinical and diagnostic research: JCDR, 9*, UC05.
- Hatefi, M., Tarjoman, A., & Borji, M. (2018). The relationship between lifestyle with chronic pain and pain acceptance in elderly with stroke. *Archives of Neuroscience, 6*(1), e83717.
- Hatefi, M., Tarjoman, A., & Borji, M. (2019). Do religious coping and attachment to god affect perceived pain? Study of the elderly with chronic back pain in Iran. *Journal of Religion and Health, 58*(2), 465–475. <https://doi.org/10.1007/s10943-018-00756-9>.
- Henningsgaard, J. M., & Arnau, R. C. (2008). Relationships between religiosity, spirituality, and personality: A multivariate analysis. *Personality and Individual Differences, 45*, 703–708.
- Holloway, M., Adamson, S., McSherry, W., & Swinton, J. (2011). *Spiritual care at the end of life: A systematic review of the literature*. London: Department of Health.
- Hooshmand, H. (2018). *Chronic pain: Reflex sympathetic dystrophy, prevention, and management* (first published 1993, 1st ed.). Routledge. <https://doi.org/10.1201/9781315139395>.
- Idler, E. L., McLaughlin, J., & Kasl, S. (2009). Religion and the quality of life in the last year of life. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 64*, 528–537.
- Jalali, A., Behrouzi, M. K., Salari, N., Bazrafshan, M.-R., & Rahmati, M. (2019a). The effectiveness of group spiritual intervention on self-esteem and happiness among men undergoing methadone maintenance treatment. *Current Drug Abuse Reviews, 11*(1), 67–72. <https://doi.org/10.2174/1874473711666180510164420>.

- Jalali, A., Shabrandi, B., Jalali, R., & Salari, N. (2019b). Methamphetamine abusers' personality traits and its relational with spiritual well-being and perceived social support. *Current Drug Abuse Reviews*, *11*(1), 44–50.
- Jasemi, M., Hosseinzadegan, F., Mardi, M., Ajoudani, F., Madadipour, N., & Namdi, F. (2018). Relationships between spiritual well-being and pain in burn patients 2016: a cross-sectional study. *The Journal of Urmia Nursing and Midwifery Faculty*, *16*, 263–272.
- Karademas, E. C., & Kalantzi-Azizi, A. (2004). The stress process, self-efficacy expectations, and psychological health. *Personality and Individual Differences*, *37*, 1033–1043.
- Karimi, S., Abdi, A., Khatony, A., Akbari, M., & Faraji, A. (2018). Epidemiology of colorectal cancer and the risk factors in Kermanshah Province-Iran 2009–2014. *Journal of Gastrointestinal Cancer*. <https://doi.org/10.1007/s12029-018-0142-z>.
- Karkkola, P., Sinikallio, S., Flink, N., Honkalampi, K., & Kuittinen, M. (2019). Pain self-efficacy moderates the association between pain and somatization in a community sample. *Scandinavian Journal of Pain*, *19*, 101–108.
- Khairy, Y., Safa, M., & Nasiri, F. (2018). Spiritual health, forgiveness and coping strategies for patients with gastrointestinal cancer. *Medical Ethics Journal*, *12*, 1–9.
- Maynard, E., Gorsuch, R., & Bjorck, J. (2001). Religious coping style, concept of God, and personal religious variables in threat, loss, and challenge situations. *Journal for the scientific study of religion*, *40*, 65–74.
- McCracken, L. M., & Eccleston, C. (2005). A prospective study of acceptance of pain and patient functioning with chronic pain. *Pain*, *118*, 164–169.
- McCracken, L. M., Vowles, K. E., & Eccleston, C. (2004). Acceptance of chronic pain: component analysis and a revised assessment method. *Pain*, *107*, 159–166.
- Mehrpoya, A., Jalali, R., Jalali, A., & Namdari, M. (2018). Patient experiences of living with coronary stent. *Journal of Vascular Nursing*, *36*, 181–185.
- Meredith, P., Ownsworth, T., & Strong, J. (2008). A review of the evidence linking adult attachment theory and chronic pain: Presenting a conceptual model. *Clinical Psychology Review*, *28*, 407–429.
- Moeini, M. (2014). Patients' religious beliefs in cardiac pain situations: A qualitative research. *Journal of Qualitative Research in Health Sciences*, *3*, 104–113.
- Mohammadi, M., Raiegani, A. A. V., Jalali, R., Ghobadi, A., & Salari, N. (2019). The prevalence of retinopathy among type 2 diabetic patients in Iran: A systematic review and meta-analysis. *Reviews in Endocrine and Metabolic Disorders*. <https://doi.org/10.1007/s11154-019-09490-3>.
- Mojahed, K., & Navidian, A. (2018). The effect of motivational interviewing on self-efficacy to quit hookah smoking in pregnant women. *Journal of hayat*, *24*, 84–96.
- Nicholas, M. K., & Asghari, A. (2006). Investigating acceptance in adjustment to chronic pain: Is acceptance broader than we thought? *Pain*, *124*, 269–279.
- Noroozi, A., Afrazeh, E., & Tahmasebi, R. (2018). Effect of gain-and loss-framed messages on knowledge, self-efficacy and self-management in diabetic patients: A randomized clinical trial. *Journal of hayat*, *24*, 20–34.
- Oshvandi, K., Amini, S., Moghimbeigi, A., & Sadeghian, E. (2018). The effect of spiritual care on death anxiety in hemodialysis patients with end-stage of renal disease: A Randomized Clinical Trial. *Journal of hayat*, *23*, 332–344.
- Piatt, J., Eldridge, L. & Baker, J. (2018). The examination of non-pharmacologic treatment of pain after spinal cord injury. *Proceedings of IMPRS*, *1*.
- Rahmati, M., Khaledi, B., Salari, N., Bazrafshan, M.-R., & Haydarian, A. (2017). The effects of religious and spiritual interventions on the resilience of family members of patients in the ICU. *Shiraz E-Medical Journal*, *18*(11), e13007. <https://doi.org/10.5812/semj.13007>.
- Rezaei, M., Seyedfatemi, N., & Hosseini, F. (2009). Spiritual well-being in cancer patients who undergo chemotherapy. *Hayat*, *14*(3), 33–39.
- Schwarzer, R. (2014). *Self-efficacy: Thought control of action*. Routledge: Taylor & Francis.
- Sepahvand, E., Jalai, R., Mirzaei, M., & Jahromi, M. K. (2015). Association between short sleep and body mass index, hypertension among acute coronary syndrome patients in coronary care unit. *Global Journal of Health Science*, *7*, 134.
- Shahrababaki, P. M., Nouhi, E., Kazemi, M., & Ahmadi, F. (2017). Spirituality: A panacea for patients coping with heart failure. *International Journal of Community Based Nursing and Midwifery*, *5*, 38.
- Shameli, L., Goodarzi, M. A., Hadianfard, H., Taghavi, S. M. R., & Ghanizade, A. (2012). Predicting the intensity of scrupulosity based on image of god and thought control strategies in obsessive-compulsive patients. *Journal of Isfahan Medical School*, *29*(166), 1–12.

- Sher, Y. (2019). *Mental health in chronic and end-stage lung disease. Psychosocial care of end-stage organ disease and transplant patients*. Berlin: Springer.
- Simon, L. S. (2012). Relieving pain in America: A blueprint for transforming prevention, care, education, and research. *Journal of pain & palliative care pharmacotherapy*, 26, 197–198.
- Sollgruber, A., Bornemann-Cimenti, H., Szilagyi, I.-S., & Sandner-Kiesling, A. (2018). Spirituality in pain medicine: A randomized experiment of pain perception, heart rate and religious spiritual well-being by using a single session meditation methodology. *PLoS ONE*, 13, e0203336.
- Strand, E. B., Mengshoel, A. M., Sandvik, L., Helland, I. B., Abraham, S., & Nes, L. S. (2019). Pain is associated with reduced quality of life and functional status in patients with myalgic encephalomyelitis/chronic fatigue syndrome. *Scandinavian Journal of Pain*, 19, 61–72.
- Tafazoli, M., Nameni, F., Mazlom, S. R., & Mirteymori, M. (2019). The relationship between spiritual health and the intensity of post-caesarean section pain. *Journal of Midwifery and Reproductive Health*, 7(2), 1655–1661.
- Tafti, E. F., Hammami Abrand-Abadi, A., & Rasouli, R. (2019). Comparing image of god and life regard in individuals with gender identity disorder after sex change surgery with those of their counterparts before the surgery. *Journal of Research on Religion & Health*, 4(5), 86–102.
- Tavan, H., Sayehmiri, K., Taghinejad, H., & Mousavi, S. M. (2015). Factor analysis of spiritual health on the islam viewpoint. *Iranian journal of public health*, 44, 1572–1573.
- Veehof, M. M., Oskam, M.-J., Schreurs, K. M., & Bohlmeijer, E. T. (2011). Acceptance-based interventions for the treatment of chronic pain: a systematic review and meta-analysis. *PAIN@*, 152, 533–542.
- Mollaei, F., Borhani, F., Abbaszadeh, A. & Khabazkhoob, M. (2019). Correlation between spiritual well-being and burden of care in family caregivers of cancer patients. *Hayat*, 24(4), 296–309.
- You, S., Yoo, J. E., & Koh, Y. (2019). Religious practices and mental health outcomes among Korean adults. *Personality and Individual Differences*, 142, 7–12.
- Ziapour, A., Khatony, A., Jafari, F., & Kianipour, N. (2017). Prediction of the dimensions of the spiritual well-being of students at Kermanshah university of medical sciences, Iran: The roles of demographic variables. *Journal of clinical and diagnostic research: JCDR*, 11, VC05.

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