

The relationship between spiritual well-being and life orientation in elderly people with type 2 diabetes

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Background. Diabetes is accompanied by multi-dimensional physical, mental, and family-related consequences. For this reason, exploring levels of spiritual well-being and life orientation among elderly people and designing learning intervals to improve their spiritual well-being and optimism can improve quality of life, increase treatment-regimen adherence, and reduce complications in this vulnerable group. This study aims to determine the relationship between spiritual well-being and life orientation in elderly people with type 2 diabetes.

Methods. This correlational descriptive study was carried out in 2016. The convenience method was used for sampling and the participants were 145 elderly people who attended a healthcare center. The data were gathered using the Functional Assessment of Chronic Illness Therapy – Spiritual Well-Being Scale (FACIT-Sp) and the Revised Life Orientation Test (LOT-r) questionnaires. The data entry and analysis were conducted using SPSS, version 21.

Results. The participants' total scores for spiritual well-being and the FACIT-Sp questionnaire were 31.37 ± 7.95 and 130.66 ± 31.74 , respectively. The results of the Pearson correlation coefficient indicated an inverse statistical correlation between spiritual well-being and life orientation ($r = .612$, $p = 0.001$).

Conclusions. The results of this study show that spirituality may play the main role in creating an optimistic life orientation. Educational learning intervals that focus on spiritual well-being are recommended to improve elderly people's quality of life.

Key words: Spiritual well-being, Life orientation, Elderly people, Type 2 diabetes

List of abbreviations

FACIT-Sp: Functional Assessment of Chronic Illness Therapy – Spiritual Well-Being Scale

LOT-R: Life Orientation – Revise

BACKGROUND

Old age is an important life stage that is rapidly expanding and will account for a high percentage of the earth's population in the near future. In 2015, older adults made up 12.5% of the world's population, according to the World Health Organization (WHO) ¹. According to official

national statistics, elderly people accounted for 8.20% of Iran's population in 2011 ². As people grow older, they become more likely to contract chronic illnesses; most people over 60 have at least one chronic illness ³. Among elderly people, the prevalence of diabetes is high, in comparison to other chronic illnesses, accounting for 25% of all chronic illnesses in the U.S. ⁴ and 49.5% in Iran ⁵.

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By 2030, rates of diabetes will have doubled worldwide (based on 2000 levels), primarily affecting people aged 65 or older⁶. Diabetes is therefore predicted to become a huge problem for societies with aging populations and changing lifestyles, afflicting a high proportion of people aged 75 or older. This condition will damage both health systems and society, causing early complications, health problems, and death for many people⁷. Diabetes is a disabling illness for elderly people, bringing numerous other diseases, including cardiovascular conditions and physical and cognitive aging syndromes. It increases the probability that an elderly individual will end up in a nursing home by up to three times⁶. It is also one of the most psychologically onerous disorders, as it tends to be accompanied by associated mental disorders⁸.

The complications of diabetes can lead to depression and sleep disorders among elderly people⁹. Diabetics can trigger emotional problems that affect treatment outcomes, leading to treatment non-adherence, an unwillingness to control glycemic levels, and an inability to pay treatment costs; all of these can increase the death toll¹⁰. Previous studies have shown that people with diabetes suffer more from mental disorders and have a lower quality of life than non-diabetics in society¹¹. In addition, the symptoms of diabetes can lead to stigmatization and negative responses from others, affecting personality and generating negative emotions¹². This illness is known to cause crises related to multiple psychological and family problems. For this reason, it drives some sufferers to search for coping strategies, one of which is spirituality¹³. Spirituality represents the basic values that guide a person to search for answers to existential questions, such as the purpose and meaning of life, reality, love, good and evil, disease, and death¹⁴. Spiritual well-being is a key domain of health for older people, closely related to beliefs and religions. It provides goals and a sense of direction for older people, helping them live healthy, satisfying lives¹⁵. It can also help people cope with chronic diseases, improve their mental health, reduce anxiety, and achieve a better quality of life¹⁶.

In addition, spirituality can alleviate the negative mental effects of chronic illness and increase adherence to treatment regimens by creating a sense of objectivity¹⁷. Several studies have explored the role of spirituality in helping diabetic patients; most of these studies have reported a positive relationship between spiritual health and better management of diabetes, including glycemic control, general self-control, and an improvement in self-caring activities^{18,19}.

An "optimistic life orientation" is another concept that can be useful in controlling chronic diseases. According to the Scheier and Carver model (1985), optimism and

pessimism are the two main aspects of life orientation. When younger and older people are assessed, their life orientation results are expected to be meaningfully related to psychological adaptability²⁰. In a diabetic patient, optimism increases dietary adherence, physical activity, treatment, and insulin therapy adherence. It improves physiologic processes (reducing inflammation, increasing parasympathetic activities, and decreasing sympathetic activities) and ultimately improves glycemic control, reducing both complications of diabetes and mortality rates²¹. A study conducted in Iran has shown that optimistic patients with diabetes experience positive outcomes, including lifestyle changes, improved interpersonal interactions, and a feeling of health during the treatment process²².

Within the health system of Iran, diabetes is a costly disease, using up more than 8.69% of the nation's health budget²³. Spiritual well-being and religious beliefs act as facilitators in helping diabetic patients to become less pessimistic²⁴. Enhancing the spiritual well-being and life orientation of elderly people can improve their quality of life, increase treatment adherence, and decrease complications of diabetes. The present study therefore aims to identify the relationship between spiritual well-being and life orientation among elderly people with type 2 diabetes; the results can provide a basis for further studies of spiritual well-being and optimistic beliefs.

METHOD

PARTICIPANTS

The study population included the elderly who referred to a diabetes treatment center where they entered the treatment process and educational programs like insulin therapy, exercising, diets and self-care in Varamin City, Iran, 2016 (as the Authors stated in the abstract, otherwise modify the year in the abstract in 2017).

The participation criteria were having diabetes, having no other chronic diseases, and having unaffected cognitive abilities. Potential participants were first given the Mini Mental State Examination (MMSE) questionnaire to assess their cognitive abilities. Elderly receiving the score of 21 or higher could enter the study²⁵.

The convenience method was used to develop a sample: all diabetic patients registered with the diabetes center were eligible and invited to participate.

SAMPLE SIZE

The sample size was based on the findings of a previous study on the prevalence of diabetes among elderly people. That study estimated that 145 participants were

needed, based on the following parameters ($\alpha = 0.05$, $\beta = 0.2$, $d = 1$ and $\alpha = 3$).

MEASUREMENTS

1. The first set of data collected included 14 items of personal, social, and disease-related information.

2. The second set of data was obtained using the FACIT-Sp questionnaire, designed in 1990. This tool has five sections: physical well-being (7 items), social/family well-being (6 items), emotional well-being (6 items), functional well-being (7 items), and spiritual well-being (12 items). All of these items are rated using a five-point Likert scale, with responses ranging from strongly disagree to strongly agree. The final score is obtained by adding together the scores of all four parts ²⁶.

The spiritual well-being questionnaire has 12 items, including three sub-scales of peace, meaning, and faith; the scoring domain for each sub-scale ranges from 0 to 16 and the total scoring domain ranges from 0 to 48. A higher score signifies a higher level of spiritual well-being ²⁷.

The spiritual well-being aspect of the FACIT-Sp tool has high internal consistency across all three sub-scales (the Cronbach's alpha for the whole scale is 0.81; for the peace and meaning sub-scales it is 0.81; and for the faith sub-scale, it is 0.88) ²⁸.

The FACIT-Sp questionnaire is used to assess the well-being among the diabetic adults according to Jafari et al. study, which is an example of using this questionnaire for chronic illnesses patients ²⁹.

The validity of FACIT-Sp questionnaire for elderly patients is assessed by Monod in 2015 ³⁰.

3. The third set of data was provided by the Revised Life Orientation Test (LOT-r) scale designed by Scheier and Carver (1994) ³¹. This 10-item scale evaluates an individual's expectations about life consequences; it has three positive and three negative items. All of the items mentioned above were rated using a five-point Likert scale (from strongly disagree to strongly agree). Items 1, 4, and 10 were positive and directly scored; items 3, 7, and 9 were negative and reversely scored. Items 2, 5, 6, and 8 were filler questions, intended not to further the goals of the test but to stop participants from overanalyzing the main items. The scoring domain varied from 0 to 24, with higher scores signifying a greater expectation of positive results ³¹.

The reliability of this tool has been demonstrated in a study of 59 women with breast cancer; the alpha factor in this study was 0.87. A retest was carried out after 12 months and the result was: $r = 0.74$ ³². The convergent and discriminant validity of the tool can also be confirmed by applying Rosenberg's self-esteem scale and comparing results derived from the control-source scale method ³². In Iran, the tool's reliability has been proven

via a study of 27 pre-university students, in which the retest was carried out after 10 days ($r = 0.70$) ³³.

The convergent reliability of the test is acceptable in relation to the 5 factors of disappointment ³⁴.

The FACIT-Sp and the Revised Life Orientation Test (LOT-r) scales were first translated from English into Persian by an expert. Their accuracy was then confirmed by another English language expert for use in this study. The translated questionnaires were checked by 10 faculty members and all of the recommended changes were made. In addition, the reliability of the tool was tested using an initial study of 30 diabetic patients; when the Cronbach's alpha was applied, the results were $\alpha = 0.89$ and $\alpha = 0.70$.

STATISTICAL ANALYSIS

Data were analyzed using SPSS (Version 21) for Windows. Descriptive statistics, including the mean, standard deviation, frequency, and percentage were applied to describe each variable. Kolmogorov-Smirnov test was used to examine normal distribution of the population. A Pearson's correlation coefficient (r) and t-test were used to measure the strength of the association between spiritual well-being and life orientation variables. All statistical tests used a significance level of $p < 0.05$.

ETHICAL CONSIDERATIONS

This study was conducted according to the guidelines laid down in the Declaration of Helsinki, and all procedures involving human subjects were approved by the Ethics Committee of Babol University of Medical Sciences. Before the study began, we presented a brief explanation of its aims and research processes and obtained informed consent.

RESULTS

The mean duration of disease and the duration of treatment were 74.08 ± 68.52 and 2.13 ± 0.66 , respectively; 63.4 percent of the patients had complications of diabetes (Tab. I).

The results of a t- test showed that the mean total score for spiritual well-being was 31.37 ± 7.95 and that the highest score was related to faith, with a mean of 11.68 ± 3.33 . The total FACIT-Sp score was 130.66 ± 31.74 and the highest score involved the emotional subdomain, with a mean of 14.60 ± 9.52 (Tab. II).

According to this data analysis, the mean score for life orientation was 13.16 ± 3.90 . This result indicates that most participants tended toward optimism. The Pearson's correlation coefficient showed a significant

Table I. The demographic characteristics of elderly people with type 2 diabetes.

Frequency (percent)	Demographic Information
	Gender
110 (75.9)	Female
35 (24.1)	Male
	Education
114 (78.6)	High school
31 (21.4)	University
	Occupation
103 (71.0)	Housewife
11 (7.6)	Employee
15 (10.3)	Self-Employed
16 (11.0)	Retired
	Marital status
9 (6.2)	Single
122 (84.1)	Married
14 (19.7)	Widowed
	Monthly income
23 (15.9)	High
79 (54.5)	Average
43 (29.7)	Low
	Treatment regimen
39 (26.9)	Oral treatment
17 (11.7)	Insulin
8 (5.5)	Insulin and oral treatment
9 (6.2)	Diet
65 (44.8)	Diet and oral treatment
7 (4.9)	Diet and insulin
	Complications of diabetes
4 (2.8)	Foot damage
38 (26.2)	Eye damage
9 (6.2)	Kidney damage

positive relationship between spiritual well-being and life orientation: $r(145) = .612$, $p = 0.001$. "Peace" had a stronger relationship with life orientation than other spiritual well-being approaches ($r(145) 0.517$, $p = 0.001$) (Tab. III).

DISCUSSION

The present study was designed to assess relationship between spiritual well-being and life orientation in elderly people with type 2 diabetes and to explore possible associations. The results showed that participants had good levels of spiritual well-being. As elderly people with diabetes have to manage crises, including diagnosis and treatment challenges, the progression of the disease, loneliness, and loss of freedom, they do tend to adopt spirituality, religion, and religious traditions as

Table II. The FACIT-Sp and spiritual well-being subdomain scores of elderly people with type 2 diabetes.

Mean (SD)	Subdomain
FACIT-Sp	
17.62 (6.26)	Physical well-being
17.40 (5.99)	Social/family well-being
14.60 (9.52)	Emotional well-being
18.27 (5.62)	Functional well-being
31.37 (7.95)	Spiritual well-being
130.66 (31.74)	Total score
Spiritual well-being	
10.8 (3.61)	Meaning
3.95 (3.27)	Peace
11.68 (3.33)	Faith
31.37 (7.95)	Total score

Table III. The relationship between spiritual well-being and life orientation in elderly people with type 2 diabetes (n. 145).

Test	Spiritual well-being	Meaning	Peace	Faith
R	0.612	0.416	0.517	0.146
P-value	0.001	0.001	0.001	0.08

coping mechanisms³⁵. Livnen et al. (2004) believe that aging can enhance spiritual well-being and that spirituality plays an important role in elderly people's ability to cope with stressful situations and chronic illnesses³⁶. In addition, numerous studies have mentioned the role of spiritual well-being as an important cultural factor in coping with physical problems^{37 38}.

The elderly people in our study had good levels of spiritual well-being, due to the cultural, traditional, and religious atmosphere of Iranian society. The other benefit of high spiritual well-being scores is that they help people face the reality of death, as they grow older. Younger people do not have such high levels of spiritual well-being because they use non-spiritual methods to relieve stress.

Our results are similar to those of Bastane et al.³⁹ and Shahdadi et al.⁴⁰ but do not support those of Jafari et al.²⁹. Jafari's study found that patients with diabetes did not experience good spiritual well-being²⁹. Since spiritual well-being is a fundamental requirement for elderly people, educational programs and consulting services should be used to support and improve patients' spiritual or religious condition and to encourage much stronger relationships. Such connections seem both advantageous and effective in improving health and the quality of life within this vulnerable group in society⁴¹. In the present study, the faith aspect of spiritual

well-being received the highest score. The fact that the elderly participants were Muslim and believed in God is likely to be the main reason for this result. The patients spent time praying every day and participated in religious traditions that are common in Iranian religious culture. These actions affected all aspects of their lives and health. In addition, applying religious rules to life was a shared moral value. It is therefore easy to understand why faith and religion would receive the highest score; other studies have also emphasized various aspects of the impact of religious values on health ³⁷.

The participants' life orientation scores showed a tendency toward optimism. The belief that age makes life less meaningful; the feeling that aging threatens perfection, sophistication, and independence; the difficulty to tolerate problems and not having enough time to perfect oneself; the absence of religious beliefs and support of family members – all of these factors – can be key reasons for a pessimistic life orientation. By contrast, a positive self-concept can support daily routines and also help people adapt to stressful events ⁴². People with a more positive life orientation have better psychological health and experience more positive emotions (including happiness, vitality, and volition) and fewer negative ones (depression and anxiety) ⁴³.

Among elderly people, pessimism has consequences, affecting treatment regimen adherence ²¹, the management of complications of chronic illness ⁴⁴ and the ability to maintain self-care ⁴⁵. Group education can generate a sense of optimism, happiness, and hope among elderly people ⁴⁶.

The results of this study confirm that higher levels of spiritual well-being increase a sense of optimism. Spiritual well-being does help patients navigate life by increasing their motivation and giving them the ability to evaluate their activities and develop meaning and goals, despite being ill. The peace they derive from their relationship with God can reduce disease-related stress. On the other hand, the hope created by meaning and life goals is an energetic and motivating feeling, which can improve treatment adherence and change patients' perspective on health improvements ^{36 37}. The sense that life is meaningful helps people feel effective, valuable, and able to control routines. It also makes them better able to manage failures, disasters, life conflicts, and even positive events and improvements ⁴³.

Spirituality can help patients evaluate negative events in an optimistic way ⁴⁷. Anandarajah and Gupta (2014) believe that having individuals with higher levels of spiritual well-being expect more positive events because they believe in a strong God who always responds to human needs ⁴⁸. These findings reflect those of Gheinaghi et al. ⁴⁹, Asgari et al. ⁵⁰, Brown et al. ⁵¹ and McFarland et al. ⁵².

CONCLUSIONS

These results show that spirituality is effective in fostering an optimistic life orientation. We therefore recommend educational learning intervals that focus on improving spiritual well-being to enhance quality of life. Additional research on the spiritual needs of elderly people and other potential solutions for improving well-being are also recommended.

CLINICAL IMPLICATIONS

If nurses are convinced that spiritual well-being can improve other aspects of health, they may be willing to apply spiritual-well-being assessments to patients in their care. Such assessments can be carried out during the care process to support better diagnoses and interventions. The use of programs that develop spiritual well-being could help patients with chronic diseases to better adapt to illness, find aims and meanings in life, and look toward a brighter future as they follow their treatment regimens.

LIMITATIONS

Since the sampling for this study was carried out using the convenience method and the participants were elderly people attending a diabetes center, its methods are generalizable to similar studies using random sampling in other parts of Iran. The FaCIT-Sp questionnaire is not limited to diabetic patients. All of the participants were Shia Muslims; no other religious groups were included because they are very small minority populations in Iran.

The value of the study will be substantially improved if authors can show that spiritual well-being is associated with better lifestyle and glycemic control. Therefore, it is recommended that a study be conducted to determine the relationship between spiritual well-being and lifestyle and glycemic control in patients with type 2 diabetes.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORS' CONTRIBUTIONS

S F participated in writing the paper and interpreting the results. F Gh and A Sh participated in the design of the study and carried out the statistical analysis. N

Y participated in data collection. All of the authors read and approved the final manuscript.

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