J Relig Health (2019) 58:599–611
https://doi.org/10.1007/s10943-018-0601-7

ORIGINAL PAPER

The Effect of Hajj Pilgrimage on Treatment Compliance in Individuals with Chronic Diseases

Feride Taskin Yilmaz[1] · **Selma Sabanciogullari**[2] · **Gulseren Karabey**[3]

Published online: 14 March 2018

Abstract This study was performed in order to determine the effect of Hajj pilgrimage on treatment compliance in individuals with chronic diseases. A total of 168 individuals were included in the prospective and descriptive study. Data were collected in three interviews using a patient identification form and the Religiousness Inclination Scale. When the medicine compliances of the individuals before and after Hajj pilgrimage were compared, a statistically meaningful difference between their regular uses of medicine statuses was found ($p = 0.011$). However, no difference was detected in the 3-month follow-up ($p = 0.094$). Additionally, it was found that in individuals with internally driven religiousness inclinations there was no relationship between their statuses regarding having changes in their disease-related complaints after Hajj pilgrimage and their status regarding coping with disease. Hajj pilgrimage was found to negatively affect treatment compliance in the short term in individuals with chronic diseases, while there were no changes in long-term treatment compliance.

Keywords Hajj · Religious · Chronic disease · Treatment compliance · Spiritualite

✉ Feride Taskin Yilmaz
feride_taskin@hotmail.com

Selma Sabanciogullari
selma.ssabanci@gmail.com

Gulseren Karabey
gulseren-karabey@hotmail.com

[1] Department of Internal Diseases Nursing, School of Susehri Health High, Cumhuriyet University, 58140 Sivas, Turkey

[2] Department of Psychiatric Nursing, School of Susehri Health High, Cumhuriyet University, Sivas, Turkey

[3] Cumhuriyet University Health Services Application and Research Hospital, Sivas, Turkey

Introduction

Chronic diseases are long-term, slowly developing cases where medical interventions are ineffective, the risk of complications is high, and raising the responsibility of the individual to the highest level in self-care through periodic monitoring and supportive care is required for the management of the disease (Linck et al. 2008; Ozdemir and Tasci 2013). Chronic diseases affect the physical, functional, economic, ad social lives of individuals negatively (Büssing and Koenig 2010) and may, in time, cause mental health problems such as depression and loss of hope (Ozdemir and Tasci 2013; Rocha and Ciosak 2014). Chronic diseases, which increase in prevalence daily without regard to the development levels of countries and the structure of social classes (World Health Organization 2014), make the provision of health services more difficult and increase their costs. For these reasons, applications toward the prevention and management of chronic diseases have started to gain importance (Thorpe 2009).

One of the most basic strategies in the management of chronic diseases is to ensure the compliance of the patient with the facts of the disease and the treatment (Al-Hajje et al. 2015; Gordon et al. 2007; Linck et al. 2008). Compliance with treatment is not just the use of the prescribed medicine but also the patient and his/her family being in cooperation regarding health care and related decisions, the patient coming in for checkups in time, the patient complying with the timetable of the treatment, the patient not quitting his/her medicine before time with the assumption they will get better the patient complying with changes in diet, and the patient exhibiting positive behavior change (Dikec and Kutlu 2015; Gordon et al. 2007). The most effective way to improve treatment compliance for individuals is to include them in the treatment process and to be informed about disease management and medicine use (Al-Hajje et al. 2015). However, factors such as the education level of the individual, his/her cultural background, the presence of family support, the accessibility of health services and treatments, the presence of complications, the side effects of the medicines used, the complexity of the treatment being applied, additional chronic diseases, and the individual/s belief regarding his/her disease can affect compliance with treatment (DiMatteo 2004; Gordon et al. 2007; Linck et al. 2008).

Another factor affecting the compliance of individuals with chronic diseases with their treatments is their spiritual approaches called spirituality (Ballew et al. 2012). Spirituality, which is present in every individual as a dimension of personality, comes forward especially in cases where the values and beliefs of the individual are threatened, such as emotional stress, physical disease, and death (Yilmaz 2011). Although it is often confused with religion (Williams and Sternthal 2007), spirituality, which includes concepts such as prayer, service, religious rituals, love, trust, and hope (Büssing and Koenig 2010; Richardson 2012; Rocha and Ciosak 2014), is an important part of holistic care (Dhamani 2014; Ramezani et al. 2014; Yilmaz 2011).

In studies performed with individuals with chronic diseases, it was found that individuals lean toward spirituality as a source of hope and use spirituality as a source of strength in coping with the disease and the treatment process (Ballew et al. 2012; Büssing and Koenig 2010; Richardson 2012; Rocha and Ciosak 2014; Stewart et al. 2013; Yodchai et al. 2016). In studies claiming religion is related to health, religious beliefs have been stated to have either positive or negative effects on health (Kılavuz 2002). In many studies, religious beliefs were found to affect mental health and, by extension, physical health, positively (Horozcu 2010; Jim et al. 2015; Koenig 2012; Roberts et al. 2009). In studies on praying, reading scripture, or paying service the well-being of individuals with chronic diseases was found be affected positively, depressive and stress-related symptoms were

found to decrease, and quality of life was found to increase (Hosrik et al. 2014; Koenig et al. 2015; Naghi et al. 2012; Unantenne et al. 2013). On the other hand, in a study by Williams and Sternthal (2007), it was stressed that religion could negatively affect health because of hate, aggressiveness, or trusting religious applications instead of medicine. In a study by Horozcu (2010), excessive religiousness could cause the development of negative health situations such as hypertension, obesity, and depression. This shows that the effect of religious applications disease and compliance with treatment in individuals with chronic diseases should be more carefully examined and that the religious inclinations of such individuals should be evaluated.

Hajj, which is an important service in Islam, is an application where Muslims spend almost a month in the city of Mecca in Saudi Arabia praying and performing other religious services. The long-term aspect of Hajj, its great effects on the spirituality of individuals, and its tendency to increase religious inclination (Erul and Keles 2013) have all been reported as causes for individuals quitting medication after or during Hajj (Yalcin 2010). Health professionals are important health personnel responsible for the control and management of chronic diseases. In this context, health professionals should know the spiritual needs of patients and the effects of religious services such as Hajj on physical and mental health as part of holistic care. (Akgun Kostak 2007; Dhamani 2014). When the literature was examined, no studies examining the changes in the treatment compliances of individuals with chronic diseases after Hajj pilgrimage were found in the national and international databases. In this context, the study is thought to provide an idea about how individuals would manage their chronic diseases both during and after Hajj pilgrimage and guide all health professionals and religious workers in the prevention of diseases and unwanted situations.

For this reason, this study was performed in order to determine the effect of Hajj pilgrimage on treatment compliance in individuals with chronic diseases.

Methods

The Type of the Study

This was conducted as a prospective and descriptive study.

Universe and Sample

The universe of the study consisted of 183 individuals with chronic diseases who applied to the office of the mufti for Hajj pilgrimage and performed their Hajj. A total of 168 individuals who used medicine for at least 6 months for a chronic disease, had no mental or communication problems, and agreed to participate in the study were included in the sample. Thirteen individuals were not included in the sample group because they did not want to participate in the study.

Data Collection Tools

Data were collected using an Individual Identification Form and the Religiousness Inclination Scale (RIS).

Personal Information Form

This form, which was prepared by the researchers, consisted of three sections. The first section consisted of 21 questions regarding the socio-demographic characteristics (age, gender, marital status, education, occupation, etc.) and disease-related characteristics (name and duration of disease, treatment style, status regarding disease-related education, etc.). The second section consisted of 10 questions regarding the continuance of individuals of their medicine regularly during Hajj, reasons behind irregular medicine use, checkup status, reasons for foregoing checkups, applications to health institutions during Hajj, application of health-related suggestions, and reasons for not applying those suggestions. The third section consisted of nine questions that similar to the questions in the second section about treatment continuation and checkup status.

The Religiousness Inclination Scale (RIS)

The Turkish cultural adaptation of the scale, which was developed by Allport, and Ross as a 20-item, 2-factor scale, was performed by Kayıklık (2000). As a result of this study, a one-factor, 10-question scale was obtained, the Cronbach's alpha reliability coefficient of the scale was reported to be 0.78. The answers of the scale consist of "I completely agree," "I agree," "I don't agree," and "I completely disagree." Each item is scored between 1 and 4. The lowest score that can be obtained from the scale is 10, while the highest is 40. Higher scores from the scale show internally drove religious inclination, while lower scores indicate externally driven religious inclinations. Internally driven religiousness encompasses individuals who find the basic motivations for religiousness within their religion, think that their other needs, no matter how strong, are ultimately unimportant, who try to make their needs comply with their religious beliefs, who internalize the basic principles of their religion, and who try to completely comply with their religion. Externally driven religiousness encompasses individuals who use religion to attain their own goals, ensure security, find consolation, gain social attention, occupy themselves, and gain social status (Kayıklık 2000). In this study, the Cronbach's alpha reliability coefficient of the scale was found to be 0.72.

Data Collection

Data were collected in three interviews. The first interview was performed a week before Hajj with individuals who accepted to participate in the study. In this face-to-face interview, data pertaining to socio-demographic and disease-related characteristics were collected.

The second interviews were performed in the first week after the participants returned from Hajj. In these interviews, each individual was called via phone by the researchers. The phone call method was preferred since it is contemporary accessible, cheap, and easily applicable. In this interview, data in the second part of the identification form were collected.

The third interview was performed in the third month after the individuals returned from Hajj. In this interview, the individuals were similarly called by phone and the data in the third part of the identification form were collected. The acquisition of study data via phone took approximately 15–20 min.

Data Analysis

Data were analyzed using the SPSS 23.0 program. The socio-demographic and disease-related characteristics of the individuals with chronic diseases were evaluated using percentages and mean values. In comparison with the medicine and disease management of the individuals before and after Hajj pilgrimage, the McNemar test was used since data did not show normal distribution, and in comparison with religious inclinations between interviews, the repeated measurement ANOVA was used. In the examination of the relationship between the disease characteristics and the religiousness inclinations of the individuals, the Student t test and the Kruskal–Wallis test were used. Significance in statistical evaluations was taken at the value of $p < 0.05$.

Study Limitations

As it is conducted in an office of the mufti for Hajj pilgrimage with individuals with chronic diseases who applied and agreed participation at a specific time zone, generalization to its own population is the study's essential limitation. Also, the input acquired about treatment compliance and religiousness inclination statuses is based upon self-statements of the individual.

Results

The average age of the participants was 62.55 ± 7.74 years (min: 40, max: 84) where 41.7% were above 65 years of age, 64.9% were female, and 82.1% were married. 27.4% of the participants were illiterate, and 38.1% were elementary school graduates. 64.3% were housewives, 31.5% were retired, and 91.7% had social security. Only 6.5% of the individuals lived alone, and only 4.8% still used tobacco.

The distribution of disease characteristics of the individuals is given in Table 1. In addition, only 10.7% of the individuals stated that they received an alternative medicine (traditional and religious applications) treatment method, and 44.4% among these individuals stated that they benefited from those methods. 45.2% of the individuals thought that going to Hajj pilgrimage would positively affect their disease. Only 24.4% of the individuals stated that they received training on their disease and treatment during preparations for Hajj.

When the medicine compliances of the individuals before and right after Hajj were compared, a statistically significant difference in their status regarding regular medicine use was found ($p = 0.011$, $p < 0.05$).7.2% of the individuals used their medicine irregularly even before Hajj, and this rate was seen to negatively rise (13.6%) after returning from Hajj. However, no differences were found in the 3-month follow-up evaluation ($p = 0.094$, $p > 0.05$) (Table 2).

7.2% of the individuals were found to voluntarily quit their medicine right after Hajj pilgrimage, and 2.4% were found to do so at the end of the third month. Individuals were found to voluntarily quit their medicine right after Hajj pilgrimage because they thought they were healed because of Hajj ($n = 5$), or because of the side effects of the drugs ($n = 7$). Three months after Hajj, the number of those who voluntarily quit their medication was found to decrease for both reasons ($n = 3$ and $n = 1$, respectively).

Table 1 The disease-related characteristics of the individuals

Characteristics	*n*	%
Duration of disease (year) ($M \pm$ SD)	9.91 ± 7.14 (min: 1, max: 40)	
Drug usage time (year) ($M \pm$ SD)	9.25 ± 7.14 (min: 1, max: 40)	
Number of diagnosed chronic diseases		
One	53	31.5
Two	87	51.8
Three and over	28	16.7
Name of chronic disease[a]		
Hypertension	97	41.8
Diabetes	64	27.6
Heart failure	29	12.5
COPD/asthma	17	7.3
Cancer	12	5.2
Other[b]	13	5.6
Status regarding receiving information on disease after diagnosis		
Yes	121	72.0
No	47	28.0
Status regarding knowing drugs used		
Knows	117	69.6
Doesn't know	51	30.4
Daily number of drugs		
One or two	93	55.4
3–5	56	33.3
6 and above	19	11.3
Status regarding being hospitalized within the last year because of chronic disease		
Never	122	72.6
1	27	16.1
2 or more	19	11.3
Status regarding using non-medical treatments because of chronic disease		
Yes	18	10.7
No	150	89.3
Thinking that Hajj would affect disease		
Yes, will get better	76	45.2
Indecisive	14	8.3
No, no change	78	46.4
Status regarding receiving information on diseases and treatment during Hajj preparations		
Yes	41	24.4
No	127	75.6

[a] *n* has increased because of individuals with more than one disease

[b] Osteoporosis, hypothyroid, cerebrovascular disease

Table 2 The comparison of the disease management compliances of the individuals before, after, and 3 months after Hajj pilgrimage

	First interview		Second interview		[a]X^2/p	Third interview		[b]X^2/p
	n	%	*n*	%		*n*	%	
Drug use					13.133/**$p < 0.05$**			6.400/0.094
Regular	156	92.6	145	86.4		161	95.8	
Irregular	11	6.4	11	6.4		3	1.8	
No use	1	0.6	12	7.2		4	2.4	
Compliance with suggested diet for disease management					13.682/ **$p < 0.05$**			9.687/0.138
Regular	59	35.1	36	21.4		68	40.5	
Irregular, as remembered	31	18.5	33	19.6		20	11.9	
Irregular, as complaints arise	20	11.9	18	10.7		19	11.3	
No application	58	34.6	81	48.8		61	36.3	
Compliance with suggested exercise for disease management					9.900/0.129			30.330/ **$p < 0.001$**
Regular	30	17.9	21	12.5		16	9.5	
Irregular, as remembered	36	21.4	29	17.3		9	5.4	
Irregular, as complaints arise	22	13.1	22	13.1		29	17.3	
No application	80	47.7	96	57.1		114	67.9	

Bold values indicate statistical significance ($p < 0.05$)

[a]McNemar test, comparison between first and second interviews

[b]McNemar test, comparison between first and third interviews

In the first interview, the individuals stated that they used their medicine irregularly because of lack of complaints ($n = 5$), forgetfulness ($n = 4$), and thoughts that it would not advance their disease ($n = 2$). In the second interview, irregular use of drugs was found to be caused by lack of complaints ($n = 5$), not believing in the benefit of the drugs ($n = 3$), forgetfulness ($n = 2$), and believing that non-medical alternative medicine methods were sufficient ($n = 1$). In the third interview, all given reasons for irregular medicine use were tied to lack of complaints ($n = 3$).

When the dietary compliances of the individuals before and right after Hajj pilgrimage were compared, a statistically significant difference in their dietary compliances was found ($p = 0.033$, $p < 0.05$). While 35.1% of the individuals stated that they complied with the suggested diet before Hajj pilgrimage, this rate was found to negatively decrease (21.4%) after returning. However, no differences were found in the 3-month follow-up evaluation ($p = 0.138$, $p > 0.05$).

When the exercise compliances of the individuals before and right after Hajj pilgrimage were compared no difference regarding the application of the suggested exercises was found ($p = 0.129$, $p > 0.05$). However, a significant decrease in the number of those who regularly exercised was seen in the 3-month follow-up evaluation ($p = 0.000$, $p < 0.05$) (Table 2).

All of the individuals stated that they took their drugs with them while going to Hajj, and 71.4% stated that they presented at a health institution during Hajj. In the second

interview, more than half (67.9%) of the individuals were found to go for checkups, and 64% among these were found to go in for routine checkups, while 46% were found to present because of increasing complaints. Despite this, almost half (49%) of the individuals who did not go for checkups stated that they did not think of going for checkups since they had no complaints recently.

When the religiousness inclination statuses of the individuals were examined, it was found that the religiousness inclination scores were above average both before and after Hajj pilgrimage and that internally driven religiousness inclinations were high. When the religiousness inclinations before and after Hajj were compared no significant difference between scale score averages was found (Table 3). Hajj pilgrimage had not affected the existing religiousness inclinations of the individuals.

29.2% of the individuals stated that their disease-specific complaints decreased after Hajj, and 70.2% stated that Hajj pilgrimage positively affected both their disease status and their coping ability. Alongside this, no significant relationship between disease-specific complaints after Hajj or the effects of Hajj on disease and coping with disease and religiousness inclinations was found ($p > 0.05$) (Table 4).

Discussion

Religious applications in individuals with chronic diseases are today among important complementary applications for coping with disease and protecting well-being (Cummings and Pargament 2010; Unantenne et al. 2013). In this context, researchers have given importance to studies examining the positive or negative relationships between physical and mental health and religious applications. However, studies on the subject are still lacking.

In the study, it was found that almost half of the individuals going for Hajj pilgrimage were over 65 years of age and often had chronic diseases such as hypertension, diabetes, and heart failure. In a study by Gautret et al. (2009), the mean age of French pilgrims was found to be 61 with 21% having hypertension and 21% having diabetes. In a study by Alomi and Zahran (2016), diabetes, hypertension, and asthma were found to be common among individuals going for Hajj pilgrimage. This shows that individuals going for Hajj pilgrimage are mostly above middle age and that the incidence of chronic diseases among these individuals is high.

There is a positive opinion among the populace about the protective and healing effect of religious beliefs and applications. Alongside this, because of religion being misunderstood by individuals, it has been stated that religious applications may have negative effects on health (Kilavuz 2002). Especially with the prejudice that medicine use may be accepted as sinfulness, individuals have been stated to be susceptible to spiritual pursuits instead in literature (Cummings and Pargament 2010). In the study, although all of the individuals took their medicine with them while going to Hajj, a significant decrease in regular medicine use was found after returning from Hajj. Additionally, it was found that there were individuals who quit their medicine after Hajj since they thought they were healed. In another study, it has been stated that in individuals who go to Hajj pilgrimage applications regarding medical treatments were insufficient with regard to both disease prevention and disease management (Alomi and Zahran 2016). Individuals with chronic diseases facing other health risks during Hajj, not having information on treatments during long-term religious service applications, or believing that their diseases would be cured by

Table 3 The comparison of the mean scores of the individuals from the Religiousness Inclination Scale

	First interview ($M \pm$ SD)	Second interview ($M \pm$ SD)	Third interview ($M \pm$ SD)	[a]F/p
Religiousness Inclination Scale	34.03 ± 4.57 (min: 17, max: 40)	33.73 ± 4.86 (min: 19, max: 40)	33.60 ± 3.92 (min: 24, max: 40)	1.068 $p = 0.287$

[a]ANOVA for repeated measures

Table 4 The relationship between the disease statuses of the individuals and their mean Religiousness Inclination Scale scores after Hajj pilgrimage

	n	%	Religiousness Inclination Scale	
			$M \pm SD$	*p* value
Whether there were changes after Hajj in disease-related complaints				
Yes, increased complaints	23	13.7	32.78 ± 3.66	KW = 2.604
Yes, decreased complaints	49	29.2	33.32 ± 4.29	*p* = 0.272
No, unchanged complaints	96	57.1	33.94 ± 3.78	
Whether Hajj affected disease and coping with disease				
Positive effect	118	70.2	33.77 ± 3.79	*t* = 0.831
Negative effect	50	29.8	33.22 ± 4.22	*p* = 0.407

t Student *t* test, *KW* Kruskal–Wallis test

their trust in a spiritual power may have negatively affected treatment compliance in the short term.

In the study, a significant decrease in the number of individuals who applied the suggested diet right after returning from Hajj and a decrease in the number of individuals applying the suggested exercise in 3-month follow-up were found. Additionally, a third of the individuals were found not to present for checkups after returning from Hajj. Supporting our findings, another study has found relationships between religiousness and not smoking, eating nutritious foodstuff, stress management, meticulous attention to checkups, and exercising (Homan and Boyatzis 2010). The obtained finding is worrying with regard to both the exercise and health control dimensions and shows that individuals need to be re-informed about disease management. Contrary to this, in another study performed in Turkey, no relationship was found between religious applications such as prayer and going to mosques and health functions, and religious applications were found not to affect the frequency of visiting doctors (Imamoglu 1999).

There are also systematical reviews and meat analyses in the literature that state religious applications have positive effects on physical health (Jim et al. 2015; Koenig. 2012; Roberts et al. 2009; Stewart et al. 2013). In our study, parallel to literature, a third of the individuals stated reductions in disease-related complaints after Hajj pilgrimage and most of the individuals stated that the pilgrimage affected their disease and coping strength positively. In a qualitative study, individuals were found to see Hajj pilgrimage as an alternative when treatment was not an option or ineffective, and individuals have claimed to attain health after Hajj pilgrimage (O'Brien 1999). In other studies, religious applications were found to increase well-being in individuals with chronic diseases (Ballew et al. 2012; Jim et al. 2015; Naghi et al. 2012; Olver and Dutney 2012; Tloczynski and Fritzsch 2002).

In the literature, a positive relationship between religiousness and health has been implied, and this relationship was stated to especially be related to factors such as satisfaction with life, social support, avoiding smoking and alcohol, regular diets, and exercising (Homan and Boyatzis 2010; Horozcu 2010; Williams and Sternthal 2007). In our study, individuals with chronic diseases were found to have internally driven religiousness inclinations. In a study by Darvyri et al. (2014), internally driven religiousness was found to improve the mental and physical health of individuals. In a study by Fehring et al.

(1997), positive relationships between internally driven religiousness and higher optimism as well as lower discomfort were found in cancer patients. The fact that the internally driven religiousness inclinations of the individuals in the sample were higher is evaluated to be a positive characteristic with regard to chronic disease management.

In our study, no significant relationship between disease-specific complaints after Hajj or the effects of Hajj on disease and coping with disease and religiousness inclinations was found. In a study conducted with cancer patients, religiousness inclination and especially internally driven religiousness was found to positively affect the disease coping skills and self-efficacies of individuals (Perez and Smith 2015). The lack of studies regarding the evaluation of the religiousness statuses and disease coping statuses of individuals after religious applications shortens the discussion on this dimension, and the findings of our study were thought to be positive because of the separation of religious beliefs and disease management.

Conclusion

Hajj pilgrimage was found to negatively affect treatment compliance in the short term in individuals with chronic diseases, while there were no changes in long-term treatment compliance. Alongside this, religiousness status was found not to affect disease-related complaints and disease coping statuses. According to these results, health professionals should train all individuals with chronic disease before Hajj pilgrimage to not quit treatments and go to health institutions upon return for checkups. Additionally, health professionals can help treatment compliance by evaluating the spiritual needs of individuals and trying to change their erroneous beliefs.

Health professionals should increase the treatment compliances of individuals with chronic diseases for the protection and improvement of public health. For this reason, health professionals should evaluate individuals after diagnosis within a holistic approach with the roles of training, counseling, and guidance. Additionally, health professionals should pay attention to the effects of the religious beliefs and applications of individuals on their disease and treatment compliances and evaluate the positive and negative aspects of these applications. Religious staff guided by health professionals correcting false information and behavior that may negatively affect disease management and the treatment process could make individuals accepting their disease and complying with treatments easier.

Compliance with Ethical Standards

Conflict of interest All the authors declare that there is no conflict of interest.

Ethical Approval Ethical approval was obtained from the Non-Invasive Clinical Research Ethics Committee of Cumhuriyet University, Sivas, Turkey (Decision no: 09/19). Also, it was stated that no private information would be disclosed someone else besides the researcher, since confidentiality of patients and their privacy were respected by the researcher. Informed consent was taken from the individuals who agreed to participate in the study. The study was conducted in accordance with the ethical standards of the Helsinki declaration.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

Akgun Kostak, M. (2007). The spiritual dimension of nursing care. *Firat Journal of Health Services, 2*(6), 105–115.

Al-Hajje, A., Awada, S., Rachidi, S., Zein, S., Bawab, W., El-Hajj, Z., et al. (2015). Factors affecting medication adherence in Lebanese patients with chronic diseases. *Pharmacy Practice, 13*(3), 590.

Alomi, Y. A., & Zahran, R. (2016). Self-assessment of mass gathering (Hajj) pharmaceutical care program in Saudi Arabia. *Journal of Pharmacy Practice and Community Medicine, 2*(4), 137–143.

Ballew, S. H., Hannum, S. M., Gaines, J. M., Marx, K. A., & Parrish, J. M. (2012). The role of spiritual experiences and activities in the relationship between chronic illness and psychological well-being. *Journal of Religion and Health, 51*(4), 1386–1396.

Büssing, A., & Koenig, H. G. (2010). Spiritual needs of patients with chronic diseases. *Religions, 1,* 18–27.

Cummings, J. P., & Pargament, P. I. (2010). Medicine for the spirit: Religious coping in individuals with medical conditions. *Religions, 1,* 28–53.

Darvyri, P., Galanakis, M., Avgoustidis, A. G., Pateraki, N., Vasdekis, S., & Darviri, C. (2014). The revised intrinsic/extrinsic religious orientation scale in a sample of Attica's inhabitants. *Psychology, 5,* 1557–1567.

Dhamani, K. A. (2014). Spirituality and nursing—An Ismaili perspective on holistic nursing care. *Journal of Holistic Nursing, 32*(4), 341–346.

Dikec, Y., & Kutlu, Y. (2015). Method for increased treatment adherence in mental disorders: Adherence therapy. *Journal of Psychiatric Nursing, 6*(1), 40–46.

DiMatteo, M. R. (2004). Social support and patient adherence to medical treatment: A meta-analysis. *Health Psychology, 23*(2), 207–218.

Erul, B., & Keles, E. (2013). *To understand the Hajj*. Ankara: Publications of Presidency of Religious Affairs.

Fehring, R. J., Miller, J. F., & Shaw, C. (1997). Spiritual well-being, religiosity, hope, depression, and other mood states in elderly people coping with cancer. *Oncology Nursing Forum, 24*(4), 663–671.

Gautret, P., Soula, G., Delmont, J., Parola, P., & Brouqui, P. (2009). Common health hazards in French pilgrims during the Hajj of 2007: A prospective cohort study. *Journal of Travel Medicine, 16*(6), 377–381.

Gordon, K., Smith, F., & Dhillon, S. (2007). Effective chronic disease management: Patients' perspectives on medication-related problems. *Patient Education and Counseling, 65*(3), 407–415.

Homan, K. J., & Boyatzis, C. J. (2010). Religiosity, sense of meaning, and health behavior in older adults. *The International Journal for the Psychology of Religion, 20*(3), 173–186.

Horozcu, U. (2010). The relationship between religiosity and spirituality and mental and physical health in the light of experiential research. *Milel and Nihal Journal of Belief, Culture and Mythological Researches, 7*(1), 209–240.

Hosrik, E. M., Cuceloglu, A. E., & Erpolat, S. (2014). Therapeutic effects of Islamic intercessory prayer on warts. *Journal of Religion and Health*. https://doi.org/10.1007/s10943-014-9837-z.

Imamaoglu, E. D. (1999). Some correlates of religiosity among Turkish adults and elderly within a cross-cultural perspective. In L. E. Thomas & S. A. Eisenhandler (Eds.), *Religion, Belief and Spirituality in Late Life* (pp. 93–110). New York: Springer.

Jim, H. S., Pustejovsky, J. E., Park, C. L., Danhauer, S. C., Sherman, A. C., Fitchett, G., et al. (2015). Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer, 121*(21), 3760–3768.

Kayıklık, H. (2000). *Forms of religious life: An evaluation in terms of psychological foundations*. Unpublished doctoral thesis, Dokuz Eylül University, Social Sciences Institute, İzmir.

Kılavuz, M. A. (2002). The importance of religious education in the patient doctor relationship. *Uludag University Faculty of Theology Journal, 11*(2), 73–86.

Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry,* 278730.

Koenig, H. G., Pearce, M. J., Nelson, B., Shaw, S. F., Robins, C. J., Daher, N. S., et al. (2015). Religious vs. conventional cognitive behavioral therapy for major depression in persons with chronic medical illness: A pilot randomized trial. *The Journal of Nervous and Mental Disease, 203*(4), 243–251.

Linck, C. L., Bielemann, V. L. M., Sousa, A. S., & Lange, C. (2008). The chronic patient in face of falling ill and the treatment compliance. *Acta Paul Enferm, 21*(2), 317–322.

Naghi, J. J., Philip, K. J., Phan, A., Cleenewerck, L., & Schwarz, E. R. (2012). The effects of spirituality and religion on outcomes in patients with chronic heart failure. *Journal of Religion and Health, 51*(4), 1124–1136.

O'Brien, S. (1999). Pilgrimage, power, and identity. The role of the Hajj in the lives of Nigerian Hausa Bori adepts. *Africa Today, 46,* 10–40.
Olver, I. N., & Dutney, A. (2012). A randomized, blinded study of the impact of intercessory prayer on spiritual well-being in patients with cancer. *Alternative Therapies in Health and Medicine, 18*(5), 18–27.
Ozdemir, U., & Tasci, S. (2013). Psychosocial problems and care of chronic diseases. *Erciyes University Medical Science Journal, 1,* 57–72.
Perez, J. E., & Smith, A. R. (2015). Intrinsic religiousness and well-being among cancer patients: The mediating role of control-related religious coping and self-efficacy for coping with cancer. *Journal of Behavioral Medicine, 38,* 183–193.
Ramezani, M., Ahmadi, F., Mohammadi, E., & Kazemnejad, A. (2014). Spiritual care in nursing: A concept analysis. *International Nursing Review, 61,* 211–219.
Richardson, P. (2012). Assessment and implementation of spirituality and religiosity in cancer care: Effects on patient outcomes. *Clinical Journal of Oncology Nursing, 16*(4), 150–155.
Roberts, L., Ahmed, I., Hall, S., & Davison, A. (2009). Intercessory prayer for the alleviation of ill health. *Cochrane Database Systematic Review, 15*(2), CD000368.
Rocha, A. C., & Ciosak, S. I. (2014). Chronic disease in the elderly: Spirituality and coping. *Revista da Escola de Enfermagem da USP, 2,* 87–93.
Stewart, W. C., Adams, M. P., Stewart, J. A., & Nelson, L. A. (2013). Review of clinical medicine and religious practice. *Journal of Religion and Health, 52*(1), 91–106.
Thorpe, K. E. (2009). Chronic disease management and prevention in the US: The missing links in health care reform. *Eurohealth, 15*(1), 5–7.
Tloczynski, J., & Fritzsch, S. (2002). Intercessory prayer in psychological well-being: Using a multiple baseline, across subjects design. *Psychological Reports, 91,* 731–741.
Unantenne, N., Warren, N., Canaway, R., & Manderson, L. (2013). The strength to cope: Spirituality and faith in chronic disease. *Journal of Religion and Health, 52*(4), 1147–1161.
Williams, D. R., & Sternthal, M. J. (2007). Spirituality, religion, and health: Evidence and research directions. *The Medical Journal of Australia, 186*(10), 47–50.
World Health Organization. (2014). *Global status report on noncommunicable diseases*. http://www.who.int/nmh/publications/ncd-status-report-2014/en/. Erişim January 25, 2017.
Yalcin, Y. E. (2010). Suggestions to pilgrim points and pilgrim candidates in terms of health in pilgrimage. *Ankara Medical Journal, 10*(18), 38–41.
Yilmaz, M. (2011). A dimension of holistic care: Spirituality, nature and relationship with nursing. *Anatolian Journal of Nursing and Health Sciences, 14*(2), 61–70.
Yodchai, K., Dunning, T., Savage, S., & Hutchinson, A. M. (2016). The role of religion and spirituality in coping with kidney disease and haemodialysis in Thailand. *Scandinavian Journal of Caring Sciences*. https://doi.org/10.1111/scs.12355.