



# Does Spiritual Well-Being Affect Medication Adherence in Individuals Diagnosed with Mental Illness in Turkey?

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## Abstract

Spiritual well-being has been evaluated as an important factor for both physical and mental recovery. The aim of this study was to determine the correlation between spiritual well-being and medication adherence in individuals diagnosed with mental illness. The study was conducted as a correlational descriptive study. The study sample consisted of 410 individuals diagnosed with mental illness. The study was conducted in the psychiatry clinic of a university hospital. The data were collected using a descriptive information form, the spiritual well-being scale, and the Morisky medication adherence scale. There was a statistically significant positive correlation between spiritual well-being and treatment adherence ( $r=0.856$ ,  $p=0.002$ ). Patient spiritual well-being was significant in explaining medication adherence ( $R^2=0.48$ ,  $p=0.000$ ). This study showed that spiritual well-being affected medication adherence in individuals diagnosed with mental illness.

**Keywords** Medication adherence · Mental illness · Patient · Psychiatry · Nursing · Well-being

## Introduction

Spirituality is the ‘aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred’ (Puchalskiet al., 2009, p.887). Spiritual well-being, may be considered the consistency and balance of the individual’s relationship with the sacred/God, society, and other individuals whom he or she positively regards in spiritual terms (Aktürk et al., 2017). Spiritual well-being provides spiritual relief for the individual and has a positive

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effect on overcoming an illness (Van-Capellen et al., 2016; Gonzalez et al., 2014; Balldachino, 2011). Gonzalez et al. (2014) determined that spiritual well-being also increases mental well-being (Gonzalez et al., 2014).

Being healthy is a condition in which the individual feels not only socially and physically healthy but also bodily, mentally, and spiritually healthy. Recovering mentally also accelerates physical recovery (Tepper et al., 2001). Over the past few years, it has been determined that spirituality protects individuals' mental health and plays an important role in positively affecting physical recovery. In recent years, there has been an increase in the number of studies investigating the correlations between religion, spirituality, and mental illnesses. In a study by Florez et al. (2018), which was conducted with patients with posttraumatic stress disorder (PTSD), it was found that patients with high levels of spiritual well-being were more hopeful and had fewer suicidal thoughts (Florez et al., 2018). A study conducted by Gonzalez et al. (2014) with cancer patients demonstrated that patients with high levels of spiritual well-being had low levels of depression (Gonzalez et al., 2014). Van Cappellen et al. (2016) reported that patients feeling spiritually well had a higher ability to cope with negative emotions (Van-Capellen et al., 2016).

Patients may feel desperate because some mental illnesses, such as schizophrenia and bipolar disorder, are long-term illnesses and do not respond to treatment immediately (Tepper et al., 2001). Patients and their relatives begin to adopt spiritual practices to eliminate feelings of desperation (Colom et al., 2000; Florez et al., 2018; Tepper et al., 2001). In Turkish society, spiritual relaxation methods such as praying, making amulets, and consulting clergymen have commonly been used in the treatment of mentally ill patients since ancient times. A study conducted by Tepper et al. with individuals diagnosed with mental illness found that the majority of patients tended to rely on spiritual beliefs to cope with their illnesses (Tepper et al., 2001). Spiritual beliefs can be used as an additional method for increasing the efficiency of the treatment of mental illnesses and medication adherence in patients. Patients' religion or the spiritual powers they recognise can increase their commitment to treatment (Sis-Çelik et al., 2014). Colom et al. (2000) stated that medication adherence was lower in individuals with psychiatric disorders than in individuals with other types of disorders (Colom et al., 2000). Yılmaz & Okanlı (2015) noted that medication adherence was low in patients with schizophrenia (Yılmaz & Okanlı, 2015). Studies have shown that recovery from a mental illness primarily depends on patients' medication adherence (Pinikahana et al., 2002).

Florence Nightingale, the founder of modern nursing, clearly indicated that it is necessary to evaluate patients holistically and to use spirituality in the process of recovery (Krägeloh et al., 2015). Increasing patients' spiritual well-being elevates their faith in treatment and thus gives them hope for recovery. Jim et al. (2015) demonstrated that patients performing religious duties had fewer problems, became depressed less, and felt more spiritually confident than those who were not engaging in such activities (Jim et al., 2015). Research conducted by Balboni et al. (2010) and Ku et al. (2010) on individuals diagnosed with mental illness indicated that the level of spiritual well-being was important for increasing the efficiency of treatment (Balboni et al., 2010; Ku et al., 2010). Pinikahana et al. (2002) indicated that individuals diagnosed with mental illness with a high level of spiritual well-being had

higher medication adherence (Pinikahana et al., 2002). It is known that spirituality has a positive effect on individuals' reflection on their health- and illness-related behaviours, adaptation to changes, acquisition of skills to overcome problems, and increased power and hope for recovery (Balboni et al., 2010; Ku et al., 2010; Pinikahana et al., 2002).

Spiritual well-being has been evaluated as an important factor for both physical and mental recovery. Thus, the correlation between spiritual well-being and mental health has recently gained the attention of researchers from all over the world, including Turkey. It was expected that this study would contribute to the existing literature due to its pioneering work in the area of psychiatric nursing.

The study was conducted to determine the correlation between spiritual well-being and medication adherence in individuals diagnosed with mental illness.

## Methods

### Design

The study was conducted as a correlational descriptive study.

### Participants

Participants were required to meet the following inclusion criteria: over the age of 18, open to communication and cooperation and in remission. The exclusion criteria were as follows: having dementia and/or another neurocognitive disorder or being mentally disabled, which was identified during the clinical interview. The study was conducted in the psychiatry clinic of the University Medical Centre between July 2017 and May 2018.

### Sample Size

The study population consisted of 2500 adults who were diagnosed with mental illness and were receiving treatment from the psychiatry clinic of the University Medical Centre. As a result of the power analysis, the sample size was determined to have a level of significance of 0.05, an effect size of 0.7, and a representativeness value of 0.95. The sample size was set to 410 participants diagnosed with mental illness, who were selected using a computeraided simple random sampling method. The names of the patients were listed and numbered.

### Measures

#### Descriptive Information Form

A descriptive information form with a total of 8 questions on the sociodemographic characteristics of the patients (age, gender, marital status, educational level,

perceived income level, employment status, history of a mental illness in the family, and medical diagnosis of the patient) was used (Yılmaz & Okanlı, 2015; Van-Capellen et al., 2016).

### The Morisky Medication Adherence Scale

This scale was originally developed by Morisky, Green, and Levine in 1986. They determined that the Cronbach's alpha coefficient of the scale was 0.61 (Morisky et al., 1986). A validity and reliability study of the Turkish version of the scale was conducted by Yılmaz in 2004. The Cronbach's alpha coefficient of the scale varied between 0.64 and 0.96. The scale consists of four questions measuring medication adherence (Yılmaz, 2004). The questions are answered with 'yes/no'. If all the questions are answered with 'no', medication adherence is evaluated as high; if one or two questions are answered with 'yes', medication adherence is evaluated as moderate; and if three or four questions are answered with 'yes', medication adherence is evaluated as low (Yılmaz, 2004). In this study, the Cronbach's alpha coefficient of the scale was found to be 0.79. Scores of 0–1, 2–3, and 4 represent low adherence, moderate adherence, and high adherence, respectively.

### The Spiritual Well-Being Scale

The Spiritual Well-Being Scale was developed by Peterman et al. in 2002. Peterman et al. stated that the Cronbach's alpha of the scale ranged from 0.81 to 0.83 (Peterman et al., 2002). A validity and reliability study of the Turkish version of the scale was conducted by Aktürk et al. in 2017. The Cronbach's alpha coefficient of the scale varied between 0.81 and 0.89. The 5-point Likert scale includes 3 subscales: meaning (2, 3, 5, and 8), peace (1, 4, 6, and 7), and faith (9, 10, 11, and 12). Each item of the scale is scored between 0 and 4. Only items 4 and 8 of the scale are reverse scored. The total score of each subscale varies between 0 and 16, and the total scale score varies between 0 and 48 (Aktürk et al., 2017). Higher scores indicate higher spiritual well-being. In this study, the Cronbach's alpha coefficient of the scale was found to be 0.82.

### Data Collection

The data were collected using the descriptive information form, the Spiritual Well-Being Scale, and the Morisky Medication Adherence Scale between June 2017 and May 2018 by the first researcher. The data were collected by conducting individual interviews with patients in the psychiatry clinic of the University Medical Centre in the interview room. The patients' answers to the questions were marked by the first researcher. Each interview took approximately 15 min.

## Statistical Analysis

In the assessment of the normally distributed data, the percentage distribution was used to examine the descriptive characteristics of the patients; the arithmetic mean was used to compare the total mean scale scores; the independent samples *t*-test was used to compare the scale scores by gender, marital status, work status, and history of mental illness in the family; analysis of variance was used to compare the scale scores by age group, educational level, perceived income level, and medical diagnosis of the patient; and linear regression and correlation analysis was used to compare the two scales. The level of significance was set at  $p < 0.05$ .

## Ethical Principles of the Study

To carry out this study, approval from the Ethics Committee of the University Health Sciences for Scientific Research and Publishing (Approval No.: 01.09.2017/18–3) and legal permission from the institution where the study would be conducted were obtained. Before the study began, the patients were informed about the purpose of the study, and verbal and written permission was obtained from the patients and their relatives. The participants signed written consent. The patients were guaranteed that their information would be kept confidential. Moreover, they were informed that they had the right to withdraw from the study whenever they wished.

## Results

### Sociodemographic Characteristics of the Patients ( $n = 410$ )

In the sample, 40% of the patients were in the age range of 29–39 years, 100.0% were Muslims, 72.4% were male, 54.1% were secondary school graduates, 59.5% were single, 73.9% were unemployed, 68% had a moderate perceived income level, 66.8% had no history of a mental illness in the family, and 47.8% were diagnosed with psychosis and related disorders (Table 1).

### Spiritual Well-being and Medication Adherence of the Patients

A total of 50.7% of the patients had a medium level of medication adherence (Table 2). The lowest and highest total scores obtained by the patients on the Spiritual Well-being Scale were 2 and 44, respectively. The mean total scale score was  $26.88 \pm 9.97$ . It can be concluded that the participants' spiritual well-being was at a medium level. (Table 2).

**Table 1** Distribution of the patients according to their descriptive characteristics ( $n = 410$ )

Descriptive characteristics	<i>n</i>	%
<i>Age groups</i>		
18–28	99	24.1
29–39	164	40.0
40–50	88	21.5
51 and over	59	14.4
<i>Religioinal belief</i>		
Muslim	410	100.0
<i>Gender</i>		
Male	297	72.4
Female	113	27.6
<i>Educational level</i>		
Literate	34	8.3
Primary School	108	26.3
Secondary School	222	54.1
High School	46	11.2
<i>Marital Status</i>		
Married	166	40.5
Single	244	59.5
<i>Working Condition</i>		
Employed	107	26.1
Unemployed	303	73.9
<i>Perceived income level</i>		
Low	73	17.8
Medium	279	68.0
High	58	14.1
<i>History of a mental illness in family</i>		
Yes	136	33.2
No	274	66.8
<i>Medical diagnosis of the patient</i>		
Anxiety disorders	58	14.1
Mood disorders	95	23.2
Psychosis and related disorders	196	47.8
Substance use disorders	61	14.9
Total	410	100.0

### Comparison of Spiritual Well-being and Medication Adherence by Patient Sociodemographic Characteristics

There was a statistically significant difference between age groups in the mean total spiritual well-being scores ( $p < 0.05$ ). The level of spiritual well-being was highest in the 18–28 year age group in the advanced analysis (Tukey analysis). There was a statistically significant difference in the mean total scores of the Spiritual Well-being

**Table 2** Comparison of subscale and total mean scores of the patients for the morisky medication adherence scale and spiritual well-being scale and their subscales in terms of their descriptive characteristics

Descriptive characteristics		<i>n</i>	%	Total score of spiritual well-being scale (Mean ± SD)	Total score of Morisky medication adherence scale (Mean ± SD)
Age groups*	18–28	99	24.1	28.89 ± 8.18	2.55 ± 1.39
	29–39	164	40	27.08 ± 7.76	2.79 ± 1.50
	40–50	88	21.5	25.05 ± 9.35	3.07 ± 1.31
	51 and above	59	14.4	25.71 ± 8.67	2.98 ± 1.44
	<b>Test value</b>			<i>F</i> = 3.738	<i>F</i> = 2.373
	<b>Significance</b>			<b>.<i>p</i> = .011</b>	<i>p</i> = .070
Gender	Male	297	72.4	26.58 ± 8.00	2.75 ± 1.48
	Female	113	27.6	27.68 ± 9.48	3.00 ± 1.27
	<b>Test value</b>			<i>t</i> = -1.171	<i>t</i> = -1.607
	<b>Significance</b>			<i>p</i> = .242	<i>p</i> = .109
Educational level*	Literate	34	8.3	24.32 ± 9.77	2.20 ± 1.51
	Primary School	108	26.3	26.73 ± 9.23	2.64 ± 1.45
	Secondary School	222	54.1	26.99 ± 7.10	2.96 ± 1.44
	High School	46	11.2	28.65 ± 10.88	3.02 ± 1.14
	<b>Test value</b>			<i>F</i> = 1.750	<i>F</i> = 3.706
	<b>Significance</b>			<b>.<i>p</i> = .016</b>	<b>.<i>p</i> = .012</b>
Marital status	Married	166	40.5	27.62 ± 8.58	2.74 ± 1.46
	Single	244	59.5	26.39 ± 8.32	2.88 ± 1.41
	<b>Test value</b>			<i>t</i> = 1.447	<i>t</i> = -0.970
	<b>Significance</b>			<b>.<i>p</i> = .012</b>	<i>p</i> = .333

**Table 2** (continued)

Descriptive characteristics	<i>n</i>	%	Total score of spiritual well-being scale (Mean ± SD)	Total score of Morisky medication adherence scale (Mean ± SD)
Working condition				
Employed	107	26.1	29.56 ± 8.71	2.94 ± 1.32
Unemployed	303	73.9	25.94 ± 8.15	2.78 ± 1.47
<b>Test value</b>			<i>t</i> = 3.871	<i>t</i> = 1.002
<b>Significance</b>			<b>.<i>p</i> = .001</b>	<i>p</i> = .317
Perceived level of income*				
Low	73	17.8	24.75 ± 10.27	1.98 ± 1.45
Moderate	279	60.8	26.88 ± 7.35	2.94 ± 1.16
High	58	14.1	29.62 ± 10.04	3.01 ± 1.40
<b>Test value</b>			<i>F</i> = 5.491	<i>F</i> = 16.320
<b>Significance</b>			<b>.<i>p</i> = .004</b>	<b>.<i>p</i> = .000</b>
History of a mental illness in family				
Yes	136	33.2	25.58 ± 8.45	2.68 ± 1.51
No	274	66.8	27.54 ± 8.37	2.89 ± 1.39
<b>Test value</b>			<i>t</i> = -2.223	<i>t</i> = -1.398
<b>Significance</b>			<b>.<i>p</i> = .027</b>	<i>p</i> = .163
Medical diagnosis of the patient*				
Anxiety disorders	58	14.1	24.60 ± 10.10	3.00 ± 1.35
Mood disorders	95	23.2	31.77 ± 7.88	2.94 ± 1.31
Psychosis and related disorders	196	47.8	25.10 ± 6.57	2.80 ± 1.54
Substance use disorders	61	14.9	30.40 ± 8.36	2.52 ± 1.31
<b>Test value</b>			<i>F</i> = 27.036	<i>F</i> = 1.423
<b>Significance</b>			<b>.<i>p</i> = .000</b>	<i>p</i> = .0236

*P* < .05 is significance, Bold values indicate *p* < .05

\*Tukey analysis



Scale by educational level ( $p < 0.05$ ). The level of spiritual well-being was higher among participants with a higher educational level in the advanced analysis (Tukey analysis). There was a statistically significant difference in the mean total scores of the Spiritual Well-being Scale by marital status ( $p < 0.05$ ). Married patients had a higher level of spiritual well-being. There was a statistically significant difference in the mean total scores of the Spiritual Well-being Scale by employment status ( $p < 0.05$ ). Employed patients had a higher level of spiritual well-being. There was a statistically significant difference in the mean total scores of the Spiritual Well-being Scale by perceived level of income ( $p < 0.05$ ). Patients with a high level of income had a higher level of spiritual well-being in the advanced analysis (Tukey analysis). There was a statistically significant difference in the mean total scores of the Spiritual Well-being Scale by history of mental illness in the family ( $p < 0.05$ ). Patients with no family history of mental illness had a higher level of spiritual well-being. There was a statistically significant difference in the mean total scores of the Spiritual Well-being Scale by medical diagnosis of the patient ( $p < 0.05$ ). Patients with anxiety disorders had a higher level of spiritual well-being in the advanced analysis (Tukey analysis).

There was no statistically significant difference in the mean total medication adherence score by age group, gender, marital status, work status, history of a mental illness in family, medical diagnosis of the patient and ( $p > 0.05$ ), whereas there was a statistically significant difference by educational level and perceived level of income ( $p < 0.05$ ). Patients with a higher educational level and a higher level of income had higher levels of medication adherence in the advanced analysis (Tukey analysis) (Table 2).

### Correlation Between Spiritual Well-being and Medication Adherence

In the study, there was a statistically significant positive correlation between spiritual well-being and treatment adherence ( $p < 0.05$ ). In the study, patient spiritual well-being significantly explained medication adherence ( $p < 0.05$ ). Patient spiritual well-being explained 48% of the variance in medication adherence (Table 3).

### Discussion

The results obtained from this study conducted to determine the correlation between spiritual well-being and medication adherence individuals diagnosed with mental illness are discussed in accordance with the existing literature.

Individuals diagnosed with mental illness had a meddium level of medication adherence. A study by Wykes et al. showed that patients had a moderate level of medication adherence (Wykes et al., 2008). A study by Olçun et al. also reported that individuals diagnosed with mental illness had a meddium level of medication adherence (Olçun & Şahin Altun, 2017). In the study conducted by Yılmaz and Okanlı with patients with schizophrenia, it was found that patients had no medication adherence (Yılmaz & Okanlı, 2015). Olfson et al. indicated that patients with

**Table 3** Explanation of/ the effect of spiritual well-being on medication adherence with regression and correlation analysis

Medication adherence										
Regression										
Correlation		<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\Delta F$	<i>T</i>	<i>P</i>			
Spir- itual well- being	Total Score	<i>R</i>	0.856	0.64	0.48	0.04	0.34	-0.12	-1.13	0.00
		<i>P</i>	0.002							

schizophrenia had a low level of medication adherence (Olfson, 2000). Perkins et al. reported that medication nonadherence was common among patients with schizophrenia (Perkin et al., 2006). The reasons for this difference in medication adherence can be associated with mild or severe symptoms of the illness in the patients with whom the studies were conducted, patients' thoughts that they would never recover due to the long-term treatment, too little or too much social support received by patients, patient stigmatisation, and a lack of non-pharmaceutical methods applied to patients.

That the mean spiritual well-being score of the participating individuals diagnosed with mental illness was  $26.88 \pm 9.97$ . Borrás et al. stated that spiritual well-being was important for the disease trajectory of patients with schizophrenia (Borrás et al., 2007). Huguélet et al. reported that religious beliefs had a positive effect on the recovery process in patients with schizophrenia (Huguélet et al., 2006). Tuck found that spirituality was important for individuals diagnosed with mental illness and increased their psychological well-being (Tuck & Anderson, 2014). Amirmohammadi et al. found that cancer patients had a moderate level of spiritual well-being (Amirmohammadi et al., 2017). The results of the present study are similar to those found in the literature.

Spiritual well-being was highest in the 18–28 age group. Good and Willoughby found a positive association between spirituality and mental health in young adults (Good & Willoughby, 2006). Kezdy et al. found that religious beliefs and spirituality positively affected mental health in young people (Kézdy et al., 2011). This result could be explained by younger psychiatric patients viewing the future with hope and having positive thoughts about the treatment process. Moreover, in this study, it was found that patients with higher educational levels had significantly higher levels of spiritual well-being. In a study conducted by Lee et al. with elderly individuals, it was determined that spiritual well-being increased with patients' educational levels (Lee et al., 2006). A study by Wong and Yau with nurses found that there was a significant difference in spirituality by educational level (Wong & Yau, 2010). The results of these studies support those of the present study. The higher the educational level of patients is, the more knowledge they have about the diagnosis and treatment of their illness. In addition, using coping mechanisms more efficiently may increase spiritual well-being.

In the study, married patients had higher levels of spiritual well-being. In a study conducted by Ercan et al. with nurses, it was noted that married nurses had higher perceived spiritual well-being than divorced or single nurses (Ercan et al., 2018). Married psychiatric patients have a positive perspective on life, feel psychologically well and happy, and have higher hopes for recovery thanks to support from their husbands, which may positively affect their spiritual well-being. It was observed in this study that employed patients had higher levels of spiritual well-being. The fact that employed patients can keep their minds busy with their work makes them feel that they are valuable and effective, and they can establish positive communication with their colleagues and have awareness of their illness, which may positively affect their spiritual well-being. It was demonstrated that patients with a higher perceived income had higher levels of spiritual well-being. The fact that patients with a high level of income have easier access to treatment opportunities and are able to afford

their treatment, and additional practices more easily can provide a higher quality of life, spiritual well-being, and feelings of happiness. Patients with anxiety disorder had higher levels of spiritual well-being in this study. The fact that the majority of patients with a mood disorder who participated in the study were in the manic period, had more positive thoughts about their illness, and felt happier may have had a positive effect on their feelings of being spiritually good.

Patients with a higher educational level had higher levels of medication adherence in this study. Ervatan et al. pointed out that when patients suffering from depressive illness had a higher level of spiritual well-being, they also had a higher level of medication adherence (Ervatan et al., 2003). In this study, patients with a higher level of income had higher levels of medication adherence. Aylaz and Kılınc stated that low-income psychiatric patients had lower medication adherence (Aylaz & Kılınc, 2017). As patients with higher socioeconomic status have more opportunities to access and continue their treatment, face no difficulties with long-term care, and are aware of their illness, they may have increased medication adherence.

In our study, the spiritual well-being of the patients affected their medication adherence. Cohen and Koenig noted that patients with stronger religious beliefs had better medication adherence and a low level of depression (Cohen & Koenig, 2003). In the study conducted by Borrás et al. with patients with schizophrenia, it was determined that patients with stronger religious beliefs displayed higher medication adherence (Borrás et al., 2007). Huguélet et al. showed that spirituality accelerated recovery in patients with schizophrenia (Huguélet et al., 2006). Pinikahana et al. reported that spiritual well-being increased medication adherence (Pinikahana et al., 2002). The results of the present study are parallel with the literature.

### **Limitation of the Study**

First, a limitation of this study is that it is conducted on a large homogeneous sample of outpatients having a mental illness in Turkey. It was carried out in a single centre in Turkey. Although we believe that our sample is representative of psychiatric patients, it still would be better if similar studies were conducted in other centres in Turkey. Second, all participants were Muslims and live in an Islamic country. Therefore, our results may not be applicable to patients of other religious groups or those in other geographic regions.

### **Conclusion and Suggestions**

The study conducted to determine the spiritual well-being of the patients affected their medication adherence, it was demonstrated that patients had medium levels of medication adherence. And It can be said that their spiritual well-being is also of medium level. Taking these results into consideration, the following interventions are recommended: determining the factors that increase the medication adherence of psychiatric patients; increasing the awareness of patients, their relatives, healthcare professionals, and society; and providing training sessions on the spiritual dimension for patients,

especially psychiatric nurses, in order to enhance their level of spiritual well-being. It is also recommended that psychiatric nurses include spirituality in patient care in line with the training sessions.

## Implications for Practice

Many studies have been conducted to improve adherence to medication. However, there is no study on how spiritual well-being affects medication adherence. Medication adherence is important in the recovery phase of individuals diagnosed with mental illness. It was demonstrated that the level of spiritual well-being of individuals diagnosed with mental illness had a positive effect their medication adherence. In line with this result, patients' spiritual orientation and practices can make them feel good, increasing their medication adherence. Psychiatric nurses may be advised to receive therapy-based trainings to increase the spiritual aspects of patients and their medication with treatment and to be able to actively apply these trainings to patients. In addition, this preliminary study is important for future interventional studies for patients.

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### Declarations

**Conflict of interest** The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Ethical Approval** In order to conduct the study, approval from the Ethics Committee of a University Health Sciences Scientific Research and Publishing (Approval No: 01.09.2017/18–3).

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