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The Effect of Spiritual Well-Being Level on Pain, Nausea and Vomiting in Patients Undergoing Cholecystectomy Surgery

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ABSTRACT

Introduction: Spiritual well-being is considered an important component of holistic health and may influence patients' perceptions of pain and other postoperative symptoms. Although cholecystectomy is a common surgical procedure, limited evidence exists regarding the role of spiritual well-being in the early postoperative recovery process. Understanding this relationship may guide nurses and clinicians in providing more individualized and holistic postoperative care.
Objective: This study aimed to examine the influence of spiritual well-being levels on early postoperative pain, nausea, and vomiting among patients who underwent cholecystectomy.
Methods: This descriptive study included 170 patients who underwent cholecystectomy. Data were collected using the Descriptive Characteristics Form, the Spiritual Well-Being Scale, and the Visual Analog Scale for pain intensity. Postoperative nausea and vomiting were assessed based on patient self-report during the early postoperative period.
Results: The mean age of the participants was 46.89±9.89 years, and 71.8% were women. The mean score on the Spiritual Well-Being Scale was 112.44±16.21, while the mean postoperative pain intensity measured by the Visual Analog Scale was 4.84±2.26. Analysis demonstrated that spiritual well-being was not significantly associated with postoperative pain levels, nausea, or vomiting.
Conclusions: The findings indicated that spiritual well-being did not influence early postoperative pain, nausea, or vomiting among patients who underwent cholecystectomy. These results suggest that spiritual well-being alone may not play a determining role in acute postoperative symptom experience. Further research involving different populations and longitudinal designs is recommended to explore the broader effects of spiritual well-being on surgical recovery.

Keywords: Cholecystectomy, Nausea, Pain, Spiritual Well-Being, Vomiting.

INTRODUCTION

Gallstone disease, also known as cholelithiasis, is a commonly encountered condition that can be treated with surgical intervention. Cholecystectomy, the removal of the gallbladder, was performed at a rate of 206.3 per 100,000 individuals in Turkey according to the statistical data from European hospitals in 2021 (1,2). While cholecystectomy operations can lead to major or minor complications, advancements in surgical techniques have reduced the risk of postoperative complications. Nevertheless, patients may experience pain in the early postoperative period (2-4). Additionally, interventions in the abdominal area and anesthesia can have adverse effects on the gastrointestinal system, leading to side effects such as postoperative nausea and vomiting. These conditions can limit patients' mobility, making it difficult for them to mobilize early in the recovery process (5-8). Therefore, regular assessment of pain and nausea-vomiting symptoms and timely administration of appropriate medications according to the treatment plan are crucial. Furthermore, non-pharmacological approaches such as psychological support, increased motivation, and distraction towards other subjects are also of great importance in the postoperative period (9).

Spirituality may serve as an important factor in managing complications that arise after surgery. It is defined as the process through which an individual understands and accepts themselves, others, and their place in the universe, shaped by the experiences and knowledge accumulated throughout their life. (10). As an integral part of a holistic approach in healthcare services, spirituality strengthens individuals'

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abilities to cope with challenges they encounter. The positive relationship between spiritual and mental health is known to enhance the quality of life. Spiritual care contributes to patients' physical and mental well-being, supporting the healing process and increasing patient satisfaction (10-12).

Being aware of and respecting the spiritual needs of surgical patients is as vital a skill as technical competence. The spiritual states of patients are closely intertwined with surgical procedures. For a surgeon, understanding and being sensitive to the spiritual states of their patients is one of the most effective tools (13). When spiritual states are overlooked, it becomes impossible to comprehend the deepest beliefs of patients and to provide patient-centered surgery and care. Neglecting the spiritual and religious beliefs of patients weakens the decision-making process that focuses on the personal characteristics, hopes, and concerns of surgical patients (13).

The number of studies evaluating the relationship between the level of spiritual well-being in patients undergoing surgery and postoperative early period pain, nausea, and vomiting is quite limited. In light of this information, this study aims to determine the relationship between the level of spiritual well-being in patients undergoing cholecystectomy and postoperative early period pain, nausea, and vomiting.

METHODS

Study design and sample

This study was conducted as a descriptive and relational investigation to determine the relationship between the level of spiritual well-being and the frequently experienced pain, nausea, and vomiting during the early postoperative period (2nd hour) in patients who underwent cholecystectomy. Ethical committee approval was obtained for the execution of the study (Meeting Date: 29.11.2023/Decision No: 2023/8/1), and the research was carried out at the Osmaniye State Hospital General Surgery Clinic. The study population consisted of patients who underwent cholecystectomy between December 2023 and September 2024, including all patients over the age of 18 who could communicate in Turkish and consented to participate in the study. The sample comprised a total of 170 patients who met the inclusion criteria for the study.

Data were collected using the Descriptive Characteristics Form, the The Spiritual Well-Being Scale, the Visual Analog Scale for Pain Intensity.

The Descriptive Characteristics Form: This is a literature-based form designed by 10-13 researchers. It includes variables such as age, gender, and education levels for patients who have undergone cholecystectomy surgery. Additionally, the form contains questions that assess the frequency of nausea and vomiting in the postoperative period.

Spiritual Well-Being Scale (SWBS): This scale was developed by Ekşi and Kardaş in 2017 to determine the process of understanding and living life (14). It consists of a five-point Likert rating, 29 statements, and three sub-dimensions: transcendence, harmony with nature, and anomie. Scores can range from a minimum of 29 to a maximum of 145, with higher scores indicating an increased state of spiritual well-being. The scale's Cronbach's alpha internal consistency coefficient was determined to be 0.88, and it has been calculated as 0.90 in this study.

The Visual Analogue Scale (VAS): This is a horizontally aligned, 10 cm line that is divided into equal intervals from 0 to 10. This horizontal line, used for assessing the intensity of pain, starts with "No Pain" and ends with "Unbearable Pain." During the pain assessment, numerical values indicated above each segment are taken into consideration (15,16).

Data Collection

The data were collected by the researcher through face-to-face interview methods. SWB Scale was applied during the preoperative period, while the Visual Analog Scale for Pain was utilized in the early postoperative period.

Data Analysis

The data analysis was conducted using the SPSS 24.00 software package, where frequency distributions were utilized for categorical variables, and descriptive statistics were employed for numerical variables. The normality of the data distribution was assessed using the Kolmogorov-Smirnov test. Both Student's t-test and regression analysis were applied. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Table 1. Sociodemographic and Clinical Characteristics of Participants

Features	n (170)	%
Gender		
Female	122	71.8
Male	48	28.2
Education		
Primary School	31	18.2
Secondary School	20	11.8
High School	64	37.6
University	52	30.6
Master's Degree	3	1.8
Profession		
Housewife	65	38.2
Tradesman	15	8.8
Civil Servant	58	34.1
Retired	5	2.9
Teacher	10	5.9
Worker	17	10.0
The Experience of Surgery		
Yes	34	20.0
No	136	80.0
Chronic Disease Status		
Yes	73	42.9
No	97	57.1
Nausea		
Never	26	15.3
1 time	32	18.8
2 times	52	30.6
3 times	47	27.6
4 times	13	7.6
Vomiting		
Never	40	23.5
1 time	28	16.5
2 times	68	40.0
3 times	32	18.8
4 times	2	1.2
Age (min:24 max:74) **Mean±SD:** 46.89±9.89		
Pain intensity (min:0 max:10) **Mean± SD:**4.84±2.26		

Upon reviewing Table 1, it has been determined that the average age of the patients is 46.89±9.89, with 71.8% being female, 37.6% having completed high school, and 38.2% being housewives. It was noted

that general anesthesia was employed during surgery, 32.8% underwent hernia operations, and 80% had previous surgical experience. Furthermore, 57.1% did not have any chronic diseases, while postoperative nausea at least twice was reported by 30.6%, and vomiting at least twice by 40% of the patients. The average postoperative pain intensity was found to be 4.84±2.26.

Table 2. Participants' SWB Scale Total Score and Sub-Dimension Scores

SWBS	Min	Max	Mean	SD
Transcendence	17	80	65.21	12.42
Harmony with Nature	9	35	28.76	5.11
Anomie	8	35	22.54	7.75
Total	58	142	112.44	16.21

Table 2 presents a summary of the participants' total scores and the scores they received from the sub-dimensions of the Spiritual Well-Being Scale. In the Transcendence sub-dimension, participants' scores range from 17 to 80, with an average of 65.21 ± 12.42. For the Harmony with Nature sub-dimension, scores vary between 9 and 35, averaging 28.76 ± 5.11. In the Anomie sub-dimension, scores are between 8 and 35, with an average determined as 22.54 ± 7.75. The total scores of the scale range from 58 to 142, and the participants' overall average score is 112.44 ± 16.21.

Table 3. Relationship Between Participants' SWB Scale Total Score and Sub-Dimension Scores and Nausea, Vomiting and Pain

Features	n (170)	Transcendence	Anomie	Harmony with Nature	Total
		Mean±SD			
with nausea	144	65.14±12.50	22.79±7.92	28.83±5.03	112.68±16.02
without nausea	26	65.71±12.12	20.71±6.31	28.23±5.80	110.76±17.86
Test (t) p		0.382 0.53	2.758 0.09	1.598 0.20	1.272 0.26
with vomiting	130	64.55±12.80	23.08±7.89	28.63±5.10	112.21±16.28
without vomiting	40	67.35±11.01	20.78±7.13	29.20±5.23	113.20±16.18
Test (t) p		-1.247 0.21	1.655 0.10	-0.605 0.54	-0.337 0.73

t: Student t test.

Table 3 displays the comparison of participants' total scores on the SWB Scale and their scores on the sub-dimensions, according to their states of nausea and vomiting. The analysis revealed that there is no significant difference in the sub-dimensions of the SWB Scale (Transcendence, Anomie, Harmony with Nature) and the total score based on the condition of nausea and vomiting. The p-values for all sub-dimensions and the total scale score are greater than 0.05, indicating that they are not statistically significant.

Table 4. Results of Regression Analysis Examining the Effect of Independent Variables on Scale Scores

Independent variables	Beta	Std. E	t	p	95% Confidence interval	
					lower limit	upper limit
constant	45,052	9,282	4,853	0,000	26,804	63,301
with vomiting	0.991	2.943	0.037	0.737	-1.39	8.321
with nausea	0.031	0.177	0.175	0.861	-0.318	0.380
Age F=0.362 p=0.548 R^2=0.470	-5.584	2.273	-0.186	-2.456	0.015	-10.072

Table 4 shows the results of the regression analysis evaluating the effect of independent variables on the total scores of the SWB Scale. The overall significance level of the model was found to be F = 0.362 and p = 0.548. However, only the age variable has a statistically significant effect on the scale scores (p

= 0.015) and shows a negative relationship (Beta = -5.584). The effects of other independent variables were not found to be significant.

DISCUSSION

In this study, which determined the effect of spiritual well-being on pain and nausea in patients who have undergone cholecystectomy, it has been found that the levels of spiritual well-being are above the medium level. Similarly, Martins and colleagues' study also found spiritual well-being levels to be at a medium level (17,18). There are studies in the literature indicating that spiritual well-being can be high (19,20) as well as low (21). These differences may be attributed to the subjective nature of spiritual well-being, which can vary from person to person and over time.

This study has determined that the level of spiritual well-being does not have an effect on nausea and vomiting. In contrast, Lee's 2021 study found that spiritual well-being was effective in coping with treatment and its adverse effects (22). It can be said that this difference stems from the diagnosis of the disease.

Furthermore, this study has found that the level of spiritual well-being does not have an effect on pain. Conversely, in the study by Siddall et al., it was observed that patients with a high level of spiritual well-being reported experiencing less pain.

While Lucchetti et al.'s study indicated a relationship between spiritual well-being and pain intensity, Wachholtz et al.'s study showed that levels of spiritual well-being were more closely related to mood, pain tolerance, and coping abilities rather than pain intensity (23,24). The specific connection between spiritual well-being and pain levels, and the role of spiritual well-being as a factor related to mood, disability, and life satisfaction, particularly in individuals with chronic pain, has been demonstrated in studies (23-26). The impact of spiritual well-being on pain intensity appears to be more evident in those with chronic pain rather than acute pains such as surgical pain.

One possible explanation for the lack of association between spiritual well-being and pain in this study is the fundamental difference between acute surgical pain and chronic pain (27-28). Acute postoperative pain is typically short-lived, caused by tissue injury, and responds rapidly to pharmacological interventions, leaving limited room for psychological or spiritual factors to influence pain perception. In contrast, chronic pain is persistent, often intertwined with emotional distress, cognitive processes, and long-term coping strategies domains in which spirituality may play a stronger regulatory role. Therefore, spiritual well-being may exert a more pronounced effect on pain modulation in chronic conditions, whereas its influence on acute surgical pain remains minimal (27-29).

CONCLUSION

This study demonstrates that the levels of spiritual well-being in patients do not influence the symptoms of pain, nausea, and vomiting following cholecystectomy surgery, suggesting that these symptoms arise from a complex interaction of physiological and psychological factors. Spiritual well-being is often associated with an individual's sense of life meaning, purpose, and commitment, which may play a supportive role in some patients' recovery processes. However, the physical symptoms that emerge after surgical interventions are typically more related to the body's natural response and the direct effects of the surgery itself. Therefore, spiritual well-being may not have a significant impact on these physical symptoms. Moreover, pain management and nausea control in the postoperative period are usually achieved through medications and other medical interventions, which could limit the influence of spiritual factors. The effects of spiritual well-being on health are complex and can vary individually; thus, each patient's experience is unique and should be evaluated from a broad perspective.

DESCRIPTIONS

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