

# Examination of the attitudes of patients in preoperative period toward uncertainty and the factors affecting the uncertainty

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## Abstract

**Aim:** To examine the attitudes of patients in preoperative period toward uncertainty and the factors affecting the uncertainty.

**Materials and Methods:** The study had a relational descriptive design. It was conducted in the surgery clinics of a university hospital in the southeast of Turkey from November 2019 to February 2020. The study sample consisted of 200 patients in preoperative period.

**Results:** The average score of patients in preoperative period from the attitudes toward uncertainty scale was  $49.04 \pm 14.81$ . The average age of patients included in the study sample was  $49.17 \pm 16.96$ . 59.5% of patients were female, 43.5% of them had an education below graduate level and 84.5% of them had someone to help with home care. A statistically significant difference was detected between the average uncertainty score and age, having someone to help with home care, total number of hospitalizations, American society of anesthesiologists preoperative risk status prior to surgical intervention and presence of any chronic diseases ( $p < .05$ ).

**Conclusion:** Study findings indicate that patients in preoperative period had moderate levels of uncertainty. It was found that the patient's age, having someone to help with home care, total number of hospitalizations, American society of anesthesiologists preoperative risk status and chronic disease variables affected the uncertainty levels. In the light of these results, it is thought that patients should be approached individually by taking these variables into consideration and the quality of patient support and their coping levels should be assessed.

**Keywords:** Nursing care; preoperative period; uncertainty

## INTRODUCTION

Surgery is a traumatic therapeutic intervention that causes psychophysical changes in an individual in association with bleeding, pain, morbidity or occasionally death risk (1,2). Surgery not only affects an individual as a physical stressor such as daily life activities, body image and lifestyle but also leads to various emotional psychological reactions such as stress, anxiety, concern, fear, distress and restlessness (1,3-6). In preoperative and postoperative periods, emotional reactions experienced by individuals are affected from the disorder requiring surgery, size of surgery, patient's age, religious orientation, psychological state, knowledge about preoperative period, previous unpleasant hospital experiences, socioeconomic status, adequacy of support systems, competence of healthcare staff and care opportunities (7).

One of the reasons of emotional reactions developed by patients in preoperative period is uncertainty and

fear of the unknown (8). Uncertainty is defined as the uncontrollable feeling of inadequacy that is developed against unexpected and unplanned circumstances and that affects an individual's life in various ways (9,10). There are periods of uncertainty in which the emotional state changes occur in each individual's life. In situations/ periods of high level of uncertainty such as sickness, hospitalization and especially surgical intervention, there are many stressors such as isolation from routine daily activities, losing one's job, separation from family, pain, ambiguous tests and treatments. As the number of factors causing uncertainty increases, problems occur in making and implementing decisions and ineffective coping with this process leads to various changes in emotional state (4,9,10).

It has been detected that waiting for a surgical or invasive intervention is stressful and worrisome (1-3,11). Patients may experience the varying stages of stress,

**Received:** 24.05.2020 **Accepted:** 14.09.2020 **Available online:** 26.01.2021

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anxiety and uncertainty prior to a surgery (1,3-6). It is reported in the literature that uncertainty is directly correlated with stress, psychosocial adaptation problems and negative emotional states and is inversely correlated with hope, expectation, purpose, coping skills, quality of life and meaning of life (9,12). Uncertainty impairs an individual's avoidance of a potential threat or alleviating its adversity and causes anxiety. Available studies demonstrate that there is a close correlation between uncertainty and anxiety signs and symptoms (6,12,13). In a quasi-experimental study conducted with arthroplasty patients (n:87), it was reported that uncertainty and anxiety affected the postoperative recovery and readiness to discharge (14).

Nurses should be aware that patients waiting for surgery may experience fear and anxiety due to uncertainty and should have a therapeutic communication with patients to make sure that these emotions are at the individual's normal levels in assessments (15). According to Mishel's uncertainty in illness theory; ambiguity about the illness, complexity of treatment, health system, poor provision of information or inconsistent information and unpredictability of the illness and prognosis are significant factors (6). It is important to know the effect of uncertainty on individuals and thus identify the uncertainty in early stages, reduce the uncertainty and use effective coping strategies (6,16). As is observed, uncertainty influences the recovery processes of patients both physically and psychologically and both in the short term and in the long term. Thus, the aim of this study is to investigate the uncertainty states of patients in preoperative period and the affecting factors. It is thought that study findings will contribute to understanding and knowing the patients better and planning and enhancing the quality of their care prior to surgeries.

## MATERIALS and METHODS

### Study design

The descriptive research design was used in the study.

### Study setting and time

The study was conducted in the surgery clinics of a university hospital (General Surgery, Neurosurgery, Orthopedics and Traumatology, Thoracic Surgery, Urology, Eye, Plastics Surgery) in the southeast of Turkey from November 2019 to February 2020.

### Study sample

The study sample consisted of individuals treated in the surgery clinics of the university hospital at the time of data collection and complying with the inclusion criteria (n: 200). The inclusion criteria were being in preoperative period, being 18 and above, agreeing to participating in the study voluntarily, understanding and speaking Turkish, having person, place and time orientation and not having hearing or speaking problems. Exclusion criteria were having any neurological medical diagnosis impacting the cognitive state (such as dementia/Alzheimer's) or any psychiatric disorder (such as schizophrenia).

### Data collection tools

Study data was collected using a Descriptive Characteristics Form and the Attitudes Toward Uncertainty Scale.

### Descriptive characteristics form

The descriptive characteristics form is comprised of 24 questions regarding the socio-demographic characteristics of individuals such as "age, gender, marital status, level of education, working status, income level, health insurance, living alone at home and whether there is someone to help with care" and questions regarding their clinical characteristics such as "clinic providing the treatment, American Society of Anesthesiologists (ASA) preoperative risk status prior to surgical intervention, type of anesthesia, total length of hospitalizations, first hospitalization, hospitalizations for the same condition, hospitalization in the last three months, total number of hospitalizations, previous surgeries, total number of surgeries, presence of any chronic diseases, type of chronic disease, regular doctor follow-up, satisfaction with information given on operation process and satisfaction with nursing care" (6).

### Attitudes toward uncertainty scale

The scale was developed by Ersanlı and Uysal in 2015 on students to measure the uncertainty levels of individuals. It is a 15-item 5-point Likert-type scale with one subscale. The lowest and highest scores than can be obtained from the scale are 15 and 75, respectively. Cronbach's alpha internal consistency reliability coefficient for the entire scale is .90. The confirmatory factor analysis results show that the scale gives reliable and valid results ( $\chi^2/df = 2.15$ ; RMSEA = .062; CFI = .932; GFI = .923 and AGFI = .896). A positive significant correlation ( $r = .85$ ,  $p < .01$ ) was detected between the scale and the intolerance to uncertainty scale (10). The scale was used to determine the uncertainty levels of patients in preoperative period in this study. The internal consistency reliability coefficient for patients in preoperative period was .97.

### Data collection

Study data was collected with face-to-face interviewing method with patients in preoperative period at their convenience. Patient records were used to obtain information on the clinical characteristics of patients.

### Data assessment

Study data was assessed electronically by using the SPSS 25 statistical software program. Descriptive statistics count, percentage, mean and standard deviation were used for the descriptive characteristics of patients in preoperative period. Average scores obtained by the patients from the attitudes toward uncertainty scale were expressed in mean, standard deviation, minimum and maximum. In order to find the correlation between the socio-demographic and clinical characteristics of patients that might affect their attitudes toward uncertainty, Pearson correlation analysis, Student t-test or Mann Whitney U test and One Way Anova or Kruskal-Wallis test were used depending on the type of data and

whether or not they showed normal distribution. The power of coefficients was described with the expressions "0.00-0.25 very low, 0.26-0.49 low, 0.50-0.69 moderate, 0.70-0.89 high, 0.90-1.00 very high" in the correlation analysis (17). The statistical significance level of variables was accepted as  $p < .05$ .

### Ethical considerations

In order to conduct the study, ethics approval (dated 16.10.2019 and numbered 36/2) was received from the health sciences ethics committee of the Suleyman Demirel University. Written permission was obtained from the institution and the authors developing the scale. The verbal consents of the patients agreeing to participate in the study were received. The patients were informed on the study purpose, implementation, data collection, that the participation was on a voluntary basis and that their names would be kept confidential.

## RESULTS

The average age of patients in the study sample was  $49.17 \pm 16.96$ . 59.5% of the patients were female, 68% were married, 43.5% had an education below graduate level, 30.5% were working, and 89% had a moderate perceived level of income. 67.5% had health insurance, 93% did not live alone and 84.5% had someone to support home care.

Table 1. Socio-demographic and clinic characteristics of patients in preoperative period (n:200)		
Variable	Count (n)	Percentage (%)
<b>Gender</b>		
Female	119	59.5
Male	81	40.5
<b>Marital Status</b>		
Single	64	32.0
Married	136	68.0
<b>Level of Education</b>		
Illiterate	43	21.5
Literate	57	28.5
Below graduate level	87	43.5
Graduate level and above	13	6.5
<b>Working status</b>		
Working	61	30.5
Not working*	139	69.5
<b>Income level</b>		
High	10	5.0
Moderate	178	89.0
Low / Insufficient	12	6.0
<b>Does the patient have health insurance?</b>		
Yes	135	67.5
No	65	32.5
<b>Does s/he live alone?</b>		
Yes	14	7.0
No	186	93.0
<b>Is there someone to help with the home care?</b>		
Yes	169	84.5
No	31	15.5

<b>Clinic providing the care</b>		
General surgery	35	17.5
Neurosurgery	35	17.5
Orthopedics	25	12.5
Thoracic surgery	25	12.5
Urology	30	15.0
Plastics	20	10.0
Eye	30	15.0
<b>ASA** preoperative risk status prior to surgical intervention</b>		
I	25	12.5
II	103	51.5
III	72	36.0
<b>Type of anesthesia</b>		
Local	6	3.0
General	194	97.0
<b>First hospitalization</b>		
Yes	59	29.5
No	141	70.5
<b>Previous hospitalizations for the same condition</b>		
Yes	50	25.0
No	150	75.0
<b>Hospitalizations in the last three months</b>		
Yes	19	9.5
No	181	90.5
<b>Previous surgeries</b>		
Yes	85	42.5
No	115	57.5
<b>Presence of any chronic disease</b>		
Yes	76	38.0
No	124	62.0
<b>Type of chronic disease</b>		
Diabetics	14	18.4
Hypertension	33	43.4
COPD***+Asthma	18	23.7
Heart disease	11	14.5
<b>Regular doctor follow-up</b>		
Yes	81	40.5
No	119	59.5
<b>Satisfaction with information given on operation process</b>		
Yes	152	76.0
No	18	9.0
Partially	30	15.0
<b>Satisfaction with the nursing care</b>		
Yes	173	86.5
No	27	13.5
	<b>Mean <math>\pm</math> Standard deviation</b>	
<b>Attitudes Toward Uncertainty Scale</b>	49.04 $\pm$ 14.81 (min-max=15.00-75.00)	
<b>Age</b>	49.17 $\pm$ 16.96 (min-max=18.00-85.00)	

Total length of hospitalization (total duration/ number of days stayed in the hospital)	4.68 ±3.74 (min-max=1.00-30.00)
Total number of hospitalizations	3.02±2.16 (min-max=1.00-10.00)
Total number of surgeries	2.09 ±1.56 (min-max=1.00-9.00)

\*Not working consists of housewives, retired individuals, students and the unemployed due to sickness. \*\*ASA: American Society of Anesthesiologists, \*\*\*COPD: Chronic Obstructive Pulmonary Disease

Patients in the study sample had an average score of 49.04±14.81 for the attitudes toward uncertainty, an average score of 4.68±3.74 for the total length of hospitalization, an average score of 3.02±2.16 for the total number of hospitalizations and an average score of 2.09 ±1.56 for the total number of surgeries. 17.5% of patients had been treated in the general surgery clinic, 51.5% of them had an ASA preoperative risk status of 2, 97% of them had surgery under general anesthesia, 70.5% of them had been hospitalized previously, 25% of them had been hospitalized for the same condition, 9.5% of them had been hospitalized in the last three months and 42.5% of them had had surgery previously. 38% of individuals had a chronic disease and 43.4% of these diseases were hypertension. Again, 40.5% of patients had been followed up regularly doctor, 76% of them were satisfied with the information provided on the surgery process and 86.5% of them were satisfied with the nursing care (Table 1). Socio-demographic and clinical characteristics of patients in preoperative period are presented in Table 1.

No significant correlation was present between the attitudes of patients in preoperative period toward uncertainty and the total length of hospitalization and total number of surgeries ( $p>.05$ ). A low, negative ( $r= -.27$ ) and highly significant correlation was present between attitudes toward uncertainty and age ( $p<.05$ ). There was a very low, negative ( $r= -.17$ ) and significant correlation between attitudes toward certainty and total number of hospitalizations ( $p<.05$ ). (Table 2).

**Table 2. The correlation between the attitudes of patients in preoperative period toward uncertainty and age, total length of hospitalization, total number of hospitalizations and total number of surgeries (n:200)**

Variable	Attitude toward uncertainty	
	r	P
Age	-.270**	.000**
Total length of hospitalization	.076	.282
Total number of hospitalizations	-.165*	.020*
Total number of surgeries	-.035	.753

\* $p < 0.05$ , \*\* $p < 0.01$

When we examined the socio-demographic and clinical characteristics that may have affected the uncertainty levels of patients, we detected a statistically significant difference in terms of having someone to help with home care, an ASA preoperative risk status of II prior to

a surgical intervention and absence of a chronic disease (Table 3). An analysis of the mean scores for the attitudes of patients in preoperative period toward uncertainty in terms of socio-demographic and clinical characteristics is given in Table 3.

**Table 3. Analysis of the mean scores for the attitudes of patients in preoperative period toward uncertainty in terms of socio-demographic and clinical characteristics (n: 200)**

Variable	Level of Attitude Toward Uncertainty Mean ± Standard deviation / Mean rank/Total	Tests
<b>Gender</b>		
Female	48.96±15.12	T: 0.095
Male	49.16±14.44	P= 0.925
<b>Marital Status</b>		
Single	49.16±15.73	T: 0.076
Married	48.99±14.42	P= 0.940
<b>Level of Education</b>		
Illiterate	48.65±13.82	
Literate	47.18±14.32	
Below graduate level	50.33±14.99	F=0.541
Graduate level and above	49.85±19.32	P=0.655
<b>Working status</b>		
Working	50.49±15.69	T=-0.918
Not working*	48.40±14.42	P=0.360
<b>Income level</b>		
High	103.35	
Moderate	100.31	KW=0.027
Low / Insufficient	101.00	P=0.986
<b>Does the patient have health insurance?</b>		
Yes	48.64±14.83	T=-0.553
No	49.88±14.85	P=0.581
<b>Does s/he live alone?</b>		
Yes	81.50/1141.00	U=1036.000
No	101.93/18959.00	P=0.202
<b>Is there someone to help with the home care?</b>		
Yes	104.64/17685.00	U=1919.000
No	77.90/2415.00	<b>P=0.018*</b>
<b>Clinic providing the care</b>		
General surgery	44.60±14.63	
Neurosurgery	53.97±14.48	
Orthopedics	48.60±15.31	
Thoracic surgery	51.08±17.31	
Urology	49.70±13.75	
Plastics	49.40±15.45	F=1.465
Eye	46.23±12.51	P=0.192
<b>ASA** preoperative risk status prior to surgical intervention</b>		
I	117.76	
II	109.38	KW=12.196
III	81.81	<b>P=0.002***</b>

<b>Type of anesthesia</b>		
Local	88.42/530.50	U=509.500
General	100.87/19569.50	P=0.603
<b>First hospitalization</b>		
Yes	50.34±16.23	T=0.801
No	48.50±14.20	P=0.424
<b>Previous hospitalizations for the same condition</b>		
Yes	46.06±17.12	T=-1.486
No	50.03±13.88	P=0.142
<b>Hospitalizations in the last three months</b>		
Yes	49.53±15.82	T=0.150
No	48.99±14.75	P=0.881
<b>Previous surgeries</b>		
Yes	47.40±14.91	T=-1.349
No	50.25±14.69	P=0.179
<b>Presence of any chronic disease</b>		
Yes	45.46±14.49	T=-2.718
No	51.23±14.63	<b>P=0.007**</b>
<b>Type of chronic disease</b>		
Diabetics	46.71±15.76	
Hypertension	43.24±13.56	
COPD+Asthma	45.67±16.75	F=0.654
Heart disease	50.18±12.02	P=0.571
<b>Regular doctor follow-up</b>		
Yes	47.32±16.38	T=-1.310
No	50.21±13.60	P=0.192
<b>Satisfaction with information given on operation process</b>		
Yes	48.59±15.17	
No	45.94±15.46	F=1.658
Partially	53.20±11.95	P=0.193
<b>Satisfaction with the nursing care</b>		
Yes	48.54±14.80	T=-1.202
No	52.22±14.81	P=0.231
<b>*p &lt;0.05, **p&lt;0.01</b>		
<b>***Advanced analysis was performed to determine which group was responsible for the difference in the variables</b>		

## DISCUSSION

It was observed that the "average score" of patients in preoperative period from the "attitudes toward uncertainty scale" (49.04±14.81) (min-max=15.00 -75.00) was moderate. Elderly patients who had had surgery for cancer had moderate levels of uncertainty prior to surgery, however, the uncertainty levels decreased significantly before discharge (18). In a study on patients with gastric cancer, it was detected that uncertainty levels were moderate and were higher in preoperative period than postoperative period (19). In another study conducted on patients with gynecologic cancers in preoperative period by using a different scale, it was found that the average uncertainty score of patients was 92.27 (min-max=33.00 -165.00) (6). Literature studies regarding uncertainty were

performed mostly on specific groups, especially on cancer patients. However, it can be said that our study findings are similar with literature study results.

A low, negative, significant correlation was present between attitudes toward uncertainty and "age" ( $p < .05$ ). That is, the uncertainty levels of patients decreased with increasing age. In a study exploring the anxiety levels of patients in preoperative period depending on age groups, it was found that younger patients had higher levels of anxiety. It was observed that 66.32% of patients with high levels of anxiety and 47.17% of patients with moderate levels of anxiety prior to surgery were young patients in 18-24 age group (20). It was reported in another study that preoperative anxiety was higher in young patients (21). In a study conducted by Bobay et al. (2010) to determine the readiness of patients to be discharged, it was found that elderly patients felt a bit more ready to go home in all subscales (coping, information and individual health) except for the expected support (22). Differently from our study findings, no significant correlation was detected between age and uncertainty in a study conducted on cancer patients in preoperative period (12). In a study investigating the post-gastrectomy uncertainty, there was no significant correlation between age and uncertainty (23). No correlation was detected between age and anxiety in a study conducted on patients in preoperative period (n:500) (24). In another study where the preoperative risk factors in colorectal surgery were assessed through retrospectively collected data, it was detected that severe/serious complications increased as the age increased (25). In line with these findings, it is thought that decreasing uncertainty with increasing age despite the higher number of health problems and complications may be due to a better judgment of events as a result of illness/clinical experience and better coping skills in advanced ages.

It was detected that uncertainty levels were higher when patients "had someone to help with home care", which is an interesting finding that differs from the literature and the expected result. A correlation was found between family concerns and preoperative anxiety of patients (21). A positive correlation was observed between postoperative anxiety and social support in patients undergoing a surgical intervention for cancer (18). In a study with patients hospitalized in clinical units (n:1601), it was detected that patients who had someone to help with home care had higher percentages of readiness to discharge in all subscales except for coping skills (26). This indicates that the quality of care support provided to patients is important and further studies with different samples in terms of this variable are recommended because the literature demonstrates a high inverse correlation between uncertainty and social support, that is, there is less uncertainty when social support is adequate (9). In further studies with patients in preoperative period, it was reported that patients who received social support had lower levels of anxiety (1,24).

There was a very low, negative, significant correlation between attitudes toward uncertainty and "total number of hospitalizations" ( $p < .05$ ). That is, the uncertainty decreased as the number of hospitalizations increased. It is reported in the literature that surgical and medical history can reduce or worsen a patient's fears and anxiety through learning and the quality of previous medical experiences is highly important (27). A patient's knowledge, decision-making and coping skills are also important in case of uncertainty (28). Therefore, it is considered that a patient's coping is reinforced and uncertainty decreases as a result of experience as the number of hospitalizations increases.

Study findings demonstrate that patients with "no chronic diseases" and with a preoperative anesthesia risk classification of "ASA 2" had higher levels of uncertainty than those with ASA 3. This is an interesting finding that differs from the literature and the expected result. According to Mishel's uncertainty in illness theory; ambiguity about the illness, complexity of treatment, health system, poor provision of information or inconsistent information about the illness and unpredictability of the illness and prognosis are significant factors (6). In the literature, uncertainty is related with both the disease's inherent features and how it is perceived by the patient. Also, a patient's knowledge, decision-making and coping skills are also important in case of uncertainty (28). It is seen in the literature that uncertainty is inversely correlated with coping (9). In another study, no significant correlation was found between chronic diseases and ASA 1/2 levels and preoperative anxiety (21). However, in a research study where the preoperative risk factors in colorectal surgery were assessed through retrospectively collected data, it was detected that the risk of severe/serious complications increased in patients with ASA 3 level (25). Thus, it is thought that having chronic diseases and ASA 3 level resulted in lower average uncertainty scores, being more familiar with the illness and treatment processes, coping with the process more effectively, feeling more adequate and being more aware and informed on the illness. It is considered that conducting further studies with different samples for these variables will lead to a better understanding of the variables in terms of uncertainty.

## CONCLUSION

In the light of study findings, it was detected that patients in preoperative period had moderate levels of uncertainty. It was determined that variables such as the age of patients, having someone to help with home care, total number of hospitalizations, ASA preoperative risk status and presence of any chronic diseases affected the level of uncertainty. Thus, it is thought that patients should be approached individually by taking these variables into consideration and the quality of patient support and their coping levels should be assessed. In addition, it is recommended to conduct further studies to identify the factors affecting the uncertainty, understand the patients better and behave accordingly.

*Acknowledgments: We thank individuals for their support in our research.*

*Conflict of interest : The authors declare that they have no competing interest.*

*Financial Disclosure: There are no financial supports.*

*Ethical approval: In order to conduct the study, ethics approval (dated 16.10.2019 and numbered 36/2) was received from the health sciences ethics committee of the Suleyman Demirel University.*

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