


Fear in Patients Undergoing Bronchoscopy and Its Causes

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ABSTRACT

Objective: Bronchoscopy is an invasive procedure that can cause a feeling of suffocation and cough. It may cause fear, discomfort, and anxiety in individuals. The aim of this research is to determine the fear and its causes before the procedure in patients undergoing bronchoscopy.

Methods: This descriptive research was conducted between April 2019 and September 2019 with the participation of 138 patients who underwent elective bronchoscopy with various indications in the endoscopy unit of a university hospital. "Patient Information Form" and "Bronchoscopy Fear Questionnaire" were used for data collection. The data were analyzed using Chi-squared test in IBM SPSS 22.0 program. The level of significance in statistical analysis was accepted as $p < 0.05$.

Results: It was found that the average age of the patients was 62.4 ± 11.5 (24–88) years. Of these patients, 79.7% ($n=110$) of them were males and 78.3% ($n=108$) were primary school graduates. It was found that 57.2% of the patients ($n=79$) felt fear of the bronchoscopy process in general. However, 93.5% of the patients agreed to undergo the procedure under the same conditions when necessary. It was determined that the patients' fear of the bronchoscopy procedure differed statistically significantly according to age and gender ($p < 0.05$).

Conclusion: These research results reveal that patients who undergo bronchoscopy experience fear of the process in general and that male patients or patients over the age of 61 are more prone to procedural fear. To optimize patient comfort and satisfaction, it is recommended that physicians and nurses working in endoscopy units question the presence of procedural fear before the procedure and help patients reduce their fears.

INTRODUCTION

Bronchoscopy is an endoscopic attempt that is frequently used in the diagnosis and treatment of respiratory problems. As it is an invasive procedure that can cause nasopharyngeal irritation, pain, feeling of suffocation, and cough, bronchoscopy may cause fear, discomfort, and anxiety in individuals.^[1–3] Fear of feeling pain during the procedure, not trusting the endoscopy team, encountering complications after the procedure, and being diagnosed with cancer are some examples of fear related to the bronchoscopy procedure.^[4–6] Also, not having enough information about the procedure is accepted as one of the causes of fear for patients.^[7] Sometimes, patients can apply mass media such as the Internet and television to get information about the procedure. This information may be wrong or exaggerated and may cause patients to feel more fear. Also, patients may feel vulnerable because anesthesia will be applied during the procedure, and they may want

to feel that they are in safe hands. This anxiety can also trigger the patients' fears.^[7]

Fear of patients about bronchoscopy procedure can reduce the cooperation of patients with healthcare professionals, prolong the operational time, and negatively affect the success and tolerance of the procedure, cause an increase in the sedation dose, cause patients to avoid undergoing this procedure, and cause a decrease in participation in repeated bronchoscopies.^[8,9] In addition, it is stated that the comfort and tolerance of patients having a high anxiety level before the procedure decrease during the bronchoscopy procedure.^[3,10]

There are studies in which the bronchoscopy team takes actions such as musicotherapy, verbal empathy, and touch and reflexology to control fear and anxiety in patients undergoing bronchoscopy procedures.^[11–13]

If the fear and factors that cause fear can be revealed, possible ways of care and kinds of treatment can be determined.

The results of the research may support the limited data in the literature by revealing the causes of this fear in patients undergoing bronchoscopy and groups at risk. The aim of this research is to determine the fear and its causes before the procedure in patients undergoing bronchoscopy.

MATERIALS AND METHODS

This descriptive research was conducted between April 2019 and September 2019 with the participation of 138 patients who underwent elective bronchoscopy with various indications in the endoscopy unit of a university hospital, who volunteered to participate in the research, were over the age of 18, and were determined by sample calculation.

Patients who underwent emergency bronchoscopy, underwent a bronchoscopy procedure outside the endoscopy unit, had a history of psychiatric illness, and could not communicate in Turkish were not included in the sample.

A calculation (95% confidence, 66% patients felt fear before endoscopy,^[14] and 5% tolerance level) indicated a minimum sample size of 138.

Data collection tools

“Patient Information Form” and “Bronchoscopy Fear Questionnaire” were used for data collection.

Patient Information Form

In this form, there were 10 statements questioning socio-demographic characteristics (age, gender, and education), characteristics of the bronchoscopy procedure (bronchoscopy experience, bronchoscopy indication, presence of chronic obstructive pulmonary disease, history of lung cancer in family, the status of obtaining information about bronchoscopy, negative hearing about bronchoscopy, and willingness to undergo a bronchoscopy procedure in the future under the same conditions when necessary).

Bronchoscopy Fear Questionnaire

The questionnaire was prepared in line with the literature^[6,9,15] and the bronchoscopy experience of the researchers (chest diseases specialist, thoracic surgery nurse, and 2 chest nurses). The questionnaire included 15 statements questioning the situation regarding procedural fear. While the first 14 statements focused on the causes of fear, the 15th statement generally determined the situation of fear of bronchoscopy. Patients answered the statements regarding procedural fear as “Yes, I’m afraid” and “No, I’m not afraid.”

Questionnaires were filled in the waiting room of the endoscopy unit on the morning of the procedure, using the method of a face-to-face interview with the patient in a maximum of 10 min by the researchers.

Procedure

Patients who applied for bronchoscopy in the endoscopy unit were given an appointment by the nurse based on

the existing appointment records and preferences of the patients. Hemogram, biochemistry, and coagulation tests were requested from the patients. Patients were informed about the procedure and preprocedure preparations by the physician and nurse. Written and verbal informed consents were obtained from the patients for the research and procedure. They were asked to be in the endoscopy unit with their attendants at 9:00 a.m. on the day of the procedure.

The solid and fluid intake of the patients was stopped 6 h before and oral fluid intake for medications was stopped 2 h before the bronchoscopy procedure.^[16]

On the day of the procedure, patients with normal hemogram, biochemistry, and coagulation tests were monitored in the bronchoscopy operating room. After the vascular access was established, oxygen therapy was applied according to the physician’s request. Lidocaine (10%) nasal and throat spray was used as topical anesthesia. The patients were lied back and sedated, and then the procedure was started. The entire bronchoscopy procedure was conducted with the participation of a chest disease specialist and assistant physicians, two fixed nurses, and an anesthesiologist. Bronchoscopy procedures were conducted every weekday in the endoscopy unit. The time between the appointment day and the procedure day of the patients varied between 1 and 10 days.

Statistical analysis

The data were analyzed using IBM SPSS 22.0 (Armonk, NY: IBM Corp, USA) program. Kolmogorov–Smirnov test was used to evaluate compliance with normal distribution, and Chi-squared test was used to compare the categorical data. The level of significance in statistical analysis was accepted as $p < 0.05$.

Ethical approach

Prior to the research, the permissions of the ethics committee (2019/92-04/25) and the institution (28999038-600E326125) were obtained. In addition, the patients were informed about the research and their written consent was obtained. The patients were informed that the information they provided would be used only for scientific purposes and would not be shared with third parties. Patients were told that they could leave the research at any time.

RESULTS

It was found that the average age of the patients was 62.4 ± 11.5 (24–88) years. Of these patients, 79.7% ($n=110$) of them were males, 78.3% ($n=108$) were primary school graduates, and 21% ($n=29$) had a bronchoscopy experience. It was determined that 93.5% ($n=129$) of the patients agreed to undergo the procedure again under the same conditions when necessary. It was determined that the patients’ fear of the bronchoscopy procedure differed statistically significantly according to age and gender

($p < 0.05$) (Table 1). When the impact size was determined between the variables and the risk ratio, the rate of fear of bronchoscopy in patients aged 61 and over was 2.8 times higher than the rate of not fearing, and the rate of fear of

Table 1. Comparison of fears of the patients according to their sociodemographic and bronchoscopic characteristics (n=138)

Characteristics		Total n (%)	Status of fear		p
			Mean \pm SD		
			Yes n (%)	No n (%)	
Age	60>	54 (39.1)	15 (27.7)	39 (72.3)	$\chi^2=7.155$
	61 \leq	84 (60.9)	44 (52.4)	40 (47.6)	$p=0.007^*$
Gender	Female	28 (20.3)	5 (17.8)	23 (82.2)	$\chi^2=7.666$
	Male	110 (79.7)	54 (49.1)	56 (50.9)	$p=0.006^*$
Education	Primary school	108 (78.3)	58 (53.7)	50 (46.3)	$\chi^2=1.526$
	High school	14 (10.1)	10 (71.4)	4 (28.6)	$p=0.466^*$
	College	16 (11.6)	11 (68.8)	5 (31.2)	
Indication	Diagnostic	130 (94.2)	55 (42.3)	75 (57.7)	$\chi^2=0.182$
	Therapeutic	8 (5.8)	4 (50.0)	4 (50.0)	$p=0.669^*$
Chronic obstructive pulmonary disease	Yes	26 (18.8)	13 (50.0)	13 (50.0)	$\chi^2=0.371$
	No	112 (81.2)	46 (41.1)	66 (58.9)	$p=0.543^*$
History of lung cancer in family	Yes	30 (21.7)	12 (40.0)	18 (60.0)	$\chi^2=0.019$
	No	108 (78.3)	47 (43.5)	61 (56.5)	$p=0.892^*$
Status of obtaining information about bronchoscopy	Yes	82 (59.4)	37 (45.1)	45 (54.9)	$\chi^2=0.255$
	No	56 (40.6)	22 (39.3)	34 (60.7)	$p=0.613^*$
Negative hearing about bronchoscopy	Yes	8 (5.8)	1 (12.0)	7 (88.0)	$\chi^2=1.999$
	No	130 (94.2)	58 (44.6)	72 (55.4)	$p=0.157^*$
Experience	Yes	29 (21)	16 (55.2)	13 (44.8)	$\chi^2=1.716$
	No	109 (79)	43 (39.4)	66 (60.6)	$p=0.190^*$
Willingness for repeat bronchoscopy	Yes	129 (93.5)	55 (42.6)	74 (57.4)	$\chi^2=0.011$
	No	9 (6.5)	4 (44.4)	5 (55.5)	$p=0.916^*$

*Chi Square test. n: Number of patients; SD: Standard deviation.

Table 2. Patients' fear of the bronchoscopy process and its causes (n=138)

Causes	Yes	No
	n (%)	n (%)
Lack of information about bronchoscopy	74 (53.6)	64 (46.4)
The effects of anesthesia	49 (35.5)	89 (64.5)
Not being able to breathe during the procedure	74 (53.6)	64 (46.4)
Experiencing pain during the procedure	75 (54.3)	63 (45.7)
Suffering during procedure	78 (56.5)	60 (43.5)
Vomiting during procedure	86 (62.3)	52 (37.7)
Airway irritation during procedure	76 (55.1)	62 (44.9)
Bronchoscopy team's behavior during the procedure	21 (15.2)	117 (84.8)
Inadequate anesthesia during the procedure	50 (36.2)	88 (63.8)
Getting an infection during procedure	85 (61.6)	53 (38.4)
Not being able to tolerate the procedure	59 (42.8)	79 (57.2)
Being diagnosed with a bad disease after the procedure	83 (60.1)	55 (39.9)
Having hoarseness after the procedure	79 (57.2)	59 (42.8)
Possible complications after the procedure	65 (47.1)	73 (52.9)
Fear of the bronchoscopy process in general	79 (57.2)	59 (42.8)

n: Number of patient.

bronchoscopy in men was 4.5 times more than the rate of not fearing.

It was found that 57.2% of the patients (n=79) felt fear of the bronchoscopy process in general. The three most important reasons for fear of bronchoscopy were determined as “vomiting during the procedure,” “getting an infection after the procedure,” and “being diagnosed with a bad disease after the procedure” (Table 2).

DISCUSSION

While 93.5% of the patients agreed to undergo the procedure under the same conditions when necessary, it was found in the literature that 82–98% of the patients were willing to undergo bronchoscopy in the future.^[15,17,18] Yıldırım et al.^[10] found that 72% of the patients who underwent bronchoscopy had a positive attitude toward repeating the procedure. Although it was observed that bronchoscopy patients experience procedural fear for different reasons, it can be said that after the procedure, they are willing to repeat bronchoscopy.

It was determined that patients over the age of 61 years were more afraid of the bronchoscopy procedure than the patients under the age of 60 years, and male patients were more afraid than female patients. Aljohaney^[9] found that advanced age was a predictive factor for high anxiety scores in patients who underwent bronchoscopy. In Vermişli et al.'s study,^[19] it was found that the average of continuity anxiety scores before surgery in the ear–nose–throat service was higher in male patients compared with women. It can be said that the fear of the procedure has increased in male patients at and over the age of 61 years who underwent bronchoscopy. While the reason for fear in patients at an advanced age can be explained by death anxiety, higher fear in men than in women can be explained by the fact that lung cancer is observed more in the male population.

It was found that 57.2% of the patients were afraid of the bronchoscopy process in general. However, in Mendes de Leon et al.'s study,^[6] it was found that 68% of patients who underwent bronchoscopy were afraid of the procedure. In studies in which patients who underwent bronchoscopy constitute samples, Andrychiewicz et al.^[15] found the rate of fear as 59.6% and Aljohaney^[9] found the rate of patients with high anxiety as 45%. Uçan et al.^[14] found in their studies that 65.5% of patients who underwent upper gastrointestinal endoscopy felt fear during the procedure. Özkan et al.^[20] determined in their studies that patients experienced moderate anxiety before bronchoscopy.

In the research, it was found that the most important reasons of the patients' fear about bronchoscopy are: “vomiting during the procedure,” “getting an infection after the procedure,” and “being diagnosed with a bad disease after the procedure.” Poi et al.^[21] reported that patients fear infection after bronchoscopy, similar to our study results. Akinsulore et al.^[22] found in their studies that the fear of developing postprocedural complications is one of the

most important determinants of preprocedural anxiety in patients. Mendes de Leon et al.^[6] found that patients fear the possible diagnosis of cancer (23%) more than dyspnea/suffocation (14%). Andrychiewicz et al.^[15] stated the causes of fear before bronchoscopy as the fear of respiratory distress (29.1%), fear of cough (25.7%), etc. Yıldırım et al.^[10] found that conditions such as cough, feeling of suffocation, and nausea are factors that cause discomfort in patients during bronchoscopy. Based on the research results, it can be said that the bronchoscopy procedure causes fear in patients.

Limitations

Since the research is single-centered, the results are limited to the participants. In addition, research data were collected on the day of the procedure because bronchoscopy was an outpatient procedure. This situation should be taken into account when interpreting the results of the research.

CONCLUSION

These research results reveal that patients who undergo bronchoscopy experience fear of the process in general and that male patients or patients over the age of 61 years are more prone to procedural fear. To optimize patient comfort and satisfaction, it is recommended that physicians and nurses working in endoscopy units question the presence of procedural fear before the procedure and help patients reduce their fears. Male patients over the age of 61 years should be given support on how to manage their fear appropriately before the bronchoscopy procedure.

Ethics Committee Approval

This study approved by the Trakya University Faculty of Medicine Clinical Scientific Research Ethics Committee (Date: 25.02.2019, Decision No: 2019/92-04/25).

Informed Consent

Prospective study.

Peer-review

Internally peer-reviewed.

Authorship Contributions

Concept: Z.K.Ö., B.S., E.K., N.G.; Design: Z.K.Ö., B.S., E.K., N.G.; Supervision: Z.K.Ö., B.S., E.K., N.G.; Fundings: Z.K.Ö., B.S., E.K., N.G.; Materials: Z.K.Ö., B.S., E.K., N.G.; Data: B.S., E.K., N.G.; Analysis: Z.K.Ö., B.S.; Literature search: Z.K.Ö., B.S., E.K., N.G.; Writing: Z.K.Ö., B.S., E.K., N.G.; Critical revision: Z.K.Ö., B.S.

Conflict of Interest

None declared.

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Bronkoskopi Uygulanan Hastalarda Korku ve Nedenleri

Amaç: Bronkoskopi, boğulma hissi ve öksürük oluşturan invaziv bir işlem olduğundan kişilerde korku, rahatsızlık hissi ve kaygıya yol açabilmektedir. Bu araştırmanın amacı, bronkoskopi uygulanan hastalarda işlem öncesi korkuyu ve nedenlerini belirlemektir.

Gereç ve Yöntem: Tanımlayıcı tipteki bu araştırma Nisan 2019–Eylül 2019 tarihleri arasında bir üniversite hastanesinde çeşitli endikasyonlarla elektif bronkoskopi uygulanan 138 hastanın katılımıyla gerçekleştirildi. Veri toplama "Hasta Tanıtım Formu" ve "Bronkoskopi Korku Anketi" kullanıldı. Veriler SPSS 22.0 programında Ki-kare testi kullanılarak analiz edildi. $P < 0.05$ istatistiksel olarak anlamlı kabul edildi.

Bulgular: Hastaların yaş ortalamasının 62.4 ± 11.5 (24–88) yıl, %79.7'sinin ($n=110$) erkek, %8.3'ünün ($n=108$) ilköğretim mezunu olduğu belirlendi. Hastaların %57.2'sinin ($n=79$) genel olarak bronkoskopi sürecinden korktuğu belirlendi. Hastaların %93.5'inin ($n=129$) işlemi gerektiğinde aynı şartlarda tekrar yaptırmayı kabul ettiği saptandı. Hastaların bronkoskopi sürecinden korkma durumlarının yaş ve cinsiyete göre istatistiksel açıdan anlamlı derecede farklılık gösterdiği belirlendi ($p < 0.05$).

Sonuç: Araştırmada bronkoskopi uygulanan hastaların genel olarak sürece ilişkin korku yaşadıkları belirlendi. Endoskopi üniterlerinde çalışan hekim ve hemşirelerin, bronkoskopi uygulanan hastaların korku düzeylerini ve korku nedenlerini belirlemeleri ve hastalara uygun bakım sunarak ve bilgilendirme yaparak korkularının azaltılmasına yardımcı olmaları önerilir.

Anahtar Sözcükler: Bronkoskopi; hasta; korku; sebepler.