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Review Article

Comparative Study to Assess the Level of Anxiety Among the Patients Undergoing Bronchoscopy and Cardiac Catheterization

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Abstract

Aim: A comparative study was done to assess, compare, and finding an association between the level of anxiety among patients before undergoing Cardiac catheterization and Bronchoscopy and selected socio-demographic variables.

Methods: A total of 100 samples (50 from Cardiac Catheterization Unit [CCU] and 50 from bronchoscopy) both males and females of age >18 years were selected using simple random sampling technique from CCU and Pulmonary Medicine Ward, Bronchoscopy Unit of Government Medical College and Hospital, Chandigarh. The samples were selected using point prevalence. The tool consisted of two parts: Part A: Socio-demographic profile including gender, age, marital status, education, occupation, and religion and Part B: Hamilton Anxiety Rating scale. Interview technique was used to collect data. Descriptive (frequency and percentage) and inferential (Chi-square) statistics were used to compare and find association between levels of anxiety between socio-demographic variables and levels of anxiety.

Results: The results showed that in patients undergoing angiography, 90% of them had mild anxiety, 10% had moderate anxiety and none of them had severe anxiety, whereas compared to patients undergoing bronchoscopy, out of 50 patients 50% of them have mild anxiety, 22% have mild to moderate anxiety and 28% of them have mild to severe anxiety.

Statistically significant comparison was found between levels of anxiety in patients undergoing angiography and bronchoscopy. No statistically significant association was found between selected socio-demographic variables and the levels of anxiety in patients undergoing angiography and bronchoscopy.

Conclusion: The study concluded that statistically significant comparison was found between levels of anxiety in patients undergoing angiography and bronchoscopy.

Keywords: Anxiety, cardiac catheterization, bronchoscopy

Introduction

Anxiety is an adaptive and universal human reaction to stressful situations. Determining when anxiety reaches the level of clinical interference with daily activities or the level of diagnosing an anxiety disorder is guided by intensity the level of distress experienced by the person) and frequency or duration (whether the anxiety occurs often and persists for longer than would be expected under the circumstances). For the diagnosis of an anxiety disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) to be made, the presence of a specific symptom profile associated with significant distress or impairment is required. Therefore, it is clinically important to be able to reliably measure both the intensity and frequency of anxiety symptoms during a specified period of time, and to measure how that changes over time.[1]

Invasive diagnostic procedures include operative procedure in which mucous membrane, skin, and connective tissue are incised or an instrument is inserted through natural body orifice. The list of invasive diagnostic procedures includes biopsy,

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angiography, colonoscopy, amniocentesis, bronchoscopy, cardiac catheterization, lumber puncture, endoscopy.[2]

Bronchoscopy is the direct inspection and examination of the larynx, trachea, and bronchi through either flexible fibro optic bronchoscopy or rigid bronchoscope. The rigid bronchoscope is a hollow metal tube with a light at its end. It is mainly used for removing foreign substances, investigating the source of massive hemoptysis, or performing endobronchial surgical procedures. Possible complications of bronchoscopy include a reaction to the local anesthetic, infection, aspirations, bronchospasm, hypoxemia, pneumothorax, bleeding, and perforation. It is a safe procedure, but some complications can occur, such as vocal cord injury or bleeding from the site of the biopsy.[3]

Cardiac catheterization is an invasive diagnostic procedure in which radio-opaque arterial and venous catheters are advanced into the right and left sides of the heart. It is the gold standard diagnostic test for coronary artery disease (CAD). Catheter advancement is guided by fluoroscopy. Catheters are inserted through the blood vessels percutaneously, or via a cut-down procedure if the patient has poor vascular access. Cardiac catheterization is performed to diagnose CAD, assess coronary artery patency; determine the extent of atherosclerosis; and determine whether revascularization procedures including percutaneous coronary intervention (PCI) or coronary artery bypass surgery may benefit to patient.[4]

Materials and Methods

A comparative study was done to assess the level of anxiety among the patients undergoing cardiac catheterization and bronchoscopy was conducted at Cardiac Catheterization Unit (CCU) and Pulmonary Medicine Ward, Bronchoscopy Unit of Government Medical College and Hospital, Sector 32, Chandigarh. A total of 100 samples (50 from CCU and 50 from Bronchoscopy) both males and females of age >18 years were selected using simple random sampling technique. Patients were included as per inclusion criteria of being conscious, able to follow verbal instructions, and those who can read and understand English, Hindi, or Punjabi languages. The samples who had known psychiatric illness and anxiety disorders were excluded from the study. Hamilton anxiety rating scale (HAM-A) was used to assess levels of anxiety. The sample size was estimated on the basis of point prevalence.

Ethical clearance

Permission of conducting research study was taken from the Ethical and research committee of Government Medical College and Hospital, Sector-32, Chandigarh. Necessary permissions were taken from the head of department and respective ward in-charges of CCU and Pulmonary Medicine Ward, Bronchoscopy Unit of Government Medical College and Hospital. Written informed consent from the patient was obatained. Confidentiality and anonymity of subjects were maintained.

The tool consisted of two parts: Part A: Socio-demographic profile including gender, age, marital status, education, occupation, and religion and Part B: HAM-A. Interview technique was conducted by the researchers to collect data and time taken for each interview was 30 min. Pilot study was conducted on 10 subjects (5 patients each from bronchoscopy and angiography) to check the feasibility of the study. It was found out to be feasible. The content validity of the tools was ensured by submitting the tools to the experts in the field of Psychiatry, Pulmonary Medicine, Child Health Nursing, and Medical-Surgical Nursing.

Data were analyzed using SPSS version 16 (IBM). Frequency and percentages were calculated for the assessment of the level of anxiety. Chi-square was used to find association between socio-demographic variables and level of anxiety. The confidence level of 95% was assumed.

Results

The results were described under the following headings:

1. Description of socio-demographic variables of angiography and bronchoscopy patients
2. Assessment of levels of anxiety in patients before undergoing angiography and Bronchoscopy
3. Comparison of the level of anxiety between patients before undergoing angiography and bronchoscopy
4. Association between socio-demographic variables and level of anxiety in patients before undergoing angiography and bronchoscopy.

Description of socio-demographic variables of angiography and bronchoscopy patients

Table 1: The data revealed in Table 1 depicts that out of 50 subjects, majority 71% of them were males and 29% of them were female patients. As per age maximum, 36% were 51–50 years and 32% were 36–50 years and above 65 years of age. Majority 80% of patients were married and 17% were divorced. Most of the samples were having higher secondary and above education with only 2% primary educated. Major distributions of samples 42% were unemployed and 66% were Hindus.

Table 2: The data in Table 2 reveals that out of 50 subjects, majority 54% of them were males and 46% of them were female patients. As per age maximum, 46% were 36–50 years and 28% were 51–65 years of age. Majority 76% of patients were married and 22% were divorced. Most of samples were literate with only 24% illiterate. Major distribution of samples 52% was unemployed and 82% were Hindus.

Assessment of levels of anxiety in patients before undergoing angiography and Bronchoscopy

Table 3: Table 3 depicts that out of 50 sample size 90.0% of them have mild anxiety, 10.0% have mild-to-moderate anxiety and none of them have moderate to severe anxiety before undergoing angiography.

Table 1: Frequency and percentage distribution of socio-demographic variables of angiography patients *n*=50

Demographic variables	Frequency	Percentage
Gender		
Male	34	71.0
Female	16	29.0
Age		
18–25 years	00	0
26–35 years	00	0
36–50 years	16	32.0
51–65 years	18	36.0
Above 65 years	16	32.0
Marital status		
Married	44	80.0
Unmarried	00	0
Divorced	01	3.0
Widow	05	17.0
Educational status		
Primary education	01	2.0
Higher education	07	14.0
Secondary education	19	38.0
Graduate	23	46.0
Illiterate	00	0
Occupational status		
Government employee	09	18.0
Private employee	07	14.0
Self employed	09	18.0
Unemployed	21	42.0
Skilled	04	8.0
Student	00	0
Religion		
Hindu	33	66.0
Sikh	16	32.0
Muslim	01	2.0

Table 2: Frequency and distribution of bronchoscopy patients according to their socio-demographic variables *n*=50

Demographic variables	Frequency	Percentage
Gender		
Male	27	54.0
Female	23	46.0
Age		
18–25 years	01	2.0
26–35 years	09	18.0
36–50 years	23	46.0
51–65 years	14	28.0
Above 65 years	03	6.0
Marital status		
Married	38	76.0
Unmarried	01	2.0
Divorced	00	0
Widow	11	22.0
Educational status		
Primary education	10	20.0
Higher education	11	22.0
Secondary education	08	16.0
Graduate	09	18.0
Illiterate	12	24.0
Occupational status		
Government employee	01	2.0
Private employee	07	14.0
Self employed	10	20.0
Unemployed	26	52.0
Skilled	04	8.0
Student	02	4.0
Religion		
Hindu	41	82.0
Sikh	08	16.0
Muslim	01	2.0

Table 4: Table 4 depicts that out of 50 sample sizes 50.0% of them had mild anxiety, 22.0% had mild-to-moderate anxiety and 28.0% of them had moderate to severe anxiety before undergoing bronchoscopy.

Comparison of the level of anxiety between patients before undergoing angiography and bronchoscopy

Figure 1: Figure 1 depicts that out of 50 patients undergoing angiography, 90% of them have mild anxiety, 10% have mild-to-moderate anxiety and none of them have moderate to severe anxiety, as when compared to patients undergoing bronchoscopy, out of 50 patients 50% of them have mild anxiety, 22% have mild-to-moderate anxiety and 28% of them have mild to severe anxiety.

Table 5: Table 5 depicts that comparison between levels of anxiety in bronchoscopy and angiography was statistically significant with Chi-square value of 21.96 at df 2 and $P < 0.00001$.

Association between socio-demographic variables and level of anxiety in patients before undergoing angiography and bronchoscopy

Table 6: Above Table 6 depicts the association between the gender, age, marital status, education, occupation, and religion of respondents undergoing angiography with level of anxiety. The calculated value of Chi-square was 0.163 and $P = 0.921$ for gender, 2.77 and $P = 0.947$ for age, 5.606 and $P = 0.468$ for marital status, 0.964 and $P = 0.999$ for education, 4.145 and $P = 0.940$ for occupation and 0.526 and $P = 0.970$ for religion showing no statistically significant association with level of anxiety.

Table 3: Distribution of subjects according to their level of anxiety before undergoing angiography *n*=50

Level of anxiety	Frequency	Percentage
Mild	45	90
Mild-to-moderate	05	10
Moderate-to-severe	00	0
Total	50	100

Table 4: Distribution of subjects according to their level of anxiety before undergoing bronchoscopy. *n*=50

Level of anxiety	Frequency	Percentage
Mild	25	50
Mild to moderate	11	22
Moderate to severe	14	28
Total	50	100

Table 5: Association between level of anxiety in patients before undergoing angiography and bronchoscopy *n*=100

Levels of anxiety	Angiography	Bronchoscopy	Chi-square	df	*P*-value
Mild	45	25	21.964	2	0.00001
Moderate	05	11			
Severe	00	14			

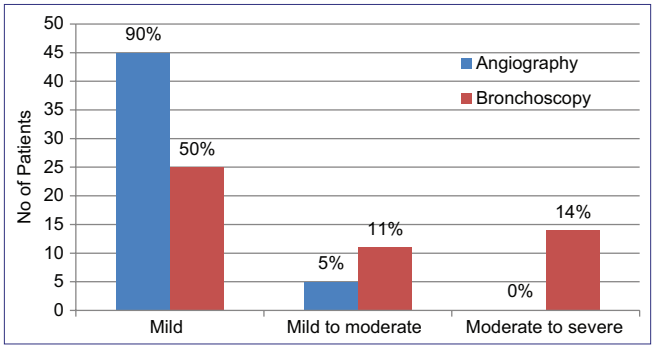

Figure 1: Comparison of level of anxiety between patients before undergoing angiography and bronchoscopy *n*=50

Table 7: Above Table 7 depicts the association between the gender, age, marital status, education, occupation, and religion of respondents undergoing bronchoscopy with level of anxiety. The calculated value of Chi-square was 3.922 and $P = 0.140$ for gender, 14.989 and $P = 0.059$ for age, 6.394 and $P = 0.380$ for marital status, 9.603 and $P = 0.475$ for education, was 7.675 and $P = 0.660$ for occupation and 7.558 and $P = 0.109$ for religion concluding that there was no statistically significant association with level of anxiety.

Discussion

Finding of our study show that out of 50 patients undergoing angiography, 90% of them have mild anxiety, 10% have mild-to-moderate anxiety and none of them have moderate to severe anxiety, as when compared to patients undergoing bronchoscopy, out of 50 patients 50% of them have mild anxiety, 22% have mild to moderate anxiety and 28% of them have mild-to-severe anxiety. No statistically significant relationship was found between selected socio-demographic variables and levels of anxiety.

The study was supported by a descriptive study done in 2017 to assess the anxiety in patients undergoing PCIs. It was reported that anxiety was highest before procedure and decreased significantly after procedure.[4]

The study was supported by a retrospective study done in 2010 to assess the role of anxiety on patient's intolerance during bronchoscopy in the Department of Pulmonary diseases, Istanbul University. It was reported that anxiety appears to be predominant factor for patient's performance undergoing bronchoscopy.[5]

In contrast, a prospective cohort study in which all patients who underwent a CAG or PCI between April 2009 and April 2010 in the Academic Medical Center were included. It was found that patients undergoing cardiac catheterization experience the highest levels of anxiety just before the procedure. The highest anxiety levels are specifically witnessed in female patients, patients of younger age, during primary PCI, and in patients with a low level of education.[6]

A study was done to determine whether the presence of significant atherosclerotic lesions in coronary arteries affects anxiety level changes following coronary angiography found that in women demonstrating no significant atherosclerotic lesions in coronary angiography, anxiety does not resolve permanently but reappears after several months. In this group, it seems justified to consider a diagnosis of an anxiety disorder in the form of a somatoform disorder. Those patients should be offered psychiatric therapy.[7]

Furthermore, contradictory results are shown in a prospective study conducted at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. All patients undergoing diagnostic bronchoscopy filled the State-Trait Anxiety Inventory questionnaire before the procedure where it was found that diagnostic bronchoscopy can cause high anxiety in many patients.[3]

A study investigated the factors that can affect the comfort of patients who underwent diagnostic fiberoptic bronchoscopy (FOB) and diagnostic endobronchial ultrasonography (EBUS) for the first time and the effect of the patients' anxiety level on their comfort during the procedure found that longer examination time, higher anxiety level before the procedure, the nasal insertion of bronchoscope, and higher number of interventions are related to the increased discomfort during FOB and EBUS. Patients' willingness for repeating FOB and EBUS increased as the level of discomfort decreased during the procedure.[8]

The study on the effect of music on state anxiety levels in patients undergoing flexible fiberoptic bronchoscopy found that Relaxation music administered through headphones to patients during flexible bronchoscopy does not decrease procedure-related state anxiety.[9]

A study done to assess the level of anxiety of patients before the cardiac procedure as per the HAM-A and to analyze whether adequate time is being given by the treating physicians in counseling of the patients about the treatment plan. The study was carried out to find out the severity of anxiety of the patients waiting for the cardiac procedure. A total of 110 patients was enrolled in the study. It was found that 63 (70.8%) male and 9 (42.9%) female patients had mild anxiety. In contrast, 4 (19%) male and 5 (5.6%)

Table 6: Association between socio-demographic variables and level of anxiety in patients undergoing angiography *n*=50

Gender	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild–to-moderate**	**Moderate-to-severe**			
Male	31	03	00	34	0.163	0.921*
	62.0	6.0	0	68.0		
Female	14	02	00	16		
	28.0	4.0	0	32.0		
Total	45	05	00	50		
	90.0	10.0	0	100		
Age	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild–to-moderate**	**Moderate-to-severe**			
18–25 years	00	00	00	00	2.77*	0.947*
	0	0	0	0		
26–35 years	00	00	00	00		
	0	0	0	0		
36–50 years	16	00	00	16		
	32. 0	0	0	32. 0		
51–65 years	15	03	00	18		
	30. 0	6.0	0	36. 0		
Above 65 years	14	02	00	16		
	28. 0	4. 0	0	32. 0		
Total	45	05	00	50		
	90. 0	10. 0	0	100		
Marital status	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Married	41	03	00	44	5.606	0.468*
	82.0	6.0	0	88.0		
Unmarried	00	00	00	00		
	0	0	0	0		
Divorced	01	00	00	01		
	2.0	0	0	2.0		
Widow	03	02	00	05		
	6.0	4.0	0	10.0		
Total	45	05	00	50		
	90.0	10.0	0	100		
Education	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Primary education	06	01	00	07	0.964	0.999*
	12.0	2.0	0	14.0		
Higher education	01	00	00	01		
	2.0	0	0	2.0		
Secondary education	18	01	00	19		
	36.0	2.0	0	38.0		
Graduate	20	03	00	23		
	40.0	6.0	0	46.0		
Illiterate	00	00	00	00		
	0	0	0	0		
Postgraduate	00	00	00	00		
	0	0	0	0		
Total	45	05	00	50		
	90.0	10.0	0	100		
Occupation	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Government	08	01	00	09	4.145	0.940
employee	16.0	2.0	0	18.0		
Private employee	07	00	00	07		
	14.0	0	0	14.0		
Self employed	09	00	00	09		
	18.0	0	0	18.0		
Unemployed	17	04	00	21		
	34.0	8.0	0	42.0		
Skilled	04	00	00	04		
	8.0	0	0	8.0		

(Contd...)

Table 6: *(Continued)*

Student	00	00	00	00		
	0	0	0	0		
Total	45	05	00	50		
	90.0	10.0	0	100		
Religion	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Hindu	29	04	00	33	0.526	0.970
	58.0	8.0	0	66.0		
Muslim	01	00	00	01		
	2.0	0	0	2.0		
Sikh	15	01	00	16		
	30.0	2.0	0	32.0		
Total	45	05	00	50		
	90.0	10.0	0	100		

Table 7: Association between socio-demographic variables and level of anxiety in patients undergoing bronchoscopy *n*=50

Gender	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild to moderate**	**Moderate to severe**			
Male	16	04	07	27	3.922	0.140
	32.0	8.0	14.0	54.0		
Female	09	09	05	23		
	18.0	18.0	10.0	46.0		
Total	25	13	12	50		
	50.0	26.0	24.0	100		
Age	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild to moderate**	**Moderate-to-severe**			
18–25 years	00	01	04	01	14.989	0.059
	0	2. 0	8.0	2. 0		
26–35 years	06	03	04	09		
	12.0	6.0	8.0	18.0		
36–50 years	06	07	02	22		
	12.0	14.0	4.0	44.0		
51–65 years	10	02	01	14		
	20.0	4.0	2.0	28.0		
Above 65 years	03	00	02	04		
	6.0	0	4.0	8.0		
Total	25	13	00	50		
	50.0	26.0	0	100		
Marital status	**Level of anxiety**			**13**	**Chi-square**	***P*-value**
	Mild	**Mild-to --moderate**	**Moderate-to-severe**			
Married	19	12	10	41	6.394	0.380
	38.0	24.0	20.0	82.0		
Unmarried	00	00	01	01		
	0	0	2.0	2.0		
Divorced	00	00	00	00		
	0	0	0	0		
Widow	06	00	02	08		
	12.0	0	4.0	16.0		
Total	25	12	13	50		
	50.0	24.0	26.0	100		
Education status	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Primary education	03	03	04	10	9.603	0.475*
	6.0	6.0	8.0	20.0		
Higher education	06	01	04	11		
	12.0	2.0	8.0	22.0		
Secondary education	03	03	02	08		
	6.0	6.0	4.0	16.0		

(Contd...)

Table 7: ***(Continued)***

Gender	Level of anxiety			Total	Chi-square	*P*-value
	Mild	Mild to moderate	Moderate to severe			
Graduate	04	04	01	09		
	8.0	8.0	2.0	18.0		
Illiterate	09	01	02	12		
	18.0	2.0	4.0	24.0		
Post graduate	00	00	00	00		
	0	0	0	0		
Total	25	12	13	50		
	50.0	24.0	26.0	100		
Occupation	**Level of anxiety**			**Total**	**Chi-square**	***P*-value**
	Mild	**Mild-to-moderate**	**Moderate-to-severe**			
Government employee	01	00	00	01	7.675	0.660
	2.0	0	0	2.0		
Private employee	03	03	01	07		
	6.0	6.0	2.0	14.0		
Self employee	05	01	04	10		
	10.0	2.0	8.0	20.0		
Unemployed	14	05	07	26		
	28.0	10.0	14.0	52.0		
Skilled	02	02	00	04		
	4.0	4.0	0	8.0		
Student	01	00	01	02		
	2.0	0	2.0	4.0		
Total	26	11	13	50		
	52.0	22.0	26.0	100		
Religion	**Level of anxiety**			**Total**	**Chi- square**	***p*-value**
	Mild	**Mild-to-moderate**	**Moderate to severe**			
Hindu	23	11	07	41	7.558	0.109*
	46.0	22.0	14.0	82.0		
Muslim	00	00	01	01		
	0	0	2.0	2.0		
Sikh	02	02	04	08		
	4.0	4.0	8.0	16.0		
Total	25	13	12	50		
	50.0	26.0	24.0	100		

female participants had severe anxiety. There was statistically significant relationship ($P < 0.05$) in the anxiety level between male and female patients.[10]

A comparative evaluation of PCI and non-PCI patients with stable angina where the revascularization procedure induced depressive symptoms, with significant difference before PCI and pre-discharge.6 Similarly, there was a significant correlation between levels of anxiety and depression before and after PCI, emphasizing the role of an adequate approach and health educational programme provided by the physician, nurses and cardiac technicians.[11]

Conclusion

In the study, it was found that anxiety levels in Cardiac Catheterizations were found to be ranging between mild-to-moderate, whereas in Bronchoscopy it ranged from mild-to-severe.

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References

1. Baker A, Simon N, Keshaviah A, Farabaugh A, Deckersbach T, Worthington JJ, *et al*. Anxiety symptoms questionnaire (ASQ): Development and validation. Gen Psychiatr 2019;32:e100144.
2. Schmid M, Wolf RC, Freudenmann RW, Schönfeldt-Lecuona C. Tomophobia, the phobic fear caused by an invasive medical procedure-an emerging anxiety disorder: A case report. J Med Case Rep 2009;3:131.
3. Aljohaney AA. Level and predictors of anxiety in patients undergoing diagnostic bronchoscopy. Ann Thorac Med 2019;14:198-204.
4. Trotter R, Gallagher R, Donoghue J. Anxiety in patients undergoing percutaneous coronary interventions. Heart Lung 2011;40:185-92.
5. Tetikkurt C, Yasar I, Tetikkurt S, Yılmaz N, Kara B, Yavuz R, *et al*. Role of anxiety on patient intolerance during bronchoscopy. J Adv Med Med Res 2014;4:2171-80.
6. Delewi R, Vlastra W, Rohling WJ, Wagenaar TC, Zwemstra M, Meesterman MG, *et al*. Anxiety levels of patients undergoing coronary procedures in the catheterization laboratory. Int J Cardiol 2017;228:926-30.
7. Piegza M, Pudlo R, Badura-Brzoza K, Piegza J, Szyguła-Jurkiewicz B, Gorczyca P, *et al*. Dynamics of anxiety in women undergoing coronary angiography. Kardiol Pol 2014;72:175-80.
8. Yıldırım F, Özkaya Ş, Yurdakul AS. Factors affecting patients' comfort during fiberoptic bronchoscopy and endobronchial ultrasound. J Pain Res 2017;10:775-81.

9. Colt HG, Powers A, Shanks TG. Effect of music on state anxiety scores in patients undergoing fiberoptic bronchoscopy. Chest 1999;116:819-24.
10. Jain K, Sinha SK, Verma AK. Assessment of the level of anxiety and associated factors among heart patients waiting for cardiac procedure at a tertiary care hospital in North India. Int J Res Found Hosp Healthc Adm 2017;5:68-72.
11. Nedeljkovic I. Assessment of depression and anxiety in patients before and after percutaneous coronary intervention: A step forward in cardiac rehabilitation? Eur J Prev Cardiol 2018;25:1015-6.

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