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LEVEL OF ANXIETY AND FEAR IN PATIENTS UNDERGOING CORONARY ANGIOPLASTY

[1]Ansa Noreen, [2]Neelam Zia, [3]Rana Kamran

[1]Head Nurse, Government Eye Cum General Hospital Gojra, Toba Tek Singh,
Email ID: ansa.ch97@gmail.com

[2]Nursing Instructor, Fatima Jinnah Medical University/Sir Ganga Ram College of Nursing Punjab, Lahore, Email ID: neelamzia41@gmail.com

[3]Male Nurse, DHQ Teaching Mian Munshi Hospital, Lahore,
Email ID: kamisukhera@gmail.com

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Abstract:

Background: *Poor prognosis is the product of anxiety and stress in cardiac patients. Since very little quantification has been known about the level of anxiety in such patients undergoing revascularization procedures. The objective of this study is to evaluate the level of anxiety in patients undergoing coronary angiography or percutaneous coronary intervention (PCI) before and after the treatment and to identify associated variables causing anxiety.*

Methods: *In this prospective cohort study 200 patients of Punjab Institute of Cardiology, Lahore undergoing angioplasty (PCI) were enrolled during June 2019 and November 2019. Anxiety levels were measured using the self-reporting Visual Analogue Scale (VAS) for anxiety with range 0 to 100. Scores were recorded at pre- and post-procedure interval.*

Results: *76.0% were male participants. The mean age of 52 ± 12 years. High scoring of anxiety was observed in males during pre-procedure time (47.2 ± 29.0 mm) whereas the female patients recorded even a higher pre procedure anxiety score (50.4 ± 26.5) than males. (p = 0.02). It was seen that age greater than 60 years was an independent variable associated with higher levels of anxiety along with lower educational status and primary PCI.*

Conclusion: *It is concluded that female patients or those undergoing primary PCI with ages greater than 60 years and no formal educational status suffer higher level of anxiety before entering the catheterization lab. Proper pre-procedural counselling along with pharmacological interventions may help reduce anxiety in cardiac patients.*

Corresponding author:

Ansa Noreen,
Head Nurse,
Government Eye Cum General Hospital Gojra, Toba Tek Singh,
Email ID: ansa.ch97@gmail.com

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INTRODUCTION:

Poor prognosis is the product of anxiety and stress in cardiac patients [1, 2]. Anxiety is feeling of irritability and restlessness due to activation of the sympathetic over activity in response to a perceived danger in the internal or external environment of the individual [3]. Sustained elevated state of stress leads to impaired immunity and cardiac arrhythmias, systemic inflammation and allergic reactions which may affect the prognosis of any disease. Therefore, numerous strategies have been applied to breakdown the conditioning of the autonomic nervous system in cardiac patients on list for percutaneous coronary interventions (PCI). This may not only ease the patient and family are but also improve the clinical outcome.

Very little data exists on of anxiety during the pre-procedural hospital stay of patients undergoing coronary angioplasty and the associated factors. Identification of such variables is important so that standard quality of care must be ensured according to the individual needs.

The aim of the study is to evaluate the fear and anxiety at pre and post-procedure levels in patients undergoing coronary angioplasty and to identify the associated factors.

METHODS:

After proper approval from the ethical review committee this prospective cohort study 200 patients of Punjab Institute of Cardiology, Lahore undergoing angioplasty (PCI) were enrolled during June 2019 and November 2019. Anxiety levels were measured using the self-reporting Visual Analogue Scale (VAS) for anxiety with range 0 to 100. Scores were recorded at pre- and post-procedure interval.

Informed consent was taken from the respondents and choice to abort during any phase of the study was offered. Data confidentiality and privacy was maintained throughout.

Table.1 Characteristics of the respondents

Variables		
Total	**N=200**	**Percentage %**
Sociodemographic Data		
Age(years)	52 ± 12	
Gender		
Male	152	76
Female	48	24
Qualification		
Primary	68	34
Secondary	52	26
Higher Secondary	40	20
Risk Factors		
Diabetes Mellitus	46	23
Hypertension	54	27
Family History	60	30
Smoking	82	41
Hyperlipidemia	84	42
Type of intervention		
Primary PCI	24	12
Secondary PCI	104	52
Coronary angiography	72	36

RESULTS:

All patients (N = 200) underwent either a coronary angiography procedure or percutaneous coronary intervention. Mean age of the participants was 52 ± 12 years, participants were predominantly male (76.4%). A total of 82 (41.0%) of the study population were active smokers and 30 % had a positive family history of deaths before the age of 50

years. The majority of the participants were treated with secondary PCI (52.0%). Table 1 shows the characteristics of the respondents.

High scoring of anxiety was observed in males during pre-procedure time (47.2 ± 29.0 mm) whereas the female patients recorded even a higher pre procedure anxiety score (50.4 ± 26.5) than males. (p = 0.02). it was seen that age greater than 60 years was an independent variable associated with higher levels of anxiety along with lower educational status and primary PCI.

Table.2 Prevalence of anxiety scores

Visual Analogue Scale (VAS)	Gender	
VAS pre procedure	Male Female	47.2 ± 29.0 50.4 ± 26.5
VAS post procedure	Male Female	45.4 ± 27.0 47.6 ± 25.4

Patients greater than 60 years of age had higher anxiety scores at the pre-procedural time in comparison to patients with higher age (47.8 ± 26.2 compared to 43.5 ± 25.5 p=0.001) Patients with a lower educational status reported higher anxiety scores (27.5 ± 26.5) than patients who had secondary (23.7 ± 23.3, p = 0.01) or higher secondary education (24.9 ± 24.1, p = 0.007).

Signs and symptoms of anxiety and depression are common manifestations in cardiac patients [11], with an expected prevalence rates ranging from 20 to 50% for anxiety [12,13] and 30 to 60% for depression [14, 15], respectively. A review of the literature has established that poor prognosis is associated with sustained stress state before and around coronary intervention [5, 16, and 17].

Whatever the mechanisms involved the anxiety and fear has a direct influence on the cardiovascular pathophysiology. Anxiety and fear create a state of fight or flight by the activation of the sympathetic division of the autonomic nervous system. Systemic and local effects of hormones such as epinephrine and norepinephrine, increases heart rate, respiratory rate, vascular tone and blood pressure creating the substrate for arrhythmias. Catecholamine surge can cause can severe stress cardiomyopathy as seen in Takotsubo's syndrome. Therefore, anxiety in patients undergoing cardiac catheterization should be identified along with its causative factors so improve the quality of care and hasten the recovery.

A clear cut trend was noticed for the anxiety patterns, which mostly appeared and peaked during the pre-procedure phase and declined at the time of discharge. These findings are identical to the one witnessed by Trotter et al. that showed that 100 patients undergoing PCI reported highest anxiety scores pre-procedure while these scores weaned off gradually during post-procedure. [18].
Past studies elicited that in patients undergoing coronary angiography, the biggest fears are of likelihood of open-heart surgery, confusion related to the disease course, impending death, pain, unfavorable diagnosis and getting bed ridden for life [19].

According to a Swedish study on 831 patients on list for catheterization lab and graft studies 6% of patients stated that fear was the most distressing symptom and 43% reported uncertainty about the future [20]. This uncertainty focused on concerns, e.g. their financial situation, family sufferings.

Pedersen et al. traced the course of anxiety symptoms over an 18 months period in patients post PCI in 486 patients. It was found that lower educational profile was associated with higher anxiety [21] which is homologous to our study. Various strategies can help to combat this anxiety such as proper information sharing or an audio-visual demonstration of the process beforehand. Psychiatric and pharmacological interventions. Music during the process can also alleviate the panic state [22, 23]. All these approaches must be aimed tuned according to patient ideas, concerns and expectations.

CONCLUSION:

It is concluded that female patients or those undergoing primary PCI with ages greater than 60 years and no formal educational status suffer higher level of anxiety before entering the catheterization lab.Proper pre-procedural counselling along with pharmacological interventions may help reduce anxiety in cardiac patients.

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