

A study to assess the effectiveness of art therapy on pre-operative anxiety among patients undergoing surgery admitted in surgical wards of Sree Balaji Medical College and hospital, Chennai-44

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Abstract

The study explores the concept of health, mental wellness, and nursing. Health involves achieving human potential through goal-directed behaviour, self-care, and satisfying relationships. Mental wellness is a positive attribute, promoting emotional well-being and flexibility. Nursing focuses on protecting, promoting, and optimizing health and abilities, preventing illness and injury, and alleviating suffering. Surgery involves cutting or closing wounds. This study used an evaluative approach to assess the effectiveness of art therapy on preoperative anxiety among patients undergoing surgery. A one-group pretest-posttest design was used, with observations made before and after art therapy. The study aimed to evaluate the effects of art therapy on anxiety levels in patients undergoing surgery. The study was conducted at Sree Balaji Medical College and hospital in Chennai-44, a 1300-bed hospital with advanced facilities. The hospital admits 40-50 patients daily due to surgical problems, with 20-30 surgeries occurring in the operation theatre. Patients are accommodated in different surgical wards and shifted to the surgical Intensive Care Unit for observation. After stabilization, they return to their previous ward. The study included all patients admitted for surgery at Sree Balaji Medical College and hospital during the study period. The study involved 60 surgical patients admitted to Sree Balaji Medical College and Hospital, Chennai-44, using a convenient sampling technique, based on availability. Table 1 shows the demographic distribution of 60 patients undergoing surgery, with 20 patients aged 21-30, 31.7% aged 31-40, 31.6% aged 41-50, and 16.7% above 50. The majority were male, with 60.0% being married, and 73.3% were married. 5% were illiterate, while 8.3% had secondary education. 25.5% were unemployed, while 45% were private employees, and 20% had their own business. All patients had prior knowledge about surgery, with 33.3% getting information from relatives, 11.7% from television, and 55% from doctors. The study found a significant association between demographic variables such as educational status, family income, and type of surgery and post-operative anxiety levels in patients undergoing surgery at Sree Balaji Medical College and hospital. The pretest anxiety score significantly differed from the post-test anxiety score. The study concluded that conducting art therapy pre-operatively can reduce anxiety levels and promote recovery during surgery.

Keywords: Art therapy; Pre-operative anxiety; Surgery; Assess the effectiveness

1. Introduction

Nursing focuses on health protection, promotion, optimization, prevention, and alleviation of suffering through diagnosis, treatment, and advocacy for individual families, communities, and populations.¹ Ambroise pare, a 16th-century French surgeon, outlined five reasons for surgery: eliminating superfluous things, restoring dislocated things, separating and joining divided things, and repairing nature's defects. Despite advancements in surgical techniques, the medical profession faced challenges like bleeding, pain, and infection. The industrial revolution transformed surgery

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into a scientific discipline, treating various diseases and conditions.² The invention of new surgical equipment, such as cauterizing and ligatures, has significantly improved the control of bleeding blood vessels, overcoming limitations and resulting in better long-term outcomes.³ Surgical equipment, such as the argon beam plasma coagulator and minimally invasive surgery, use heat to seal blood vessels and control bleeding. Early infection prevention efforts began in 1847 by Hungarian doctors Ignaz Semmelweis, Louis Pasteur, and Joseph Lister. Germ theory has improved aseptic conditions in modern hospitals.⁴ Horace Wells and William Morton discovered anaesthesia, reducing traumatic pain in surgery, which was previously limited to amputations and external growth removals.⁵ The 1840s saw significant changes in surgery with the discovery of anesthetic chemicals like ether and chloroform. Today, body parts are reattached, smaller incisions are required, and lasers are used in various surgeries.⁶ Filoptics in the operating room have made surgery less invasive, allowing surgeons to remove small organs and growths without traditional incisions. Laparoscopic surgery, using an endoscope through the abdominal wall, has been used for appendix and gallbladder removal. Technological advancements have reduced physiological and psychological issues associated with surgery.⁷ Anxiety levels in surgical patients can be high during the post-operative period, but gradually decrease during recovery and slight anxiety on follow-up care. Factors contributing to anxiety include previous surgical experience, perception of the surgery as positive, unfamiliar environment, fear of long-term effects, and complications. Many patients are admitted for elective surgery the day before, and anxiety may arise from hospitalization and doubts about the procedure. Dr. Eric Robins found that 80-90% of surgical patients experience noticeable anxiety before surgery, and reducing anxiety can reduce the need for anesthetics.⁸

Objectives

The specific objectives of the study were:

- To assess the level of anxiety among the patients undergoing surgery, on the day of admission for surgery using Modified Spielberg's State Anxiety Scale.
- To assess the level of anxiety after art therapy on the day of surgery using Modified Spielberg's State Anxiety Scale.
- To compare the level of anxiety, before and after art therapy among Patients undergoing surgery.
- To associate the level of anxiety after art therapy with the selected demographic variables.

2. Methodology

- **Research approach:** This study utilized an evaluative approach to evaluate the effectiveness of Art therapy on preoperative anxiety, focusing on the overall plan for conducting research.
- **Research design:** This study utilized a pre-test-post-test design to evaluate the impact of art therapy on pre-operative anxiety in surgical patients, observing before and after the introduction of the independent variable.
- **Description of the setting:** The study was conducted at Sree Balaji Medical College and hospital in Chennai-44, a 1300-bed hospital with advanced facilities. The hospital admits 40-50 patients daily due to surgical problems, with 20-30 surgeries occurring in the operation theatre. Patients are accommodated in different surgical wards and shifted to the surgical Intensive Care Unit for observation. After stabilization, they return to their previous ward.
- **Population:** The population consisted of all the patients admitted for surgery in Sree Balaji Medical College and hospital during the period of study.
- **Sample size:** In this study the sample consisted of (60) sixty patients who were admitted for surgery in surgical wards of Sree Balaji Medical College and Hospital, Chennai-44.
- **Sampling technique:** A convenient sampling technique was used. The samples were selected from different wards according to the availability and alternatively assigned to the study group.
- **PLAN FOR DATA ANALYSIS:** Collected data are tabulated and analyzed using descriptive and inferential statistics.
- **Descriptive statistics:** Descriptive statistics were used to find out the frequency, percentage, mean, Standard deviation of demographic variables and to assess the Pre-operative anxiety level or pretest and posttest of patients undergoing surgery before and after art therapy.
- **Inferential statistics:** Inferential statistics were used to find out the Paired t test and chi square test. Paired t test is used to compare the pre-test and post test scores and to rule out effectiveness of art therapy on Pre-operative anxiety. Chi square test was used to analysis the association between the levels of anxiety after art therapy among patients undergoing surgery with selected demographic variables.

3. Result

The chapter deals with analysis and interpretation of data collected from 60 samples to assess the effectiveness of art therapy on Pre-Operative anxiety patients undergoing surgery admitted in surgical wards of Sree Balaji Medical College and Hospital, Chennai-44. Analysis and interpretation of data are based on collection of data through convenient sampling. Descriptive and inferential statistics were used for the analysis of the data.

As per the objective of the study, the interpretation has been organized and tabulated as follows:

- **SECTION – A** –Data on demographic characteristics of the samples undergoing surgery.
- **SECTION – B**- Data on comparison of preoperative anxiety of the pretest and post-test of the patients undergoing surgery before and after art therapy
- **SECTION – C** – Data on mean and standard deviation of pre-operative anxiety of patients undergoing surgery before and after art therapy and level of significance or effectiveness.
- **SECTION – D**-Data on association of selected demographic variables with overall anxiety of samples on the day of surgery.

3.1. SECTION –A

3.1.1. Data on demographic characteristics of the samples undergoing surgery

Table 1 Frequency and percentage distribution of demographic variables

S.No.	Variables	Groups	(N=60) No.	%
1	Age	21-30 Years	12	20%
		31- 40 years	19	31.7%
		41 - 50 years	19	31.6%
		50 years and above	10	16.7%
2.	Sex	Male	36	60%
		Female	24	40%
3.	Marital status	Married	44	73.3%
		Unmarried	7	11.7%
		widow/widower	6	10%
		divorced	3	5%
4.	Educational status	Illiterate	3	5%
		Secondary	5	8.3%
		Higher secondary	24	40%
		Graduate	28	46.7%
		Post graduate	0	0%
5.	Occupation	Un employed	15	25%
		Daily Wage labourer	3	5%
		Private Employer	27	45%
		Government employer	3	5%
		Own business	12	20%
6.	Family income	less than Rs.5000	2	3.3%

		Rs.5001 – 10,000	5	8.3%
		Above Rs.10,001	53	88.4%
7.	prior knowledge about the surgery	Yes	60	100%
		No	-	-
8.	Source of information	From relatives who under went surgical intervention	20	33.3%
		From Television, Newspaper, Magazine etc.	7	11.7%
		From Doctor, Nurse etc.	33	55%
9.	Type of surgery	Minor	21	35%
		Major	39	65%

Table 1 shows the demographic distribution of 60 patients undergoing surgery, with 20 patients aged 21-30, 31.7% aged 31-40, 31.6% aged 41-50, and 16.7% above 50. The majority were male, with 60.0% being married, and 73.3% were married. 5% were illiterate, while 8.3% had secondary education. 25.5% were unemployed, while 45% were private employees, and 20% had their own business. All patients had prior knowledge about surgery, with 33.3% getting information from relatives, 11.7% from television, and 55% from doctors.

3.2. SECTION – B

3.2.1. *Data on comparison of preoperative anxiety of the pretest and post-test of the patients undergoing surgery before and after art therapy*

Table 2 Pre-test and post -test preoperative anxiety score of patients undergoing surgery N=60

Anxiety Score	Pre test		Post test	
	No	%	No	%
No Anxiety (0-45)	0	0%	1	1.7%
Mild anxiety (46-90)	18	30%	49	81.6%
Moderate Anxiety (91-135)	32	53.3%	10	16.7%
Severe Anxiety (136-180)	10	16.7%	-	-

Table 2 shows that among 60 patients undergoing surgery, 0% had no anxiety, 30% had mild anxiety, 53.3% had moderate anxiety, and 16.7% had severe anxiety. The results showed that most patients had mild anxiety.

3.3. SECTION - C

3.3.1. *Data on mean and standard deviation of pre-operative anxiety of patients undergoing surgery before and after art therapy and the level of significance or effectiveness*

Table 3 Effectiveness of art therapy on pre-operative anxiety

Variables	Pre-test Score		Post-test Score		Overall Reduction in anxiety		Paired t test (Effectiveness)
	Mean	S.D	Mean	S.D	Mean	S.D	
Pre-Operative anxiety level	108.3	29.1	78.7	19.3	32.7	21.0	12.1 (S) (P<0.001)

S-Statistically Significant

Table 3 shows pre-test and post-test anxiety scores, with a mean of 108.3 and 78.7 respectively. The overall reduction in anxiety was 32.7, with a standard deviation of 21.0. The results were statistically significant at a $P < 0.001$ level, rejecting the Null Hypothesis (NH 1) of a significant difference.

3.4. SECTION – D

3.4.1. Data on association between the post- test level of pre-operative anxiety of patients undergoing surgery with selected demographic variables

Table 4 Association between the post -test level of pre-operative anxiety of patients undergoing surgery with selected demographic variables

Variables	Level of Pre-operative anxiety(N=60)								X ² df=1	P
	No anxiety		Mild Anxiety		Moderate Anxiety		Severe Anxiety			
		%		%		%		%		
Age group									0.002	1.0 NS
21-30Yrs	1	1.7	9	15	2	3.3	-	-		
31-40 Yrs	-	-	17	28.3	2	3.3	-	-		
41-50 Yrs	-	-	16	26.7	3	5	-	-		
>50 Yrs	-	-	7	11.7	3	5	-	-		
Sex									1.1	0.3 NS
Male	1	1.7	31	51.7	4	6.6	-	-		
Female	-	-	18	30	6	10	-	-		
Marital status									2.1	0.2 NS
Married	1	1.7	38	63.3	5	8.3	-	-		
unmarried	-	-	6	10	1	1.7	-	-		
widow	-	-	3	5	3	5	-	-		
Divorced	-	-	2	3.3	1	1.7	-	-		
Educational status									4.9	0.03 S
Illiterate	-	-	2	3.3	1	1.7	-	-		
Pre-School	-	-	2	3.3	3	5	-	-		
High school	-	-	21	35	3	5	-	-		
Graduates	1	1.7	24	40	3	5	-	-		
Post-graduate	-	-	-	-	-	-	-	-		
Occupation									0.2	0.7 NS
Unemployed	-	-	13	12.7	2	3.3	-	-		

Daily wage Labourer	-	-	2	3.3	1	1.7	-	-		
Private	1	1.7	21	35	5	8.3	-	-		
Govt	-	-	2	3.3	1	1.7	-	-		
Own business	-	-	11	18.3	1	1.7	-	-		
Family income									6.3	0.01 S
<5000	-	-	1	1.7	1	1.7	-	-		
5001-10000	1	1.7	1	1.7	3	5	-	-		
>10001	-	-	47	78.3	6	10	-	-		
Prior Knowledge									NA	NA
Yes	-	-	50	83.3	10	16.7	-	-		
No	-	-	-	-	-	-	-	-		
Soure of information									0.7	0.3 NS
relatives	-	-	15	25	5	8.3	-	-		
Tv, Newspaper etc	-	-	5	8.3	2	3.3	-	-		
Doctor, Nurse	1	1.7	29	48.3	3	5	-	-		
Type of surgery									4.7	0.03 S
minor	1	1.7	20	33.3	-	-	-	-		
major	-	-	29	48.3	10	16.7	-	-		

S-Statistically Significant/NS-Statistically Non-Significant; /NA-Not applicable

Table 4 the study found a significant association between demographic variables and overall anxiety score, with educational status, family income, and type of surgery being the most significant, rejecting the Null Hypothesis NH 2.

4. Discussion

Demographic findings: The study analysed 60 patients undergoing surgery, with 20 patients aged 21-30, 31.7% aged 31-40, 31.6% aged 41-50, and 16.7% above 50. The majority were male, with 60% being male and 40% female. Most were married, with 73.3% being married. The majority had secondary education, with 46.7% having graduate education. The majority had a family income above Rs.10, 000. Most had previous knowledge about surgery, with 33.3% obtaining information from relatives, 11.7% from television, and 55% from doctors. The first objective is to assess the level of anxiety among the patients undergoing surgery, on the day of admission for surgery using Modified Spielberg's State Anxiety Scale: Among 60 samples of patients undergoing surgery, 0(0%) had no anxiety score of (0-45), 18(30%) of them had mild anxiety score of (46-90), 32(53.3%) had moderate anxiety score of (91-135) and only 10(16.7%) had severe anxiety score of (136-180). 10 patients had Severe anxiety due to financial difficulties and poor educational status where as others had good educational qualification and financial support.

The second objective is to assess the level of anxiety after art therapy on the day of surgery using Modified Spielberg's State Anxiety Scale: Among 60 samples of patients undergoing surgery, 1(1.7%) had no anxiety score of (0-45) after art therapy, 49(81.6%) of them had mild anxiety score of (46-90) after art therapy and 10(16.7%) of them had moderate anxiety score of (91-135) after art therapy and no one had severe anxiety after art therapy. In this post-test no one had severe anxiety because most of them had interest and involvement in art therapy and actively participated in the therapy sessions.

- **The Third objective is to compare the level of anxiety, before and after art therapy among Patients undergoing surgery:** Among 60 samples of patients undergoing surgery, 0(0%) of them had no anxiety score

of (0-45), 18(30%) of them had mild anxiety score of (46-90), 32(53.3%) had moderate anxiety score of (91-135) and only 10(16.7%) had severe anxiety score of (136-180) in the Pre-test and 1(1.7%) of them had no anxiety score of (0-45), 49(81.6%) of them had mild anxiety score of (46-90), 10(16.7%) had moderate anxiety score of (91-135) and no one had severe anxiety score of (136-180) in the post test. In comparison the post test revealed that there is no severe anxiety because most of them had interest and involvement in art therapy and actively participated in the therapy sessions but in the Pre-test 10 patients had severe anxiety due to financial difficulties and poor educational status where as others had good educational qualification and financial support.

- **The Fourth objective is to associate the level of anxiety after art therapy with the selected demographic variables:** Among 60 samples and among 9 demographic variables, Educational status, Family income and Type of surgery were statistically significant others were statistically Non-significant and Prior knowledge of the samples about surgery was not applicable. The demographic variables ,Educational status, Family income and Type of surgery showed an impact on the patients anxiety status

5. Summary

The present study was conducted to evaluate the effectiveness of art therapy on Pre-operative anxiety among patients undergoing surgery admitted in surgical wards of Sree Balaji Medical College and Hospital. A sample of 60 was selected for the study, the study was carried on in sree Balaji College of nursing, surgical wards. The patient's level of Pre-Operative anxiety was assessed in the pre-test using Modified spiel Berger's state anxiety scale on the day of admission for surgery. After the pretest was done, one session of art therapy was provided based on the patient's interest and post-test was done by using the same anxiety scale used in pre-test on the day of surgery.

6. Conclusion

The present study assessed the effectiveness of art therapy on Pre-operative anxiety among Patients admitted for surgery in surgical wards of Sree Balaji Medical College and hospital, chennai-44. The investigator analyzed the data that there was a significant association between the demographic variables such as Educational status, Family income and type of surgery were associated with post-test level of anxiety of Pre-operative patients undergoing surgery and the pretest anxiety score had a significant difference from the posttest anxiety score. The hypothesis stated that there will be no significant difference between the mean anxiety score of patients undergoing surgery before and after art therapy and there will be no is a significant association between the mean anxiety score of patients undergoing surgery after art therapy with selected demographic variables. Hence Both the null hypothesis is rejected.

After Art therapy the Pre-operative anxiety of Patients undergoing surgery was only between Mild to Moderate. But Before Art therapy the patients had an anxiety level ranging from Mild to severe. So conducting art therapy programme Pre-operatively will help to reduce anxiety of patients during surgery and promote a good recovery.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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