Effect of Pranayama in terms of anxiety among clients with Myocardial Infarction.

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ABSTRACT

The main aim of the present study was to evaluate the effectiveness of Pranayama in reducing the level of anxiety among clients with Myocardial Infarction. To assess the pre and post test level of anxiety among clients with Myocardial Infarction in experimental and control group and to evaluate the effectiveness of Pranayama on level of anxiety among clients with Myocardial Infarction

METHODS: The research design adopted was a quasi experimental pre and post test with control group design. Non-probability purposive sampling technique was adopted to select the desired sample. The sample size was 60. 10 minutes of Pranayama was given to experimental group (30) for once a day in the morning for 5 consecutive days. Routine nursing care was given to control group. Standardized Spielbergers State Anxiety Rating Scale was used to assess the level of anxiety. The data collection tool was validated by 6 experts and was found to be valid. RESULTS: Analysis using paired 't' test found significant values 26.96 $p < 0.01$ level in experimental group. The findings of the study revealed that Pranayama was effective in reducing anxiety among Clients with Myocardial Infarction.

Keywords: **Effectiveness, Pranayama, Myocardial Infarction.**

Heart is the most important organ which helps to lead a healthy life. The heart is taking the main role in the circulatory system and it supply's the blood all over the body.

Myocardial Infarction clients with anxiety get affected in their quality of life and increased cardiac morbidity. Clients with Myocardial Infarction suffer with physical symptoms of chest pain, weakness, profuse cold sweat, palpitation, difficulty in breathing, deathly pallor and vomiting.

According to Gautama, (2001) yoga and meditation are gaining world wide popularity among people. It is not possible for many of us to practice yoga regularly after a hard day's work. Breathing exercise does not take away our energy. It is a kind of relaxation in Pranayama. Pranayama is a breathing exercise which is unique physiological function as it is involved in both voluntary and automatic rehabilitation. By modifying one's breathing, taking slower and deeper breaths, one has the ability to control the nervous system. Ultimately breathing slowly can induce state of relaxation, focus and calmness.

Wooler., (2008) reported positive effects that were observed in mood, stress, anxiety, sleep quality, and overall quality of life, as well as functional and psychological measures after practicing Pranayama.

Naresh Trehan., September (2007) estimated that cardio vascular disease may increase from 2.9 crore in 2000 to as many as 6.4 crore in 2015. In that, most of the increase will occur on account of coronary heart disease- acute myocardial infarction, angina, congestive heart failure and inflammatory heart disease in India.

Anxiety is the common reason to death in Myocardial Infarction. Thus to reduce the anxiety, Pranayama helps the clients with Myocardial Infarction is more effective and capable in reducing the death rate.

Statement of the Problem

A Study to Evaluate the Effectiveness of Pranayama on Level of Anxiety among Clients with Myocardial Infarction in a Selected Hospital at karnal.

Objectives

- To assess the pre and post-test level of anxiety among clients with Myocardial Infarction in experimental and control group.

- To evaluate the effectiveness of Pranayama on level of anxiety among clients with Myocardial Infarction in experimental group.

- To determine the association between the level of anxiety among clients with Myocardial Infarction with their selected demographic variables in experimental and control group.

Hypothesis:

H_1 :   There is a significant difference between the pre and post- test level of anxiety among clients with myocardial infarction in experimental group.

H_2 :   There is a significant difference between the post- test level of anxiety among clients with Myocardial infarction between experimental and control group.

H_3 :   There is a significant association between the level of anxiety among clients with Myocardial Infarction and selected demographic variables in experimental and control group.

Operational Definition:

Effectiveness

Effectiveness is the capability of producing a desired result.In this study, it refers to the efficiency of pranayama in reducing the level of anxiety.

Pranayama

It refers to a type of yogic breathing exercise which consists of 4steps:

Step 1: Inspiration, end inspiration (4 seconds)

Step 2: breath holding (4 seconds)

Step 3: expiration, end expiration (6 seconds)

Step 4: breath holding (2 seconds)

with 20 seconds rest for each cycle. Likewise, 20 breath cycles within the duration of 12 minutes once a day for 5 consecutive days.

Anxiety

It refers to an individual's reaction to real or imagined dangers on threats. In this study, it refers to the level of individual's physical and psychological reaction during the time of admission due to myocardial infarction as measured by Standardized Speilberger State Anxiety Rating Scale.

Clients with Myocardial Infarction

In this study it refers to persons who are newly and already diagnosed to have myocardial infarction previously and admitted either for cardiac or any other reasons.

Assumptions

- Diagnosis of Myocardial Infarction may cause anxiety to the clients.

- Clients with Myocardial Infarction may have varying level of anxiety.

- Pranayama may bring a change in the level of anxiety.

- Pranayama has no adverse affects among clients with Myocardial Infarction.

- Pranayama is a simple and cost effective method to reduce anxiety.

For the study, the literature reviews are divided into following sessions:

- Studies related to prevalence of anxiety among clients with Myocardial Infarction.

- Studies related to Pranayama on anxiety.

- Studies related to effectiveness of Pranayama on anxiety among clients with Myocardial Infarction.

Research Approach

- A quantitative, evaluative approach was used to determine the effectiveness of Pranayama in reducing the level of anxiety among clients with Myocardial Infarction.

Research design

- A Quasi experimental pre and post test with control group design was chosen for this study.

Variables

Dependent Variable   :   Anxiety

Independent Variable :   Pranayama

Demographic Variables: Age, Gender, Education, Occupation, Income, Religion, Marital Status, Type of Family, Place of residence, Duration of Illness, Duration of Hospitalization..

Setting of the Study

This main study was conducted at Arpana Hospital, Karnal. It is a cardiac hospital. The total number of beds in the hospital is 200 beds. The average cardiac inpatient is minimum 25 patients per week and 10 patients per day. During the study period, there were minimum 72 subjects who got admitted per month. Approximately there were 100 patients per day visiting outpatient department and inpatient censes was on an average 90% per month.

Population

The target population was clients with Myocardial Infarction.

The accessible population for this study was clients who had Myocardial Infarction with mild to moderate level of anxiety and admitted at selected hospital.

Sample

Clients who had Myocardial Infarction with mild and moderate level of anxiety those who fulfilled the inclusion criteria were the sample.

Sample Size

The sample size for the study was 60 (30 in the experimental group and 30 in the control group).

Sampling Technique

Non-probability purposive sampling technique was used for the study.

Criteria for Sample Selection

Inclusion Criteria

- Clients who were conscious and stable.

- Clients who stayed in hospital for a minimum of 7 days.

- Clients with mild to moderate level of anxiety.

Exclusion Criteria

- Clients who are on anxiolytics and antidepressants.

- Clients with respiratory problems such as asthma etc.,

- Clients with nasal problems such as rhinitis, injury to the nose etc.,

- Clients who were critically ill, Clients who were mentally ill, Clients with sensory deficit (blindness, deafness).

Description of Tool

Part A

It consisted of demographic variables of clients with Myocardial Infarction.

Part B

It consisted of standardized Spielbergers State Anxiety Inventory. It was used to assess the level of anxiety among clients with Myocardial Infarction. The State anxiety inventory was developed by Charles D.Spielberger. It is a 4 point likert scale which consisted of 20 items which provides measure of state anxiety. It is a measure of the intensity of anxiety experienced at the time of assessment.

Scoring Procedure

The scale consisted of 20 items among them item numbers 3,4,6,7,9,12,13, 14,17,18 were positive items and item numbers 1,2,5,8,10,11,15,16, 19, 20 were negative items. The positive items were scored as Not at all-1, Somewhat - 2, Moderately so-3, and Very much so-4. The negative items were scored reversely as Not at all-4, Somewhat-3, Moderately so-2, and Very much so-1.

The minimum score was 20 and the maximum score was 80. The grading of anxiety was done as follows

20	:	No anxiety
21-40	:	Mild level of anxiety
41-60	:	Moderate level of anxiety
61-80	:	Severe level of anxiety

Intervention

The investigator developed an interventional strategy on Pranayama by reviewing literature & obtaining expert opinion. It is a type of yogic breathing technique that consists of 4 steps (inspiration, breath holding, expiration, breath holding) and to continue 20 cycles. The intervention was demonstrated once. The total duration for one Pranayama session was 12 minutes.

Validity and Reliability

Content Validity

Five experts in nursing and two experts in medicine evaluated the content of the instrument and intervention (Pranayama). Nursing experts were Medical Surgical Nursing and Medical experts were from Cardiology and from Psychiatry.

Reliability

The reliability was calculated through test re-test method. Test retest score (r=0.9). Hence the tool was found to be reliable and was used in this study.

Pilot Study

The Investigator conducted a pilot study among ten clients with Myocardial Infarction in St.Mary's Hospital at Podanur after obtaining the written permission. The tool applicability and feasibility was found to be satisfactory.

Data Collection Procedure

Data collection procedure was done for a period of 6 weeks in general wards of Moorthy's Hospital at Trichy. Permission to conduct the study was obtained from the Director of the hospital. The subjects were informed by the researcher about the nature and purpose of the study. Written consent was obtained from all the study subjects as per rule on the Day 1. On the same day, self administered standardized Spielbergers State Anxiety Inventory was administered to assess pre- test score of anxiety. Pranayama was demonstrated first time about 12 minutes followed by pre- test and the subjects were asked to repeat the demonstration. Day 2, 3, 4, 5 and 6, the subjects did Pranayama once in the morning and it was supervised daily by the investigator. Post- test was done on the Day 6 by using the same questionnaire.

Plan for Data Analysis

The demographic variables were analyzed by using descriptive statistics (frequency & percentage). The level of anxiety was analyzed by using descriptive statistics (mean, standard deviation). The effectiveness of Pranayama was analyzed by using inferential statistics (paired and unpaired 't' test). Association between the level of anxiety among clients with Myocardial Infarction with their selected demographic variables was analyzed by chi square analysis.

Protection of Human Rights

The study was conducted after the approval of research committee of the college. The nature and purpose of this study was explained to the health care personnel involved. Written consent was obtained from all the study participants. Anonymity and confidentiality was maintained throughout the study.
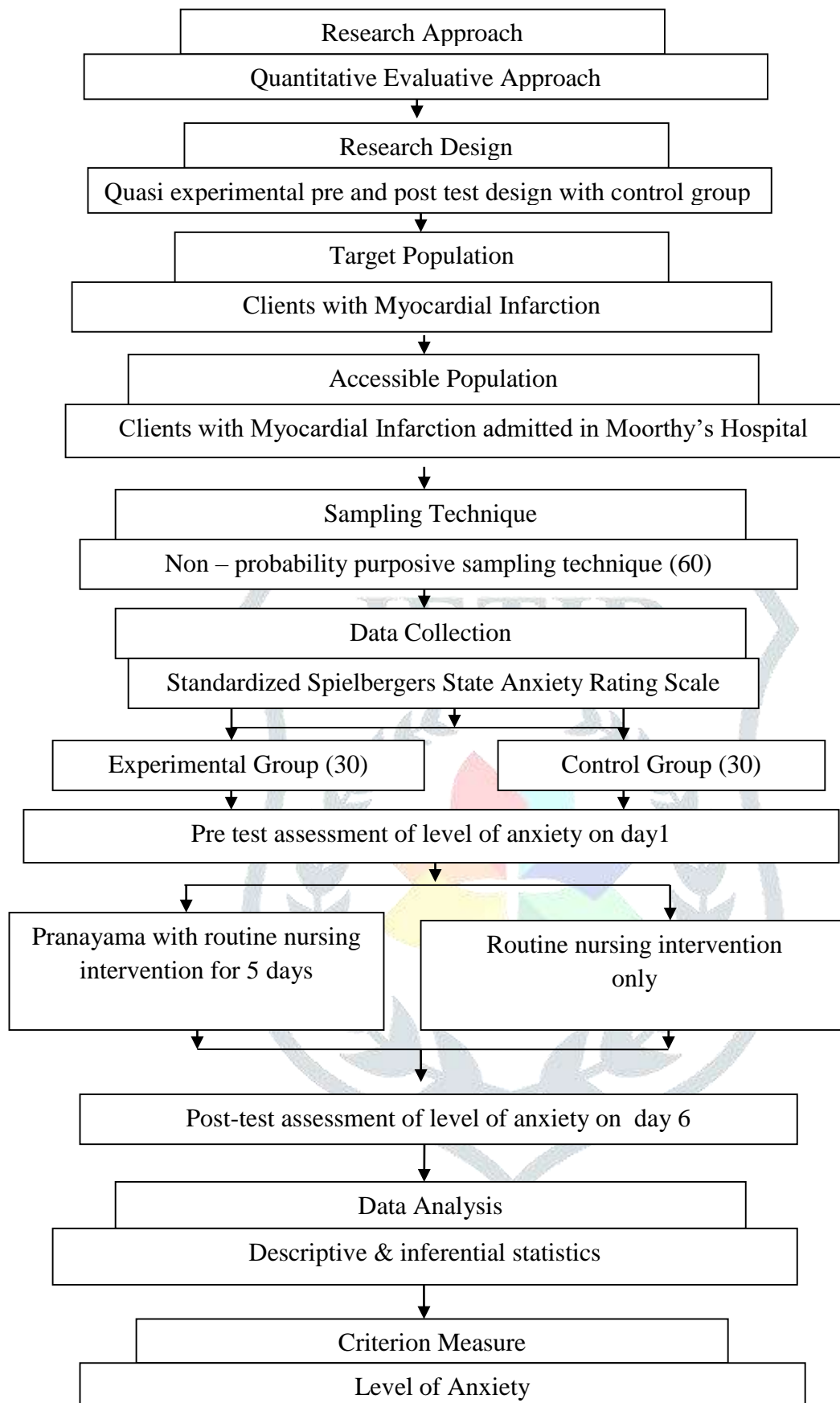
Research Approach

Quantitative Evaluative Approach

Research Design

Quasi experimental pre and post test design with control group

Target Population

Clients with Myocardial Infarction

Accessible Population

Clients with Myocardial Infarction admitted in Moorthy's Hospital

Sampling Technique

Non – probability purposive sampling technique (60)

Data Collection

Standardized Spielbergers State Anxiety Rating Scale

Experimental Group (30)   Control Group (30)

Pre test assessment of level of anxiety on day1

Pranayama with routine nursing intervention for 5 days   Routine nursing intervention only

Post-test assessment of level of anxiety on day 6

Data Analysis

Descriptive & inferential statistics

Criterion Measure

Level of Anxiety

Fig. 1: The Schematic Representation of Research Methodology

Table: 1

Frequency and Percentage Distribution of Clients with Myocardial Infarction according to their Level of Anxiety in Experimental Group.

n=30

S. No.	Level of Anxiety	Experimental Group			
		Pre-test		Post-test	
		f	%	f	%
1.	No Anxiety	0	0	10	33
2.	Mild Anxiety	9	30	19	63
3.	Moderate Anxiety	21	70	1	4

Table 1 shows the level of anxiety among the experimental group with Myocardial Infarction.

Out of 30 subjects, 9 (30%) had a mild level of anxiety, 21 (70%) had a moderate level of anxiety during pre test. Where as in post test 10 (33%) of them had a no anxiety, 19 (63%) had a mild level of anxiety and 1(4%) had moderate level of anxiety.

n=30

S. No.	Level of Anxiety	Control Group			
		Pre-test		Post-test	
		f	%	f	%
1.	No Anxiety	0	0	0	0
2.	Mild Anxiety	13	43	17	57
3.	Moderate Anxiety	17	57	13	43

Table 2 shows the level of anxiety among the control group with Myocardial Infarction.

Out of 30 subjects, 13 (43%) had a mild level of anxiety, 17 (57%) had a moderate level of anxiety during pre-test. Where as in post-test 17 (57%) of them had a mild level of anxiety, 13 (43%) had a moderate level of anxiety.

EFFECTIVENESS OF PRANAYAMA ON LEVEL OF ANXIETY AMONG CLIENTS WITH MYOCARDIAL INFARCTION

Table: 3

Mean, Standard Deviation, Mean Difference and 't' Value of Pre-test and Post-test Level of Anxiety among Clients with Myocardial Infarction in Experimental Group.

n=30

S.No.	Variables	Mean	SD	MD	't' Value
1.	Pre-test	44.33	6.98	17.5	26.96**
2.	Post-test	26.83	6.64		(2.462)

**- Significant at p<0.01 level

Table 3 reveals that the mean pre test score was 44.33 with standard deviation 6.98 and the mean post test score was 26.83 with the standard deviation 6.64. The mean difference was 17.5. The obtained 't' value, 26.96 (2.462) was significant at $p < 0.01$ level. Hence there was significant difference in the experimental group between the pre-test and post-test.

Table: 4

Mean, Standard Deviation, Mean Difference and 't' Value of Pre-test and Post-test Level of Anxiety among Clients with Myocardial Infarction in Control Group.

n=30

S.No.	Variables	Mean	SD	MD	't' Value
1.	Pre-test	0.7	11.36	1.4	2.43
2.	Post-test	39.3	7.27		(2.462)

Table 4 revealed that the mean pre test score was 40.7 with standard deviation 11.36 and the mean post test score was 39.3 with the standard deviation 7.27. The mean difference was 1.4. The obtained 't' value, 2.43 (2.462) was no significant at $p < 0.01$ level. Hence, there was no significant difference in the control group between the pre-test and post-test.

Table: 5

Mean, Standard Deviation, Mean Difference and 't' Value of Post-test Level of Anxiety among Clients with Myocardial Infarction in Experimental and Control Group.

n=60

S.No.	Variables	Mean	SD	MD	't' Value
1.	Post-test Experimental Group	26.83	6.64	12.47	6.77** (2.462)
2.	Control Group	39.3	7.27		

**significant at p<0.01 level

Table 5 reveals that the mean post-test score was 26.83 with standard deviation 6.64 in experimental group and the mean post-test score was 39.3 with the standard deviation 7.27 in control group. The mean difference was 12.47. The obtained 't' value, 6.77(2.462) was significant at p<0.01 level. It is inferred that Pranayama was effective on level of anxiety among clients with Myocardial Infarction.

➢ It was inferred that there was no significant association between the level of anxiety among clients with Myocardial Infarction in experimental group and their demographic variables.

➢ It was inferred that there was no significant association between the level of anxiety among clients with myocardial infarction in control group and their demographic variables.

Major findings of the study were,

✓ Regarding the demographic variables of the experimental group, majority of the clients with Myocardial Infarction 21 (35%) belonged to age group between 46-55 years, 32 (54%) of them were males and , 20 (33%) of them had studied up to secondary level, 28 (46%) were unemployed, 36 (60%) had earned an income of above ` 10000 per month, 25 (41%) were Hindus, 44 (73%) were married, 31 (51%)of them hailed from nuclear family, 37 (62%) of them hailed from urban areas. With regard to duration of illness majority of them 29 (48%) suffered from Myocardial Infarction for more than 1 year, In duration of treatment majority of them 29 (48%) were under treatment for more than a year, In duration of hospitalization 57 (95%) were hospitalized for a period less than 7 days.

✓ With regard to effectiveness of Pranayama on anxiety among clients with Myocardial Infarction, the mean post test score of level of anxiety was less than the mean pretest score of level of anxiety. The obtained 't' value 6.77 was significant at p<0.01 level.

✓ With regard to the association between the level of anxiety and selected demographic variables, the study findings revealed that there was no significant association between level of anxiety and any demographic variables in both the experimental and control group.

Implications of the Study

Nursing Practice

- As Nurses accompany the patient's round the clock they are in a best position to impart and teach Pranayama to the patient's in the clinical area.

- Pranayama intervention can be practised by the clients in clinical setting to reduce anxiety and relax themselves as Pranayama is cost-effective and has no adverse effects.

Nursing Education

- Nurse educators have to teach the students regarding accurate assessment of level of anxiety among clients with Myocardial Infarction.

- Nurse educators should arrange for participating capacity building program on pranayama techniques ensure the availability of enough literature related to pranayama techniques in reduction of anxiety in library, for students references.

Nursing Administration

- In service education program can be organized by nurse administrators for the nurses on this complementary technique.

- Nurse administrators can collaborate with hospital authorities in formulating policies to employ the specially qualified nurses in the wards and periodically supervise their application of pranayama intervention.

Nursing Research

- The study findings encourage, further research studies on the effectiveness of Pranayama in reducing anxiety among clients with Myocardial Infarction.

- The study finding will help to expand the scientific body of professional knowledge upon which further research can be conducted.

Limitation

- The investigator found difficult to start the intervention at same time every day because the client woke up at different times.

Recommendations

- A similar study can be conducted with a larger sample size and in different settings.

- A similar study can be conducted on other symptoms like headache, hypertension, memory loss, stress, obesity and insomnia.

- A similar study with other complementary therapies on anxiety can be conducted.

- A longitudinal study can be undertaken to see the long term effect of Pranayama, in reducing anxiety at various time intervals such as at 6 months, 1 year and 2 years.

- A True experimental study can be conducted among clients with Myocardial Infarction and with other chronic illness.

REFERENCES

- ✓ Aleyamma eupen,(1999). Cardio vascular nursing. New Delhi: Churchill Livingstone publication.

- ✓ Ann Mariner Toomey. (2006). Nurse theorists and theories. 6th ed. Missouri: Mosby publication.

- ✓ Dorothy. Et.al. (1995). Fundamentals of nursing research. 2nd ed. Usa: jones and bartlett publication.

- ✓ Deidre lane, douglas carroll, gregory (2009). Anxiety, depression and prognosis after myocardial infarction journal of the american college of cardiology. 18.7.

- ✓ Asif iqbal a. Savanur, jesveena mathis (2011).effect of pranayama on anxiety. Nightinggale nursing time. Volume 7(4).page no:21-23.

- ✓ Dr.m.thirunarayanasamy, dr.g.jayabharathi (2010). Effect of pranayama. Health action volume 59 (7). Page no. 35-36.

- ✓ Diasy josphine lobo (2010). Application of roy's adaptation model nightingale nursing times. Volume 6(9): 61 –64.

- ✓ Jones west. (1996). Meta-analysis on myocardial infarction.

  Retrieved from https://web.ebscohost.com/myocardialinfarction=1024. Retrieved on 9th october 2012
  .

- ✓ Gautama (2008). Yoga and meditation. Retrieved from https://www.yoga&oq=gautama=65052%3b= df0dd4f71. Retrieved on 11th september 2012.

- ✓ Robert w.yeh (2010).cross sectional study to assess the anxiety and stress among myocardial infarction. Retrieved from https://web.ebscohost.com/ ehost/detail?sid =prevelance+mi1355534169. Retrieved on 9th October 2012.