

“A study to assess the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry”

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ABSTRACT

Cancer is a disease in which a person's cells grow out of control and spread to other parts of the body. Cancer is a group of conditions where the body's cells begin to grow and reproduce in an uncontrolled manner. . A true experimental research design was used. By using purposive sampling technique 30 sample was selected for the present study. The tool consists of demographic data and questionnaire. In pre test 17(56.7%) of them having moderate pain, 5(26.7%) of them having severe pain, 5(16.7%) having mild pain. After given the chemotherapy, the post test will be conducted, in post test level of pain was 14(46.7%) having no pain, 8(26.7%) having moderate pain, 7(23.3%) having mild pain and remaining 1(3.3%) of them having severe pain. In pre test 16(53.3%) having high level stress, 11(36.7%) of having moderate level of stress and few 3(10%) having low level of stress. After given the chemotherapy, the post test will be conducted, in post test level of stress was 23(76.7%) of having low stress, 6(20%) of them having moderate level of stress and 1(3.3%) having high level of stress.

I. INTRODUCTION

REVIEW OF LITERATURE

S.H et.al, (2021) was conducted a study based on an experimental in 88 out patients at Tokyo. Subjects were randomly assigned to receive yoga (n=44) or brief supportive therapy (n=44) prior to their radio therapy treatment with stage 2 and stage 3 breast cancer. The intervention consisted of yoga sessions lasting 60 minutes daily while control group was imparted supportive therapy once in 10 days. Assessment was done at base line and after 6 weeks stress scales. At last results from this therapies showed a significant decrease in psychological distress, (p=0.01) over time in the yoga group as compare to control group. There was significant improvement in the activity level in the yoga group as compare to control group. They concluded that the result suggests a possible role for yoga to improve quality of life and affect in breast cancer patients.

STATEMENT OF THE PROBLEM:

“A study to assess the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry”

OBJECTIVES:

1. To assess the level of pain among cancer patients.
2. To assess the level of stress among cancer patients.
3. To find out the association between level of pain and stress with their selected demographic variables.

ASSUMPTION

1. Most of the oncology patients will have stress and pain.
2. Deep breathing exercise is an alternative therapy that reduces pain and stress.

II. MATERIALS AND METHODS:

Research methodology refers to the techniques used to structure a study and to gather and analyze information in a systematic fashion. Research methodology includes the steps, procedures and strategies for gathering and analyzing data in the research investigation. The research approach used for this study was quantitative research approach. A true experimental research design was used. By using purposive sampling

technique 30 sample was selected for the present study. The tool consists of demographic data and questionnaire.

Section A: Description of the demographic variables.

Section B:

i) Assessment of the effectiveness of deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry.

ii) Assessment of the effectiveness of deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry.

Section C:

i) Effectiveness of deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry.

ii) Effectiveness of deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry.

Section D:

i) Association between effectiveness of pre-test on deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables.

ii) Association between effectiveness of post-test on deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables.

iii) Association between effectiveness of pre-test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables.

iv) Association between effectiveness of post-test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables.

SCORING INTERPRETATION:

Wong baker Pain rating scale

1. 0 ± No pain.
2. 1 ± 3 Mild pain.
3. 4 - 6 Moderate pain.
4. 7 ± 10 severe pain.

Stress Assessment scale

1. 0 - 13 mild pain
2. 14- 26 moderate pain
3. 27- 40 severe pain

Research approach

An experimental approach was used to determine the effectiveness of deep breathing exercise in terms of reduction of pain and stress among cancer patients.

Research design

The research design selected was **True experimental design One group pre-test, post-tests-- Time series design.**

SETTINGS OF THE STUDY

The study was conducted among patient who are admitted in medical and Surgical ward in Sri Manakula Vinayagar medical college and hospital, Puducherry. The selection of the setting was done based on the feasibility of conducting the study and the availability of the subject after getting cooperation from the authorities.

STUDY POPULATION

The population for the study was patients diagnosed with cancer and admitted for chemotherapy treatment.

SAMPLING TECHNIQUE

Purposive sampling technique was used in this study.

SAMPLE SIZE

The total size of sample was 30.

CRITERIA FOR SAMPLE SELECTION INCLUSION CRITERIA

- Patients who were admitted with cancer for patient receiving (Chemotherapy).
- Patients in the age group of 15-46 yrs.
- Patients speaking and understanding Tamil.

EXCLUSION CRITERIA

- patient who are not willing to participate in this study
- Patients who were terminally ill.
- Patients who were on continuous opioids.

III. RESULTS:

The finding reveals that out of 30 samples the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry” the frequency and percentage wise distribution of pre-test and post-test level of pain among cancer patients receiving chemotherapy. In pre test 17(56.7%) of them having moderate pain, 5(26.7%) of them having severe pain, 5(16.7%) having mild pain. After given the chemotherapy, the post test will be conducted, in post test level of pain was 14(46.7%) having no pain, 8(26.7%) having moderate pain, 7(23.3%) having mild pain and remaining 1(3.3%) of them having severe pain.

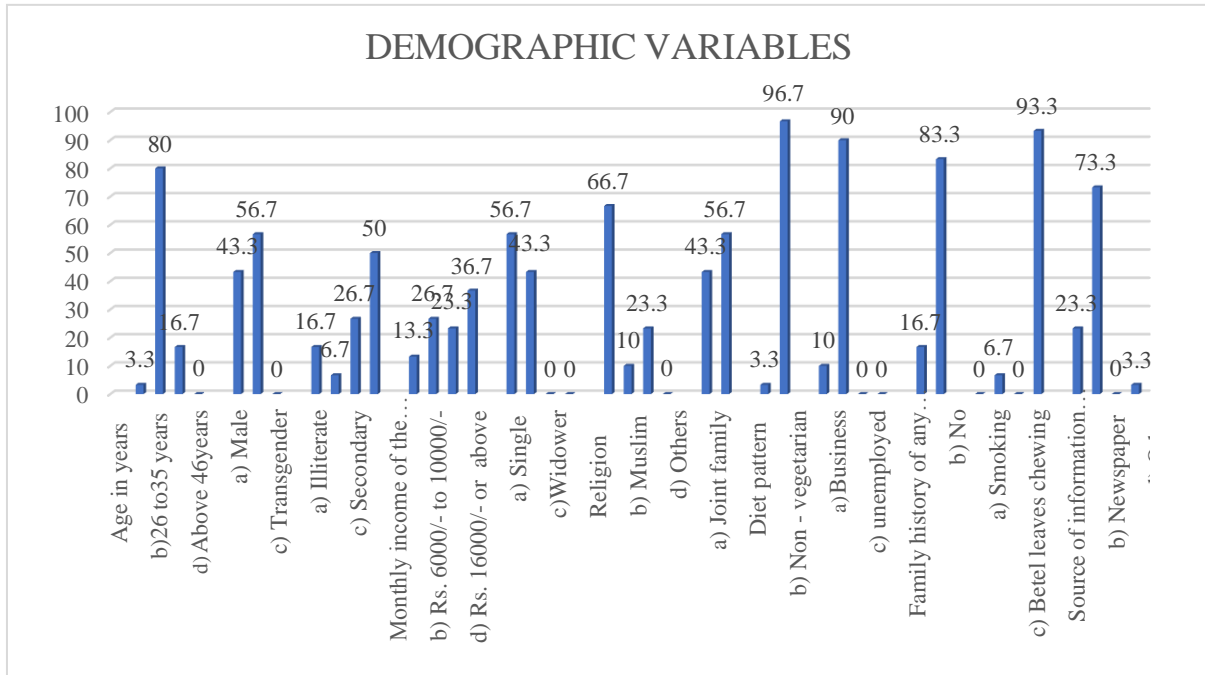
The finding reveals that out of 30 samples the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry” the frequency and percentage wise distribution of pre-test and post-test level of pain among cancer patients receiving chemotherapy. In pre test 16(53.3%) having high level stress, 11(36.7%) of having moderate level of stress and few 3(10%) having low level of stress. After given the chemotherapy, the post test will be conducted, in post test level of stress was 23(76.7%) of having low stress, 6(20%) of them having moderate level of stress and 1(3.3%) having high level of stress.

The finding reveals that out of 30 samples the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry” the level of pain among cancer patients receiving chemotherapy in the pre test the mean and standard deviation was 3.13 ± 0.681 and in the post test 1.87 ± 0.937 . the highest significance of the p value is 0.05.

Frequency and percentage wise distribution of the demographic variables.

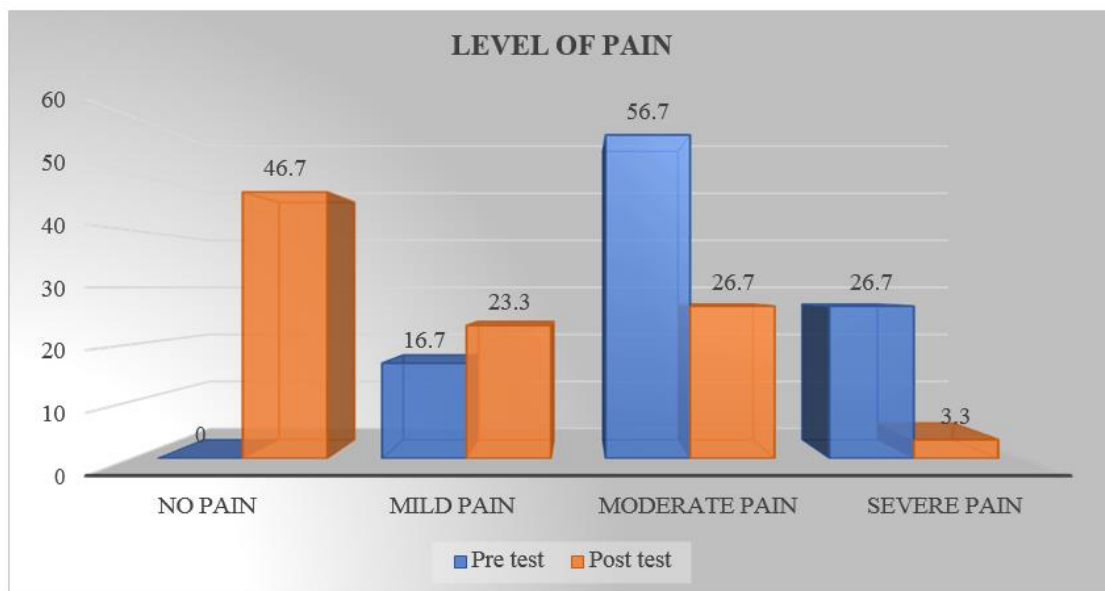
S.NO	DEMOGRAPHIC VARIABLES	Frequency (N)	Percentage (%)
1	Age in years		
	a) 15 to 25 years	1	3.3
	b) 26 to 35 years	24	80
	c) 36 to 45 years	5	16.7
	d) Above 46 years	0	0
2	Gender		
	a) Male	13	43.3
	b) Female	17	56.7
	c) Transgender	0	0
3	Educational status		
	a) Illiterate	5	16.7
	b) Primary	2	6.7
	c) Secondary	8	26.7
	d) Degree and above	15	50
4	Monthly income of the family per month?		
	a) Below Rs.5000/-	4	13.3
	b) Rs. 6000/- to 10000/-	8	26.7
	c) Rs. 11000/- to 15000/-	7	23.3
	d) Rs. 16000/- or above	11	36.7
5	Marital status		
	a) Single	17	56.7
	b) Married	13	43.3
	c) Widower	0	0

	d) Divorced	0	0
6	Religion		
	a) Hindu	20	66.7
	b) Muslim	3	10
	c) Christian	7	23.3
	d) Others	0	0
7	Type of family		
	a) Joint family	13	43.3
	b) Nuclear family	17	56.7
8	Diet pattern		
	a) vegetarian	1	3.3
	b) Non - vegetarian	29	96.7
9	Occupation		
	a) Business	3	10
	b) Daily wages	27	90
	c) unemployed	0	0
	d) Salaried	0	0
10	Family history of any chronic diseases?		
	a) Yes	5	16.7
	b) No	25	83.3
11	Bad habits		
	a) Smoking	0	0
	b) Alcohol	2	6.7
	c) Betel leaves chewing	0	0
	d) NIL	28	93.3
12	Source of information regarding cancer ?		
	a) Radio or television	7	23.3
	b) Newspaper	22	73.3
	c) Medical professionals	0	0
	d) Other	1	3.3



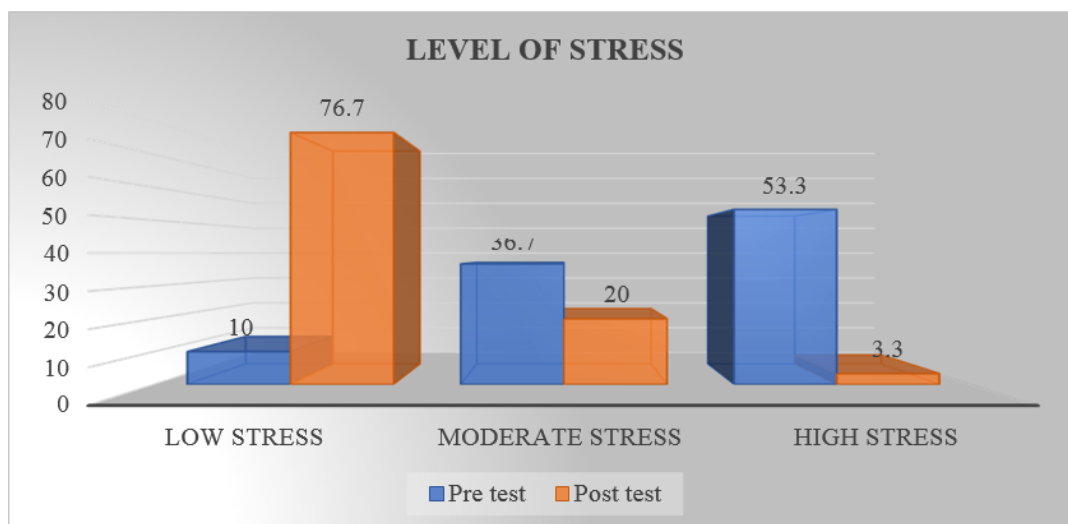
Frequency and percentage wise distribution of pre-test and post-test level of pain among cancer patients receiving chemotherapy. (N=30)

S.NO	Level of pain	Pre test		Post test	
		Frequency(N)	Percentage(%)	Frequency(N)	Percentage(%)
1	No pain	0	0	14	46.7
2	Mild pain	5	16.7	7	23.3
3	Moderate pain	17	56.7	8	26.7
4	Severe pain	8	26.7	1	3.3



Frequency and percentage wise distribution of pre-test and post-test level of stress among cancer patients receiving chemotherapy. (N=30)

S.NO	Level of stress	Pre test		Post test	
		Frequency(N)	Percentage(%)	Frequency(N)	Percentage(%)
1	Low stress	3	10	23	76.7
2	Moderate stress	11	36.7	6	20
3	High stress	16	53.3	1	3.3



Mean and Standard deviation of both pre test and post test on deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry.

S.NO	Level of pain	Mean	Standard deviation	P value
1	Pre test	3.13	0.681	0.05
2	Post test	1.87	0.937	

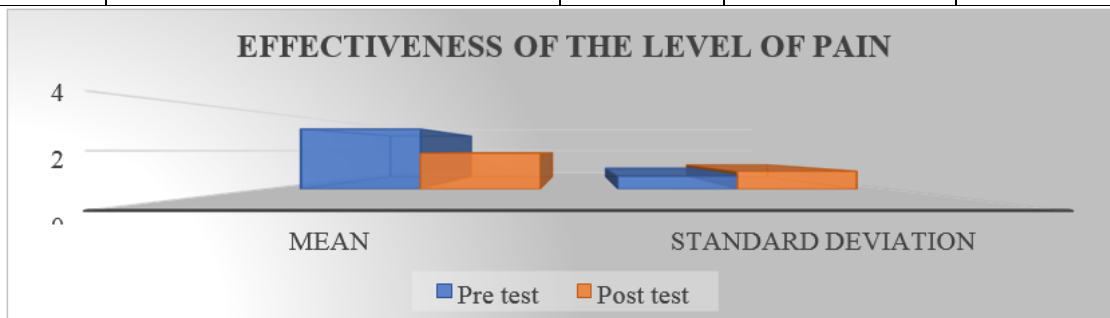
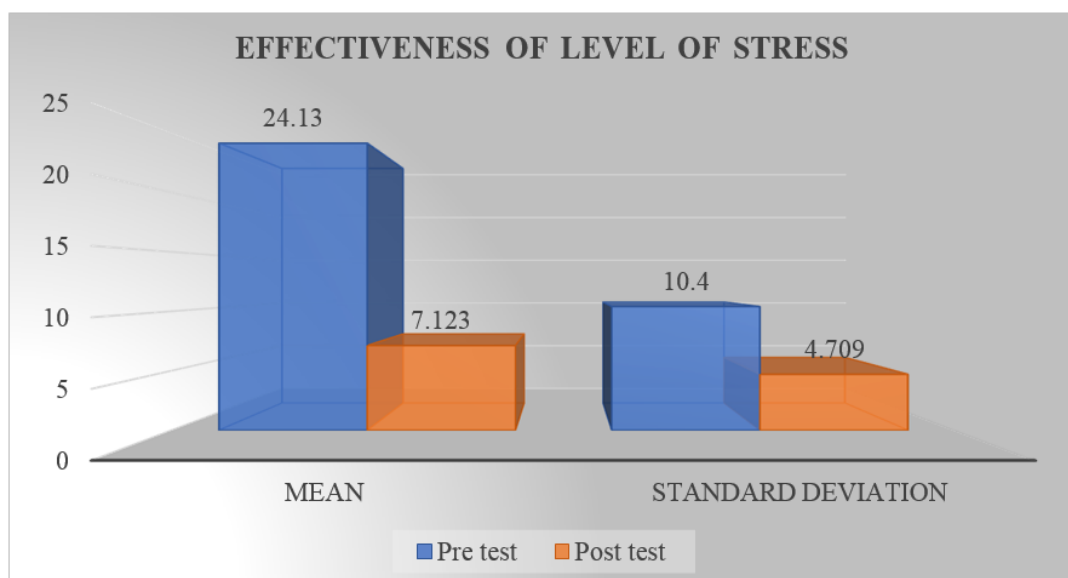


Fig 4.4 represents the mean and standard deviation values of level of pain

Mean and Standard deviation of both pre test and post test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry. (N=30)

S.NO	Level of stress	Mean	Standard deviation	P value
1	Pre test	24.13	10.40	0.05
2	Post test	7.123	4.709	

The level of stress among cancer patients receiving chemotherapy in the pretest the mean and standard deviation was 24.13 ± 10.40 and in the post test 7.123 ± 4.709 . the highest significance of the p value is 0.05.



The mean and standard deviation values of level of stress

Mean and Standard deviation of both pre test and post test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry. (N=30)

S.NO	DEMOGRAPHIC VARIABLES	Mild		Moderate		Severe		X ² Df P value
		N	%	N	%	N	%	
1	Age in years							
	a) 15 to 25 years	0	0	1	3.3	0	0	2.656
	b) 26 to 35 years	5	16.7	12	40	7	23.3	4 0.617
	c) 36 to 45 years	0	0	4	13.3	1	3.3	NS
	d) Above 46 years	0	0	0	0	0	0	
2	Gender							
	a) Male	3	10	7	23.3	3	10	0.709
	b) Female	2	6.7	10	33.3	5	16.7	2
	c) Transgender	0	0	0	0	0	0	0.702 NS
3	Educational status							
	a) Illiterate	0	0	4	13.3	1	3.3	5.916
	b) Primary	0	0	2	6.7	0	0	6 0.433
	c) Secondary	3	10	3	10	2	6.7	NS
	d) Degree and above	2	6.7	8	26.7	5	16.7	
4	Monthly income of the family per month?							
	a) Below Rs.5000/-	0	0	3	10	1	3.3	6.777
	b) Rs. 6000/- to 10000/-	3	10	3	10	2	6.7	6 0.342
	c) Rs. 11000/- to 15000/-	0	0	6	20	1	3.3	NS
	d) Rs. 16000/- or above	2	6.7	5	16.7	4	13.3	
5	Marital status							
	a) Single	3	10	9	30	5	16.7	0.230
	b) Married	2	6.7	8	26.7	3	10	2 0.892
	c) Widower	0	0	0	0	0	0	NS
	d) Divorced	0	0	0	0	0	0	
6	Religion							

	a) Hindu	4	13.3	11	36.7	5	16.7	0.801
	b) Muslim	0	0	2	6.7	1	3.3	4 0.938
	c) Christian	1	3.3	4	13.3	2	6.7	NS
	d) Others	0	0	0	0	0	0	
7	Type of family							
	a) Joint family	4	13.3	5	16.7	4	13.3	4.224 2
	b) Nuclear family	1	3.3	12	40	4	13.3	0.121 NS
8	Diet pattern							
	a) vegetarian	0	0	0	0	1	3.3	2.845 2
	b) Non - vegetarian	5	16.7	17	56.7	7	23.3	0.241 NS
9	Occupation							
	a) Business	0	0	3	10	0	0	2.549 2
	b) Daily wages	5	16.7	14	46.7	8	26.7	0.280
	c) unemployed	0	0	0	0	0	0	NS
	d) Salaried	0	0	0	0	0	0	
10	Family history of any chronic diseases?							
	a) Yes	1	3.3	3	10	1	3.3	0.152 2
	b) No	4	13.3	14	46.7	7	23.3	0.927 NS
11	Bad habits							
	a) Smoking	0	0	0	0	0	0	2.017 2
	b) Alcohol	1	3.3	1	3.3	0	0	0.365
	c) Betel leaveschewing	0	0	0	0	0	0	NS
	d) NIL	4	13.3	16	53.3	8	26.7	
12	Source of information regarding cancer ?							
	a) Radio or television	0	0	4	13.3	3	10	5.707 4
	b) Newspaper	5	16.7	13	43.3	4	13.3	0.222
	c) Medical professionals	0	0	0	0	0	0	NS
	d) Other	0	0	0	0	1	3.3	

(S- Highly Significant, NS- Non Significant, P=0.05)

None of the demographic variables are significant.

Association between effectiveness of post-test on deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables. (N=30)

S.NO	DEMOGRAPHIC VARIABLES	Mild pain		Moderate pain		No pain		Severe pain		X ² df P value
		N	%	N	%	N	%	N	%	
1	Age in years									
	a) 15 to 25 years	1	3.3	0	0	0	0	0	0	4.054 6
	b) 26 to 35 years	5	16.7	6	20	12	40	1	3.3	0.669
	c) 36 to 45 years	1	3.3	2	6.7	2	6.7	0	0	NS
	d) Above 46 years	0	0	0	0	0	0	0	0	
2	Gender									
	a) Male	3	10	4	13.3	6	20	0	0	0.911 3
	b) Female	4	13.3	4	13.3	8	26.8	1	3.3	0.823
	c) Transgender	0	0	0	0	0	0	0	0	NS

3	Educational status									
	a) Illiterate	1	3.3	2	6.7	2	6.7	0	0	9.147
	b) Primary	2	6.7	0	0	0	0	0	0	0.424
	c) Secondary	1	3.3	3	10	4	13.3	0	0	NS
	d) Degree and above	3	10	3	10	8	26.7	1	3.3	
4	Monthly income of the family per month?									
	a) Below Rs.5000/-	0	0	2	6.7	2	6.7	0	0	7.392
	b) Rs. 6000/- to10000/-	2	6.7	2	6.7	4	13.3	0	0	0.596
	c) Rs. 11000/- to15000/-	3	10	1	3.3	2	6.7	1	3.3	NS
	d) Rs. 16000/- orabove	2	6.7	3	10	6	20	0	0	
5	Marital status									
	a) Single	2	6.7	3	10	12	40	0	0	9.565
	b) Married	5	16.7	5	16.7	2	6.7	1	3.3	0.023*S
	c)Widower	0	0	0	0	0	0	0	0	
	d) Divorced	0	0	0	0	0	0	0	0	
6	Religion									
	a) Hindu	5	16.7	6	20	9	30	0	0	10.582
	b) Muslim	1	3.3	0	0	1	3.3	1	3.3	0.102
	c) Christian	1	3.3	2	6.7	4	13.3	0	0	NS
	d) Others	0	0	0	0	0	0	0	0	
7	Type of family									
	a) Joint family	3	10	4	13.3	5	16.7	1	3.3	1.784
	b) Nuclear family	4	13.3	4	13.3	9	30	0	0	0.618
										NS
8	Diet pattern									
	a) vegetarian	0	0	0	0	1	3.3	0	0	1.182
	b) Non - vegetarian	7	23.3	8	26.7	13	43.3	1	3.3	0.757
										NS
9	Occupation									
	a)Business	2	6.7	0	0	1	3.3	0	0	3.810
	b)Daily wages	5	16.7	8	26.7	13	43.3	1	3.3	0.283
	c) unemployed	0	0	0	0	0	0	0	0	NS
	d)Salaried	0	0	0	0	0	0	0	0	
10	Family history of any chronic diseases?									
	a) Yes	3	10	0	0	2	6.7	0	0	5.314
	b) No	4	13.3	8	26.7	12	40	1	3.3	0.150
										NS
11	Bad habits									
	a) Smoking	0	0	0	0	0	0	0	0	2.449
	b) Alcohol	0	0	0	0	2	6.7	0	0	0.485
	c) Betel leaveschewing	0	0	0	0	0	0	0	0	NS
	d) NIL	7	23.3	8	26.7	12	40	1	3.3	
12	Source of information regarding cancer ?									
	a) Radio or television	0	0	4	13.3	3	10	0	0	35.385
	b) Newspaper	7	23.3	4	13.3	11	36.7	0	0	0.000*S
	c) Medical professionals	0	0	0	0	0	0	0	0	
	d) Other	0	0	0	0	0	0	1	3.3	

(S- Highly Significant, NS- Non Significant, P=0.05)

The association between effectiveness of post-test on deep breathing exercise on the level of pain among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables were in marital status and source of information regarding cancer were highly significant. Other than the demographic variables were non-significant.

Association between effectiveness of post-test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables. (N=30)

S.NO	DEMOGRAPHIC VARIABLES	HIGH		LOW		MODERATE		X2 Df P Value
		N	%	N	%	N	%	
1	Age in years							
	a) 15 to 25 years	0	0	0	0	1	3.3	5.589 4 0.02*S
	b) 26 to 35 years	1	3.3	18	60	5	16.7	
	c) 36 to 45 years	0	0	5	16.7	0	0	
	d) Above 46 years	0	0	0	0	0	0	
2	Gender							
	a) Male	0	0	10	33.3	3	10	0.873
	b) Female	1	3.3	13	43.3	3	10	0.646
	c) Transgender	0	0	0	0	0	0	NS
3	Educational status							
	a) Illiterate	0	0	5	16.7	0	0	5.774
	b) Primary	0	0	1	3.3	1	3.3	6 0.44
	c) Secondary	1	3.3	6	20	1	3.3	NS
	d) Degree and above	0	0	11	36.7	4	13.3	
4	Monthly income of the family per month?							
	a) Below Rs.5000/-	0	0	4	13.3	0	0	7.266
	b) Rs. 6000/- to 10000/-	1	3.3	5	16.7	2	6.7	6 0.029*S
	c) Rs. 11000/- to 15000/-	0	0	4	13.3	3	10	
	d) Rs. 16000/- or above	0	0	10	33.3	1	3.3	
5	Marital status							
	a) Single	1	3.3	13	43.3	3	10	0.873
	b) Married	0	0	10	33.3	3	10	2 0.646
	c) Widower	0	0	0	0	0	0	NS
	d) Divorced	0	0	0	0	0	0	
6	Religion							
	a) Hindu	1	3.3	16	53.3	3	10	1.367
	b) Muslim	0	0	2	6.7	1	3.3	4 0.850
	c) Christian	0	0	5	16.7	2	6.7	NS
	d) Others	0	0	0	0	0	0	
7	Type of family							
	a) Joint family	0	0	11	36.7	2	6.7	1.198
	b) Nuclear family	1	3.3	12	40	4	13.3	2 0.549
								NS
8	Diet pattern							
	a) vegetarian	0	0	1	3.3	0	0	0.315
	b) Non - vegetarian	1	3.3	22	73.3	6	20	2 0.854 NS

9	Occupation							
	a) Business	0	0	2	6.7	1	3.3	0.451
	b) Daily wages	1	3.3	21	70	5	16.7	2
	c) unemployed	0	0	0	0	0	0	0.798
	d) Salaried	0	0	0	0	0	0	NS
10	Family history of any chronic diseases?							
	a) Yes	0	0	5	16.7	0	0	1.826
	b) No	1	3.3	18	60	6	20	2
								0.401
								NS
11	Bad habits							
	a) Smoking	0	0	0	0	0	0	1.234
	b) Alcohol	0	0	1	3.3	1	3.3	2
	c) Betel leaveschewing	0	0	0	0	0	0	0.539
	d) NIL	1	3.3	22	73.3	5	16.7	NS
12	Source of information regarding cancer ?							
	a) Radio or television	0	0	6	20	1	3.3	4.557
	b) Newspaper	1	3.3	17	56.7	4	13.3	4
	c) Medical professionals	0	0	0	0	0	0	0.0336*S
	d) Other	0	0	0	0	1	3.3	

(S- Highly Significant, NS- Non Significant, P=0.05)

The association between effectiveness of post-test on deep breathing exercise on the level of stress among cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry with their selected demographic variables were in age in years, monthly income of the family per month and source of information regarding cancer were highly significant. Other than the demographic variables were non-significant.

IV. CONCLUSION AND RECOMMENDATIONS:

The present study was to assess the effectiveness of deep breathing exercise on the level of pain and stress among cancer patient receiving chemotherapy admitted in SMVMCH at Puducherry”. A true experimental research design was selected for this study with quantitative research approach was adopted for this study. Population of the study consist cancer patients receiving chemotherapy admitted in SMVMCH at Puducherry. The study samples were selected by using purposive sampling technique at Sri Manakula Vinayagar Medical College and Hospital. Sample size consist of 30 cancer patients receiving chemotherapy at Sri Manakula Vinayagar Medical College and Hospital.

NURSING IMPLICATION:

The study has implication for nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE:

The nurses working in the hospital, clinical setting and in community should practice health education as an integral part of nursing profession. This module was developed by the investigator also be used by the nurses to educate and instruct about the cancer patients Through this effective health education it can also be improved.

NURSING EDUCATION:

The nurse educated the clients about the deep breathing exercise in the hospital settings. Provide a necessary health education, provide a deep breathing exercise or routine works etc.,

NURSING ADMINISTRATION:

The nursing administration should take an active role in organizing and implementing health education campus in the hospital settings.

NURSING RESEARCH:

The effectiveness of research study is verified by the utility by the nurses in the practical field. The findings of the study also help the patients to reduce stress and pain level. This study help the nurse researcher to develop knowledge regarding deep breathing exercise.

RECOMMENDATIONS:

- A similar study can be conducted by large number of sample in future.
- The study was conducted to particular group of people at particular age.

- Study based on daily life of clients to do their daily task.

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