EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON PHYSICAL SYMPTOMS AMONG PATIENT RECEIVING CHEMOTHERAPY

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ABSTRACT

Cancer is one in all the leading causes of morbidity and mortality worldwide, with more or less fourteen million new cases in 2012. The number of recent cases is predicted to rise by concerning seventieth over consequent a try of decades. Cancer is that the second leading reason for death globally, and was to blame for eight.8 million deaths in 2015. Globally, nearly one in six deaths is because of cancer. The present study is used to assess the effectiveness of progressive muscle relaxation technique on physical symptoms among patients receiving chemotherapy. The data from a sample of 100 cancer patients receiving chemotherapy admitted in selected hospital of Amritsar, Punjab. 50 patients in experimental group and 50 patients in control group were selected using purposive sampling technique. The results of the study showed highly significant difference in pre-interventional and post-interventional physical symptoms of experimental and control group. The Z value (Wilcoxon signed rank test) between pre-intervention and post-intervention in experimental group related to nausea was 6.350 which were found statistically highly significant at $p < 0.001$. The Z value between pre-intervention and post-intervention in control group related to nausea was 1.000 which was found statistically non-significant in control group at $p > 0.001$. Hence, it was concluded that in control group physical symptoms were not relieved. The Z value between pre-intervention and post-intervention in experimental group related to vomiting was 6.154 which were found highly significant at $p < 0.001$. Hence, it was concluded that progressive muscle relaxation technique has significant effect in relieving physical symptoms. The Z value between pre-intervention and post-intervention in control group related to vomiting was 1.342 which was found non-significant at $p < 0.001$. Hence, it was concluded that in control group physical symptoms were not relieved. The Z value between pre-intervention and post-intervention in experimental group related to pain was 6.385 which was found highly significant at $p < 0.001$. Hence, it was concluded that progressive muscle relaxation technique has significant effect in relieving physical symptoms.

Key words: Effectiveness, Progressive Muscle Relaxation Technique, Physical Symptoms, Cancer patients, Chemotherapy, Wilcoxon-signed rank test.

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INTRODUCTION

In The Times of Republic of India supported data} between 2010 and 2012, it's steered that at some purpose throughout their time period more or less thirty-nine. 6 per cent of ladies and men are aiming to be diagnosed with cancer. In India, it's calculable that fourteen. 5 large integer individuals reside with the sickness, with over seven large integers new cases being registered each year and five, 56,400 deaths that are fore mentioned to be cancer connected. AN calculable seventy one per cent of all cancer connected deaths are occurring within the people between thirty to sixty nine years. While lung, colorectal, pharynx, stomach, head and neck, and liver were the 5 commonest sites of cancer diagnosed among men in 2012; for constant amount, the 5 common sites of cancer diagnosed among girls were breast, ovary, lip and oral fissure, metabolic process organ and cervix.

A pilot study on the utilization of progressive muscle relaxation technique within the management of the post-chemotherapy nausea and reflex in Chinese carcinoma patients. Eight patients were indiscriminately assigned to receive either oral anti-emetic as per hospital and adjuvant progressive muscle relaxation technique. Progressive muscle relaxation technique is given by trained nurses for five days. Nausea, reflex is assessed by mean star day nausea reflex scale. Results indicate that period and intensity of nausea and reflex were lower within the experimental cluster. Despite the little size the study shows progressive muscle relaxation technique is an efficient adjuvant technique to decrease nausea reflex in chemotherapeutical patients.

NEED OF THE STUDY

A study emphasised that, fatigue, nausea, vomiting, appetite loss, constipation and looseness of the bowels were rated extremely as symptoms that interfered with traditional lifestyle. Thirty four girls with female internal generative organ cancer throughout mobilization therapy, vi to seven weeks when high dose therapy and vegetative cell transplantation expressed the following preferences from best to worst: no proof of sickness, ideal therapy, alopecia, cytopenia, ototoxicity, fatigue, neuropathy, mucositis, dysuria, hepatotoxicity, nausea and reflex, and worst therapy.

To meet this challenge the nurse should realistically set goals which will be earned. Optimizing the management of treatment-induced nausea and reflex ought to be a high priority for all health care suppliers concerned within the care of patients with cancer. Measures in reducing nausea and reflex embrace reduction of harmful stimuli like odors, turning away of spicy greasy foods, distraction through reading and relaxation. Relaxation techniques will facilitate to decrease stimuli tributary to symptoms. Progressive muscle relaxation technique considerably reduces therapy elicited nausea and reflex.

PROBLEM STATEMENT

A Quasi-experimental Study to assess the effectiveness of Progressive Muscle Relaxation Technique on physical symptoms among Patients receiving chemotherapy in a selected Hospital of Amritsar, Punjab.

OBJECTIVE: To compare the pre-interventional and post- interventional physical symptoms of experimental and control group among patients receiving chemotherapy

RESEARCH METHODOLOGY

Research approach: Quantitative approach

Research design: Experimental design

Research setting: The study was set to be conducted in a Hospital of Amritsar, Punjab. **Population:** The population of gift study were aiming to be cancer patients receiving therapy in hospital

Sample: Cancer patients receiving chemotherapy

Sample Size: The sample was 100 patients who can receive therapy (50 in experimental cluster and 50 in control group).

Sample Technique: Purposive sampling technique

Description of tools:

Part A:

Socio-demographic profile: This part included items for obtaining personal information of the cancer patients like age, gender, monthly income, duration of illness, type of cancer, staging of cancer, cycle of chemotherapy

Part B

Changed graphic rating scale to assess nausea: This half consisted of graphic rating scale starting from 0-10. Zero (No nausea) to ten (Severe nausea).

Criterion Measures

Level of Nausea	Scores
No Nausea	0
Mild Nausea	1-3
Moderate Nausea	4-6
Severe Nausea	7-10

Part C

Changed common toxicity criteria to assess reflex: This half consisted of grading of common toxicity criteria ranges from 0- 4. 0 (None) and 4 (Very high).

Criterion Measures

Level of Vomiting	Scores
None	0
Mild	1
Moderate	2
High	3
Very High	4

Part D

Standardized 0-10 numeric rating scale for assessing pain. This half consisted of numeric rating scale from 0-10. zero (No pain) and ten (Severe pain).

Criterion Measures

Level of Pain	Scores
No Pain	0
Mild Pain	1-3
Moderate Pain	4-6
Severe Pain	7-10

Data collection procedure:

Prior to filling the research tool, investigator gave self-introduction to the patients and explained the purpose of gathering information; a good rapport was established with the subjects. They were assured that their responses would be kept confidential and the information would be used only for the research purpose. Written consent was taken from the patients. Firstly data from the control group was collected and after that data from experimental group was collected. Pre-interventional assessment of anxiety and depression was done by using rating scale by the researcher. Researcher took an average of 15 minutes for the pre-interventional assessment. After assessing the symptoms patients were taught to perform progressive muscle relaxation technique before chemotherapy for 7 days for the time-period of 30-35 minutes by the researcher herself. On the 8th day, the post-interventional psychological symptoms were assessed.

SECTION – 1

SAMPLE CHARACTERISTICS

Table 1

Frequency and percentage distribution of sample characteristics

N= 100

Sr. No.	Demographic Variables	Control group (n=50)		Experimental group (n=50)		df	χ^2	P value
		n	%	n	%			
1.	AGE (IN YEARS)							
a.	18-27	0	0	0	0	2	4.057	0.132 ^{NS}
b.	28-37	2	4	4	8			
c.	38-47	20	40	11	22			
d.	≥48	28	56	35	70			
2.	GENDER							
a.	Male	24	48	28	56	1	0.641	0.423 ^{NS}
b.	Female	26	52	22	44			
3.	MONTHLY INCOME (IN RUPEES)							
a.	≤5000	0	0	0	0	2	2.963	0.227 ^{NS}
b.	5001-10,000	14	28	21	42			
c.	10,001-15,000	35	70	29	58			
d.	≥15,001	1	02	0	0			
4.	TYPE OF CANCER							
a.	Respiratory	13	26	12	24	2	0.437	0.804 ^{NS}
b.	Gastro-intestinal	13	26	16	32			
c.	Circulatory	0	0	0	0			
d.	Reproductive	24	48	22	22			
e.	Others	0	0	0	0			

Sr. No.	Demographic Variables	Control group (n=50)		Experiment group (n=50)		df	χ^2	P value
		n	%	n	%			
5.	DURATION OF ILLNESS (IN YEARS)							
a.	≤2	13	26	23	46	2	5.320	0.070 ^{NS}
b.	3-5	23	46	20	40			
c.	6-8	14	28	7	14			
d.	>8	0	0	0	0			
5.	STAGING OF CANCER							
a.	Stage 1	13	26	14	27	2	0.395	0.821 ^{NS}
b.	Stage 2	27	54	24	51			
c.	Stage 3	10	20	12	22			
d.	Stage 4	0	0	0	0			
7.	CYCLE OF CHEMOTHERAPY							
a.	2-3 cycle	9	18	10	20	2	0.093	0.955 ^{NS}
b.	4-5 cycle	28	56	28	56			
c.	6-7 cycle	13	26	12	24			

Chi-Square Test: NS: p > 0.05; Not significant

Table 1 reveals the frequency and percentage distribution of characteristics of the study subjects. The total sample was 100 patients admitted in selected hospital of Amritsar, Punjab was studied to assess the effectiveness of Progressive Muscle Relaxation Technique. Among 100 cancer patients receiving chemotherapy, 50 patients were in the control group and 50 patients were in the experimental group.

According to **age**, it was revealed that in control group more than half of (56%) were in the age group of ≥ 48 years followed by two-fourth (40%) were in age group of 38-47 years, (4%) in age group of 28-37 years and in experimental group nearly three-fourth (70%) of cancer patients were in age group of ≥48 years followed by (22%) had age group of 38-47 years and (8%) were in age group of 28-37 years. As per **gender**, in control group, more than half (52%) of patients were male followed by up to one-fourth (24%) were females and in experimental group nearly half (44%) of cancer patients were males was followed by more than one-fourth (28%) females.

In context of **Monthly Income (in rupees)**, in control group majority nearly three-fourth (70%) of subjects were having income ≥ Rs.10,001-15,000 followed by more than one-fourth (28%) having monthly income Rs.5,001-10,000, followed by (2%) were having income >15,001 and in experimental group more than half (58%) were having monthly income Rs.10,001-15,000 followed by (42%) having monthly income Rs.5,001-10,000. According to **Type of cancer**, in control group nearly half of (48%) were having reproductive cancer followed by equal number (26%) having gastro-intestinal cancer and respiratory type of cancer and in experimental group (44%) of subjects having reproductive cancer followed by (32%) having gastro-intestinal cancer and (24%) having respiratory type of cancer. As per **Duration of illness** nearly half of (46%) of subjects in control group were having 3-5 years illness followed by more than one-fourth (28%) having 6-8 years and nearly one-fourth (26%) having ≤ 2 years of illness

and in experimental group nearly half of (46%) were having ≤ 2 years of illness followed by (40%) having 3-5years, followed by (14%) were having 6-8 years of illness.

According to **Staging of cancer**, in control group nearly half of (54%) belongs to stage 2 followed by nearly one-fourth (26%) in stage 1 and (20%) in stage 3 and in experimental group mostly half of (48%) belongs to stage 2 followed by (28%) in stage 1 and mostly half of (24%) in stage 3. As per **Cycle of chemotherapy**, more than half of (56%) of subjects in control group lied in 4-5 cycle followed by nearly one-fourth (26%) having 6-7 cycle of chemotherapy followed by (18%) were in 2-3 cycle of chemotherapy and in experimental group more than half of (56%) lied 4-5 cycle followed by nearly one-fourth (24%) having 6-7 and (20%) having 2-3 cycle of chemotherapy.

The above description showed that the sample in experimental and control group were homogenous in characteristics which was well proved with application of chi-square which and found non-significant at $p > 0.05$.

Hence, it was concluded that maximum number of subjects were in the age group ≥ 48 years and were male and maximum monthly income was Rs.10,001- 15,000. The maximum subjects were suffering from reproductive cancer with ≤ 2 years of illness having stage 2 level of cancer and most of them were taking 4-5 cycle of chemotherapy.

Objective: To compare the pre-interventional and post-interventional physical symptoms of experimental and control group among patients receiving chemotherapy

Table 2 (a)

Comparison of the pre-interventional and post-interventional physical symptoms of control group related to nausea among patients receiving chemotherapy.

Level of Nausea	Pre-intervention		Post-intervention		Z	P value
	n	%	n	%		
No Nausea	0	0	0	0	1.000	0.317 ^{NS}
Mild Nausea	0	0	0	0		
Moderate Nausea	14	28	17	34		
Severe Nausea	36	72	33	66		

Maximum score=10

$p > 0.05$; Not significant

Minimum score = 0

Table 2(a) depicts pre- intervention and post-intervention physical symptoms of control group. In pre-intervention, nearly three-fourth (72%) had severe nausea followed by (28%) moderate nausea and in post-intervention (66%) had severe nausea followed by (34%) had moderate nausea. The Z value (wilcoxon sign rank test) between pre-intervention and post-intervention was 1.000 which was found statistically non-significant in control group at $p < 0.05$.

Hence, it was concluded that in control group physical symptoms are not relieved.

Table 2(b)

Comparison of the pre-interventional and post-interventional physical symptoms of experimental group related to nausea among patients receiving chemotherapy.

N= 100

Level of Nausea	Pre-intervention		Post-intervention		Z	P value
	N	%	N	%		
No Nausea	0	0	0	0	6.350	<0.001**
Mild Nausea	0	0	30	60		
Moderate Nausea	4	8	20	40		
Severe Nausea	46	92	0	0		

Maximum score= 4

**p<0.001; highly significant

Minimum score = 0

Table 2(b) depicts pre- intervention and post-intervention physical symptoms of control group. In pre-intervention, majority (92%) had severe nausea followed by (8%) moderate nausea and in post-intervention More than half (60%) had mild nausea followed by (40%) had moderate nausea. The Z value between pre-intervention and post-intervention was 6.350 which was found statistically significant in experimental group at p<0.05.

Hence, it was concluded that in experimental group progressive muscle relaxation technique has significant effect in reducing the physical symptoms.

Table 2(c)

Comparison of the pre-interventional and post-interventional physical symptoms of experimental group related to vomiting among patients receiving chemotherapy.

N= 100

Level of Vomiting	Pre-intervention		Post-intervention		Z	P value
	N	%	N	%		
None	0	0	33	66	6.154	<0.001**
Mild	7	14	15	30		
Moderate	42	84	2	4		
High	1	2	0	0		
Very High	0	0	0	0		

Maximum score =10

**p <0.001; highly significant

Minimum score = 0

Table 2(c) depicts pre- intervention and post-intervention physical symptoms of experimental group. In pre-intervention, majority (84%) had moderate vomiting followed by (14%) mild vomiting and 1% had high vomiting and in post-intervention (66%) had none followed by (30%) had mild vomiting and (4%) had moderate vomiting. The Z value between pre-intervention and post-intervention was 6.154 which was found statistically significant in experimental group at p<0.05.

Hence, it was concluded that progressive muscle relaxation technique has significant effect in reliving the physical symptoms.

Table 2(d)

Comparison of the pre-interventional and post-interventional physical symptoms of control group related to vomiting among patients receiving chemotherapy.

N= 30

Level of Vomiting	Pre-intervention		Post-intervention		Z	P value
	N	%	N	%		
None	0	0	0	0	1.342	0.180 ^{NS}
Mild	3	6	6	12		
Moderate	43	86	40	80		
High	4	8	4	8		
Very High	0	0	0	0		

Maximum score = 10

p >0.05; Not significant

Minimum score = 0

Table 2(d) depicts pre- intervention and post-intervention physical symptoms of control group. In pre-intervention, majority (86%) had moderate vomiting followed by (8%) had high vomiting, (6%) had mild vomiting and in post-intervention majority (80%) had moderate vomiting followed by (12%) had mild vomiting, (8%) had high vomiting. The Z value between pre-intervention and post-intervention was 1.000 which was found statistically non-significant in control group at p<0.05.

Hence, it was concluded that in control group physical symptoms were not relieved.

Table 2(e)

Comparison of the pre-interventional and post-interventional physical symptoms of experimental group related to pain among patients receiving chemotherapy.

N= 100

Level of Pain	Pre-intervention		Post intervention		Z	P value
	N	%	N	%		
No Pain	0	0	0	0	6.385	<0.001**
Mild Pain	0	0	31	62		
Moderate Pain	0	0	19	38		
Severe Pain	50	100	0	0		

Maximum score =10

****p <0.001; highly significant**

Minimum score = 0

Table 2(e) depicts pre- intervention and post-intervention physical symptoms of experimental group. In pre-intervention, all (100%) had severe pain and in post-intervention more than half (62%) had mild pain followed by (38%) had moderate pain. The Z value between pre-intervention and post-intervention was 6.385 which was found statistically highly significant in experimental group at p<0.05.

Hence, it was concluded that progressive muscle relaxation technique had significant effect in post-intervention in experimental group.

Table 2(f)

Comparison of the pre-interventional and post-interventional physical symptoms of control group related to pain among patients receiving chemotherapy.

N= 100

Level of Pain	Pre-intervention			Post-intervention		Z	P value
	N	%		N	%		
No Pain	0	0		0	0	1.000	0.317 ^{NS}
Mild Pain	0	0		0	0		
Moderate Pain	4	8		5	10		
Severe Pain	46	92		45	90		

Maximum score =10

p > 0.05; non-Significant

Minimum score = 0

Table 2(f) depicts pre- intervention and post-intervention physical symptoms of control group. In both pre-intervention and post-intervention, majority (92%) had severe pain followed by (90%) had severe pain. The Z value between pre-intervention and post-intervention was 1.000 which was found statistically non-significant in control group at p>0.05.

Hence, it was concluded that in control group physical symptoms were not relieved.

CONCLUSION

It was concluded that progressive muscle relaxation technique is effective in reducing the physical symptoms due to chemotherapy. So, it is important to teach the patients about the progressive muscle relaxation technique so that the survival rate will be more.

RECOMMENDATIONS

1. Similar study can be undertaken on a large sample for making more valid generalization.
2. A true experimental study can be conducted using random sampling technique.
3. Time series study can be conducted to evaluate long term effect of progressive muscle relaxation technique in relieving the physical symptoms due to chemotherapy.

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