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EFFECTIVENESS OF FOOT MASSAGE IN REDUCING THE LEVEL OF PAIN AMONG CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY UNITS OF SELECTED HOSPITALS, JALANDHAR, PUNJAB.

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Abstract

Cancer is an abnormal growth of cells which tend to proliferate in an uncontrolled way and, in some cases; to metastasize (spread).Cancer is not one disease, It's a group of more than 100 different and distinctive diseases. Methods: A quantitative research approach and quasi experimental research design was used and the research setting was in the selected hospitals (Patel Hospital, Jalandhar, Punjab & Civil Hospital, Jalandhar, Punjab). Total 60 samples were selected with purposive sampling technique i.e. 30 from experimental and 30 from control group. Written consent were taken from the patients who were selected as sample. Modified numeric pain rating scale was used to assess the effectiveness of foot massage. Results: The findings of the study show that the mean±SD pre interventional level of pain in experimental group was 6.7+1.09 and mean±SD post interventional level of pain was 4.16+0.99. The mean difference between pre interventional and post interventional level of pain in experimental group was statistically significant at p<0.001 level. The mean±SD pre interventional level of pain in control group was 5.67+2.19 and mean±SD post interventional level of pain was 5.77+1.99. The mean difference between pre- interventional and post interventional level of pain in control group was statistically non-significant at p<0.001 level. Hence, it was inferred that there was effect of foot massage in reducing the level of pain among cancer patients receiving chemotherapy.

Key Words:

INTRODUCTION:

Cancer is a general term used to refer to a condition where the body's cells begin to grow and reproduce in an uncontrollable way. These cells can then invade and destroy healthy tissue, including organs. Cancer sometimes begins in one part of the body before spreading to other parts. It is a disorder in which differentiated body cells undergo changes at the molecular level resulting in loss of normal cell regulation, characteristics and functions. Development of cancer

is an orderly process comprising stages like initiation, promotion and progression. Causes of cancer may be genetic, radiation, chemical or viral in nature.[1]

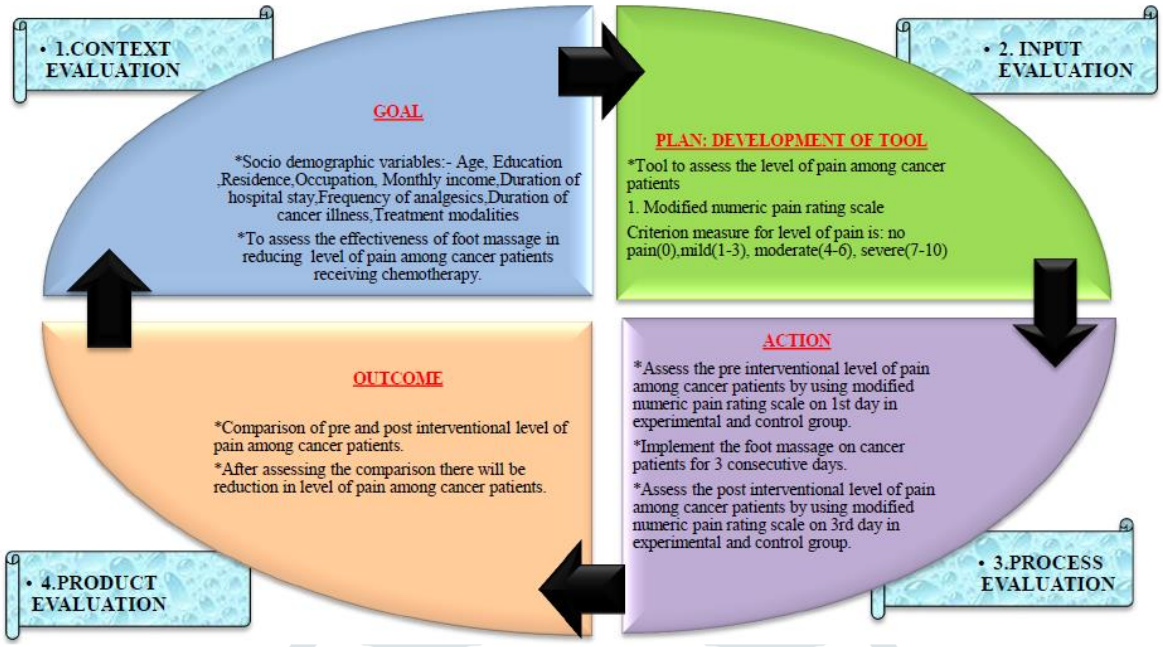
According to WHO, cancer is one of the leading cause of morbidity and mortality worldwide, with approximately 14 million new cases in year 2012.The number of new cases is expected to rise by about 70% over the next 2 decades. Cancer is the second leading cause of death globally and was responsible for 8.8 million deaths in year 2015. Patients having cancer can experience pain at any point during the course of the disease; in general the more advanced the cancer, the more likely it is that the patient will experience significant pain. Although bone is not a vital organ, many common tumors (of the breast, prostate, thyroid, kidney, and lung) have a strong predilection to metastasize to multiple bones at the same time. Tumor growth in bone results in pain, hypercalcemia, anemia, increased susceptibility to infection, skeletal fractures, compression of the spinal cord, spinal instability, and decreased mobility, all of which compromise the patient‘s functional status, quality of life, and survival. Once tumor cells have metastasized to the skeleton, the ―ongoing tumor-induced bone pain is usually described as dull in character, constant in presentation, and gradually increasing in intensity with time.[2]

Oncology channel says that 90% patients with advanced cancer experience severe pain. 30%-50% have pain at the time of diagnosis. 70% to 90% have severe pain when the disease is advanced. 40% die with severe pain. 60%-80%complains of inadequate pain relief by their physician. 30% are not relieved by drug treatment alone, so patients require interventional pain management. More than 90% cancer pain can be adequately controlled**.** In the United States, cancer is the second most common cause of death and it is expected that about 562,340 Americans will have died of cancer . Bone cancer pain is common in patients with advanced breast, prostate, and lung cancer as these tumors have a remarkable affinity to metastasize to bone.[2]

Chemotherapy is one of cancer treatments that can destroy cancerous cells and prevent metastasis. Among various types of non-pharmacological therapy, massage has been reported to have a positive effect on reducing several symptoms such as pain, anxiety, fatigue, nausea and vomiting. Several massage techniques are evident and are used in various populations including patients with cancer, bone marrow transplantation patients, patients with lower-back pain, end-stage renal disease and patients who have had abdominal surgery. Massage can be applied on any part of the body. However, some parts of the body may not be easily accessible or relevant to apply in some cultures. For example, Muslim women may feel reluctant to have others to touch their body. Thus, a foot massage may be an alternative type of massage for them.[3]

Foot massage is a complimentary therapy that has great potential for use by nurse in a multidisciplinary pain management programme. The use of foot massage as a complementary therapy and as a relatively simple nursing intervention for patients experiencing nausea or pain related to the cancer experience.[4]

The conceptual framework selected for the study was based on CIPP (Context, Input, Process and Product) developed by Daniel Stuffle Beam (1983) (Fig. 1)



AIM OF STUDY:

―To assess the effectiveness of foot massage in reducing the level of pain among cancer patients receiving chemotherapy.‖

OBJECTIVES:

1. To assess the pre interventional level of pain among cancer patients.
2. To assess the post interventional level of pain among cancer patients
3. To compare the pre interventional and post interventional level of pain among the cancer patients in experimental and control group.
4. To determine the association between level of pain among cancer patients with their selected socio demographic variables.

METHODOLOGY:

A Quantitative Quasi experimental non Randomized control group design was used. The study was conducted in Patel Hospital, Jalandhar and Civil Hospital Jalandhar, Punjab. The sample consisted of cancer patients receiving chemotherapy, who fulfill the inclusion criteria and the sample size for the present study was 60 (30 Experimental groups and 30 Control group) as per the Central Limit Theorem legitimizes. Final data was collected from 15th February to 14th March 2017 after getting administrative approval. Written permission was taken from the higher authorities of selected of Patel and Civil Hospitals, Jalandhar, Punjab. Purpose of the study was explained to the subjects. The subjects were assured about anonymity and confidentiality of the information provided by them and informed consent was taken from those who were willing to participate in the study. Total 60 participants were selected then investigator divided them into two groups (Experimental group and Control group) and them provided a calm and quiet environment to the patients. After placing patients in comfortable position investigator assessed the pre-interventional level of pain on modified numeric pain rating scale in experimental and control group. Then foot massage was given for 3 consecutive days in experimental group and no intervention in control group. On the day 3rd post- interventional level of pain was assessed in both groups.

RESULTS

Table 1 : Frequency and percentage distribution of cancer patients according to socio demographic variables **n=60**

Socio Demographic variables		Experimental group		Control group	
		f	%	f	%
1 Age (in years)					
a)	20-30	0	0	1	3.33
b)	31-40	2	6.67	3	10
c)	41-50	1	3.33	4	13.33
d)	51-60	12	40	12	40
e)	61-70	11	36.67	8	26.67
f)	71-80	4	13.33	2	6.67
2 Educational status					
a)	Illiterate	9	30	3	10
b)	Up to primary	3	10	1	3.33
c)	Up to middle	7	23.33	11	36.67
d)	Up to Secondary	7	23.33	5	16.67
e)	Senior Secondary	2	6.67	1	3.33
f)	Diploma/ Graduation and above	2	6.67	9	30
3 Residence					
a)	Urban	9	30	14	46.67
b)	Rural	21	70	15	50
c)	Slum	0	0	1	3.33
4 Occupation					
a)	Unemployed	2	6.67	1	3.33
b)	Government job	6	20	4	13.33
c)	Private job	0	0	0	0
d)	House maker	22	73.33	20	66.67
e)	Self-employed	0	0	5	16.67
5 Monthly income(in Rupees)					
d)	≥ 20,000	30	100	30	100
6 Duration of Hospital stay					
a)	≤ 2 days	0	0	16	53.33
b)	3-4 days	21	70	13	43.34
c)	≥5 days	9	30	1	3.33
7 Frequency of analgesic					
a)	OD	0	0	0	0
b)	BD	11	36.67	22	73.33
c)	TDS	0	0	0	0
d)	SOS	19	63.33	8	26.67
8 **Duration of cancer illness**					
a)	<1 year	16	53.33	21	70
b)	1-2 years	7	23.33	4	13.33

Socio Demographic variables		Experimental group		Control group	
		f	%	f	%
c)	≤ 3 years	2	6.67	0	0
d)	> 3 years	5	16.67	5	16.67
9	**Treatment modalities**				
b)	Chemotherapy	30	100	30	100

Table- 2 : Frequency and percentage distribution of pre interventional level of pain among cancer patients in experimental and control group.

Level of Pain	Experimental group		Control group	
	f	%	f	%
No pain (00)	0	0	1	3.33
Mild (1-3)	0	0	3	10
Moderate (4-6)	14	46.67	16	53.33
Severe (7-10)	16	53.33	10	33.33

Table- 2 : Frequency and percentage distribution of Post interventional level of pain among cancer patients in experimental and control group.

Level of Pain	Experimental group		Control group	
	f	%	f	%
No pain (00)	0	0	1	3.33
Mild (1-3)	9	30.00	2	6.67
Moderate (4-6)	21	70	17	56.67
Severe (7-10)	0	0	10	33.33

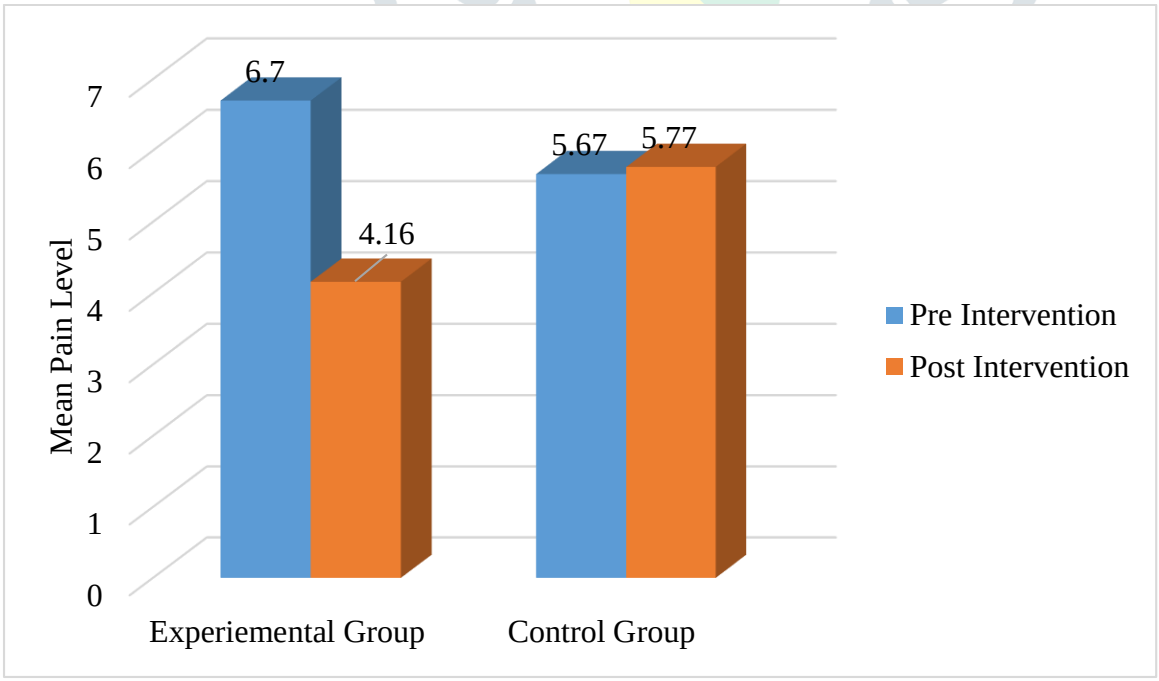


Fig 2: Comparison of Pre-interventional and post interventional Level of pain among cancer patients in experimental and control group

Association between pre interventional level of with socio demographic variables by using „Chi square" test.

- There was no significant effect of pre interventional level of pain among cancer patients with age, Residence, Occupation, Monthly income, Duration of Hospital stay, Frequency of analgesics, Duration of cancer illness, Treatment modalities at $p<0.05$ level in experimental group.
- There was significant effect of pre interventional level of pain among cancer patients with educational status at $p<0.05$ level in experimental group.
- There was no statistically significant effect of pre interventional level of pain among cancer patients with age, Educational status, Residence, Occupation, Monthly income, Duration of Hospital stay, Frequency of analgesics, Duration of cancer illness, Treatment modalities at $p<0.05$ level in control group.

CONCLUSION

Objective 1.To assess the pre interventional level of pain among cancer patients.

Mean+SD pre interventional level of pain among cancer patients in experimental group was 6.70±1.09 and pre interventional (observation 1) level of pain was 5.67+2.19 in control group.

The finding supportive by a quasi-experimental study at a pediatric oncology unit in Turkey. 25 children suffering from cancer were enrolled in this study. Their pain and anxiety were determined using a visual analogue scale before and after intervention. Findings of pre test reveal that the majority of children were having severe level of pain. When the pretest and posttest pain and anxiety levels of the control group were compared, no statistically significant difference was found ($p > 0.05$). It was determined that pain and anxiety levels in the experimental group decreased significantly. This study provides preliminary evidence for the effectiveness in children of massage in reducing pain and anxiety arising from intrathecal therapy or bone marrow aspiration.[5]

Objective 2: To assess the post interventional level of pain among cancer patients

Mean+SD post interventional level of pain among cancer patients in experimental group was 4.16+0.99 and post interventional (observation 2) level of pain was 5.77+1.99 in control group.

The finding supportive by reported an experimental study to assess the effectiveness of reflexology (foot massage) in reducing chemotherapy induced nausea and vomiting (CINN) at CMC Vellore consisting of 128 subjects 64 (control) and 64 (experimental) who received moderate, high and very high emetogenic chemotherapy selected by purposive sampling technique. The instruments used were demographic data, clinical variables, nausea assessment by numerical rating scale and questionnaire. The study revealed that there was a reduction in the mean total score for nausea in experimental group (2.93) than in control group (3.46). Also the mean of total number of episodes of nausea less in experimental group (19.96%) than in control group (22.2)[6]

Objective 3: To compare the pre interventional and post interventional level of pain among the cancer patients in experimental and control group.

The difference in means of pre interventional and post interventional level of pain among cancer patients in experimental group was statistically significant at $p<0.001$ level .Hence it can be said that there was decrease in level of pain among cancer patients in experimental group after implementation of foot massage as compared to control group. (Fig. 3)

The findings supportive by the therapeutic effect of foot massage on pain, nausea and relaxation in University of Canberra, Australia.. 87 participants were included in the study ranging age from 18-88 years. The massage sessions were of 10 minutes duration for three consecutive evenings between 7am and 8pm. The pain, nausea and relaxation measured using 0-100mm visual analogue scale .For the control session, the pretest mean pain score was 21.3 and posttest mean pain score was 20.4 representing a mean difference of 0.874 (t=.867, P =0.1943). The pretreatment mean pain score for massage session I was 25.1 which decreased to 15.3 (t=5.979; p=0.001)) immediately after massage, resulting in a mean difference of 9.8 mm. similarly the mean pain score for massage session II decreased 9.4 from 27.9 to 18.5 (+5.751; P= 0001). The use of foot massage as a complementary method is recommended as a relatively simple nursing intervention for patients experiencing nausea or pain related to the cancer experience.[7]

Objective 4: To determine the association of the level of pain among cancer patients with their selected socio demographic variables.

There was no significant effect of pre interventional level of pain among cancer patients with age, Residence, Occupation, Monthly income, Duration of Hospital stay, Frequency of analgesics, Duration of cancer illness, Treatment modalities at $p<0.05$ level in experimental group.

There was significant effect of pre interventional level of pain among cancer patients with educational status at $p<0.05$ level in experimental group.

There was no statistically significant effect of pre interventional level of pain among cancer patients with age, Educational status, Residence, Occupation, Monthly income, Duration of Hospital stay, Frequency of analgesics, Duration of cancer illness, Treatment modalities at $p<0.05$ level in control group.

The findings supportive by undertook a nonrandomized single-group pre-test and post-test design study to assess the impact of a Swedish massage intervention on oncology patients' perceived level of distress. A total of 251 oncology patients participated in this study for over a 3-year period at a university hospital setting in southeastern Georgia. Each patient's distress level was measured using 4 distinct dimensions: pain, physical discomfort, emotional discomfort, and fatigue. The analysis found a statistically significant reduction in patient reported distress for all 4 measures: pain, physical discomfort , emotional discomfort and fatigue ($p = .001$). This reduction in patient distress was observed regardless of gender, age, ethnicity, or cancer type.[8]

CONCLUSION

Cancer is a common condition and a serious health problem. For this treatment cancer patients take different treatment modalities. One of them is chemotherapy due to which patient experience pain and pain can occur at any point during the course of the disease, in general the more advanced the cancer, the more likely it is that the patient will experience significant pain. This study reveals that Mean+SD pre interventional level of pain among cancer patients in experimental group was 6.70±1.09 and pre interventional (observation 1) level of pain was 5.67+2.19 in control group. So, to reduce level of pain foot massage plays role as a diversional therapy can be used for the cancer patients.

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