"A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT REFLEXOLOGY THERAPY ON PHYSICAL AND PSYCHOLOGICAL ASPECTS AMONG CANCER PATIENTS IN SELECTED ONCOLOGY CENTRE OF AHMEDABAD CITY."

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ABSTRACT

Background

Cancer is emerging as a major problem globally. Cancer and its treatment often effect on physical and psychological aspects that commonly includes chronic pain, cardiovascular changes including pulse rate and blood pressure, urinary incontinence, fatigue, sleep disturbance, disturbance in bowel pattern, nausea or vomiting, neuropathy, skin rashes, impaired sexual drive, toxicity, stress, anxiety, depression. Foot reflexology is form of therapy practiced as a treatment in Complimentary alternative medicine (CAM). Administering of foot reflexology therapy among cancer patients can be helpful to improve the physical and psychological aspects.

Aims

This study aims to evaluate the effectiveness of foot reflexology therapy on physical aspects as like Pain, Fatigue, Insomnia, Bowel pattern and Psychological aspects such as Anxiety and stress among Cancer patients in selected oncology centre Of Ahmedabad city.

Objectives of the studies were

1. To assess the pre-test score of physical and psychological aspects in control group and experimental groups among cancer patients in selected oncology centre of Ahmadabad city.
2. To assess the post-test score of physical and psychological aspects in control group and experimental groups among cancer patients in selected oncology centre of Ahmadabad city.
3. To evaluate the effectiveness of foot reflexology therapy on physical and psychological aspects in experimental group among cancer patients in selected oncology centre of Ahmadabad city.
4. To determine the association between pre-test score of physical and psychological aspects with selected demographic variables among cancer patients in selected oncology centre of Ahmadabad city.

Methods

Quantitative research approach was used with Quasi experimental research design (Non Randomization Control Group Design). Investigator used Non-Probability Purposive sampling technique for selecting 30 samples (15 experimental group samples and 15 control group sample). A **Modified CANCER** (**C**ancer **A**spects **N**umerically **C**alculating **E**xpert **R**ating) **Scales** were prepared to

assess the Physical and psychological aspects among cancer patients. The reliability of the tool was determined, by using test and retest method of "Karl Pearson's formula" Reliability of Modified CANCER Scales were: Pain scale- 0.73, Modified CANCER Fatigue scale- 0.76, Modified CANCER Bowel pattern scale- 0.81, Modified CANCER Insomnia scale- 0.73, Modified CANCER Anxiety scale- 0.71, Modified CANCER Stress scale- 0.78. Modified CANCER Scales were found highly reliable.

Result

Present study identified that, For the comparison of **pre test, re assessment test and post test score** on Modified CANCER Scales identified that; 'p' value of **Experimental Group** for Modified CANCER Pain scale- <0.001, Modified CANCER Fatigue scale- <0.001, Modified CANCER Bowel pattern scale- <0.002, Modified CANCER Insomnia scale- <0.001, Modified CANCER Anxiety scale- <0.01, Modified CANCER Stress scale- 0,003. 'P' value of **Control Group** for Modified CANCER Scales was; Modified CANCER Pain scale- 0.16, Modified CANCER Fatigue scale- 0.18, Modified CANCER Bowel pattern scale- 0.36, Modified CANCER Insomnia scale- 0.46, Modified CANCER Anxiety scale- 0.35, and Modified CANCER Stress scale- 0.14. All Modified Cancer scales in experimental group were less than 0.05 level of significance and in control group were greater than 0.05 level of significance. Hence, P value difference in experimental group and control group on Modified CANCER scales scores were a real difference and not by chance it shows that foot reflexology has significant effect on level of physical and psychological aspects, Therefore it reveals that Ho is rejected and H1 was accepted. The data identified from the present study shows that **the Foot reflexology improves the level of physical aspects as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress**.

.   In the comparison between **pre-test and post test score** of samples obtained by Modified CANCER Scales on level of physical and psychological aspects in experimental and control group among cancer patients were in **Experimental Group** calculated "t" value for test score on Modified CANCER Scales were; Modified CANCER Pain scale14.22, Modified CANCER Fatigue scale-5.085, Modified CANCER Bowel pattern scale-4.01, Modified CANCER Insomnia scale-10.47, Modified CANCER Anxiety scale - 7.89, Modified CANCER Stress scale 1.98. Tabulated value of Modified CANCER Scales were; Modified CANCER Pain scale- 2.15, Modified CANCER Fatigue scale-2.15, Modified CANCER Bowel pattern scale-2.15, Modified CANCER Insomnia scale-2.15,, Modified CANCER Anxiety scale - 2.15,, Modified CANCER Stress scale 2.15 at 0.05 level of significance. In **Control Group** calculated "t" value for test score on Modified CANCER Scales were Modified CANCER Pain scale- 2.06, Modified CANCER Fatigue scale - 2.08, Modified CANCER Bowel pattern scale-0.487, Modified CANCER Insomnia scale-1.85, Modified CANCER Anxiety scale- 1.76, Modified CANCER Stress scale- 1.98.Tabulated value of Modified CANCER Scales were; Modified CANCER Pain scale- 2.15, Modified CANCER Fatigue scale-2.15, Modified CANCER Bowel pattern scale-2.15,, Modified CANCER Insomnia scale-2.15,, Modified CANCER Anxiety scale - 2.15, Modified CANCER Stress scale 2.15. It reveals that in experimental group calculated t values were higher than the tabulated value at 0.05 level of significance. This difference in experimental group were a real difference and not by chance That shows that **there was significant improvement in level of physical aspects as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress.**

Conclusion

There was significant improvement in Physical and psychological aspects among cancer patients after Administration of the Foot reflexology therapy. Hence it was concluded that **Foot reflexology therapy was effective in as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress** among cancer patients in Selected Oncology centre of Ahmedabad city.

Key Words

Foot reflexology therapy, Effectiveness of foot reflexology therapy, Cancer patients, and Physical and Psychological aspects, Oncology centre.

INTRODUCTION

Latest global cancer data shows that Cancer burden rises to 18.1 million new cases and 9.6 million cancer deaths in developed and developing countries. Based on the cancer statistics in India (2018), the estimated number of people living with the disease is around 2.25 million. New cancer patients registered every year is over 157,294 and cancer-related deaths are 784821. In 2020, the diagnosis and treatment of cancer was hampered by the corona virus disease 2019 (COVID-19) pandemic that may lead to a short-term drop in cancer incidence followed by an uptick in advanced stage disease and ultimately increased mortality. The rate of new cases of cancer incidence is 442.4 per 100,000 men and women per year. According to World Health Organization (WHO) in 2019, cancer is the second leading cause of death before age 70 years. Among them 91 of 172 countries between 2008 – 2030, the number of new cancer cases is expected to increase more than 80% in low-income countries along with increase and vary in the rate of symptoms of cancer and cancer treatment. The projected incidence of patients with cancer in India among males was 679,421 (94.1 per 100,000) and among females 712,758 (103.6 per 100,000) for the year 2020 as per Report from National Cancer Registry Programme, India. As per the report of Gujarat Cancer Research Institute annual report 2018; 29,952 new cancer patients registered and 3, 58,499 patients attended OPD. As per the latest report, August 2020of the National Cancer Registry Programme has pointed out that 1 in every 3 patients in Ahmadabad has cancer of mouth or tongue. The percentage of these cancers is 33 in Ahmedabad, which was the highest in India among 28 centers considered for the study. According to register data of Lion Bharat Kshatriya Community Oncology Centre, vasana, Ahmedabad ; they treated 1656 (Male), 4154 (Female) patients in 2016-17.

Cancer and its treatment often effect on every aspect of human's life involving self, physical, psychological, social, socio economic and mental aspects. But it mainly effects on physical and psychological aspects Physical aspects and symptoms vary cross cancer types and treatment modalities but commonly includes chronic pain, cardiovascular changes including pulse rate and blood pressure, urinary incontinence, fatigue, sleep disturbance, constipation or diarrhea, nausea or vomiting, neuropathy, skin rashes, impaired sexual drive, toxicity, cognitive problems. A cancer diagnosis can affect the psychological aspects that include depression, anxiety, anger, cancer distress, fear, emotional intimacy, social isolation, quality of life, emotional disturbance, mental

adjustment problems feelings during this life-changing experience. Cancer also involves changes in health of patients, families, and caregivers, patient's roles at home, school and work can be affected. It's important to recognize these changes and get help when needed.

Foot Reflexology is a massage technique which, throughout careful pressures applied at different parts of the foot. Foot reflexology is extending therapy in India. On the report of Cancer research-2019, Foot Reflexology is one of the most popular types of complementary therapy in UK among people with cancer. There are some evidences that reflexology can help you: relax and cope with stress and anxiety, relieve pain, lift your mood and give a feeling of well-being, boost the immune system, fight off colds and bacterial infections, reduce sinus problems, reduce back problems, change hormonal imbalances, overcome infertility, reduce digestion problems, reduce arthritic pain, reduce nerve tingling and numbness from cancer drugs (peripheral neuropathy). The purpose of this study is to detect physical and psychological aspects among cancer patient and relive discomfort of aspects by providing the foot reflexology therapy.

Objectives of the studies were

1. To assess the pre-test score of physical and psychological aspects in control group and experimental groups among cancer patients in selected oncology centre of Ahmadabad city.
2. To assess the post-test score of physical and psychological aspects in control group and experimental groups among cancer patients in selected oncology centre of Ahmadabad city.
3. To evaluate the effectiveness of foot reflexology therapy on physical and psychological aspects in experimental group among cancer patients in selected oncology centre of Ahmadabad city.
4. To determine the association between pre-test score of physical and psychological aspects with selected demographic variables among cancer patients in selected oncology centre of Ahmadabad city.

Methodology for research

Quantitative research approach was used with Quasi experimental research design (Non Randomization Control Group Design). Investigator used Non-Probability Purposive sampling technique for selecting 30 samples (15 experimental group sample and 15 control group sample). A **Modified CANCER** (**C**ancer **A**spects **N**umerically **C**alculating **E**xpert **R**ating) **Scales** were prepared to assess the Physical and psychological aspects among cancer patients. The reliability of the tool was determined, by using test and retest method of "Karl Pearson's formula" Reliability of Modified CANCER Scales were: Pain scale- 0.73, Modified CANCER Fatigue scale- 0.76, Modified CANCER Bowel pattern scale- 0.81, Modified CANCER Insomnia scale- 0.73, Modified CANCER Anxiety scale- 0.71, Modified CANCER Stress scale- 0.78. Modified CANCER Scales were found highly reliable.

RESULT

Present study identified that, according to the interpretation of ANOVA test; comparison of pre test, re assessment test and post test data score on Modified CANCER Scales identified ; 'p' value of **Experimental Group** for Modified CANCER Pain scale- <0.001, Modified CANCER Fatigue scale- <0.001, Modified CANCER Bowel pattern scale- <0.002, Modified CANCER Insomnia scale- <0.001, Modified CANCER Anxiety scale- <0.01, Modified CANCER Stress scale- 0,003. 'P' value of **Control Group** for Modified CANCER Scales were ; Modified CANCER Pain scale- 0.16, Modified CANCER Fatigue scale- 0.18, Modified CANCER Bowel pattern scale- 0.36, Modified CANCER Insomnia scale- 0.46, Modified CANCER Anxiety scale- 0.35, Modified CANCER Stress scale- 0.14. All Modified Cancer scales in experimental group were less than 0.05 level of significance and in control group were greater than 0.05 level of significance. Hence, P value difference in experimental group and control group on Modified CANCER scales scores were a real difference and not by chance it shows that foot reflexology has significant effect on level of physical and psychological aspects, Therefore it reveals that Ho is rejected and H1 was accepted. The data identified from the present study shows that the **Foot reflexology improves the level of physical aspects as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress.**

. According to the interpretation of Paired t test In the comparison between pre-test and post test score of samples obtained by Modified CANCER Scales on level of physical and psychological aspects in experimental and control group among cancer patients were in **Experimental group** calculated "t" value for test score on Modified CANCER Scales were; Modified CANCER Pain scale14.22, Modified CANCER Fatigue scale-5.085, Modified CANCER Bowel pattern scale-4.01, Modified CANCER Insomnia scale-10.47, Modified CANCER Anxiety scale - 7.89, Modified CANCER Stress scale 1.98. Tabulated value of Modified CANCER Scales were; Modified CANCER Pain scale- 2.15, Modified CANCER Fatigue scale-2.15, Modified CANCER Bowel pattern scale-2.15, Modified CANCER Insomnia scale-2.15,, Modified CANCER Anxiety scale - 2.15,, Modified CANCER Stress scale 2.15 at 0.05 level of significance. In **Control group** calculated "t" value for test score on Modified CANCER Scales were Modified CANCER Pain scale- 2.06, Modified CANCER Fatigue scale - 2.08, Modified CANCER Bowel pattern scale-0.487, Modified CANCER Insomnia scale-1.85, Modified CANCER Anxiety scale- 1.76, Modified CANCER Stress scale- 1.98.Tabulated value of Modified CANCER Scales were; Modified CANCER Pain scale- 2.15, Modified CANCER Fatigue scale-2.15, Modified CANCER Bowel pattern scale-2.15,, Modified CANCER Insomnia scale-2.15,, Modified CANCER Anxiety scale - 2.15, Modified CANCER Stress scale 2.15. It reveals that in experimental group calculated t values were higher than the tabulated value at 0.05 level of significance. This difference in experimental group were a real difference and not by chance That **shows that there was significant improvement in level of physical aspects as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress** Bar graph showing the comparison of physical and psychological aspects level of pre test mean and post test mean score in experimental and control group mentioned in Figure9,10,11,12,13,14.

F (Frequency) & P (%) (Percentage), distribution of pre-test, re assessment and post-test levels of Pain among patients with cancer measured by Modified CANCER Pain scale

Level of Pain in Pre test score, re assessment score and post test score by using Modified CANCER scales

- **Modified CANCER Pain scale Pre test scores** describes that before the intervention of foot reflexology therapy, In **experimental group, no** patients had a normal level of Pain, **3(20%)** patients had a mild level of Pain, **10(66.7%)** had a moderate level of Pain and **2 (13.3 %)** had a severe level of Pain. In **control group**, **no** patients had a normal level of Pain **3(20%)** patients had a mild level of Pain, **10(66.7%)** patients had a moderate level of Pain and **2 (13.3 %)** patients had a severe level of Pain.

- **Modified CANCER Pain scale re assessment scores** describes level of pain after 7 days of the intervention of foot reflexology therapy in **experimental group**, **4(26.7%)** patients had a normal level of Pain, **11(73.3%)** patients had a mild level of Pain and **0(0%)** patients had a moderate level of Pain and **no** patients had a severe level of Pain After 7 days without administration of foot reflexology in **control group**, **2(13.3%)** patients had a normal level of Pain **11(73.3%)** patients had a mild level of Pain , **2(13.3%)** patients had moderate Pain and , **no** patients had severe Pain.

- **Modified CANCER Pain scale Post test scores** describes level of pain after 15 days of the intervention of foot reflexology therapy in **experimental group**, post test data shows; **15(100%)** patients had a normal level of Pain, **no patient** had a mild, moderate and severe level of Pain. After 15 days without administration of foot reflexology therapy in **control group**, **1(6.7%)** patients had a normal level of Pain, **14(93.3)** had a mild level of Pain and **no** patients had moderate and severe level of Pain.
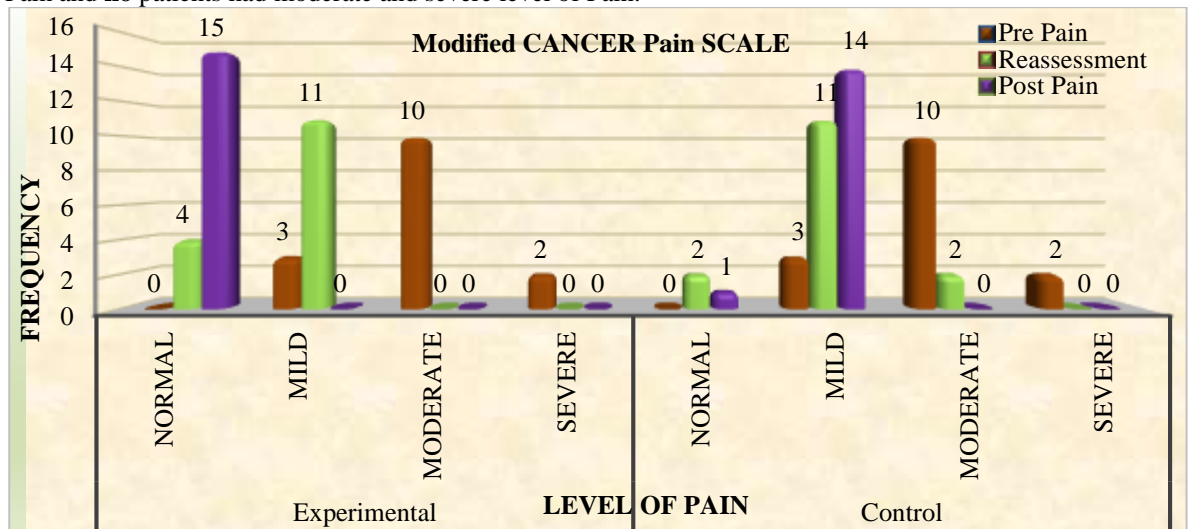

Figure 1 Bar graph showing the comparison of Pre test, Reassessment and post test level of pain in experimental and control group

Level of Fatigue in Pre test score, re assessment score and post test score by using Modified CANCER scales

- **Modified CANCER Fatigue pre test scale** describes that before the intervention of foot reflexology therapy represent that, In **experimental group, 2(13.3%)** patients had a normal level of fatigue, **2(13.3%)** patients had a mild level of fatigue, **4(26.7%)** patients had a moderate level of fatigue and **7 (46.7 %)** patients had a severe level of fatigue. In **control group**, **1(6.7%)** patients had a normal level of fatigue **3(20%)** patients had a mild level of fatigue, **10(66.7%)** patients had a moderate level of fatigue and **2 (13.3 %)** patients had a severe level of fatigue.

- **Modified CANCER Fatigue scale re assessment scores** describes level of fatigue after 7 days of the intervention of foot reflexology therapy in **experimental group**, **3 (20%)** patients had a normal level of fatigue, **6(40%)** patients had a mild level of fatigue and **6(40%)** patients had a moderate level of fatigue and no patients had a severe level of fatigue. in **control group**, **3(20%)** patients had a normal level of fatigue, **4(26.7%)** patients had a mild level of fatigue, **7 (46.7%)** patients had moderate fatigue and **1(6.7%)** patients had severe fatigue.

- **Modified CANCER Fatigue scale post test scores** describes level of fatigue After 15 days intervention of foot reflexology therapy in **experimental group**, post test data shows **10(66.7%)** patients had a normal level of fatigue, **4(26.7%)** had a mild level of fatigue, **1(6.7%)** had a moderate level of fatigue and **no** patients had a severe level of fatigue. After 15 days without administration of foot reflexology therapy in **control group**, **3(20%)** patients had a normal level of fatigue, **7(46.7%)** had a mild level of fatigue and **3 (20%)** patients had moderate level of fatigue and **2(13.3%)** patients had severe level of fatigue.
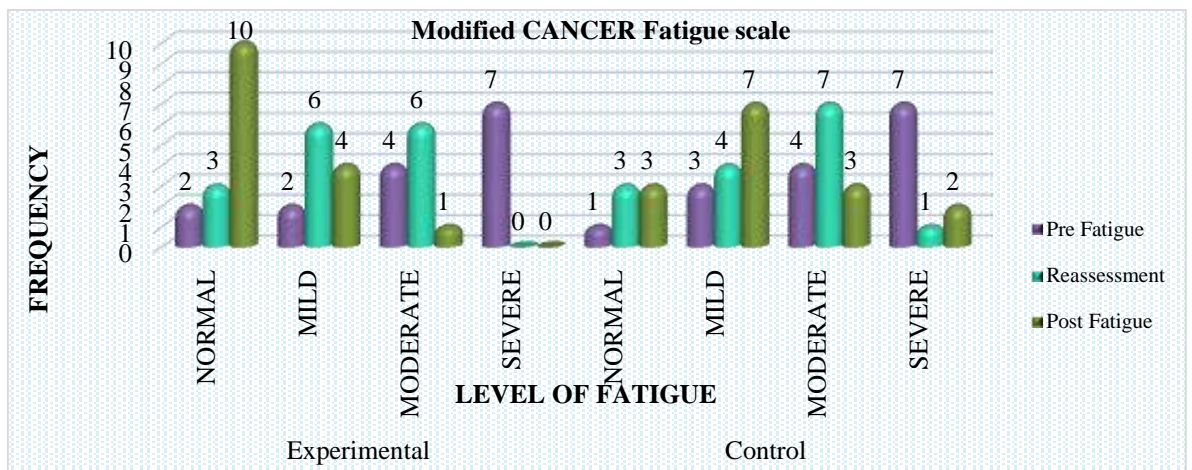
Figure 2 Bar graph showing the comparison of Pre test, Reassessment and post test level of Fatigue in experimental and control group

Level of Bowel pattern in Pre test score, re assessment score and post test score by using Modified CANCER scales

Modified CANCER Bowel pattern scale pre test scores describes that before the intervention of foot reflexology therapy represent that In **experimental group, 2(13.3%)** patients had a normal level of Bowel pattern, **4(26.7%)** patients had a mild level of Bowel pattern, **6(40.0%)** patients had a moderate level of Bowel pattern and **3 (20 %)** patients had a severe level of Bowel pattern. In **control group**, **2(13.3%)** patients had a normal level of Bowel pattern **5(33.3%)** patients had a mild level of Bowel pattern, **6(40%)** patients had a moderate level of Bowel pattern and **2 (13.3 %)** patients had a severe level of Bowel pattern.

Modified CANCER Bowel pattern scale re assessment scores describes level of Bowel pattern After 7 days of intervention of foot reflexology therapy in **experimental group**, reassessment data shows; **6 (40%)** patients had a normal level of Bowel pattern, **5(33.3%)** patients had a mild level of Bowel pattern and 4 **(26.7%)** patients had a moderate level of Bowel pattern and **no** patients had a severe level of Bowel pattern. After 7 days without administration of foot reflexology in **control group**, 3(20%) patients had a normal level of Bowel pattern, **6(40%)** patients had a mild level of Bowel pattern, **6 (40%)** patients had moderate Bowel pattern and no patients had severe Bowel pattern.

Modified CANCER Bowel pattern scale post test scores describes level of Bowel pattern After 15 days intervention of foot reflexology therapy in **experimental group**, post test data shows **10 (66.7%) patients** had a normal level of Bowel pattern, **4(26.7%)** had a mild level of Bowel pattern, **1(6.7%)** had a moderate level of Bowel pattern and **no** patients had a severe level of Bowel pattern. After 15 days without administration of foot reflexology therapy in **control group**, **1(6.7%)** patients had a normal level of Bowel pattern, **5(33.3)** had a mild level of Bowel pattern and **8(53.3%)** patients had moderate level of Bowel pattern and **1(6.7%)** patients had severe level of Bowel pattern.
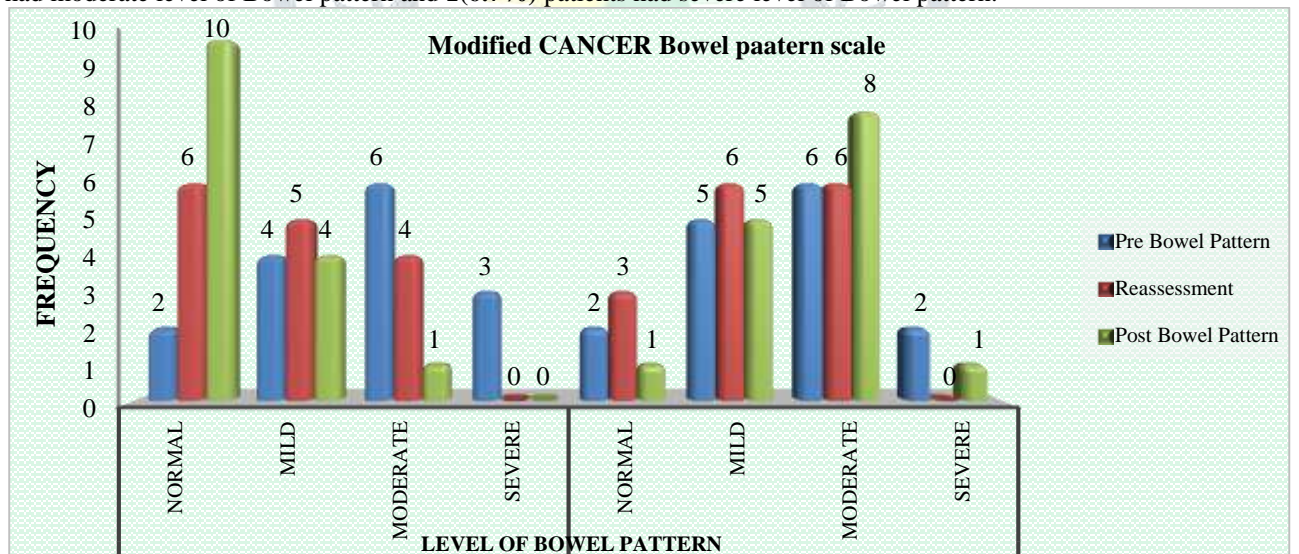

Figure 3 Bar graph showing the comparison of Pre test, Reassessment and post test level of Bowel pattern in experimental and control group

Level of Insomnia in Pre test score, re assessment score and post test score by using Modified CANCER scales

- **Modified CANCER Insomnia scale pre test scores** describes that before the intervention of foot reflexology therapy represent that, In **experimental group, 1(6.7%)** patients had a normal level of Insomnia, **5(33.33%)** patients had a mild level of Insomnia, **4(26.7%)** patients had a moderate level of Insomnia and **5(33.33 %)** patients had a severe level of Insomnia. In **control group**, **1(6.7%)** patients had a normal level of Insomnia **3(20%)** patients had a mild level of Insomnia, **6(40%)** patients had a moderate level of Insomnia and **5 (33.3 %)** patients had a severe level of Insomnia.

- **Modified CANCER Insomnia scale re assessment scores** describes level of insomnia after 7 days of the intervention of foot reflexology therapy in **experimental group**, **9(60.0%)** patients had a normal level of Insomnia, **6(40.0%)** patients had a mild level of Insomnia and no patients had a moderate level of Insomnia and **0(0%)** patients had a severe level of Insomnia. After 7 days without administration of foot reflexology in **control group**, **2(13.3%)** patients had a normal level of Insomnia, **8(53.3%)** patients had a mild level of Insomnia, **5(33.33%)** patients had moderate Insomnia and ,**no** patients had severe Insomnia.
- **Modified CANCER Insomnia scale post test scores** describes level of insomnia after 15 days intervention of foot reflexology therapy in **experimental group** 15(**100**) patients had a normal level of Insomnia, **0(0%)** had a mild level of Insomnia, , **no patient** had a moderate level of Insomnia and **0(0%)** patients had a severe level of Insomnia. After 15 days without administration of foot reflexology therapy in **control group**, **3(20%)** patients had a normal level of Insomnia, **2(13.3)** had a mild level of Insomnia and **8(53.3%)** patients had moderate level of Insomnia and **2(13.3%)** patients had severe level of Insomnia.

Level of Anxiety in Pre test score, re assessment score and post test score by using Modified CANCER scales

- **Modified CANCER Anxiety scale pre test scores** describes that before the intervention of foot reflexology
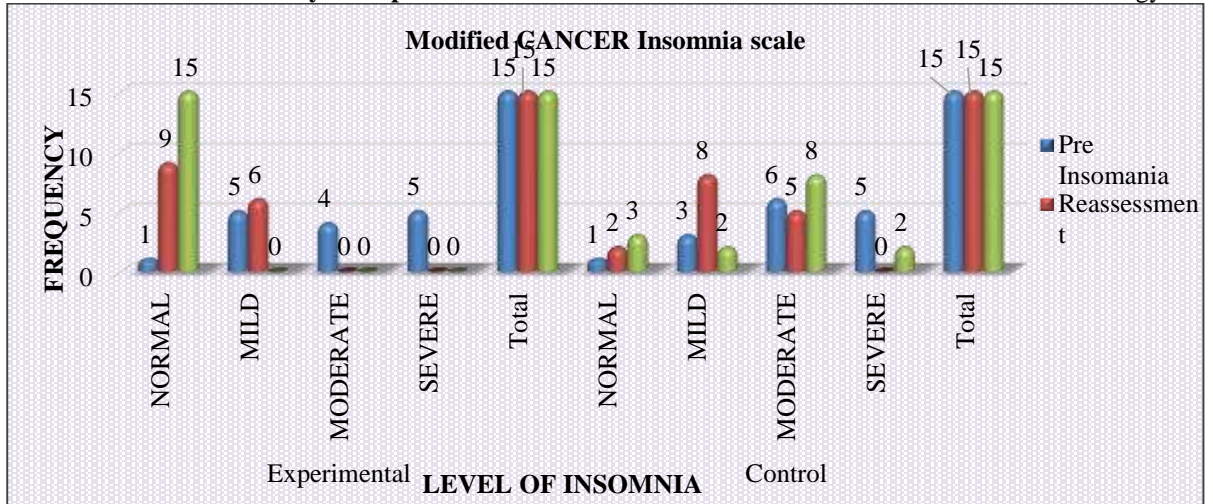

Figure 4 Bar graph showing the comparison of Pre test, Reassessment and post test level of Insomnia in experimental and control group

- therapy in **experimental group, 1(6.7%)** patients had a normal level of Anxiety, **4(26.7%)** patients had a mild level of Anxiety, **6(40%)** patients had a moderate level of Anxiety and **4(26.7 %)** patients had a severe level of Anxiety. In **control group**, **2(13.3%)** patients had a normal level of Anxiety **2(13.3%)** patients had a mild level of Anxiety, **8(53.3%)** patients had a moderate level of Anxiety and **3(20%)** patients had a severe level of Anxiety.
- **Modified CANCER Anxiety scale re assessment scores** describes level of anxiety After 7 days of intervention of foot reflexology therapy in **experimental group**; **1(6.7%)** patients had a normal level of Anxiety, **4(26.7%)** patients had a mild level of Anxiety and **9(60%)** patients had a moderate level of Anxiety and **1(6.7%)** patients had a severe level of Anxiety. After 7 days without administration of foot reflexology in **control group**, **4(26.7%)** patients had a normal level of Anxiety, **2(13.3%)** patients had a mild level of Anxiety , **9(60%)** patients had moderate Anxiety and ,**no** patients had severe Anxiety.
- **Modified CANCER Anxiety scale post test scores** describes level of anxiety After 15 days intervention of foot reflexology therapy in **experimental group**, post test data shows **4(26.7)** patients had a normal level of Anxiety, **11(73.3%)** had a mild level of Anxiety, no patients had a moderate and sever level of pain. After 15 days without administration of foot reflexology therapy in **control group**, **2(13.3%)** patients had a normal level of Anxiety, **8(53.3%)** had a mild level of Anxiety and **5(33.3%)** patients had moderate level of Anxiety and no patie nts had severe level of Anxiety.
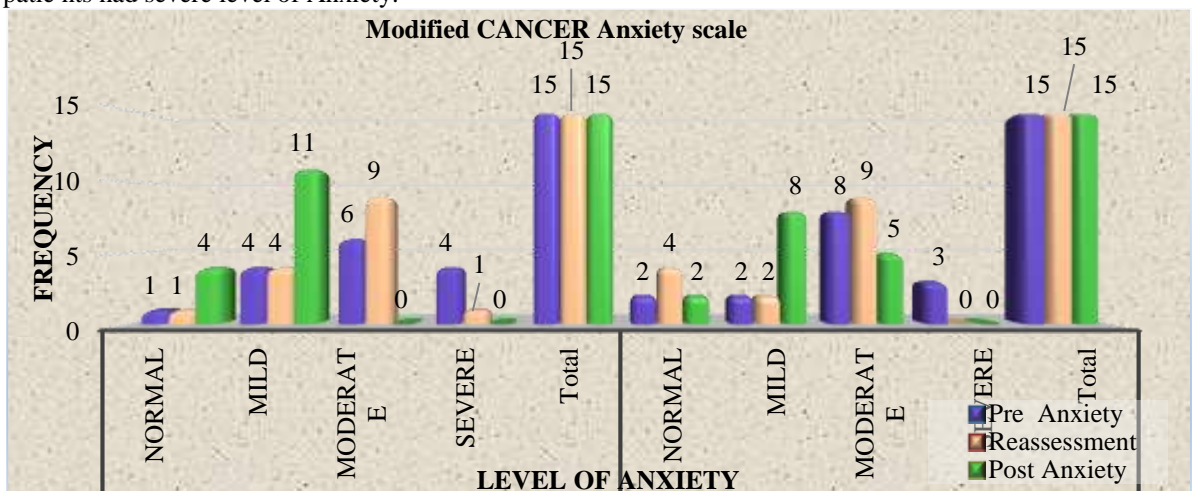

Figure 5 Bar graph showing the comparison of Pre test, Reassessment and post test level of Anxiety

Level of Stress in Pre test score, re assessment score and post test score by using Modified CANCER scales

- **Modified CANCER Stress scale pre test scores** describes that before the intervention of foot reflexology therapy represent that, , In **experimental group, 2(13.3%)** patients had a normal level of Stress, **4(26.7%)** patients had a mild level of Stress, **7(46.7%)** patients had a moderate level of Stress and 2**(13.3 %)** patients had a severe level of Stress. In **control group**, **2(13.3%)** patients had a normal level of Stress 3**(20%)** patients had a mild level of Stress, **7(46.7%)** patients had a moderate level of Stress and **3(20%)** patients had a severe level of Stress.

- **Modified CANCER Stress scale re assessment scores** describes level of stress after 7 days of the intervention of foot reflexology therapy **experimental group** 2**(13.3 %)** patients had a normal level of Stress, **8(53.3%)** patients had a mild level of Stress and **5(33.3%)** patients had a moderate level of Stress and **no** patients had a severe level of Stress. After 7 days without administration of foot reflexology in **control group**, 3**(20%)** patients had a normal level of Stress, **6(40%)** patients had a mild level of Stress, **6(40%)** patients had moderate Stress and no patients had severe Stress. **6(40%)** patients had moderate Stress, **0(0%)** patients had severe Stress.

- **Modified CANCER Stress scale post test scores** describes level of stress after 15 days intervention of foot reflexology therapy in **experimental group**, **5(33.3)** patients had a normal level of Stress, **8(23.3%)** had a mild level of Stress, , **2(13.3%)** had a moderate level of Stress and **no** patients had a severe level of Stress. After 15 days without administration of foot reflexology therapy in **control group**, **4(26.7.3%)** patients had a normal level of Stress, **4(26.7**%) had a mild level of Stress and **7(46.7%)** patients had moderate level of Stress and no patients had severe level of Stress
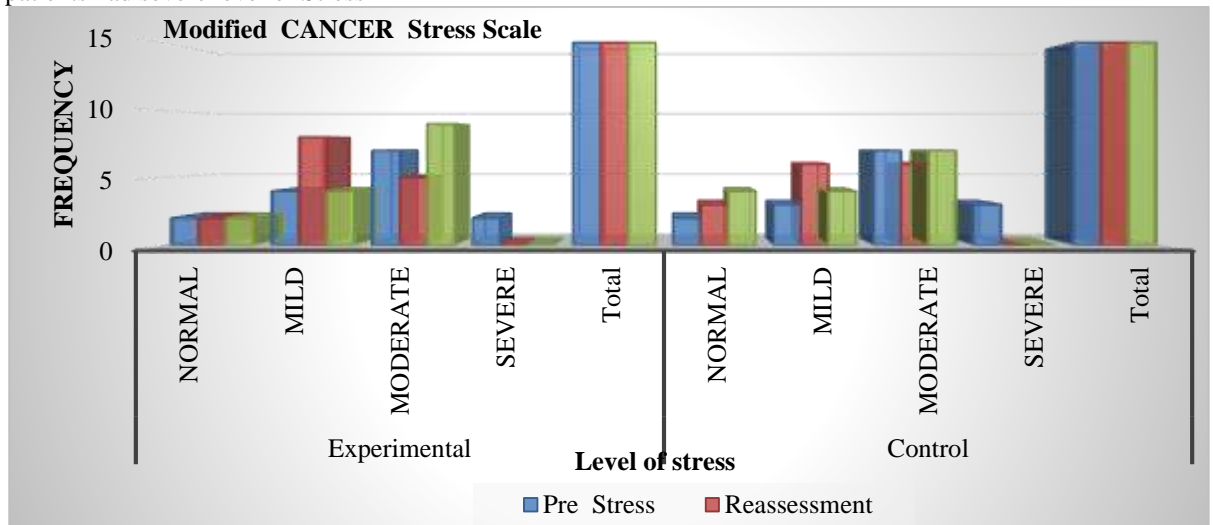
Figure 6 Bar graph showing the comparison of Pre test, Reassessment and post test level of Stress in experimental and control group

TABLE: 1 ANALYSIS AND INTERPRETATION OF THE DEMOGRAPHIC VARIABLES OF THE SAMPLES. (N=30)

Sr No.	Demographic Variables	Frequency		Percentage (%)	
		Exp. Group	Control Group	Exp. Group	Control Group
1.	**Diagnosis**				
	A. Buccal Mucosa Cancer	6	7	40%	46.7%
	B. Oral Cancer	5	5	33.3%	33,33%
	C. Breast Cancer	4	3	26.7%	20%
2.	**Age in years:**				
	A. 25 years-34years	1	2	6.7%	13.3%
	B. 35 years-44years	5	5	33.3%	33.3%
	C. 45 years-54 years	3	4	20%	26.7%
	D. 55 years-64 years	6	4	40%	26.7%
3.	**Gender:**				

Sr No.	Demographic Variables	Frequency		Percentage (%)	
		Exp. Group	Control Group	Exp. Group	Control Group
	A. Male	8	6	53.3%	40%
	B. Female	7	9	46.7%	60%
4.	Gross income per month: (in rupees) A. Less than 10,000	7	5	46.7	33.3%
	B. 10,000 -30,000	5	6	33.33%	40%
	C. 30,000 – 60,000	2	2	13.3%	13.3%
	D. 60,000 – 90,000	1	2	6.7%	13.3%
5.	Educational qualification: A. Illiterate	3	4	20%	26.7%
	B. Primary and secondary school level	0	2	0%	13.3%
	C. Higher secondary school level	5	4	33.33%	26.7%
	D. Graduation and above	7	5	46.7%	33.3%
6.	Co-morbid disease: A. Yes	7	8	46.7%	53.3%
	B. No	8	7	53.3%	46.7%
	C. Arthritis	1	2	6.7%	13.3%
	D. Cancer distress	2	1	13.3%	6.7%
	E. Diabetes mellitus and diabetic neuropathy	1	1	6.7%	6.7%
	F. Hypertension	0	1	0%	6.7%
	G. Hypertension and diabetes mellitus	1	1	6.7%	6.7%
	H. Mood disorder	1	0	6.7%	0%
	I. Osteoporosis	1	0	6.7%	0%
	J. Diabetes mellitus	0	1	0%	6.7%
7.	Duration of cancer A. 0 to 5 years	10	12	62.5%	80%
	B. 6 to 10 years	5	3	33.3%	20%

Sr No.	Demographic Variables	Frequency		Percentage (%)	
		Exp. Group	Control Group	Exp. Group	Control Group
8.	Stages of Cancer:				
	A. 1st Stage	0	0	0%	0%
	B. 2nd Stage	0	0	0%	0%
	C. 3rd Stage	4	5	26.7%	33.3%
	D. 4th Stage	11	10	73.3%	66.7%
9.	Current Treatment related to research aspects				
	A. Analgesics,Narcotics	1	2	6.6%	13.3%
	B. Analgesics,Narcotics, Anti – Diarrheal Drugs,Sedatives	2	1	13.6%	6.7%
	C. Analgesics, Narcotics, Laxatives, Sedatives	2	1	13.6%	6.6%
	D. Analgesics, Narcotics, Laxatives	3	2	20.%	13.3%
	E. Analgesics, Anti – Diarrheal Drugs	1	2	6.67%	13.3%
	F. Narcotics and anti dahhoreal	1	1	6.7%	6.67%
	G. Anaqlgesic sedative, Narcotics	1	1	6.7%	6.7%
	H. Narcotics and anti dahhoreal, sedetive	1	1	6.7%	6.7%
Sr No.	Demographic Variables	Frequency		Percentage (%)	
		Exp. Group	Control Group	Exp. Group	Control Group

	I. Analgesics, Narcotics,	1	2	6.6%	13.3%
	J. Analgesics, Narcotics, Anti – Diarrheal Drugs,Sedatives	2	2	13.6%	13.6%
10.	**History of therapies received by patient**				
	A. Chemotherapy, Onco- Surgery	3	3	20%	20%
	B. Radiation therapy, Chemotherapy, Onco- Surgery, Palliative care	5	7	33.3%	46.7%
	C. Radiation therapy, Chemotherapy, Palliative care	3	2	20%	13.3%
	D. Radiation therapy, Palliative care	1	0	6.7%	0%
	E. Chemotherapy, Onco-Surgery, Palliative care	0	1	0%	6.7%
	F. Onco surgery,Palliative	1	1	6.7%	6.7%
	G. Palliative	2	1	13.3%	6.7%

Table 1 shows the Frequency and percentage distribution of 30 samples based on demographic variables among 15 samples of Experimental group and 15 samples of control group in cancer patients such as Diagnosis, age, gender, educational qualification, gross family income, co morbid diseases, duration of cancer, stage of cancer, current treatment related to research aspects current, History therapy received by patients for cancer.

For **Diagnosis, in experimental group** 6(**40%**) samples belong to the buccal mucosa cancer, **5 (33.3)** samples belong to oral cancer and **4(27.7%)** samples belong to Breast cancer. In **control group**, **7(46.7%)** samples belong to the buccal mucosa

cancer, **5(33.3)** samples belong to oral cancer and **3(20%)** samples belong to Breast cancer.For **Age In Years** in **experimental group**; **1 (6.7%)** samples belong to the age group of 25- 34, **5(33.3%)** samples belong to the age group 35-44 years, **3(20%)** samples belong to the age group of 45-54 and major 6 samples belong to the age group of 55-64 and lowest samples **1(6.7 %)** samples belong to the age group of 35-34. In **Control group**, in **experimental group**; **4 (26.7%)** samples belong to the age group of 45-54, **4 (26.7%)** samples belong to the age group of 55-64 , highest samples **5(33.3%)** samples belong to 35-44 years and lowest samples **2(13.3 %)** samples belong to the age group of 25-34 years.For the **Gender** in **experimental group**,; Majority of the samples **8 (53.3%)** were male and **6(40%)** were female. In **control group**, Majority of the samples **9(60%)** were female and **7(46.7%)** were maleFor **The Gross Family Income** in **experimental group;** Majority of the samples **7(46.7)** belongs to Less than 10,000 ₹, **5 (33.3)** samples belongs to 10,000 ₹ to 30,000₹, **2(13.3)** samples belongs to 30,000₹ to 60,000₹ and lowest1**(6.7%)** samples belongs to 60,000₹ to 90,000₹ . In **control group** Majority of the samples **6(40%)** belongs to10, 000 ₹ to 30,000₹, **5(33.3 %)** samples belongs to Less than 10,000 ₹, **2(13.3 %)** samples belongs to 30,000₹ to 60,000₹ and **2(13.3%)** samples belongs to 60,000₹ to 90,000₹ . for **Educational qualification** in **experimental group**; majority samples **7(46.7%)** were belongs to Graduation and above, **3(20%)**were belongs to Illiterate , and no samples were belongs to Primary and Secondary School level and **5(33.3%)** samples were belongs to Higher secondary school level. In **control group**, majority samples **5(33.3%)** were belongs to Graduation and above, **4(26.7%)** were belongs to Illiterate, **2(13.3%)** samples were belongs to Primary and Secondary School level and **4(26.7%)** samples were belongs to Higher secondary school level. for the **Co Morbid** disease In **experimental group**; 7 (46.7) samples had co morbid diseases and **8(53.3%)** samples had not any other co morbid diseases In co morbid diseases **1(6.7%)** samples were suffering fromArthritis,**2(13.3%)** samples were suffering from Cancer distress ,**1(6.7%)** samples were suffering from Diabetes mellitus and diabetic neuropathy, **1(6.7%)**Hypertension and diabetes mellitus,**1(6.7%)** samples were suffering from Mood disorder, **1(6.7%)** samples were suffering from Osteoporosis .In **control group** for the co morbid disease **8(53.3%)** samples had co morbid diseases and **7(46.7%)** samples had not any other co morbid diseases In co morbid diseases **2(13.3%)**samples were suffering from Arthritis, **1(6.7%)** samples were suffering from Cancer distress,1 **(6.7%)** samples were suffering from Cad and hyper tension,**1(6.7%)** samples were suffering from Diabetes mellitus and diabetic neuropathy,**1(6.7%)** samples were suffering from Hypertension, **1(6.7%)** samples were suffering from1**(6.7%)**Hypertension and diabetes mellitus, **1(6.7%)** samples were suffering from diabetes mellitus.In **Duration Of Cancer** in **experimental group**; majority of samples **10 (62.5%)** were belongs to 0 year to 5 years and **5(33.3%)**samples were belongs to 6 year to 10 years. In **control group** majority of samples **12(80%)** were belongs to 0 year to 5 years and **3(20%)**samples were belongs to 6 year to 10.**In experimental group** for stages of cancer majority of **11(73.3%)** samples were belongs to 4$^{th Stage}$ of cancer and 4(**26.7%)** samples were belongs to 3rd Stage of cancer, **In control group** 10(66.7) samples were belongs to 4th Stage of cancer and 5(33.3) samples were belongs to 3rd Stage of cancer. No samples were belongs to 1st and 2nd stage of cancer.For **History of therapies received by patient** in **experimental group**; majority samples **5(33.3%),** received Radiation therapy, Chemotherapy, Onco- Surgery, **3(20%)**samples received Chemotherapy, Onco- Surgery, **3(20%)** samples received Radiation therapy, Chemotherapy, Palliative care, **1(6.6%)** samples received 0nco surgery, Palliative care, **1(6.6)** samples received 0nco surgery, Palliative care, **2(13.6%)** received palliative care and no sample received Chemotherapy, Onco Surgery, Palliative care. In **control group 7(46.7%)** patients received Radiation therapy, Chemotherapy, Onco- Surgery, Palliative care, 3(20%) samples received Chemotherapy, Onco- Surgery, **2(13.3%)** samples received Radiation therapy, Chemotherapy, Palliative care. **1(6.7)** samples received Chemotherapy, Onco- Surgery, Palliative care**, 1(6.7)** samples received 0nco surgery Palliative, **1(6.7)** samples received 0nco surgery Palliative and no samples recived Radiation therapy, Palliative care. **For Current Treatment related to research aspects in experimental group** majority samples 3(20%) samples were taking Analgesics, Narcotics, Laxatives, sedatives, 1(6.7%) sample was taking Analgesics, Narcotics, 2(13.6%) sample was taking Analgesics, Narcotics, Laxatives,2(13.3 %) samples were taking Analgesics, Narcotics, Anti dahhoreal, sedative,1(6.7%) sample was taking Analgesics, Anti – Diarrheal Drugs, 1 (6.7%) was taking anti diarrheal and narcotics. 1 (6.7%) was taking analgesic, narcotic, sedative. 1 (6.7%) was taking Anti dahhoreal, narcotic, sedative. 2(13.3 %) samples were Analgesics, Narcotics, Anti – Diarrheal Drugs, Sedatives. In **control group** majority samples 2(13.3%) samples were taking Analgesics ,Narcotics, 1(6.7%) sample was taking Analgesics, Narcotics, Anti – Diarrheal Drugs, Sedatives, 1(6.7%) sample was taking Analgesics, Narcotics, Laxatives,2(13.3%) samples were taking Analgesics, Narcotics, Laxatives, Sedatives, 2(13.3%) sample was taking Analgesics and anti

dahhoreal,1(6.7%) sample was taking Narcotics, anti dahhoreal , 1(6.7%) sample was taking Analgesics sedative, Narcotics, 1(6.7%) sample was taking Narcotics and anti dahhoreal, sedative, 2(13.3 %) samples were Analgesics, Narcotics, Anti – Diarrheal Drugs, Sedatives.
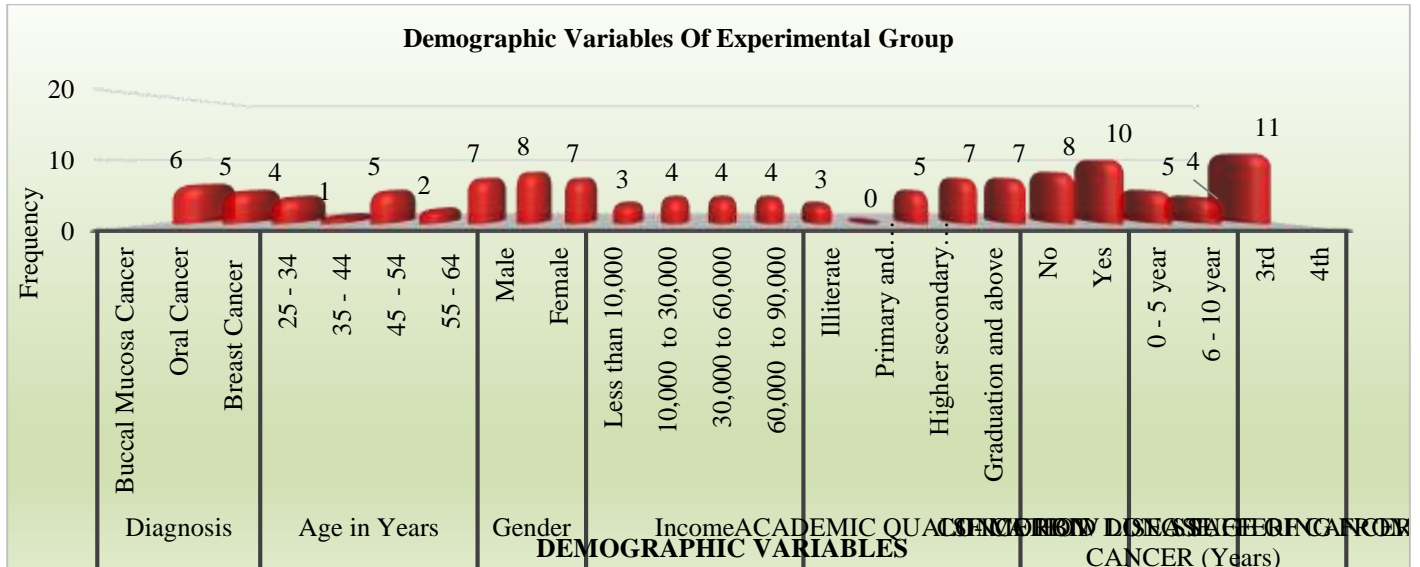

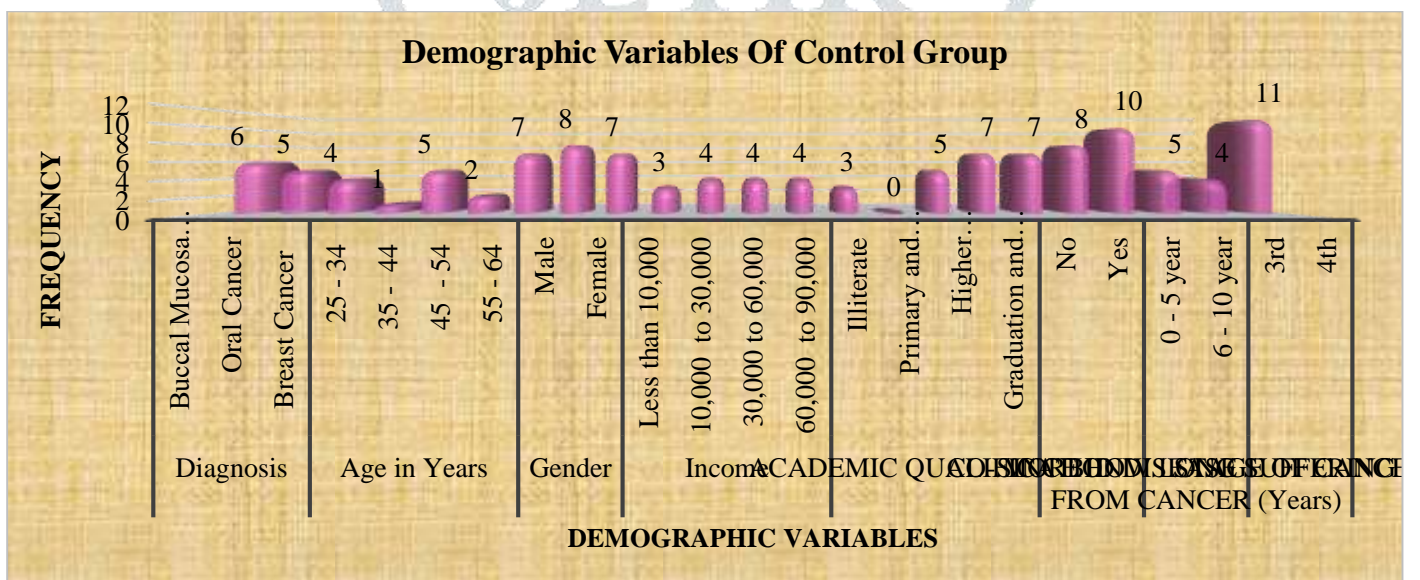**FIGURE 7 bar graph showing frequency distribution of demographic variables of Experimental group**

FIHURE 8 bar graph showing frequency distribution of demographic variables of Control group

Figure: 9- Bar graph showing the comparison of pain level of pre test mean and post test mean score in experimental and control group
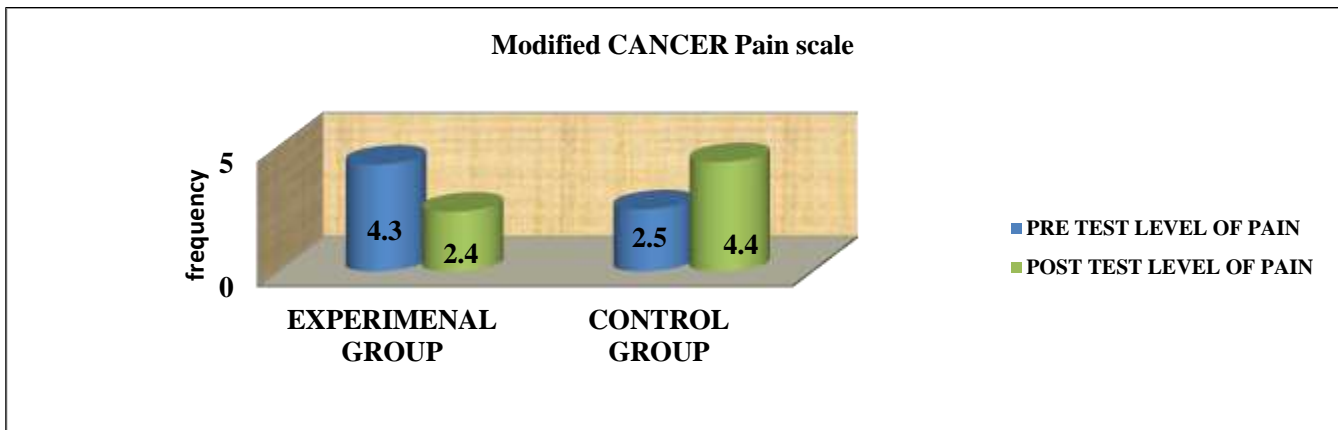

Figure 10 Bar graph showing the comparison of Fatigue level of pre test mean and post test mean score in experimental and control group
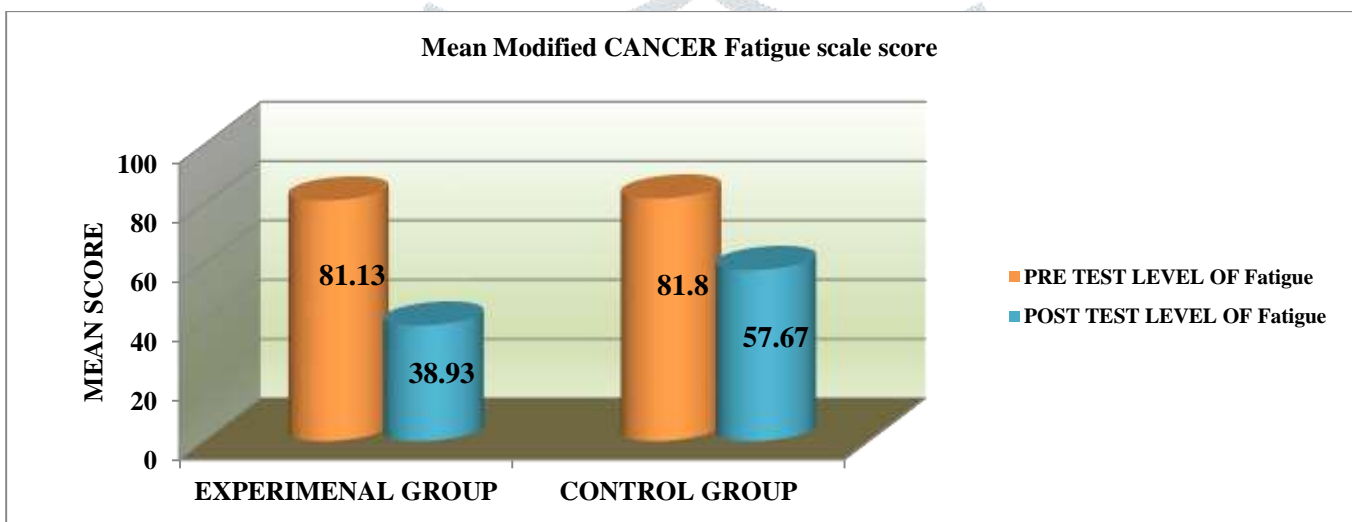

Figure 11 Bar graph showing the comparison of Bowel pattern level of pre test mean and post test mean score in experimental and control group

Figure 12 Bar graph showing the comparison of Insomnia level of pre test mean and post test mean score in experimental and control group

Figure 13 Bar graph showing the comparison of Anxiety level of pre test mean and post test mean score in experimental and control group
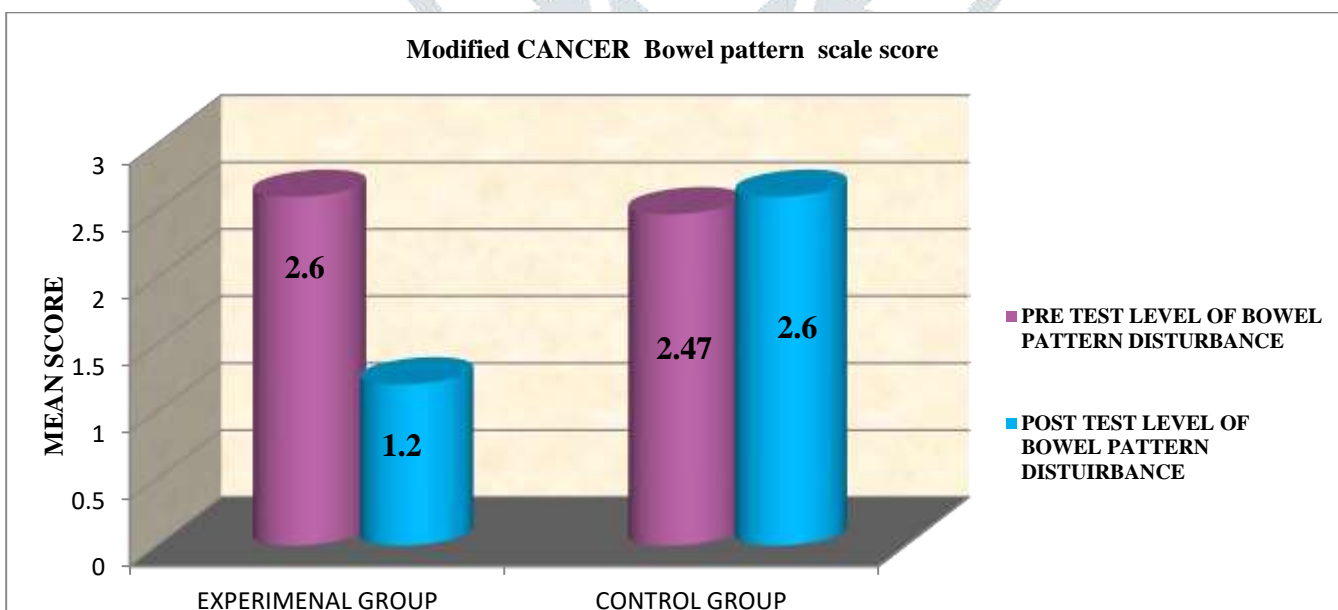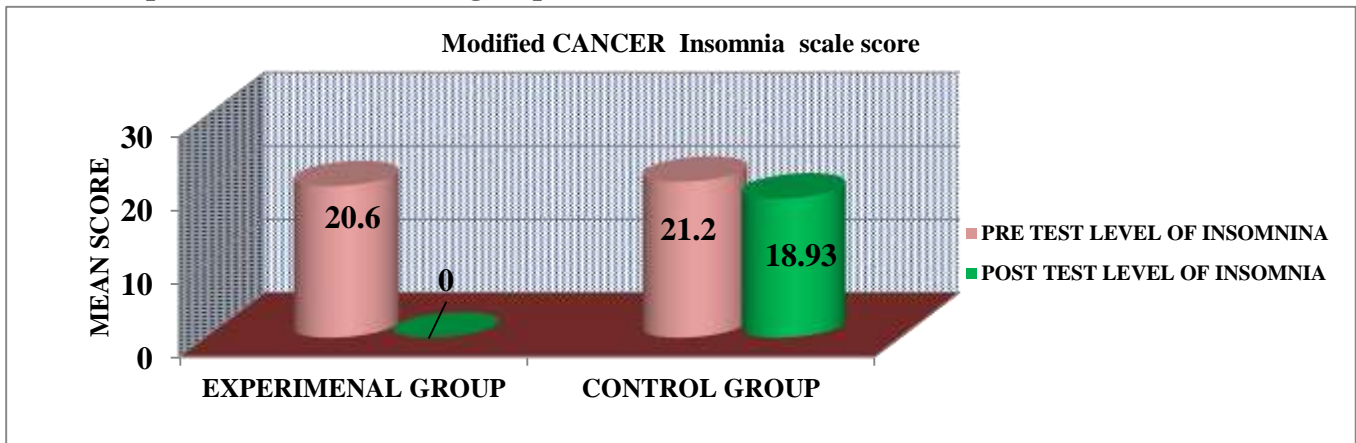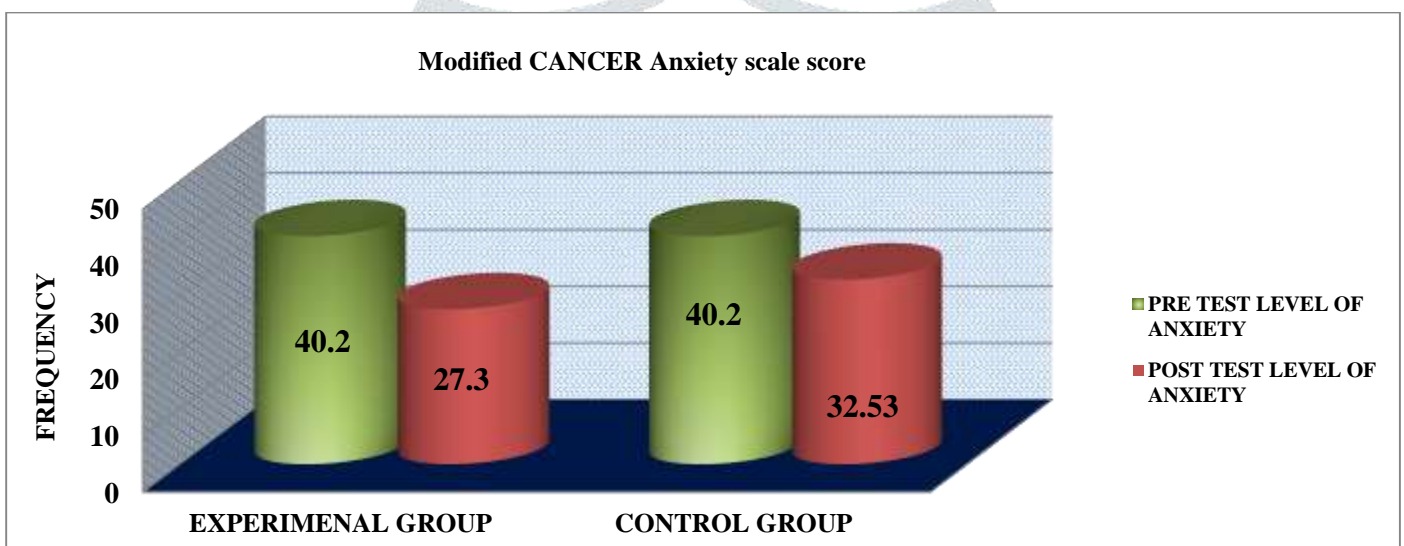

Figure 14 Bar graph showing the comparison of Insomnia level of pre test mean and post test mean score in experimental and control group
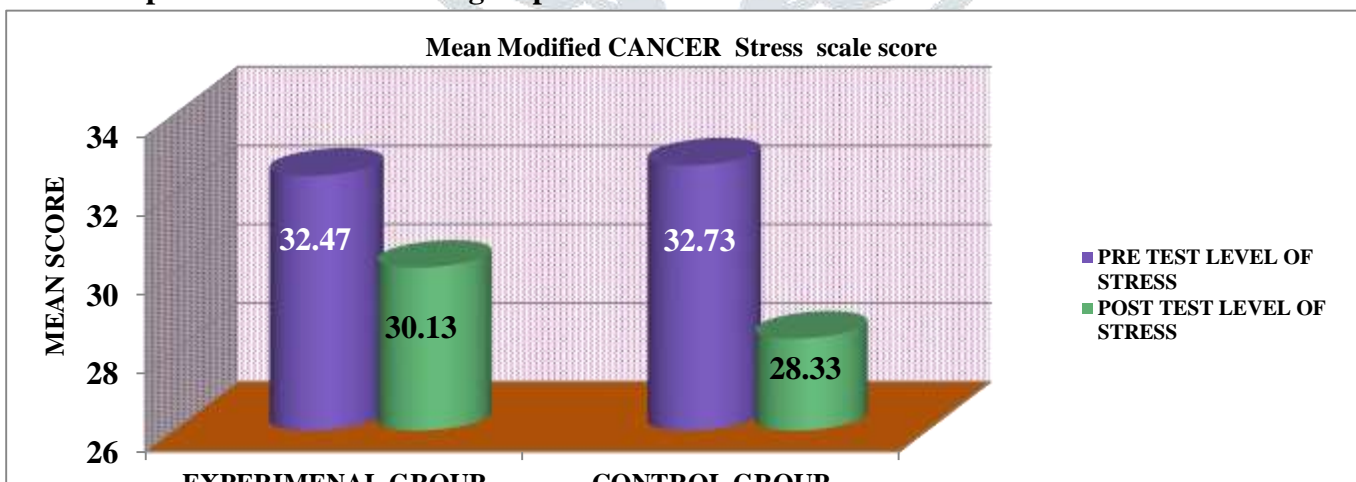
Table 2 ASSOCIATION BETWEEN THE PRE-TEST OF MODIFIED CANCER SCALES   SCORE OF

Demographic Variables	Sr. No.	Pre test level of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	DF	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	1.60	4	9.49	Non- Sig
	A.2	Fatigue	3.23	6	12.59	Non-Sig
Diagnosis	A.3	Bowel Pattern	5.81	6	12.5	Non-Sig
	A.4	Insomnia	6.33	6	12.59	Non-Sig
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	6.048	6	12.59	Non-Sig
	B.2	Stress	3.626	6	12.59	Non-Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	4.63	6	12.59	Non-Sig
	A.2	Fatigue	12.521	9	17	Non-Sig
Age In Years	A.3	Bowel Pattern	8.68	9	16.92	Non-Sig
	A.4	Insomnia	16.98	9	16.92	Sig.
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	9.5	9	16.92	Non-Sig
	B.2	Stress	11.46	9	16.92	Non-Sig

Demographic Variables	SR. NO.	Pre Test Level Of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	Df	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	0.98	2	5.99	NON-SIG
	A.2	Fatigue	2.107	3	7.82	NON-SIG
	A.3	Bowel Pattern	7.93	3	7.82	SIG.
Gender	A.4	Insomnia	1.51	3	7.82	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	2.57	3	7.82	NON-SIG
	B.2	Stress	7.93	3	7.82	SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	3.87	6	12.59	NON-SIG
	A.2	Fatigue	8.862	9	16.92	NON-SIG
	A.3	Bowel Pattern	7.60	9	16.92	NON-SIG
Gross Income Of Family	A.4	Insomnia	7.68	9	16.9	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	8.82	9	16.92	NON-SIG
	B.2	Stress	18.33	9	16.92	SIG.

EXPERIMENTAL GROUP WITH SELECTED DEMOGRAPHIC VARIABLES OF SAMPLES (N=15)

Demographic Variables	SR. NO.	Pre test level of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	DF	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	2.71	4	9.49	NON-SIG
	A.2	Fatigue	3.90	6	12.59	NON-SIG
	A.3	Bowel Pattern	5.094	6	12.59	NON-SIG
Acadamic Qualification	A.4	Insomnia	3.41	6	12.6	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	5.90	6	12.6	NON-SIG
	B.2	Stress	7.48	6	12.59	NON-SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	2.01	2	5.99	NON-SIG
	A.2	Fatigue	2.55	3	7.82	NON-SIG
	A.3	Bowel Pattern	7.97	3	7.82	NON-SIG
	A.4	Insomnia	3.70	3	7.82	NON-SIG
Co- Morbid Disease		**PART- B PSYCHOLOGICAL ASPECTS**				
	B.1	Anxiety	3.38	3	7.82	NON-SIG
	B.2	Stress	3.94	3	7.82	NON-SIG

Demographic Variables	SR. NO.	Pre Test Level Of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	Df	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	8	2	5.9	SIG
	A.2	Fatigue	4.51	3	7.82	NON-SIG
	A.3	Bowel Pattern	0.98	3	7.80	NON-SIG
Duration Of Cancer	A.4	Insomnia	1.71	3	7.82	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	6.80	3	7.8	NON-SIG
	B.2	Stress	3.12	3	7.82	NON-SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	6.48	2	5.9	SIG
	A.2	Fatigue	8.60	3	7.82	SIG
Stage Of Cancer	A.3	Bowel Pattern	1.12	3	7.82	NON-SIG
	A.4	Insomnia	8.86	3	7.82	SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	5.61	3	7.8	NON-SIG
	B.2	Stress	2.95	3	7.82	NON-SIG

Table 3 ASSOCIATION BETWEEN THE PRE-TEST OF MODIFIED CANCER SCALES SCORE OF CONTROL GROUP WITH SELECTED DEMOGRAPHIC VARIABLES OF SAMPLES (N=15)

Demographic Variables	Sr. No.	Pre test level of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	DF	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	1.77	4	9.49	Non- Sig
	A.2	Fatigue	7.5	6	12.59	Non-Sig
	A.3	Bowel Pattern	3.63	6	12.5	Non-Sig
Diagnosis	A.4	Insomnia	7.20	6	12.59	Non-Sig
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	5.02	6	12.59	Non-Sig
	B.2	Stress	6.43	6	12.59	Non-Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	4.73	6	12.59	Non-Sig
	A.2	Fatigue	8.681	9	17	Non-Sig
	A.3	Bowel Pattern	2.71	3	7.82	Non-Sig
Age In Years	A.4	Insomnia	12.48	12	21.03	NON- Sig.
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	9.09	3	7.82	Non-Sig
	B.2	Stress	8.83	9	16.92	Non-Sig

Demographic Variables	SR. NO.	Pre Test Level Of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	Df	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	2.01	2	5.99	NON-SIG
	A.2	Fatigue	3.45	3	7.82	NON-SIG
	A.3	Bowel Pattern	9.07	9	16.92	NON SIG.
Gender	A.4	Insomnia	1.61	3	7.82	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	3.51	3	7.82	NON-SIG
	B.2	Stress	5.32	3	7.82	SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	6.32	6	12.59	NON-SIG
	A.2	Fatigue	10.86	9	16.92	NON-SIG
	A.3	Bowel Pattern	9.89	9	16.92	NON-SIG
	A.4	Insomnia	7.89	9	16.9	NON-SIG
Gross Income Of Family		**PART- B PSYCHOLOGICAL ASPECTS**				
	B.1	Anxiety	9.07	9	16.92	NON-SIG
	B.2	Stress	8.83	9	16.92	SIG.

Demographic Variables	SR. NO.	Pre test level of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	DF	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	5.62	6	12.59	NON-SIG
	A.2	Fatigue	8.44	9	16.92	NON-SIG
	A.3	Bowel Pattern	0.75	3	7.82	NON-SIG
Academic Qualification	A.4	Insomnia	7.52	9	16.92	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	9.07	9	16.92	NON-SIG
	B.2	Stress	8.60	9	16.92	NON-SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	3.49	2	5.99	NON-SIG
	A.2	Fatigue	2.39	3	7.82	NON-SIG
	A.3	Bowel Pattern	0.75	3	7.82	NON-SIG
Co- Morbid Disease	A.4	Insomnia	2.18	3	7.82	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	4.09	3	7.82	NON-SIG
	B.2	Stress	1.178	3	7.82	NON-SIG

Demographic Variables	SR. NO.	Pre Test Level Of Physical And Psychological Aspects For Experimental Group	Fishers Chi Square	Df	Table Value	Sig/ Non Sig
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	103	2	5.99	NON-SIG
	A.2	Fatigue	3.03	3	7.82	NON-SIG
	A.3	Bowel Pattern	1.96	3	7.82	NON-SIG
Duration Of Cancer	A.4	Insomnia	4.44	3	7.82	NON-SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	2.32	3	7.82	NON-SIG
	B.2	Stress	2.99	3	7.82	NON-SIG
		PART-A PHYSICAL ASPECTS				
	A.1	Pain	5.99	2	4.29	SIG
	A.2	Fatigue	7.51	3	7.82	SIG
Stage Of Cancer	A.3	Bowel Pattern	1.52	3	7.82	NON-SIG
	A.4	Insomnia	5.60	3	7.82	NON SIG
		PART- B PSYCHOLOGICAL ASPECTS				
	B.1	Anxiety	5.11	3	7.8	NON-SIG
	B.2	Stress	6.79	3	7.82	NON-SIG

Table 2 findings for experimental group indicate that there was significant

- Association found between the pre-test of Modified CANCER Pain scale score of experimental group with the selected demographic variables were Duration of cancer and Stage of cancer.

- Association found between the pre-test of Modified CANCER Fatigue scale score of experimental group with the selected demographic variables was Stage of cancer.

- Association found between the pre-test of Modified CANCER Bowel pattern disturbance scale score of experimental group with the selected demographic variables was Gender.

- Association found between the pre-test of Modified CANCER Insomnia scale score of experimental group with the selected demographic variables was Age in years and stage of cancer.

- No Association found between the pre-test of Modified CANCER I Anxiety scale score of experimental group with the selected demographic variables.

- Association between the pre-test of Modified CANCER stress scale score of experimental group with the selected demographic variables were Gender and Family income.

Table 3 findings for control group indicate that there was significant

- Association found between the pre-test of Modified CANCER Pain scale score of control group with the selected demographic variable was Stage of cancer.

- Association found between the pre-test of Modified CANCER Fatigue scale score of control group with the selected demographic variable was Stage of cancer.

- No Association found between the pre-test of Modified CANCER Bowel pattern disturbance scale score of control group with the selected demographic variables.

- No Association found between the pre-test of Modified CANCER Insomnia scale score of control group with the selected demographic variables.

- No Association found between the pre-test of Modified CANCER I Anxiety scale score of control group with the selected demographic variables.

- Association between the pre-test of Modified CANCER stress scale score of control group with the selected demographic variables were Gender and Gross Family income.

DISCUSSION

The finding for the comparison of pre test, re assessment test and post test data score on Modified CANCER Scales suggests that the after the administration of foot reflexology therapy in Experimental group improves the level of physical aspects as like Pain, fatigue, Bowel pattern, insomnia, and psychological aspects as like anxiety and stress. Tumours, surgery, intravenous chemotherapy, radiation therapy, targeted therapy and diagnostic procedures may cause pain, Fatigue , insomnia, bowel pattern disturbance, stress, anxiety to cancer patient**.** Cancer treatments that include chemotherapy, radiation therapy, and immunotherapy (biologic therapy)and drug therapy, External to the pelvis that can cause various physical and psychological aspects common symptom for cancer patients that may vary with advanced stage of cancers and Foot reflexology used as a complementary therapy and is one of the non-pharmacological therapies to alleviate our mental, emotional, and spiritual health, while improving the quality of our life for the cancer patients. The study represent there was statistical significance between Physical & psychological aspects and demographic variables such as diagnosis, as age, gender, educational qualification, gross family income, co morbid diseases and cancer aspects variable such as since how long suffering from cancer, stage of cancer, treatment taking by patient for cancer, therapy taken by patients for cancer.

CONCLUSION

This study reports the effectiveness of foot reflexology therapy on physical and psychological aspects among cancer patients in selected oncology centre of Ahmedabad city. Modified Cancer scales score shows marked improve in level of physical aspects and Psychological aspects after administration of foot reflexology therapy. Modified Cancer scales score finding represent that the experimental group includes highest number of patients in normal and mild level of physical aspects such a pain Fatigue, Insomnia, Bowel pattern and Psychological aspects such as Anxiety and stress . The Control group includes highest number of patients in moderate and severe level of physical aspects such a pain Fatigue, Insomnia, Bowel pattern and Psychological aspects such as Anxiety and stress. It shows **there is significant improvement in Physical and psychological aspects among cancer patients after Administration of the Foot reflexology therapy in experimental group.** Study findings strongly suggest that after the administration of foot reflexology; After 7 days (re assessment test) the most improved Physical and psychological aspects in series were insomnia >bowel pattern disturbance> pain > fatigue > stress> anxiety. After 15 days (post test) the most improved Physical and psychological aspects in series were Pain> insomnia> fatigue> bowel pattern disturbance> stress> anxiety. The association between pre test score and demographic variables in **experimental group findings indicate that there was significant;** Association found between the pre-test of Modified CANCER Pain scale score of experimental group with the selected demographic variables were Duration of cancer and Stage of cancer. Association found between the pre-test of Modified CANCER Fatigue scale score of experimental group with the selected demographic variables was Stage of cancer. Association found between the pre-test of Modified CANCER Bowel pattern disturbance scale score of experimental group with the selected demographic variables was Gender. Association found between the pre-test of Modified CANCER Insomnia scale score of

experimental group with the selected demographic variables was Age in years and stage of cancer. No Association found between the pre-test of Modified CANCER I Anxiety scale score of experimental group with the selected demographic variables. Association between the pre-test of Modified CANCER stress scale score of experimental group with the selected demographic variables were Gender and Family income. The association between pre test score and demographic variables in **control group findings indicate that there was significant** Association found between the pre-test of Modified CANCER Pain scale score of control group with the selected demographic variable was Stage of cancer. Association found between the pre-test of Modified CANCER Fatigue scale score of control group with the selected demographic variable was Stage of cancer. No Association found between the pre-test of Modified CANCER Bowel pattern disturbance scale score of control group with the selected demographic variables. No Association found between the pre-test of Modified CANCER Insomnia scale score of control group with the selected demographic variables. No Association found between the pre-test of Modified CANCER I Anxiety scale score of control group with the selected demographic variables. Association between the pre-test of Modified CANCER stress scale score of control group with the selected demographic variables were Gender and Gross Family income.

Conflict of interest: The authors declare that they have no competing interests

Ethics declarations

Ethics approval and consent to participate

Lion Bharat Kshatriya Community Oncology Centre, vasana, Ahmedabad ethics committee and HCG Cancer Centre, Ahmedabd ethics committee were reviewed this study and granted ethical approval. A consents form has been obtained from participants.

Consent for publication

Written consent for publication was obtained from each participant.

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