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The Therapeutic Massage for Elderly Women with Colorectal Cancer: Effects on Pain, Fatigue, And Anxiety

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ABSTRACT

Therapeutic massage (TM) can be used to relieve colorectal cancer pain, fatigue and anxiety in elderly patients. It can promote relaxation and relieve tension by applying physical pressure to muscles, tendons, and connective tissues at specific sites. This study **aims** to evaluate the effect of therapeutic massage on pain intensity, fatigue and anxiety level among elderly women with colorectal cancer. **Design**: Quasi-experimental design used to test whether a treatment or intervention affects patient outcomes. **Sample**: A purposive sample of 60 elderly colorectal cancer patients; 30 study and 30 control groups. **Setting**: the study was conducted at National Cancer Institute (inpatients and outpatient). **Study tools**: (1) Structured Personal and Medical Data Questionnaire, (2) Subjective & Objective colorectal cancer Pain intensity Assessment including: part1: Subjective pain intensity assessment, part2: Objective pain intensity assessment (Visual Analogue Scale (VAS): Numeric Rating Scale (NRS) and Faces Pain Rating Scale (FRS), (3) Hirai Cancer Fatigue Scale (HCFS), (4) Geriatric Anxiety Scale (GAS). **Results**: 40% of elderly women patients aged 65 to less than 70 years old in the study group with a mean age 67.6±5.5 years and 36.7% of women patients aged 60 to less than 65 years old in the control group with a mean age 67.5±5.6 years. 96.7%, had severe pain and 73.4% had moderate to severe anxiety during pretest which was decreased to be 96.7% had intermittent pain & 80% had mild to moderate anxiety in the study group after implementation of Therapeutic massage as compared to 46.7% of elderly patients who suffered from severe pain and 100% who suffered from moderate to severe anxiety posttest in the control group whereas Elderly women patients suffered from fatigue pre and post massage in the study and control groups. **Conclusion**: Therapeutic massage has a positive effect on (pain & anxiety) among colorectal cancer patients. **Recommendation**: application of TM on a large-scale sample to gain more generalization & endorsement of it as a routine nursing care in medical oncology units.

Keywords: *Therapeutic Massage; pain intensity; fatigue; Anxiety.*

1. INTRODUCTION

Colorectal cancer is the second most frequent cause of death, leading to unbearable and hardly controllable symptoms among elderly (Thomas, 2023).Colorectal cancer patients experience a broad spectrum of individual and co-occurring symptoms such as pain, anxiety, depression, fatigue, nausea, diarrhea, wasting, and cognitive impairments, which both promote and indicate distress, uncertainty about the disease and its treatment and there is also fear of death, disease progression, reduction in quality of life (QOL) and also relationships, a loss of sense of control, and impacts on decision-making ability (Cleeland & Mendoza, 2020).

Older patients with colorectal cancer, unrelieved pain can affect functioning, increase fatigue, anxiety, cognitive impairment and depression, which in turn can influence the severity of pain and make management more challenging (Massoumeh & Farideh, 2021). Cancer pain may be mild, moderate or severe and it may take several forms, such as feeling like a sharp stabbing pain that comes and goes, a tingling or burning sensation or a persistent ache (Imanishi, 2023).Therapeutic massage is one of the non-pharmacological treatments for pain intensity, fatigue and anxiety reduction which can cause reduction of pain and changes in physiological parameters (heart rate, respiratory rate and blood pressure). Anxiety associated with chemotherapy can put the body's central nervous system on high alertness. Moreover, anxiety with colorectal cancer can be

associated with chemotherapy and radiotherapy and colorectal cancer fatigue is a complex symptom with numerous potential causes, including the cancer itself, its treatments, and various related factors like anemia, pain, and emotional distress. Therapeutic massage is a form of non-invasive, a caring, safe, compassionate touch and "a relax response" which it can be beneficial to the mind, body and spirit during chemotherapy (Musarezaie, Khaledi & Esfahani, 2024).

Significance of the study

Colorectal cancer (CRC) is the third commonest cancer in women, accounting for about 663,000 new cases worldwide every year and the second commonest in men, with around 571,000 new cases worldwide every year. Eight percent of all cancer deaths are attribute to colon cancer, placing it fourth in the rank for cancer-related death causes. Deaths for about 608,000 are estimated each year from colorectal cancer worldwide (Jalalodini, 2019). The incidence of colorectal cancer increases with age as a major risk factor for colorectal cancer. Approximately 70% of cases develop over the age of 65, and 40% of patients in total are 75 years or older (Aaldriks, 2020)**.** In Egypt, data about the prevalence of colorectal cancer are not consistent but it is estimated to rank as the eighth most common cancer diagnosis among old age and its incidence rate is estimated to be 9.8 per 100,000 cases (Allam, 2024).

Moreover, colorectal Cancer pain, fatigue and anxiety can be managed through a number of pharmacological and non-pharmacological approaches. The effectiveness and safety of pharmacological agents in colorectal cancer elderly patients is still uncertain and unclear. Beside this the side effects that resulting from the utilization of pharmacological interventions including physical and psychological health problems have impelled patients to turn to complementary therapy as supportive care approaches to help them in managing their pain, anxiety and fatigue (Werthmann, 2025).Therapeutic massage has the advantages of easy operation and high safety and it can promote relaxation, relieve tension and improve blood circulation by applying physical pressure to muscles, tendons, and connective tissues at specific sites. The mechanism of massage therapy includes analgesia is by inducing local biochemical changes in the soft tissues through descending modulatory circuits, improving oxygenation and blood flow as well as increasing the release of certain hormones associated with analgesia that act as pain receptors, such as oxytocin, vasopressin, adenosine, endorphins, and serotonin which also lead to decreasing level of cortisol hormone that decreases fatigue and level of anxiety among elderly patients with colorectal cancer (Fallon, 2020).

Gerontological nurses' role is crucial as they offer the link between the physician ordering and providing the therapy for cancer elderly patients. Also nurses play an important role in conveying information and applying safe and effective massage therapy for elderly women with colorectal cancer. Nurses also have previous experience in dealing with the pain, fatigue, anxiety, cultural and spiritual influence and can advise the prescription of non-pharmacological interventions in complementary but not in replacement of pharmacological therapy. Scarce nursing studies are carried out in the respect of application of therapeutic massage for reducing pain intensity, fatigue and anxiety among colorectal cancer patients so it is necessary to make more researches about this topic therefore, gerontological nurses can integrate therapeutic massage in nursing care routine which can be curative, preventive, rehabilitative and relieving of muscle tension. Therefore, the aim of this study was to evaluate the effect of therapeutic massage on pain intensity, fatigue and anxiety level among elderly women with colorectal cancer.

Operational definitions

Therapeutic Massage in this study, is defined as type of Swedish massage and application of light touch and slow, steady movements on (lower extremities, upper extremities, neck, face and back) for the elderly women with colorectal cancer to help body relaxation, alleviation of pain, fatigue and anxiety.

Aim of the study: The aim of this study was to evaluate the effect of therapeutic massage on pain intensity, fatigue and anxiety level among elderly women with colorectal cancer.

Research hypotheses:

H1: Colorectal Cancer elderly women patients who will receive therapeutic massage (study group) will exhibit lower post total mean pain intensity scores than those who will not receive therapeutic massage.

H2. Colorectal Cancer elderly women patients who will receive therapeutic massage (study group) will exhibit lower post total mean fatigue scores than those who will not receive therapeutic massage.

H3. Colorectal Cancer elderly women patients who will receive therapeutic massage (study group) will exhibit lower post total mean anxiety scores than those who will not receive therapeutic massage.

2. SUBJECTS AND METHOD

Research design: Quasi-experimental design; 2 groups (study & control groups) were utilized where the study group only received the TM while the control group received the routine nursing care.

Setting: The study was carried out at National Cancer Institute (medical oncology unit and outpatient), Fom El-Khalieg, Cairo, Egypt. The National Cancer Institute provides preventive care (screening, maintaining healthy weight, vaccinating against human papillomavirus (HPV) & counseling about engaging in physical activity and stop smoking), direct medical

care (surgery, chemotherapy & radiotherapy) and rehabilitative care (follow up, physical therapy, nutritional counseling, pain management and psychological support).

Sample: Purposive sample of 60 colorectal cancer elderly women patients whom met the inclusion criteria and attended the Oncology Medical unit, the medical oncology department and the outpatient's clinics were randomly assigned to one of two groups (study and control).

Inclusion Criteria: Elderly women cancer patients who were ≥ 60 years old, admitted to Cancer Institute for colorectal cancer at any stage (stages I, II,III, IV), undergoing chemotherapy, pre/post-surgery, and agreed to be enrolled in the study .

Exclusion Criteria: Elderly women patients who have contraindications of performing therapeutic massage such as (wound or bleeding), or complain of severe cognitive impairment as delirium, immobility, not conscious and who were treated by any other Complementary treatments.

Tools for Data Collection:1- Structured Personal and Medical Data Questionnaire was developed by the researcher and it was consisted of 23 points to determine Structured Personal and Medical Data Questionnaire for elderly women with cancer such as personal data; age, previous occupation, marital status, level of education, address, numbers of children, living condition. Life style habits; smoking, diet, exercise, number of sleeping hours. Medical data; family history, comorbidity diseases, past medical history, current complains, bowel habits, cancer stage and past surgical complains.

Content validity and reliability: the researcher employed the alpha coefficient as the index of content validity. A coefficient of 0.00 indicated lack of agreement between the experts and a coefficient of 1.00 indicated complete agreement and the result of the current study was 90 %, r = 0.9. Cronbach alpha was used for internal consistency of the personal & medical data form.

2- Colorectal Cancer Subjective & objective pain intensity assessment Questionnaire (CPAQ): It included 2 parts: (part1) Subjective Pain Assessment was developed by the researcher through using pain body charts; concerned by 6 items about time for feeling pain, onset, duration, site and type of pain. Part 2: Objective colorectal cancer Pain intensity Assessment: Visual Analogue Scale (VAS) it included Numeric Rating Scale (NRS) and Faces Pain Rating Scale (FRS). It was standardized tool developed by Hayes and Patterson (2020) to assess level of pain intensity for colorectal cancer patients. Numeric Rating Scale included the patient was asked to mark their current pain level on the line. Patients were asked to mark their maximum, minimum, and average pain. The researcher scores the (NRS) by measuring the distance in either centimeter from (0 to 10). Verbal Descriptor Scale (VDS) included the patient was asked to describe the pain using the following descriptors: "no pain," "mild pain," "moderate pain," "severe pain". Faces Pain Rating Scale (FRS) was a self-report measure used to assess the intensity of colorectal cancer elderly patient's pain. **Scoring System:** (Numeric Rating Scale) used scores from 0 to 10 which 0 meant no pain, 1 meant very mild pain, 2 meant minor pain, 3 meant noticeable pain, 4 meant moderate pain, 5 meant moderately strong pain, 6 meant moderately stronger pain, 7 meant strong pain, 8 meant very strong pain, 9 meant very hard to tolerate pain and 10 meant worst possible pain.(Verbal Descriptor Scale(VDS) used scores from 0 to 10 which 0 meant no pain, from (1-4) meant mild pain, (5-6) meant moderate pain and (7-10) meant severe pain.(Faces Pain Rating Scale) used scores from 0 to 5 which 0 meant no hurt (no pain), 1 meant pain little bit, 2 meant pain little more, 3 meant pain even more, 4 meant pain whole a lot and 5 meant pain worst.

Content validity and reliability: The researcher employed the alpha coefficient as the index of content validity. pre-posttest Colorectal Cancer Pain Assessment Questionnaire (CPAQ): (Numerical Rating Scale and Faces Rating Pain Scale) were 0.97 and 0.93, respectively. The VAS demonstrated excellent test–retest reliability with an intraclass correlation coefficient (ICC) of 0.97.

3- Colorectal Cancer Patient Fatigue Assessment Questionnaire: (Hirai Cancer Fatigue Scale (HCFS) was developed by Hirari (2015) and it was standardized tool. It was 15 items to measure level of fatigue among elderly people with colorectal cancer,5-point Likert scale which included (1 means no fatigue), (2 means mild fatigue), (3 means moderate fatigue), (4 means severe fatigue) and (5 means extreme level of fatigue). **Scoring system:** Its scoring included summing the total scores on all questions which ranged from (10 to 50), the total scores were <22 indicated no fatigue and ≥ 22 indicated fatigue.

Content validity and reliability: The researcher employed the alpha coefficient as the index of content validity. Hirai Cancer Fatigue Scale (HCFS) had an overall Cronbach's a coefficient of .943 and a test-retest reliability coefficient of r ¼ .820 ($p < 0.01$), confirming the high reliability of the scale.

4- Colorectal Cancer Patient Anxiety Assessment Questionnaire: Geriatric Anxiety Scale (GAS) was developed by Segal (2011) and it was standardized tool. It was 30 items to measure level of anxiety among elderly people with colorectal cancer, Items 1 through 25 were scorable items. Each item ranged from 0 to 3. Each item loaded on only one scale. Items 26 through 30 were used to help clinicians identify areas of concern for the respondent. They were not used to calculate the total score of the GAS or any subscale. The GAS referred to Somatic subscale (9 items) = sum of items 1, 2, 3, 8, 9, 17, 21, 22, 23, Cognitive subscale (8 items) = sum of items 4, 5, 12, 16, 18, 19, 24, 25, and Affective subscale (8 items) = sum of items 6, 7, 10, 11, 13, 14, 15, 20. **Scoring system:** Its scoring included four cutoff scores had been provided by authors in the manuals: 0–7 (normal anxiety), 8–15 (mild–moderate anxiety), 16–25 (moderate–severe anxiety), and 26–63 (severe anxiety).

Content validity and reliability: The researcher employed the alpha coefficient as the index of content validity. The Geriatric Anxiety Scale demonstrated strong reliability and validity, excellent internal consistency among older adults with one or more chronic medical condition (a=0.94). The cognitive (mean a=0.85), somatic (mean a=0.77), and affective (mean a=0.83) subscales demonstrated good or acceptable average internal consistency across the samples, excellent internal consistency (Cronbach's alpha around 0.90-0.95). Test-retest reliability is also generally acceptable, though slightly lower than internal consistency, with values around 0.53.

Protection of ethical and human rights: The Ethical Committee for Scientific Researches of Cairo University-Faculty of Nursing approval number is RHDIRB2019041701. Furthermore, an official approval to perform the suggested study was received from Cairo University's Faculty of Nursing and Vice Dean of Graduate Studies and Ethical Committee in the National Cancer Institute. The researcher informed the elderly women patients in the National Cancer Institute, Medical Oncology department and Medical Oncology Clinics about the purpose and nature of the study and emphasis were made that participation in this study is voluntary; each female patient has the right to withdraw from the study when she wants written informed consent was obtained from the elderly women patients or the family member depending on patient's condition before conducting the study. Anonymity and confidentiality were assured through coding the data. Patients assured that this data would not be reused in another research without their permission, and data collected was used for this research only. Final approval was granted from the research ethics committee.

Procedure: the therapeutic massage was applied for intervention group from 9/2024 to 1/2025 for 6 weeks of application of program (12 sessions). The study was carried out in the following phases: preparation phase (introductory phase), Implementation phase, and evaluation phase.**1-preparation phase**: Before approaching data collection, the researcher received a training course in therapeutic massage under supervision of a specialized trainer in the field of therapeutic massage from Academy of Chinese Medicine in Cairo (320 hours' workshop), after obtaining the official approval for conducting the study, the researcher met the eligible colon cancer elderly women who received chemotherapy in the Medical Oncology clinics and inpatient and introduced herself to them, the researcher was obtained informed consent from the elderly women patients after explaining the potential benefits and risks as well as study aim and procedures, through face-to-face meetings, the researcher began "introductory session" which interviewed the study participants individually before implementation of therapeutic massage sessions to collect the baseline data using the study tools: Structured Personal and Medical Data Questionnaire for elderly women patients with colorectal cancer, Colorectal Cancer Pain Assessment Questionnaire (CPAQ), Hirai Cancer Fatigue Scale (HCFS) and Geriatric Anxiety Scale (GAS) as pre- test and personal Data to ensure the homogeneity of the groups at the beginning of the study and telephone numbers of the studied elderly were recorded to ensure continuous communication. Researcher gave introduction before application of program to raise awareness for patients about the importance of program for elderly women patients with colorectal cancer and increasing their cooperation during application of the program. During introductory session, the researcher explained the importance of therapeutic massage sessions and the researcher explained the rules which were followed during application of the therapeutic massage program sessions. At the end of the session, the researcher thanked the patients and determined a date for the 2nd interview.**2-Implementation phase**: At the beginning of the 1st session the researcher weighed the women and performed therapeutic massage sessions (12 sessions, 2 sessions/week for 6 weeks) individually for the intervention group (30 female patients) in the private inpatient rooms and in Physical therapy unit at National Cancer Institute to apply therapeutic massage for elderly patients from Medical Oncology clinics, caregivers were instructed to perform massage therapy for patients at home by the researcher while the control group (30 participants) received daily routine care. At the beginning of the first session of massage, the researcher prepared the environment; the room was quiet and light lighting. It was included (bed, pillows, linen and scale) and the researcher maintained the patient's privacy. The researcher rubbed hands together to warm it by little amount of massage lavender oil and started to distribute the oil on the selected parts for massage. The researcher used two pillows to support the neck and legs to ensure the comfort of the elderly women colorectal cancer patients. The researcher started massaging the muscles of the legs from the front and back, the arms, the neck, the face, then the back area around the spine in a circular motion using techniques (light pressure, deep pressure, muscle rubbing technique, then light pressure using the fingers and the palm of the hand again at the end of the session) each session at a rate of two sessions per week for a period of 6 weeks. **3-Evaluation phase** (posttest): was performed immediately after the 6th week and after 3 months (for follow up) from implementation of therapeutic massage using the same scales as pretest evaluation for both the study and the control group to assess progression and by telephone to evaluate the effect of therapeutic massage on pain intensity, fatigue and anxiety among colorectal cancer elderly women patients.

3. THE STUDY RESULTS

Part I: Personal and Medical Data Questionnaire for Elderly women patients with Colorectal Cancer (Personal and Medical Data Form of the Study Sample).

1-Distribution of the elderly patient's personal data (n=60):

Table (1): Distribution of the elderly patient's personal data in relation to age, occupation and number of children (n=60):

Personal data	Categories	Study group N=30		Control group N=30		Chi square test	
		No	%	No	%	χ2	P
Age group	60-	10	33.3	11	36.7	21.1	0.33
	65-	12	40.0	11	36.7		
	70-	2	6.7	2	6.7		
	75-80	4	13.3	4	13.3		
	70-79	2	6.7	2	6.7		
X ±SD	67.6±5.5			67.5±5.6			
Occupation	Pension	1	3.3	0	0.0	2.4	0.49
	Housewife	17	56.7	21	70.0		
	Worker	6	20.0	6	20.0		
	Employee	6	20.0	3	10.0		

* Significant at the p ≤ 0.05

Table (1) indicates that, 33.3% of elderly patients in the study group aged 60 to less than 65 years old, 40% aged 65 to less than 70 years old & 6.7% aged 70 to less than 75 years old as with a mean age 67.6±5.5 years compared to 36.7%, 36.7% & 6.7% respectively in the control group with a mean age 67.5±5.6 years with no statistically significant differences between them (χ2=21.1, P= 0.33). Concerning their occupation, 56.7% were housewives, 20 % were worker and 20 % were employee and 3.3% were on pension in the study group while 70 % were housewives, 20% were worker & 10% were employee and no one were on pension in the control group with no statistically significant differences between them (χ2=2.4, P= 0.49).

Figure (1): Distribution in marital status among the elderly patients in the study and control group (n=60):

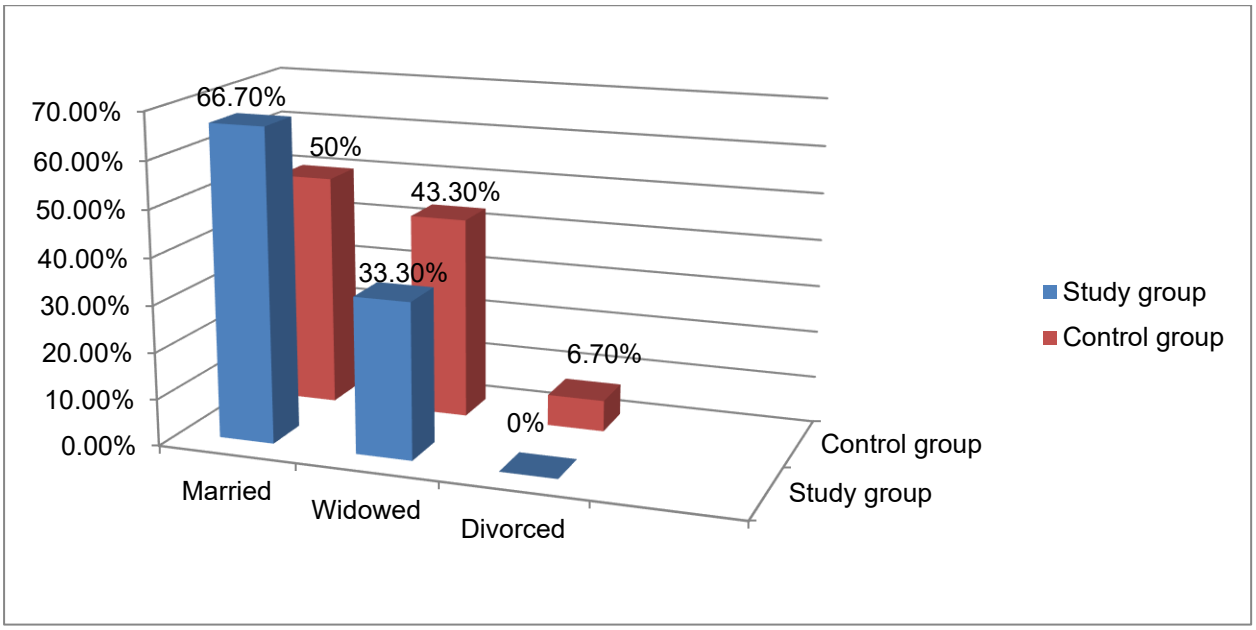

Figure (1) shows that, 66.7% of elderly female patients were married ,33.3% were widowed and no one were divorced in the study group whereas 50% were married, 43.3% were widowed and 6.7% were divorced in the control group with no statistically significant differences between them (χ2=3.1, P= 0.21).

Table 2: Distribution of the Elderly women Patient's Life Style Habits (n=60).

Life style habits	Variables	Study group		Control group		Chi square test	
		No	%	No	%	$\chi 2$	P
Sleeping hours	<6	29	96.7	30	100.0	8.1	0.22
	6-8	1	3.3	0	0.0		
	>8	0	0.0	0	0.0		
Body Mass Index (BMI)	<18.5	14	46.7	19	63.3	8.1	0.22
	18.5-24.9	2	6.7	2	6.7		
	25-29.9	11	36.7	9	30.0		
	30-39.9	0	0.0	0	0.0		
	>40	3	10.0	0	0.0		

* Significant at the $p \leq 0.05$

Regarding to diet, Table (2) according to their sleeping hours, 96.7% slept less than 6 hours, 3.3% slept from 6 to 8 hours, 0 % slept more than 8 hours in the study group as compared to 100%,0%, 0% respectively in the control group with no statistically significant differences between them ($\chi 2$=8.1, P= 0.22). While, BMI for 46.7% elderly patients suffered from underweight, 6.7% were healthy weight, 36.7% suffered from overweight, 0% were obese and 10% suffered from morbid obesity in the study group as compared to 63.3%, 6.7%, 30%,0% and 0% respectively in the control group with no statistically significant differences between them ($\chi 2$=25.7, P= 0.47).

2-Distribution of the elderly patients' medical data (n=60).

Table (3).Distribution of the Elderly women Patients' Medical Data regarding family history of cancer (n=60).

Medical data	Variables	Study group		Control group		Chi square test	
		No	%	No	%	$\chi 2$	P
Family history of cancer	Yes	14	46.7	6	20.0	4.8	.02
	No	16	53.3	24	80.0		
Family member who suffered from cancer	1st degree relatives	19	63.3	20	66.7	1.4	0.4
	2nd degree relatives	5	16.7	4	13.3		
	3rd degree relatives	3	10.0	4	13.3		
	4th degree relatives	3	10.0	2	6.7		

* Significant at the $p \leq 0.05$

Table (3) indicates that, 46.7% of elderly patients in the study group as compared to 20% of elderly patients in the control group had family history of cancer with statistically significant differences between them ($\chi 2$=4.8, P= 0.02). Concerning family member who suffered from cancer in the study group, 63.3% were 1st degree relatives, 16.7% were 2nd degree relatives, 10% were 3rd degree relatives and 10% were 4th degree relatives while 66.7%, 13.3%, 13.3% and 6.7% respectively in the control group with no statistically significant differences between them ($\chi 2$=1.4, P= 0.4).

Figure (2). Distribution of the elderly women patients regarding Types of cancer for family member (n=60):

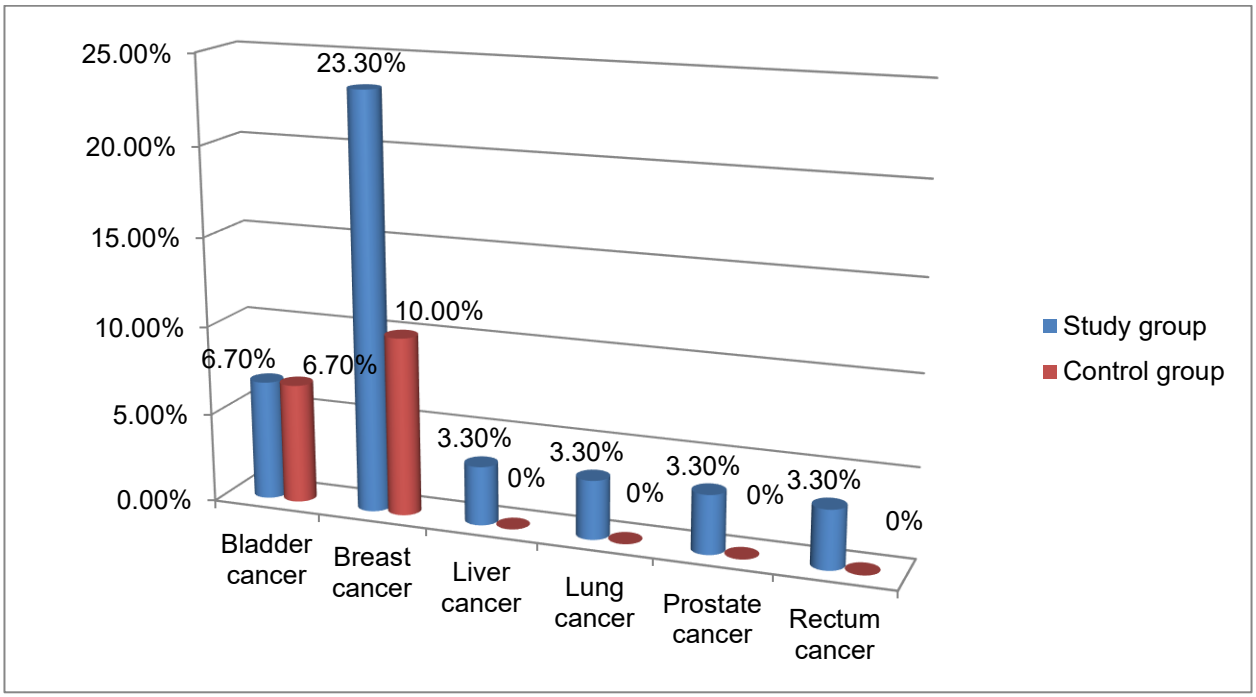

Figure (2) shows that, 6.7% of the elderly female patients in the study group reported that type of cancer for their family history was bladder cancer, 23.3% was breast cancer, 3.3% was liver cancer, 3.3% was lung cancer, 3.3% was prostate cancer and 3.3% was rectum cancer as compared to 6.7% was bladder cancer and 10% was breast cancer in the control group with no statistically significant difference ($\chi 2$=8.2, P= 0.4).

Table 4. Distribution of the Elderly women Patient's Medical Data regarding chronic disease, medications and type of medications (n=60).

Medical data	Variables	Study group		Control group		Chi square test	
		No	%	No	%	$\chi 2$	P
Chronic disease	Yes	13	43.3	13	43.3	0.0	1.0
	No	17	56.7	17	56.7		
Medications	Yes	30	100.0	30	100.0	0.0	1.0
Type of medications	Analgesics	28	93.3	30	100.0	6.0	0.05
	Concor	2	6.7	0	0.0		

* Significant at the $p \leq 0.05$

Table (4) denotes those chronic diseases, 43.3% in both groups had chronic diseases with no statistically significant differences between them ($\chi 2$=0.0, P= 1.0). According to their medications, most of all study and control groups 100% were treated by medications with no statistically significant differences between them ($\chi 2$=0.0, P= 1.0).Regarding to their types of medications, 93.3% had analgesics and 6.7% had Concured in the study group as compared to most of control group 100% had analgesics with statistically significant differences between them ($\chi 2$=6.0, P= 0.05).

Figure 3. Distribution of the elderly women patients regarding Type of chronic diseases (n=60).

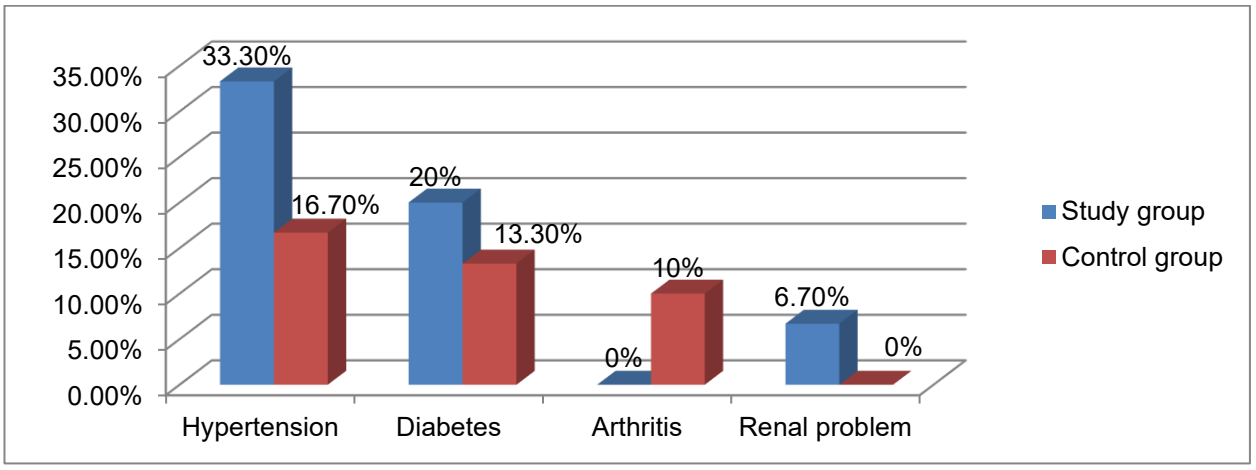

Figure (3) reveals that, 33.3% of elderly patients in the study group suffered from hypertension followed by diabetes mellitus 20% & 6.7% renal problem whereas 16.7% hypertension followed by diabetes 13.3% & 10% arthritis in the control group with no statistically significant differences between them ($\chi 2$= 8.2, P= 0.08).

Table 5: Distribution of the Elderly women Patient's Medical Data regarding treatment of colorectal cancer and time of operation (n=60).

Medical data	Variables	Study group		Control group		Chi square test	
		No	%	No	%	$\chi 2$	P
Treatment for colorectal cancer	Chemotherapy	29	96.7	30	100.0	1.1	0.31
	Radiotherapy	1	3.3	0	0		
Time of operation since	1-6 months	20	66.7	25	83.3	7.7	0.73
	7-12 months	10	33.3	5	16.7		

* Significant at the $p \leq 0.05$

Table (5) exhibits that, 96.7% were treated by chemotherapy and 3.3% were treated by radiotherapy in the study group as compared to 100% were treated by chemotherapy and no one were treated by radiotherapy for colorectal cancer in the control group with no statistically significant differences between them ($\chi 2$=1.1, P= 0.31).While, the time of their operations, 66.7% of elderly patients in the study group had operation since (1 to 6 months) while 33.3% had operation since (7 to 12 months) as compared to 83.3% and 16.7% respectively in the control group with no statistically significant differences between them ($\chi 2$=7.7, P= 0.73).

Figure 4. Distribution of the elderly women patients regarding type of surgery (n=60).

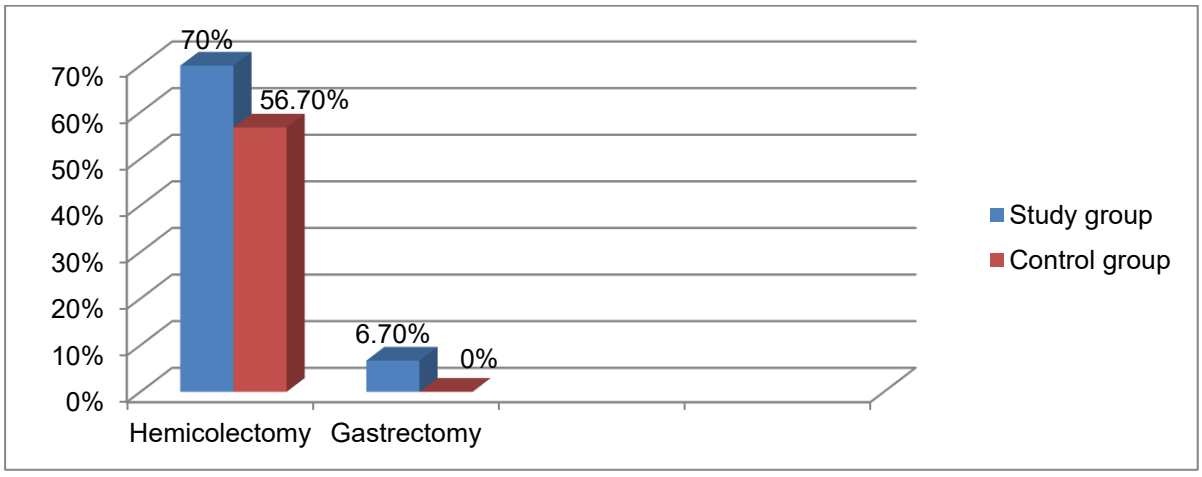

Figure (4) indicates that, 70 % of elderly patients in the study group reported that had hemicolectomy and 6.7% reported that had gastrectomy as compared to 56.7% reported that had hemicolectomy in the control group with no statistically significant differences between them ($\chi 2$= 6.8, P= 0.07).

Figure 5. Distribution of the elderly women patients regarding their stages of colorectal cancer (n=60).

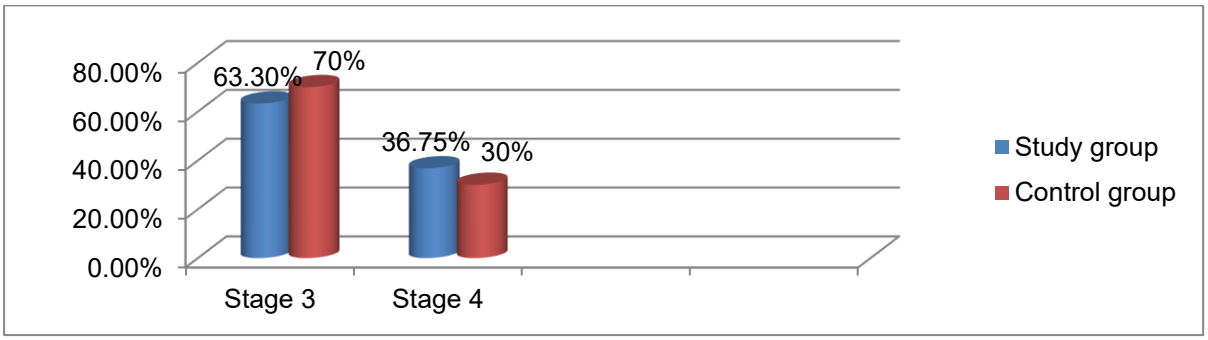

Figure (5) illustrates that, 63.3% of elderly patients in the study group suffered from stage 3 of colorectal cancer and 36.7% suffered from stage 4 of colorectal cancer as compared to 70% and 30% respectively in the control group with no statistically significant differences between them ($\chi 2$= 0.3, P= 0.58).

Figure 6. Distribution of the elderly women patients regarding signs and symptoms before operation (bowel complains) (n=60).

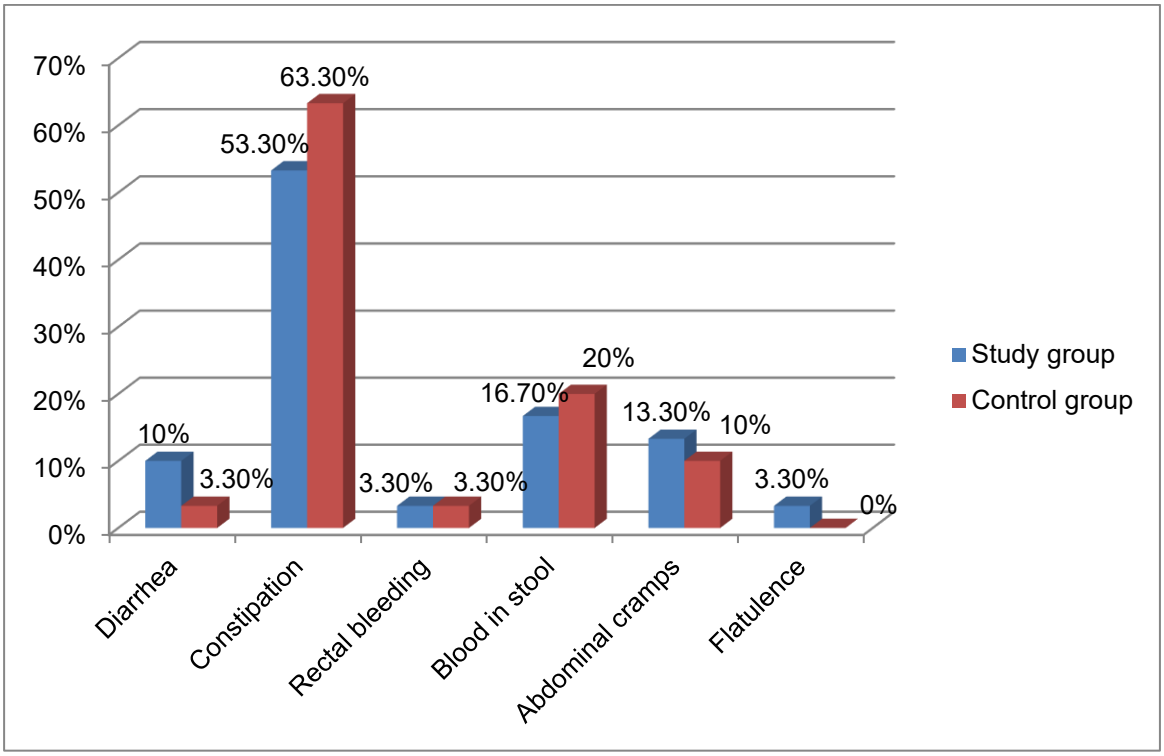

Figure (6) indicates that, 10 % of elderly women patients in the study group suffered from diarrhea, 53.3% constipation, 3.3% rectal bleeding, 16.7% blood in stool, 13.3% abdominal cramps and 3.3 % suffered from flatulence as compared to 3.3% ,63.3%, 3.3%, 20%, 10% and 0% respectively in the control group with no statistically significant differences between them ($\chi 2$= 2.4, P= 0.77).

Part II: Colorectal Cancer elderly women patient's pre, post and follow up of therapeutic massage regarding pain intensity:

a-Colorectal cancer subjective pain intensity:

Table 6.a.1.Distribution of Elderly women Patients in relation to colorectal cancer Subjective Pain Intensity among the Study and Control Groups (n=60).

Subjective Pain intensity	Variables	Study group (n=30)						Control group (n=30)						Study/Control	
		Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
		No	%	No	%	No	%	No	%	N0	%	No	%	χ2	P
Duration of pain	Hours	13	43.3	24	80.0	30	100.0	6	20.0	0	0.0	6	20.0	6.6	0.01*
	Days	17	56.7	6	20.0	0	0.0	24	80.0	30	100.0	24	80.0		
Sites of pain	Colon	20	66.7	25	83.3	20	66.7	25	83.3	23	76.7	25	83.3	4.6	0.45
	Abdomen	1	3.3	3	10.0	2	6.7	2	6.7	2	6.7	3	10.0		
	Back	4	13.3	2	6.7	4	13.3	3	10.0	3	10.0	2	6.7		
	Legs	3	10.0	0	0.0	2	6.7	0	0.0	1	3.3	0	0.0		
	Lung	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
	Uterus	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
	Feet	0	0.0	0	0.0	1	3.3	0	0.0	0	0.0	0	0.0		
	Arms	0	0.0	0	0.0	1	3.3	0	0.0	1	3.3	0	0.0		

* Significant at the $p \leq 0.05$ probability level.

Table (6.a.1.) shows that, a highly statistically significant difference (P=0.01*) was found between subjective pain intensity of elderly patients in the study group in the pre, post therapeutic massage and follow up, 43.3% of them in the pretest the duration of pain reported that pain lasted for hours and 56.7% of them reported that pain lasted for days and duration of pain was changed after therapeutic massage (post-test) to be 80% reported that pain lasted for hours & 20% reported that pain lasted for days in the study group (P=0.01*) as compared to 0.0% and 100% respectively post-test in the control group.

Table 6. a.2.Distribution of Elderly women Patients in relation to colorectal cancer Subjective Pain Intensity (Types, frequency and alleviating factors of pain) among the Study and Control Groups (n=60).

Subjective Pain intensity	variables	Study group (n=30)						Control group (n=30)						Study/Control	
		Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
		No	%	No	%	No	%	No	%	N0	%	No	%	χ2	P
Types of pain	Burning	23	76.7	27	90.0	30	100	27	90.0	30	100	28	93.3	3.15	0.07
	Stabbing	6	20	3	10.0	0	0.0	3	10.0	0	0.0	2	6.7		
	Throbbing	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
Frequency of pain	Occasional	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.3	25.7	0.00*
	Intermittent	3	10	29	96.7	18	60.0	0	0.0	18	60	0	0.0		
	Frequent	27	90	0	0.0	12	40.0	30	100	12	40	29	96.7		
	Constant	0	0.0	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0		
Alleviating Factors of pain	Analgesics	30	100	24	80.0	9	30.0	25	83.3	11	36.7	25	83.3	17.3	0.00*
	Warm	0	0.0	2	6.7	6	20.0	1	3.3	7	23.3	2	6.7		

	compressors														

* Significant at the p ≤ 0.05 probability level.

According to frequency of pain, table (6.a.2.) indicates that, 10% of study group in the pretest reported intermittent pain and 90% of them had frequent pain and the pain frequency was changed after therapeutic massage (post-test) to be 96.7% reported intermittent pain & 0.0% reported frequent pain with highly significant difference (P=0.00*) as compared to 0.0% and 100% respectively pre-test in the control group.

b-Colorectal cancer objective pain intensity:

Table 6.b.1.: Distribution of Elderly women Patients in relation to colorectal cancer Objective Pain Intensity by Numerical Rating Scale among the Study and Control Groups (n=60).

Numerical Rating and Verbal Descriptor scale	Study group (n=30)						Control group (n=30)						Study/Control	
	Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
	No	%	No	%	No	%	No	%	N0	%	No	%	χ2	P
Mild	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	47.1	0.00*
Moderate	1	3.3	29	96.7	16	53.3	0	0.0	16	53.3	0	0.0		
Severe	29	96.7	1	3.3	14	46.7	30	100	14	46.7	30	100		

* Significant at the p ≤ 0.05 probability level.

Regarding Numerical pain Rating and Verbal Descriptor pain intensity assessment, table (6.b.1.) displays that, a highly statistically significant difference was found between colorectal objective pain intensity of elderly patients in the study group in the pre, post therapeutic massage and follow up, 96.7% of them in the pretest were suffering from severe pain & after therapeutic massage (posttest) were 3.3% & 3.3% were suffering from moderate pain and became 96.7% after post therapeutic massage in the study group (P=0.00*) as compared to 100%, 46.7% , 0.0% & 53.3% respectively in the control group.

Table 6.b.2.: Distribution of Elderly women Patients in relation to colorectal cancer Objective Pain Intensity by Faces Pain Rating Scale among the Study and Control Groups (n=60).

Faces pain Rating scale	Study group (n=30)						Control group (n=30)						Study/Control	
	Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
	No	%	No	%	No	%	No	%	N0	%	No	%	χ2	P
Hurts even more	0	0.0	0	0.0	18	60.0	0	0.0	0	0.0	0	0.0	31.2	0.00*
Hurts whole lot	4	13.3	18	60.0	12	40.0	18	60.0	12	40.0	18	60.0		
Hurts worst	26	86.7	12	40.0	0	0.0	12	40.0	18	60.0	12	40.0		

In relation to Faces pain intensity assessment, table (6.b.2.) reveals that, 13.3% of elderly patients in the pretest hurts whole lot and 86.7% of them hurts worst and became after therapeutic massage (post-test) 60% hurts whole lot & 40% hurts worst in the study group with a highly statistically significant difference (P=0.00*) as compared to 60% and 40% respectively pre-test in the control group.

Part III: Colorectal Cancer elderly women patient's pre, post and follow up of therapeutic massage regarding fatigue.

Table 7.Distribution of Elderly Patients in relation to colorectal cancer fatigue by Hirai Cancer Fatigue Scale among the Study and Control Groups (n=60).

(Hirai Cancer Fatigue Scale (HCFS):	Study group (n=30)						Control group (n=30)						Study/Control	
	Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
	No	%	No	%	No	%	No	%	N0	%	No	%	$\chi 2$	P
No Fatigue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.0
Fatigue	30	100.0	30	100.0	30	100.0	30	100.0	30	100.0	30	100.0		

* Significant at the $p \leq 0.05$ probability level.

Concerning Colorectal Cancer Fatigue, table (7) shows that, no statistically significant differences were found between colorectal cancer fatigue of elderly patients in the study group in the pre, post therapeutic massage and follow up, most of them were suffering from fatigue pre, post therapeutic massage and follow up in the study group (P=1.0) as compared to most of them pre, post therapeutic massage and follow up were suffering from fatigue in the control group

Part IV: Colorectal Cancer elderly women patient's pre, post and follow up of therapeutic massage regarding anxiety level.

Table.8.Distribution of Elderly Patients in relation to Colorectal Cancer Patient Anxiety Assessment by Geriatric Anxiety scale among the Study and Control Groups (n=60).

Colorectal Cancer Patient Geriatric Anxiety scale (GAS)	Study group (n=30)						Control group (n=30)						Study/Control	
	Pretest %		Posttest %		Follow up %		Pretest %		Posttest %		Follow up %		Chi square test	
	No	%	No	%	No	%	No	%	N0	%	No	%	$\chi 2$	P
Normal	0	0	0	0	0	0	0	0	0	0	0	0	49.1	0.00*
Mild-Moderate	7	23.3	24	80	30	100	3	10	0	0	3	10		
Moderate-Severe	22	73.4	3	10	0	0	24	80	30	100	24	80		
Severe	1	3.3	3	10	0	0	3	10	0	0	3	10		

* Significant at the $p \leq 0.05$ probability level.

Regarding Colorectal Cancer Anxiety scale, table (8) shows that, highly statistically significant differences were found between colorectal cancer anxiety assessment of elderly patients in the study group in the pre, post therapeutic massage and follow up, 73.4% of them in the pretest were suffering from moderate to severe anxiety & after therapeutic massage (posttest) were 10% & 80% were suffering from mild to moderate anxiety and became most of them were suffering from mild to moderate anxiety after follow up in the study group (P=0.00*) as compared to 80%, 100% , 0.0% & 10% respectively in the control group.

Part VI: Comparison between Total T-test and Total Mean pain, fatigue and anxiety level Scores of the Study and Control Groups in Pretest, Post therapeutic massage and Follow-Up (n=60):

Table 10. Distribution of the Elderly Women Patients regarding Total T-test and Total Mean pain, fatigue and anxiety level Scores of the Study and Control Groups in Pretest, Post therapeutic massage and Follow-Up (n=60):

Studied Variables	Study group (n=30)	Control group (n=30)	Study/Control	
	Total Mean ±SD	Total Mean ±SD	t	p
Pain	3.4±0.49	4.4±0.49	7.904	0.000*
Fatigue	28.70±3.06	49.30±9.23	11.603	0.000*
Anxiety level	33.53±3.83	47.70±4.94	12.416	0.000*

* Significant at the $p < 0.05$ probability level.

Table (10) indicates that, highly statistically significant differences were found between the study and control groups regarding the total mean colorectal cancer pain, fatigue and anxiety level scores of the elderly women patients in the pre, post therapeutic massage and follow up tests with the following p values; P=0.000*, P=0.000*& P=0.000* respectively.

4. DISCUSSION

Therapeutic massage is increasingly used in medical treatment programs for colorectal women patients to reduce symptoms, improve coping, and enhance quality of life. A geriatric therapeutic massage technique for colorectal cancer elderly patients employs light, gentle massage and passive stretching to ease muscle tension without excessive friction on the skin, induce relaxation, and reduce fatigue and anxiety. Pain can negatively affect a colorectal cancer elderly's quality of life. Recent findings highlight the role of massage in pain management (Stuart, 2023). So, the aim of the current study was to evaluate the effect of therapeutic massage on pain intensity, fatigue and anxiety level among elderly women with colorectal cancer.

Based on the current study results, all studied elderly patients agreed to participate in the study, it revealed that one third of the elderly patients was aged from sixty to less than sixty-five years old, more than one third aged from sixty-five to less than seventy years old & less than one quarter aged 70 to less than 75 years old with no statistically significant differences were found between patient's age groups. The current study findings were in harmony with a similar study that carried out by Bischofl and Hurni (2021) studied " Management of Elderly and Old Cancer Patients , Geriatric Oncology " (Published research article) in Department of Medical Oncology, Switzerland, found that of the 754 cases reviewed, more than half of people with cancer in Switzerland were older than 65 years old. From the researcher's point of view, aging is considered as a major risk factor for cancer development and the incidence of cancer increases dramatically with advancing of age.

As regard to marital status, the results of the current study showed that more than half of elderly patients were married & quarter of them were widowed and no one of them were divorced in the study group as compared to half of them were married, near half were widowed and near eighth were divorced in the control group with no statistically significant differences between the two groups .This study findings were consistent with the study done by Avila (2024) studied "Marital status, frailty, and survival in older adults with cancer." (Published research article) in Geriatric Oncology Journal, Boston, USA, found that of the 664 cases reviewed, more than half of patients were married, less than quarter of patients were single/divorced, and less than eighth were widowed .

Concerning sleeping hours, the results of the current study showed that more than three quarter slept 6 hours, less than fifth slept from 6 to 8 hours and no one slept more than 8 hours in the study group as compared to most of control group slept less than 6 hours with no statistically significant differences between them(table 2). These results agree with the study done by Lianqi (2021) , who revealed that; in a published study entitled as," Sleep Disturbances in Cancer.", in National Institutes of Health, in California San Diego, USA, found that 354 cancer patients reviewed, more than three quarter complained of sleeping fewer hours than normal and three quarter complained of difficulty in getting back to sleep undergoing chemotherapy. From the researcher's point of view, patients with colorectal cancer had different kinds and different rates of sleep problems due to signs and symptoms of cancer such as, diarrhea, constipation, rectal bleeding, blood in stool, abdominal cramps, flatulence, severe pain, eating problems, anxiety, and fatigue and it matches with chemotherapy side effects.

Pertaining to the Body Mass Index(BMI), the results of the current study revealed that less than half of elderly women patients suffered from underweight, near fifth has normal weight, more than quarter suffered from overweight, no one were obese and tenth of patients suffered from morbid obesity in the study group as compared to more than half suffered from underweight, less than fifth has normal weight, less than quarter suffered from overweight and no one were obese or morbid obese in the control group with no statistically significant differences between them. These results consistent with the study done by Takada & Shimokawa (2019) , who revealed that; in a published study entitled as," Association of Low Body Mass Index With Poor Clinical Outcomes After Resection of Non-small Cell Lung Cancer", in Anticancer Research Journal, in Fukuoka, Japan, found that 780 of cancer patients reviewed, Most of study sample reported that were underweight which (BMI <18.5 kg/m2) and was reported that underweight was a factor of poor prognosis in patients with cancer .From the researcher's point of view, It may be and due to gastric problems, such as, diarrhea, constipation, rectal bleeding, blood in stool, abdominal cramps and flatulence that decreasing the appetite and causing underweight problem.

In relation to the family history of cancer, the results of the current study showed that, near half of elderly patients in the study group as compared to near quarter of elderly patients in the control group had family history of cancer with statistically significant differences between them. These findings were in agreement with a study done by Scott (2020) conducted ,in a published study entitled as," Population-based study of the prevalence of family history of cancer: Implications for cancer screening and prevention.", in Fred Hutchinson Cancer Research Center, in USA, found that 36,000 of cases reviewed that, most of cases reported that Breast cancer was the most common condition noted for family history of cancer , followed by lung cancer ,less than quarter reported colorectal cancer , less than fifth reported prostate cancer and less than tenth reported ovarian cancer i.e. the family history of cancer was more commonly reported by elderly patients. From the researcher's point of view, some inherited gene mutations are linked to a family cancer syndrome (also called an inherited or hereditary cancer syndrome) which may cause cancer.

Based on the current study results, near half in both groups had chronic diseases with no statistically significant differences between them. In accordance with these results, Duthie and Strohschein (2019) reported that, in a published study entitled as," Living with cancer and other chronic conditions: Patients' perceptions of their healthcare experience", in Canadian Oncology Nursing Journal, in Canada, found that 10 of cases reviewed that, most of colorectal patients undergoing chemotherapy within the last 12 months were suffering from hypertension, and followed by diabetes. From the researcher's point of view, comorbidities are due to aging process and also the progression of cancer that can pressure on other organs that may cause chronic disease.

Concerning the treatment for colorectal cancer, the results of the current study denoted that, more than three quarters were treated by chemotherapy and less than fifth were treated by radiotherapy in the study group as compared to most of control group were treated by chemotherapy and no one were treated by radiotherapy for colorectal cancer with no statistically significant differences between them .This findings was disagree with Thomas (2023) who mentioned that, in a published study entitled as," The use of radiotherapy, surgery and chemotherapy in the curative treatment of cancer: results from the forty (Favorable Outcomes from radiotherapy) project", in Br J Radiology, in UK, found that 1,029,569 of cases reviewed that, who revealed that; more than quarter were treated by chemotherapy and less than half were treated by radiotherapy for patients with cancer in Manchester, United Kingdom.

According to types of surgery for colorectal cancer elderly patients, the current study approved that; near three quarters of elderly patients in the study group reported that had hemicolectomy and near fifth reported that had gastrectomy as compared to more than half reported that they underwent hemicolectomy in the control group with no statistically significant differences between them. These current study findings in the same line with Matsuda & Yamashita1 (2021) who found that; in a published study entitled as," Current status and trend of laparoscopic right hemicolectomy for colon cancer", in Annals of Gastroenterological Surgery Journal., in USA, found that 400 of cases reviewed that, most of the study sample had right hemicolectomy for quicker recovery of bowel function. From the researcher's point of view, the hemicolectomy operation is very important for elderly colorectal cancer patients especially in early stages to prevent metastasis of cancer and to relieve the pressure of cancer cells on organs.

Moreover, the current study revealed that, more than half of elderly patients in the study group suffered from stage 3 of colorectal cancer and more than quarter suffered from stage 4 of colorectal cancer as compared to near three quarters suffered from stage 3 and more than quarter suffered from stage 4 in the control group with no statistically significant differences between them. This current study findings supported by Sung, Ferlay and Siegel (2021) who reported that, in a published study entitled as," GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. ", in CA Cancer J Clin., in USA, found that 19.3 million of cases reviewed that ,near three quarters of colorectal cancer patients suffered from stage 3 of colorectal cancer while more than eighth suffered from stage 4 of colorectal cancer metastatic colorectal cancers.

Concerning the signs and symptoms before operation, the results of the current study showed that, more than half suffered from constipation, less than eighth of elderly patients in the study group suffered from diarrhea, less than fifth suffered from rectal bleeding, quarter suffered from blood in stool, less than quarter suffered from abdominal cramps and less than eighth suffered from flatulence with statistically significant differences between them .The current study findings disagree with these results by Elshami1 et all.(2022) reported that, in a published study entitled as," Awareness of colorectal cancer signs and symptoms: a national cross-sectional study from Palestine ", in BMC Public Health., in Gaza, Palestine, found that 4877 of cases reviewed that, more than half suffered from blood in stools, near three quarters suffered from unexplained weight loss and near the half suffered from persistent pain in the abdomen and less than half suffered from changing in bowel habits. From the researcher's point of view, as a result of different stages of colorectal cancer for elderly patients in two different studies so, signs and symptoms were different.

The results of the current study revealed that, highly statistically significant differences were found between subjective pain intensity of elderly patients in the study group in the pre, post therapeutic massage and follow up, less than half of them in the pretest regarding to the duration of pain reported that pain lasted for hours and more than half of them who reported that pain lasted for days and duration of pain was changed after therapeutic massage (post-test) and more than three quarters reported that pain lasted for hours & less than quarter reported that pain lasted for days in the study group and also were more than three quarters reported that pain lasted for hours , less than fifth reported that pain lasted for days after follow up as compared to most of control group post-test reported that pain lasted for days. These findings are consistent with Musarezaie and Khaledi (2024) reported that, in a published study entitled as," Factors affecting quality of life and fatigue in 1365 patients with leukemia under chemotherapy ", in Educational Health Promotion Journal., in Iran, that massage therapy significantly alleviated the pain in patients undergoing chemotherapy as well as perioperative patients with an even better effect.

The current study results denote that regarding Numerical Pain Rating and Verbal Descriptor Pain intensity assessment revealed that, highly statistically significant differences were found between colorectal objective pain intensity of elderly patients in the study group in the pre, post therapeutic massage and follow up, most of them in the pretest were suffering

from severe pain & after therapeutic massage (posttest) were near fifth & less than eighth were suffering from moderate pain and became more than quarter after post therapeutic massage while the follow up were less than half were suffering from severe pain and became more than half were suffering from moderate pain in the study group .This result was matched with the results of Kutner and Smith (2020) who reported that, in a published study entitled as," Massage therapy vs. simple touch to improve pain and mood in patients with advanced cancer ", in Annals of Internal Medicine., in USA, and found that 380 older adults with advanced cancer reviewed that, most of cases reported that deep tissue massage induces muscle relaxation which decreased pain intensity.

The current study also revealed that in relation to Faces pain intensity assessment, shows that, less than eighth of elderly patients in the pretest hurts whole a lot and more than three quarters of them hurts worst and became after therapeutic massage (post-test) more than half hurts whole a lot & near half hurts worst and changed into no one hurts a lot & less than half hurts whole a lot after follow up in the study group as compared to near half hurts whole a lot in pre-test in the control group with highly statistical significant differences ($p \leq 0.00$). These results consistent with the results of a study done by Furlan and Yazdi (2021), in a published study entitled as," Complementary and alternative therapies for back pain II." in Evidence Based Complement Alternative Medicine, in Canada, found that 3033 of cases reviewed that, most of the study sample reported that massage showed potential benefit compared to inactive controls for pain in the short term, but not in the long-term follow-up.

The results of the current study revealed that, highly statistically significant differences were found between the total mean subscale scores colorectal cancer fatigue scores among the colorectal cancer elderly patients in the study group in the pre, post therapeutic massage & follow up test at whereas no statistically significant differences were found in the control group in the pre, post & follow up test .The present findings were in agree with Shengnan (2023) who mentioned that, in a published study entitled as," Massage therapy significantly improves cancer-related fatigue in cancer patients: A meta-analysis of randomized controlled trials." in Support Care Cancer Journal, in China, found that 789 of cases reviewed that, more than half of study sample reported that Massage therapy was effective in relieving fatigue in cancer patients which the intervention frequency were twice a week for 3-5 weeks, and the optimal duration was 20-40 min.

The findings of the current study indicated that, no statistically significant differences were detected between colorectal fatigue of elderly patients in the study group in the pre, post therapeutic massage and follow up, most of them were suffering from fatigue pre, post therapeutic massage and follow up in the study group (P=1.0) as compared to most of them pre, post therapeutic massage and follow up were suffering from fatigue in the control group. Similarly, these findings are in the same line with Massoumeh and Farideh (2021) who reported in a published study entitled as " Effect of Slow-Stroke Back Massage on Anxiety of Older Women with Cancer Undergoing Chemotherapy " found that of the 80 cases in Tehran, Iran, reviewed that, the average anxiety score and its dimensions in the experiment group was remarkably lower after the intervention (massage therapy) compared to the control group.

The findings of the current study revealed that, highly statistically significant differences were found between the total mean subscale scores colorectal cancer anxiety level scores among the colorectal cancer elderly patients in the study group in the pre, post therapeutic massage & follow up test at whereas no statistically significant differences were found in the control group in the pre, post & follow up test. The present findings were agree with Imanishi (2023) who reported in a published study entitled as " Effect of Massage Therapy on Anxiety and Depression in Cancer Patients. " in Evidence-based Non-pharmacological Therapies for Palliative Cancer Care, found that of the 90 cases in Japan, reviewed that, therapeutic massage in cancer patients would be beneficial for the reduction of anxiety.

Also, these study findings agree with Alhamdoun and Alomari (2020) who reported in a published study entitled as " The Effects of Massage Therapy on Symptom Management among Patients with Cancer: A Systematic Review" in International Research Journal of Oncology, found that of the 711 cases in Oman, reviewed that, most of study sample reported that massage therapy were effective in symptom management of anxiety, pain, fatigue, nausea and vomiting in cancer patients. The current study findings are agree with Werthmann (2025) in a published study entitled as " Efficacy and safety of massage for postoperative stress in colorectal cancer patients: a randomized, controlled, three-arm trial " in Mayo Clinic, found that of the 68 cancer patients in Germany, reviewed that, more than half of study sample reported that massage with additional resting time had a significantly positive impact on anxiety and tension, and satisfaction in patients who had undergone chemotherapy.

Conflict of Interest: No conflict of interest.

Strengths and implications for future studies:

This study highlighted on the positive effect of therapeutic massage as an alternative therapy on pain, fatigue and anxiety level among female elderly colorectal cancer patients which could add to nursing body of knowledge.

Recommendations:

Based on the findings of the present study, the following recommendations are suggested

1- Application of TM on a large sample to gain more generalization in Egypt.

2- Therapeutic massage should be carried out routinely for managing colorectal cancer patients in cancer units by nurses (teaching colorectal cancer elderly patients about the importance of therapeutic massage to relief pain, fatigue and anxiety.

3- Provision of seminars and workshops to raise health team personnel awareness about benefits of therapeutic massage for their provision of care and integrate pharmacological treatment with therapeutic massage to relive disease's side effects.

4- Therapeutic massage should be carried out for many sessions for long time to give effective results for symptoms of colorectal cancer.

Conclusion:

In conclusion, the current study provides evidence of the benefits of using therapeutic massage in colorectal cancer care for elderly patients. These findings are consistent with previous studies that have reported positive outcomes associated with application of therapeutic massage. However, further research is needed to investigate the optimal implementation strategy and the potential complementarily of therapeutic massage with other interventions to achieve optimal outcomes for colorectal cancer elderly patients.

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