A Study to Assess the Effectiveness of Foot Reflexology for Reduction of Physiological Symptoms among Adult Cancer Patients in Cancer Centre, at Gwalior District, Madhya Pradesh

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ABSTRACT

Introduction:

Cancer is a group of more than 200 diseases characterized by controlled and unregulated growth of cells. It is a major health problem that occurs in people of all ethnicities. Cancer incidence overall is higher in women than in men in India. The gender difference incidence and death rates are higher for some types of cancer like head neck, breast and lung. Cancer encompasses a broad range of diseases of multiple causes that can arise in any cell of the body capable of envading regulatory control over proliferation and differentiation.

Statement of the Problem:

"a study to assess the effectiveness of foot reflexology for reduction of physiological symptoms among adult cancer patients in cancer Centre, at Gwalior District, Madhya Pradesh"

Objectives:

➢ To assess the physiological and psychological symptoms of adult patients with cancer in experimental and control group before and after foot reflexology.

➢ To determine the effectiveness of foot reflexology among adult patients with cancer by comparing the physiological and psychological symptoms between experimental and control group of patients with cancer before and after foot reflexology.

➢ To assess the correlation between the physiological and psychological symptoms of adult patients with cancer before and after foot reflexology among experimental and control group of patients.

➢ To find out the association between the demographic variables and level of physiological and psychological symptoms of adult patients with cancer among experimental and control group before foot reflexology.

➢ To find out the association between the clinical variables and level of physiological and psychological symptoms of adult patients with cancer among experimental and control group before foot reflexology.

➢ To determine the level of satisfaction regarding foot reflexology among experimental group of adult patients with cancer.

Research Hypotheses:

➢ **H₁** There will be a significant difference in physiological symptoms between the experimental and control group of patients with cancer before and after foot reflexology.

➢ **H₂** There will be a significant difference in psychological symptoms between the experimental and control group of patients with cancer before and after foot reflexology.

➢ **H₃** There will be a significant relationship between the level of physiological and psychological symptoms of experimental and control group of patients with cancer before and after foot reflexology.

➢ **H₄** There will be a significant association between the demographic variables and physiological symptoms in experimental and control group of patients with cancer before foot reflexology.

- ➢ **H₅** There will be a significant association between the demographic variables and psychological symptoms in experimental and control group of patients with cancer before foot reflexology.
- ➢ **H₆** There will be a significant association between the clinical variables and physiological symptoms of experimental and control group of patients with cancer before foot reflexology.
- ➢ **H₇** There will be a significant association between the clinical variables and psychological symptoms of experimental and control group of patients with cancer before foot reflexology.

INTRODUCTION

Background of the study:

The uncontrolled growth of anaplastic cells that try to invade surrounding tissue and to spread to distant sites is called neoplasm. The presence of malignant cells leads to cancer. The basic origin of cancer is not determined, but the potential cause of cancer is recognized. More than 80% of cases of cancer are due to cigarette smoking, exposure to carcinogenic chemicals, ionizing radiation and ultra violet rays. Over exposure to the sun causes skin cancer. Genetic susceptibility is an important factor for cancer. The immune system plays an important role in controlling the proliferation of anaplastic cells. The incidence of different types of cancer varies with sex, age, ethnic group and geographic location. The common sites for the development of malignant tumors are the lung, breast, colon, and uterus, oral cavity and bone marrow. Surgery is the common form of treatment. Radiation is used as preoperative, post-operative or primary therapy. Chemotherapy with single or multiple anti neoplastic agents is very effective. Many malignant resions are curable, if determined in the early stage like, a change in bowel and bladder habit, a non-healing sore, unusual bleeding or discharge, a thickening or lump in the breast or elsewhere indigestion or dysphagia, an obvious change in a wart or mole or a nagging cough or persistent hoarseness.

Significance and Need for the study:

Cancer forms one of the major components amongst non-communicable diseases with increase in life expectancy, better control of communicable diseases and an ageing population, demographic data shows a significant increase in frequency and incidence of cancer globally. As per the recent GCOBOCAN estimates, approximately 12.6 million new cancer cases and 7.6 million cancer deaths occurred worldwide in 2018.

India is likely to have over 17.3 lakhs new cases and over 8.8 lakhs deaths due to the disease by 2020. In its projection, the Indian Council of Medical Research (ICMR) said in 2016 that the total number of new cancer cases is expected to be around 14.5 lakh and the figure is likely to reach nearly 17.3 lakh in 2020.

The times of India reported on February 4th 2017 that the new cancer cases or its incidence in India is estimated to grow by 25% by 2020.According to the cancer registry released by the Indian Council of Medical Research (ICMR). while new case in Delhi have increased rapidly since 2008, 69% the burden in north eastern states is also high. Cancer cases in India are expected to jump from around 14 lakhs in 2016 to over 17.3 lakh by 2020.Deaths due to cancer are projected to go up from 7.36 lakh to over 8.8 lakhs in the next four years. Breast, lung and cervical cancers have topped the list of new cases. The data shows, over 1.5 lakh new breast cancer cases were estimated during 2016, which is over 10% of total cases. Cancer of lung is the second with estimated1.14 lakh new cases (83,000 in males and 31,000 in females) during 2016.Incidence of breast cancer is projected to go up to 1.9 lakh by 2020, whereas lung cancer cases are likely to increase to 1.4 lakh in the next four years. Mumbai: Over nine lakh people died due to cancer in India in 2022 even as 14 lakh new cases were registered, according to the latest estimates released by the International Agency for Research on Cancer (IARC).

The IARC report said that globally "over 35 million new cancer cases are predicted in 2050, a 77% increase from the estimated 20 million cases in 2022." Deaths would increase by 50% in the same period." The data, released to coincide with World Cancer Day on Feb 4 (Sunday), said an estimated 20 million new cancer cases and 9.7 million deaths were registered across the world. The report showed that more Indian women (7.2 lakh) than men ..

Operational Definitions:

- ➢ **Effectiveness:** In this study it refers to the reduction in physiological and psychological symptoms among adult patients with cancer in experimental group after intervening of foot reflexology as measured by Numerical Pain Rating scale, Modified Rhodes Nausea Vomiting index, Modified Major Depression Inventory and Modified State Trait Anxiety Inventory.

- ➢ **Foot Reflexology:** In this study it refers to giving 30 minutes' massage of both feet by applying manual pressure on the reflex points of the feet to the adult patients with cancer for 10 days.

- ➢ **Physiological Symptoms:** In this study physiological symptoms refer to pain, nausea, vomiting experienced by adult patients with

cancer as measured by Numerical Pain Rating Scale and Modified Rhodes nausea vomiting index.

➢ **Psychological Symptoms:** In this study psychological symptoms refer to depression and anxiety experienced by adult patients with cancer as measured by Modified Major Depression Inventory and Modified State Trait Anxiety Scale.

➢ **Patients with Cancer:** In this study patients with cancer refer to patients suffering from any type of cancer in any stage and hospitalized.

➢ **Satisfaction:** In this study it refers to feeling of gratification attained by adult patients with cancer and foot reflexology using satisfaction rating scale developed by the researcher

Assumptions

➢ Patients with cancer suffer from pain, nausea, vomiting, depression and anxiety (physiological and psychological symptoms).

➢ The impulses (generated by pressure) manage to reach the hypothalamus, which is the seat of autonomous nervous system and the controller of sympathy para sympathetic activity. The mutually opposing sympathetic and para sympathetic system get balanced, due to which homoeostasis is restored.

➢ The foot reflexology can help to reduce the physiological and psychological symptoms for patients with cancer.

Delimitations

➢ The study is delimited to the patients with cancer who were admitted in Cancer Centre, Gwalior, M.P.

➢ Data Collection was delimited to patients who were willing to participate during data collection.

➢ Data collection period was limited to 1 year.

Projected Outcome

➢ Since the foot reflexology is found effective, it can be used for all cancer patients to reduce their suffering from physiological and psychological symptoms.
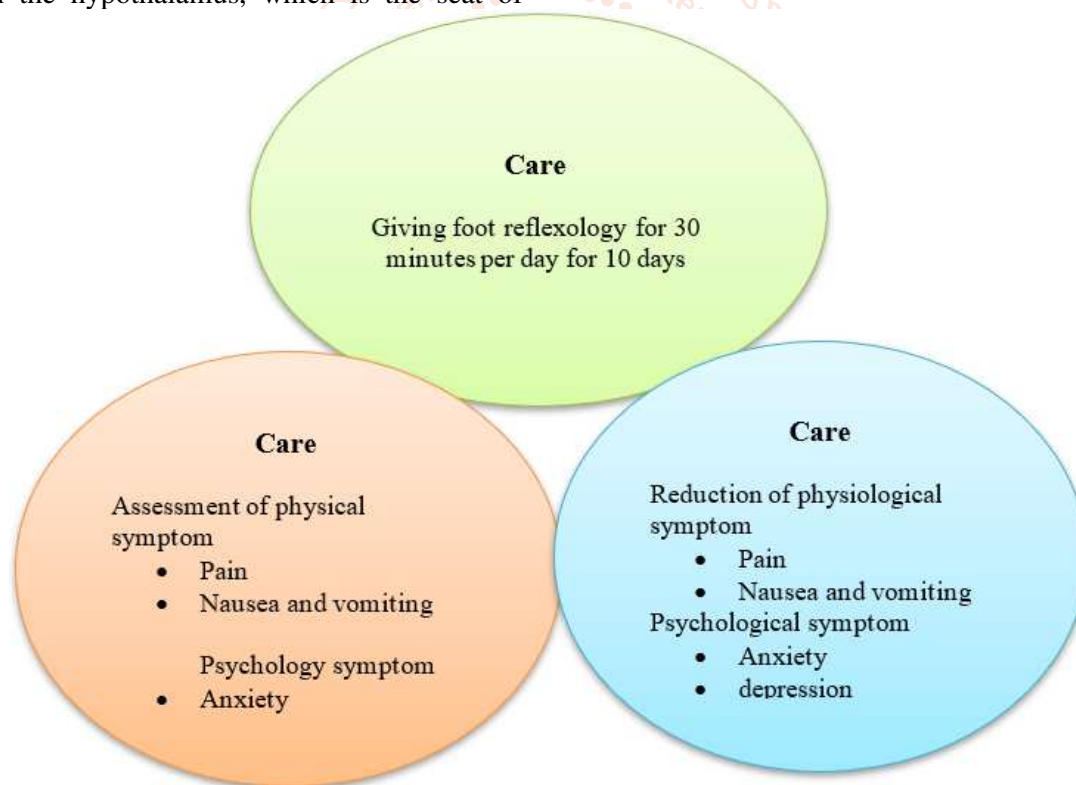

Fig :1 Conceptual frame work based on Lydia Hall the Care, Core and Cure model (1963)

Review of Literature

A review of literature involves the systematic identification, location, scrutiny and summary of written materials that contain information on a research problem identified. A review of literature is a critical analysis of earlier scholarly work on a chosen topic. An extensive search of research and non-research literature were obtained through printed and electronic data base for acquaintance with the rationalized knowledge of selected problem under study search sources were pubmed/ Medline, EMBASE, Cochrane central register of controlled trials. Also direct search of specific journal and backward searches through reference lists of related publication were done.

The review of literature is organized under the following headings:

1. Reviews Related to Prevalence of Cancer.

2. Review of Literature Related to Reflexology and Physiological Symptoms (pain, nausea, vomiting) and Cancer.

3. Review of Literature Related to Reflexology and Psychological Symptoms (anxiety, depression) and Cancer.

4. Review of Literature Related to Reflexology and Physiological, Psychological Symptoms and Cancer.

5. Review of Literature Related to Reflexology and its Benefits.

1. Prevalence of Cancer

A prospective study on "Histological Subtype of Ovarian Cancer Associated with Parity and Breast Feeding' was conducted by **Gaitskell etal** (**2018**). In a prospective study of 1.1 million UK women, 8719 developed ovarian cancer during follow up. Cox regression yielded adjusted relative risks overall and by tumor histotype amongst women with different childbearing pattern. Nulliparous women had a 24% greater ovarian cancer risk than women with one child, with significant heterogeneity by histotype (p=0.01). There was no significant increase in serous tumors, a modest increase in mucinous tumors, but a substantial increase in endometrioids (RR=1.49, 95 %CI:1.18-1.89) and clear cell tumor (RR=1.68, 1.29-2.20). Among parous women, each additional birth was associated with an overall 6% reduction in ovarian cancer risk. This association also varied histotype (p=0.0006), with the largest reduction in risk for clear cell tumors (RR per birth=0.75, 0.65-0.85, p<0.001) and weak effect for endometriosis, high grade serous, or mucinous tumors. We found little association with age at first or last birth. There was about a 10% risk reduction per 12 months' breast feeding (RR=0.89,0.84-0.94, p<0.001), with no significant heterogeneity by histotype, but statistical power was limited.[106]

Indian Council of Medical Research 2022, The estimated number of incident cases of cancer in India for the year 2022 was found to be 14,61,427 (crude rate:100.4 per 100,000). In India, one in nine people are likely to develop cancer in his/her lifetime. Lung and breast cancers were the leading sites of cancer in males and females, respectively. Among the childhood (0-14 yr) cancers, lymphoid leukemia (boys: 29.2% and girls: 24.2%) was the leading site. The incidence of cancer cases is estimated to increase by 12.8 per cent in 2025 as compared to 2020.

Nikbakhsh ,Moudi ,Abbasian ,Khafri. (**2022**) conducted a study on "Prevalence of Depression and Anxiety among Cancer Patients" among 146 patients with a recent diagnosis of breast, colorectal, stomach, esophagus, lung and thyroid cancer. The result revealed that, there were significant relationship between anxiety, depression and the age group of patients (p=0.004 and 0.007respectively) with higher frequency in older ages. There was no significant relationship between anxiety and depression with sex, marital status and educational levels of patients (p>0.05). There were significant relationships between anxiety and depression with the type of cancer (p=0.001 and 0.003 respectively) and type of treatment.

2. Reflexology and Physiological symptoms (Pain, Nausea, and Vomiting) and cancer

A single blinded randomized clinical trial study was carried out by **Nazari, Shahreza, Shaygannejad, Valiani.** (**2015**) "Comparing the Effect of Reflexology and Relaxation on Fatigue in Women with Multiple Sclerosis" among 75 patients with multiple sclerosis, who referred to the multiple sclerosis clinic of Ayatollah Kashani Hospital (Isfahan, Iran). After simple random sampling, participants were randomly assigned minimization method to three groups, namely reflexology, relaxation and control groups (25 patients in each group). In the experimental group the interventions foot reflexology and relaxation were performed for 4 weeks, twice a week for 40 min in each session, and the control group received care and routine medical treatment as directed by a physician. Data were collected through a questionnaire and the fatigue severity scale before, immediately after and 2 months after interventions from all three groups. The result showed that there was no significant difference in the mean fatigue severity score in the pre interventions between the three groups (P>0.05), but there was significant difference immediately and 2 months after interventions among the three groups (P<0.05). The findings obtained from repeated measures ANOVA showed that there was significant difference in the mean fatigue severity score during different times between the three groups (P<0.05), whereas the difference was not significant in the control group (P>0.05). Furthermore, least significant difference post-hoc test revealed that the mean scores of fatigue severity immediately after intervention was lower in the other two groups and were lower in the relaxation group than in the control group 2 months after intervention.

Jennifer Currin , Edward Anton Meister (2022) The objective of this study was to assess the impact of

a Swedish massage intervention on oncology patients' perceived level of distress. Each patient's distress level was measured using 4 distinct dimensions: pain, physical discomfort, emotional discomfort, and fatigue. A total of 251 oncology patients volunteered to participate in this nonrandomized single-group pre- and post-design study for over a 3-year period at a university hospital setting in southeastern Georgia. The analysis found a statistically significant reduction in patient-reported distress for all 4 measures: pain (F = 638.208, P = .000), physical discomfort (F = 742.575, P = .000), emotional discomfort (F = 512.000, P = .000), and fatigue (F = 597.976, P = .000). This reduction in patient distress was observed regardless of gender, age, ethnicity, or cancer type. These results lend support for the inclusion of a complementary massage therapy program for hospitalized oncology patients as a means of enhancing their course of treatment.

3. Reflexology and Psychological Symptoms (Anxiety, Depression) and Cancer

A quasi experimental study was conducted by **Lee, Ham, Ok, Kim, etal. (2020)** on "The Effect of Foot Reflexology on Peripheral Neuropathy, symptom Distress, Anxiety, Depression in Cancer Patients Treated with Oxaliplatin". The sample patients were treated with oxaliplatin (experimental group 14 and control group 17). The peripheral neuropathy, symptom distress, anxiety and depression were measured. Experimental group received foot reflexology and the control group did not receive any treatment. Data were analyzed using χ^2 test, Fisher's exact test, 't' test, Wilcoxon signed rank test and the Mann Whitney 'u' test. The result showed that the experimental group that received foot reflexology experienced less peripheral neuropathy and symptom of distress than the control group. There was no difference in anxiety and depression between the experimental and control group.

Serfaty , Wilkinson , Freeman , Mannix , King . (2019) conducted a study on "TOT study helping with Touch or Talk (ToT). A Pilot Randomized Controlled Trail to Examine the Clinical Effectiveness of Aromatherapy Massage Versus Cognitive Behavioral Therapy for Emotional Distress in Patients under Cancer / Palliative Care". Patients at all stages of cancer selected from oncology outpatient clinics and screening eight or more for anxiety and / or depression on the HADS, were randomized to treatment as usual (TAU) plus up to eight sessions weekly of either AM or LBT offered within three months. The POMS were collected at baseline and 3 and 6 months' post baseline. The study findings revealed that, over 60% (39/63) participated (AM,

n=20; CBT, n=19) and over 90% (36/39) were followed up. Both packages were well received. The preference was for AM, with more sessions taken up (mean number session AM = 72 SD (2.0) and CBT = 5.4 (SD = 3.1) P<0.05 significant improvement in POMS occurred with both interventions. Groups comparison showed a non-significant trend towards greater improvement in depression with CBT.

4. Reflexology and Physiological, Psychological Symptoms and Cancer.

Hanan Gaber Mohammed. (2022), conducted a study on "the Effect of Foot Massage on Post-Operative Pain and Vital Signs in Breast Cancer Patients". A quasi experimental design was used to investigate any causality between foot massage and post- operative pain, with a total of 60 breast cancer patient's n = 30 in the control group who received only analgesic treatment and n = 30 in the experimental group, who received analgesic plus foot massage. A structured questionnaire was developed by the researcher to collect data related to participants. Patient pain was assessed by visual analogue scale as a baseline and after 60 minutes and 120 minutes following foot massage. Vital signs were assessed using the same time interval. The result revealed that the mean pain level of the experimental group, who had experienced foot massage as an adjunct to analgesic to be lower than that of the control group. A statistically significant reduction of systolic and diastolic blood pressure in both groups was also observed but a higher reduction was observed in the experimental group (P < .001) while the respiratory rate remained unchanged in both groups.

A non-blinded randomized study was done by **Dyer, Thomas, Sandsund, Shaw. (2022)** on "Reflexology was Interior to Aroma Therapy Massage for Amelio Rating Self Selected Problems or Concerns". The adult outpatients were selected 1:1 for this study. The study participants were 115 subjects (58 aroma therapy, massage, 57 reflexology patients were randomized by four aroma therapy massage or four reflexology session. Data were collected by MY caw score, visual analogy scale in the pre and post session. Data were analyzed using unpaired 't' test for the primary outcome. Analysis of variance test was used for repeated measure for VAS (relaxation) descriptive statistics (mean and 95% confidence interval) and content analysis for patients. The result showed that reflexology was found to be no less effective than aromatherapy massage for Mycaw first concern (P = 0.046). There was no statistical difference between groups of Mycaw second concern or overall wellbeing scores, proportion of patients giving clinical benefit,

VAS scores over time (p = 0.489) or between groups (p = 0.408) or in the written responses'

5. Reflexology and its Benefits:

A quasi experimental study on "Effectiveness of Foot Reflexology on Hypertensive Patients" was done by **Shringi (2023)**. A sample of fifty hypertensive patients were selected by purposive sampling technique. The setting of the study was JK Hospital, Bhopal. Foot reflexology was given for five minutes twice a day continued for seven days. The finding of the study showed that the blood pressure before and after the administration of foot reflexology on 1st day and on 7th day, showed significant positive effect on normalizing blood pressure in hypertensive patients.

Dashti Shahmari, Mirzaaghazadeh, Mirzaaghazadeh. (2019) conducted a study on "the effect of foot reflexology and olive oil foot massage on asthma control. This randomized controlled trial study was performed in 2013 on 45 adult patients who suffered from asthma. Participants were divided into three groups (15 in each group): foot reflexology (R), olive oil foot massage (O) and control (C). The reflexology and olive oil foot massage were done by a massage therapist for ten sessions, three times a week for 15 minutes. Asthma control questionnaire (ACQ) was used to determine the adequacy of asthma control. Data were analyzed by SPSS 18. P value <0.05 was considered statistically significant. The study finding showed that significant difference was seen in asthma control mean scores for both of reflexology and foot massage group at the baseline and after the intervention (p< 0.01). There was no significant difference between R and C group in their asthma control mean scores at the end of the intervention.

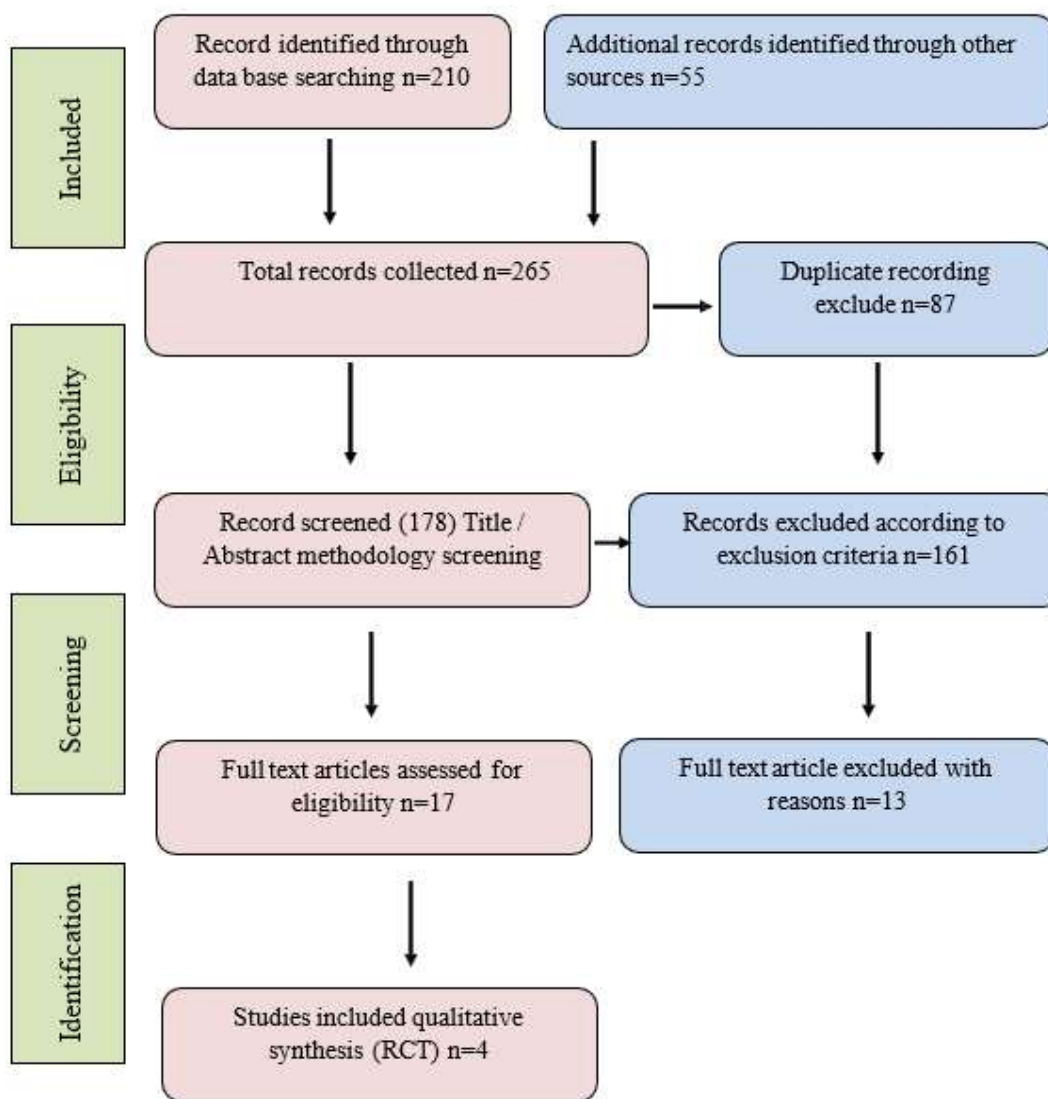## PRISMA FLOW DIAGRAM DEPICTING THE DIFFERENT PHASES OF SYSTEMATIC REVIEW

Fig.2 PRISMA Flow Diagram

RESEARCH METHODOLOGY

Research methodology refers to research steps, procedures and strategies for gathering and analyzing data in a study. Since the main objective of research is to build the body of knowledge of the profession and add more to the

existing one, it must try out new nursing intervention to establish appropriate strategies to solve the existing health problem.

The methodology of research indicates the general pattern of organizing the procedure for gathering valid and reliable data. Methodology includes the research approach, the research design, the setting, sample, sampling technique, data collection tools, and plan for data analysis.

Research Approach
The aim of the present study was to assess the effectiveness of foot reflexology for reduction of physiological and psychological symptoms among adult patients with cancer in Cancer Centre, Gwalior, M.P. To accomplish the objectives of the study the researcher has chosen quantitative approach.

Research Design
A research design is the overall plan for addressing a research question, including specification for enhancing the study integrity.[181]

The research design adopted for the study was pret est, postt est, control group design.

Pre-test and post-test control group design

RC	O$_1$	-	O$_2$	-	O$_3$
RE	O$_1$	X$_1$	O$_2$	X$_1$	O$_3$

R - Random assignment of the patients with cancer

E- Experimental group.

C- Control group

O$_1$ – pre- test assessment of physiological (pain, nausea and vomiting) and psychological symptoms (depression and anxiety) in experimental and control group.

X$_1$ - Administration of foot reflexology for 10 days.

O$_2$ – post- test 1 assessment of physiological (pain, nausea and vomiting) and psychological symptoms (depression, and anxiety) of experimental and control group on 5th day of intervention.

O$_3$ – post-test assessment of physiological (pain, nausea and vomiting) and psychological symptoms (depression, and anxiety) of experimental and control group on 10th day of intervention and the level of satisfaction on 10th day of intervention was assessed.

Variables:
A variable is defined as anything that has a quantity or quality that varies. The dependent variable, is the response, behavior, or outcome that is predicted or explained in research and independent variable is treatment or experimental activity that is manipulated

or varied by the researcher to cause an effect on the dependent variable.

➤ **Independent variable:**
In this study the independent variable is administration of foot reflexology to the patients with cancer.

➤ **Dependent variable:**
In this study dependent variables are the Physiological symptoms (Pain, Nausea and vomiting) and Psychological symptoms (Depression and Anxiety) as measured by the Numerical Pain Rating Scale, Modified Rhodes Nausea Vomiting index, Modified Major Depression Inventory and Modified State Trait Anxiety are the dependent variables.

Setting of the study:
Location for conducting research, can be natural, partially controlled or highly controlled.

The study was conducted in Cancer Centre, Gwalior, M.P. which is one of the pioneer institutes for cancer treatment in Madhya Pradesh. It is a wing of the cancel Hospital & research center, Gwalior, M.P which functions under the CHRI and Cancer Hospital and Research institute, Gwalior has a tragic back ground in its foundation.

In March 1971, Shri & Smt. Shitla Sahai had lost their only son Rajiv, who was suffering from osteosarcoma sarcoma. Hardly any facilities were available then in Gwalior for the treatment of cancer. Undaunted by the grief, this family vowed to start a Cancer Hospital to provide benefit to cancer patients in Gwalior. With this aim in view, a charitable trust "Jan Vikas Nyas" was founded in May 1971. Surmounting difficulties and with untiring efforts of the bereaved family, Cancer Hospital was Started in 1977, which has gradually developed to a modern Cancer Hospital with facilities for comprehensive management of cancer.

Among that 306 beds are exclusively for cancer patients. The setting is a central referral hospital for a population of about 5 lakhs residents of surrounding rural urban and semi urban areas. It has all the facilities including radiation therapy, internal radiation, chemotherapy, spiritual counselling, simulation, financial support by self-group and mission services, Chief minister's health insurance scheme, providing well balanced diet for all in patients, and financial support for poor patients by support groups.

Population:
Population is a well-defined collection of individuals or objects known to have similar characteristics. All individuals or objects within a certain population usually have a common, binding characteristic or unit.

In this study the accessible population refers to adult patients with cancer aged between 25-54 years. who were admitted in the inpatients department of the Cancer Centre, Gwalior, M.P. for treatment during the period of January 2022 to June 2023.

Sample:

A sample is a subset of a population that is used to represent the entire group as a whole.

The patients with cancer, who fulfilled the inclusion criteria for the study after taking oral consent from them.

Sample Size Estimation:

Number of subjects, events, behaviors or situation that are examined in a study.

The sample size was estimated using the power analysis based on pilot study findings. The type 1 error =0.05 and 1-=0.80. The standard deviation was 6.71. The pretest means of experimental and control group were 51.0 and 54.5 respectively. The effect size is 58 worked out sample size of each group was 2x 58 =116. By rounding the sample to one hundred and twenty-five, the total samples of 250 cancer patients were included. The selection of cancer wards was made by simple random (Lottery Method). 125 samples were allotted to experimental group and 125 samples were allotted to control group. The power of the study will be 1-=1-0.2=0.8 or 80%. The final sample size

Experimental group -125.

Control group -125

Sampling Technique:

Sampling is the process of selecting a portion of the population to represent the entire population.

Random sampling technique was adopted for this study. The random sampling technique was used to select the wards. Among the four wards, two wards were selected by random sampling technique. From those two wards samples who met the inclusion criteria were selected by random sampling method during the data collection period. In the initial part of the study, cancer patients for the control group were enrolled in to the study. Later the cancer patients for the experimental group were enrolled. To allot the patients to experimental group (125 patients) and control group (125 patients), the patients who were admitted in the hospital during the period of data collection (Dec 2023 - June 2024) were only included. There were 8 dropouts in the experimental group and those samples were replaced by the investigator. In control group there was no drop out.

Criteria for sample selection:

List of the characteristics essential for inclusion or exclusion in the target population.

Inclusion criteria

➢ Patients with cancer undergoing chemotherapy.
➢ With stage I, II, III and IV
➢ Minimum of hospital stay for 10 days.
➢ In age group between 25 -54 years.
➢ Able to follow instruction.

Exclusion criteria

Patients with cancer
➢ Neurologically affected.
➢ Terminally ill.
➢ Undergoing surgical procedure.
➢ Who are severely debilitated

DATA ANALYSIS AND INTERPRETATION

This chapter dealt with the analysis and interpretation of data collected for the present study. Data were entered and analyzed using SPSS 20 package. Appropriate statistics methods were used based on the objectives of the study. Descriptive statistics used were frequency, percentage, mean and standard deviation. The continuous variables were interpreted by parametric tests and the discrete variables were interpreted by non-parametric tests. In this study the parametric tests such as paired 't' test independent 't' test and χ^2 (chi-square) tests and repeated measures of ANOVA were utilized. The correlation between physiological and psychological symptoms was analyzed by spearman rank correlation (rs) and Pearson product moment correlation was used for numerical pain scale. The chi square was used to analyze the association between selected demographic variables and chemical variables with the per-test level of physiological symptoms (Pain, Nausea and Vomiting) and psychological symptoms (anxiety, depression)

SUMMARY, CONCLUSION, IMPLICATION RECOMMENDATION AND LIMITATIONS.

This chapter presents a brief summary of the study, major findings, recommendations and conclusion drawn. It also gives the implications for nursing practice, nursing education, nursing administration and nursing research. The present study was aimed to assess the effectiveness of foot reflexology for reduction of physiological and psychological symptoms among adult patients with cancer in Cancer Centre, Gwalior, M.P.

Summary

Cancer is a universal and non - communicable disease that affects people without regard to gender, culture, race and economic status. It can occur in any organ or part of the body and involves any type of tissue or

cells. There are huge variations in the occurrence of cancer throughout the world. Cancer is the second most common killer disease in the world. Most common cancer is males in lung and bronchus followed by hypo pharynx, oral cavity, pharynx, larynx and rectum and in the females commonest is the breast cancer followed by cervix, mouth, esophagus, ovary and stomach. Cancer patients had physiological symptoms like pain, nausea and vomiting, fatigue, dyspnea, insomnia, and had psychological symptoms like depression, anxiety and stress. For reducing their symptoms, they need pharmacological therapy and non-pharmacological therapy can also be used.

Nursing Implication

Nursing practice

➢ Cancer patients had physiological and psychological symptom. For that they need non pharmacological assistance. The findings of the present study can be utilized by practice nurses to alleviate pain, nausea and vomiting, depression and anxiety of patients with cancer.

➢ Nurses can provide foot reflexology in addition to other nursing interventions.

Nursing Education

➢ Nurse educator can formulate educative materials on foot reflexology and educate the nurses.

➢ The updated nursing curriculum should emphasize more on various complementary and alternative therapies and their advantages.

➢ Nurses with special training and update knowledge will provide cost - effective and quality nursing care.

Nursing Administration:

➢ Nurse administrator must make necessary arrangements to implement foot reflexology as an effective method for reduction of physiological and psychological symptoms.

➢ Nurse administrator need to facilitate the utilization of research based nursing intervention in complementary and alternative therapy method and to formulate policies and necessary changes in the institution.

Nursing Research:

➢ A similar study can be conducted in various settings

➢ Similar study can be done with large sample size which will help to generalize the findings.

Nursing Recommendations

➢ A study can be carried out to evaluate the efficiency of various alternative therapies like acupressure, massage, music therapy, and guided imagery.

➢ A study can be conducted to find out the knowledge of nurses regarding importance of alternative complementary therapy.

➢ A similar study can be replicated on a larger sample using non probability sampling technique.

Limitation

➢ The study was limited to only hospitalized cancer patients who were in cancer center, Gwalior.

➢ Data Collection was limited to patients who were willing to participate during data collection.

Conclusion:

The study concluded that the foot reflexology was an effective intervention for reducing physiological and psychological symptoms. Hence the foot reflexology had a significant effect on reducing physiological (pain, nausea and vomiting) and psychological (depression and anxiety) symptoms among cancer patients in the experimental group. Hence there was a statistical significant difference in the scores of pre-tests. Post-test 1 and posttest 2 in experimental and control groups. So the hypotheses earlier framed were partially accepted by the investigator thereby concluding that the foot reflexology was very effective in reducing physiological and psychological symptoms of cancer patients.

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