CHAPTER-III

METHOD
The study has been conducted in two parts: Part-'A' and Part-'B'. Part-'A' deals with the study of death anxiety level and quality of life of Leukaemia and Breast Cancer patients through Yoga-Based Intervention (Kapalbhati Pranayam). Part- 'B' deals with the study of effectiveness of Yoga-Based Intervention (Kapalbhati Pranayam) in reducing the death anxiety level and improving quality of life of Leukemia and Breast Cancer patients.

**PART-'A'**

**OBJECTIVES:**

1. To study the Death Anxiety Level of Leukaemia and Breast Cancer patients through Yoga-Based Intervention (Kapalbhati Pranayam).

2. To study the Quality Of Life of Leukaemia and Breast Cancer patients through Yoga-Based Intervention (Kapalbhati Pranayam).

**HYPOTHESES:**

1. The death anxiety level of Cancer patients having only conventional treatment (Control group) is higher than the patients who are practicing yoga based intervention (Kapalbhati Pranayam) along with conventional treatment.

2. Cancer patients having only conventional treatment (Control group) are lower on the measures of quality of life than the patients who are practicing yoga based intervention (Kapalbhati Pranayam) along with conventional treatment.
DEFINITION OF THE TERMS USED:

Death Anxiety- Death anxiety is defined as anxiety caused by conscious and unconscious fear of death and dying. In essence, they are aware of their own mortality and yet they strive for self-preservation. This knowledge of the inevitability of death can lead to death anxiety or a deep sense of terror.

Quality of life- Quality of life has been defined by the WHO (1998) as an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.

Cancer- A term for disease in which abnormal cells divide without control. Cancer cells can invade nearby tissues and can spread through the bloodstream and lymphatic system to other parts of the body. There are several types of cancer. In the present investigation, patients from two types of cancer, Leukemia and breast cancer are taken.

Leukaemia- It is a group of malignant disorders of the haemopoietic tissues characteristically associated with increased numbers of leucocytes in the blood. They are progressive and total conditions resulting in death most often from hemorrhage or infection.

Breast cancer- Breast Cancer is a cancer of the breast. Every woman is at risk for breast cancer. The risk varies with age. At age 25, a women’s risk is about 1 in 20,000. At age forty-five, it is 1 in about 100. At age 85, it is more than 1 in 10. About 80 percent of all breast cancers are found in women over the age of 50.
SAMPLE:

The total sample for the present study consisted of 100 female cancer patients (first stage) age range from 25 to 40 years who have completed various types of therapies on recommendation of their respective doctors. These patients were selected from Cancer Department, S.N. Medical College, Agra, and clinic of Dr. Ajay Gupta, (Medical Oncologist), New Agra. 50 cases were on conventional treatment (control group) and the remaining 50 patients were practiced yoga-based intervention along with conventional treatment (intervention group). All the patients were matched in terms of age, marital status, education and religion. Only those patients were taken who belong to upper middle socio economic status and had education at least up to the first degree level. Patients suffering from heart disease, diabetes, degenerative processes, senility and other predominant psychosocial factors specific to old age were being excluded from the sample.

MEASURES:

1. WHOQOL (1995) - The quality of life of breast cancer patients was measured by WHOQOL (1995). Quality of life has been defined by the World Health Organization as an individual’s perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept incorporating in a complex way the person’s physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of the environment. The instrument is organized into 6 broad domains of quality of life. These are physical domain, psychological domain; level of independence; social relationships; environment; and spiritual domain. Within each domain a series of sub-domains (facets) of
quality of life summarize that particular domain of quality of life. The WHOQOL overall coverage of quality of life ensures a conceptual, coherence, missing from many other measures of health status. WHOQOL can be used in broad ranging ways, such as use in clinical trials, epidemiology research, clinical practice, health policy research and health and social service adults. The WHOQOL project is part of a larger goal towards “Health for All”, and the promotion of physical, psychological and social well-being.

**DOMAIN I - PHYSICAL DOMAIN**

- **Pain and discomfort** explores unpleasant physical sensations experienced by a person and, the extent to which these sensations are distressing and interfere with life.

- **Energy and fatigue** explores the energy, enthusiasm and endurance that a person has in order to perform the necessary tasks of daily living, as well as other chosen activities such as recreation.

- **Sleep and rest** concerns how much sleep and rest, and problems in this area, affect the person's quality of life.

*Instructions for Physical Domain: “This questionnaire examines how you feel about your quality of life, health, and other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response. Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks.”*
DOMAIN II – PSYCHOLOGICAL

- **Positive feelings** examines how much a person experiences positive feelings of contentment, balance, peace, happiness, hopefulness, joy and enjoyment of the good things in life.

- **Thinking, learning, memory and concentration** explore a person's view of his/her thinking, learning, memory, concentration and ability to make decisions.

- **Self-esteem** examines how people feel about themselves.

- **Body image and appearance** examines the person's view of his/her body.

- **Negative feelings** concerns how much a person experiences negative feelings, including despondency, guilt, sadness, tearfulness, despair, nervousness, anxiety and a lack of pleasure in life.

Instructions for Psychological Domain: “The following questions ask about how much you have experienced certain things in the last two weeks, for example, positive feelings such as happiness or contentment. If you have experienced these things an extreme amount circle the number next to “An extreme amount”. If you have not experienced these things at all, circle the number next to “Not at all”. You should circle one of the numbers in between if you wish to indicate your answer lies somewhere between “Not at all” and “Extremely”. Questions refer to the last two weeks.”
DOMAIN III - LEVEL OF INDEPENDENCE

- **Mobility** examines the person's view of his/her ability to get from one place to another, to move around the home, move around the work place, or to and from transportation services.

- **Activities of Daily Living** explores a person's ability to perform usual daily living activities. This includes self-care and caring appropriately for property.

- **Dependence on medication or treatments** includes medical interventions that are not pharmacological, but on which the person is still dependent.

- **Working capacity** examines a person's use of his or her energy for work. "Work" is defined as any major activity in which the person is engaged.

**Instructions for Level of Independence Domain:** "The following questions ask about how completely you experience or were able to do certain things in the last two weeks, for example activities of daily living such as washing, dressing or eating. If you have been able to do these things completely, circle the number next to "Completely". If you have not been able to do these things at all, circle the number next to "Not at all". You should circle one of the numbers in between if you wish to indicate your answer lies somewhere between "Not at all" and "Completely". Questions refer to the last two weeks."

DOMAIN IV - SOCIAL RELATIONSHIPS

- **Personal relationships** examine the extent to which people feel the companionship, love and support they desire from the intimate relationship(s) in their life.

- **Social support** examines how much a person feels the commitment, approval, and availability of practical assistance from family and friends.
- **Sexual activity** concerns a person’s urge and desire for sex, and the extent to which the person is able to express and enjoy his/her sexual desire appropriately.

**Instructions for Social Relationships Domain:** “The following questions ask you to say how satisfied, happy or good you have felt about various aspects of your life over the last two weeks. For example, about your family life or the energy that you have. Decide how satisfied or dissatisfied you are with each aspect of your life and circle the number that best fits how you feel about this. Questions refer to the last two weeks.”

**DOMAIN V - ENVIRONMENT**

- **Physical safety and security** examines the person's sense of safety and security from physical harm.

- **Home Environment** examines the principal place where a person lives (and, at a minimum, sleeps and keeps most of his/her possessions), and the way that this impacts on the person's life.

- **Financial resources** explores the person's view of how his/her financial resources (and other exchangeable resources) and the extent to which these resources meet the needs for a healthy and comfortable life style.

- **Health and social care: availability and quality** examines the person's view of the health and social care in the near vicinity. "Near" is the time it takes to get help.

- **Opportunities for acquiring new information and skills** examines a person's opportunity and desire to learn new skills, acquire new knowledge, and feel in touch with what is going on.
• Participation in and opportunities for recreation and leisure explores a person's ability, opportunities and inclination to participate in leisure, pastimes and relaxation.

• Physical environment (pollution/ noise/ traffic/ climate) examines the person's view of his/her environment.

• Transport examines the person's view of how available or easy it is to find and use transport services to get around.

Instructions for Environment Domain: “The following questions refer to how often you have felt or experienced certain things, for example the support of your family or friends or negative experiences such as feeling unsafe. If you have not experienced these things at all in the last two weeks, circle the number next to the response “never”. If you have experienced these things, decide how often and circle the appropriate number. So for example if you have experienced pain all the time in the last two weeks circle the number next to “Always”. Questions refer to the last two weeks.”

DOMAIN VI - SPIRITUALITY / RELIGION / PERSONAL BELIEFS

A spirituality / religion / personal belief examines the person's personal beliefs and how these affect quality of life.

Instructions for spirituality / religion / personal beliefs Domain: “The following few questions are concerned with your personal beliefs, and how these affect your quality of life. These questions refer to religion, spirituality and any other beliefs you may hold. Once again these questions refer to the last two weeks.”
SCORING OF QUALITY OF LIFE SCALE - In WHOQOL, there are six domains scores, 24 specific facet scores, and one general facet score that measures overall quality of life and general health. The scores of six domains denote an individual's perception of quality of life in the following domains: Physical, Psychological, Level of Independence, Social Relationships, Environment, and Spirituality. Domain and facet scores are scaled in a positive direction where higher scores denote higher quality of life. Some facets (pain and Discomfort, Negative Feelings, dependence on medication) are not scaled in a positive direction, meaning that for these facets higher scores do not denote higher quality of life. Thus a total quality of life score derived by summing data from all WHOQOL items is not recommended. The scores from the four items in the Overall Quality of Life and General Health facet can be summed and presented as part of a profile.

FACET SCORES

Facets were scored through summative scaling. Each item contributes equally to the facet score. Scaling is in the direction of the facet, determined by whether the facet is positively or negatively framed. Significant numbers of facets contain questions which need to be reverse scored. For a positively framed facet, any negatively framed constituent questions are reverse scored. None of the three negatively framed facets (Pain and Discomfort, Negative Feelings, Dependence on Medication) has any positively framed questions. An example of how to score facets is given below:

For facets with no reverse scoring:

POSITIVE FEELINGS = (F4.1 + F4.2 + F4.3 + F4.4).

For facets where certain items need to be reverse scored:
ENERGY AND FATIGUE = (F2.1 + (6-F2.2) + F2.3 + (6-F2.4)).

Domain Scores

Each facet is taken to contribute equally to the domain score. Any additional facets suggested by the new centre should contribute to the respective domain score in a positively scaled direction. Domain score are calculated by computing the mean of the facet score within the domain, according to the following formulae, noting that negatively phrased facets are reverse score according to the procedure given below.

Physical domain = (24 - PAIN score) + ENERGY score + SLEEP score / 3
Psychological domain = (POSITIVE FEEL. Score + THINKING score + SELF ESTEEM score + BODY IMAGE score + (24 - NEGATIVE FEEL. Score)) / 5
Level of Independence domain = (MOBILITY score + ACTIVITIES OF DAILY LIVING score + (24 - MEDICATION score) + WORK score) / 4.
Social relationships domain = (PERSONAL RELATIONSHIPS score + SOCIAL SUPPORT score + SEXUAL ACTIVITY score) / 3.
Environment domain = (SAFETY score + HOME ENVIRONMENT score + FINANCIAL RESOURCES score + ACCESS TO SERVICES score + ACCESS TO INFORMATION score + LEISURE ACTIVITIES score + PHYSICAL ENVIRONMENT score + ACCESS TO TRANSPORT score) / 8.
Spirituality domain = SPIRITUALITY facet score
2. FEAR OF PERSONAL DEATH SCALE- This scale is developed by Rajamanickam (1999).

Death, though, universally is accepted end of the existence of an organism, it has varied meanings depending upon the way it is looked upon or conceived. Generally death is considered as the end of a living creature.

The scale is consisted of 40 statements. These statements fall under seven headings. Each heading may be considered as sub-scale or factor. They are 1) reaction to death-the fear, 2) deprivation of personal fulfillment, 3) deprivation of companionship (social attachment), 4) deprivation of relatives and friends 5) Supernatural occurrences, 6) destruction of the self and 7) retribution after death.

Thus all the 40 statements are put under seven sub-scale (or factors). There are three negative statements, they are S.No. 20, 22, 23 and the rest of them are 37 positive statements. This scale is developed on the pattern of Likert Scaling Technique.

Reliability:

To determine the reliability of a scale, the split-half method was used. The correlation coefficient between the two tests was 0.89, indicating high positive correlation between the two tests (two halves).

Validity:

For determining the validity of a scale, intrinsic type of validity is used. The intrinsic validity is also called index of reliability, and it was tested with t test, which is 49.0, significant at 0.1 level, Therefore the scale is highly trustworthy, can be used in any population.
Instruction & Scoring

The scale can be scored according to the procedure with the help of the key. There are both positive and negative statements. The negative ideas are expressed only in the few statements. Therefore, the scoring should be made carefully identifying the negative statements. For the positive ideas, the response of totally accepting it 2, and for totally not accepting it 1. For the negative ideas the reverse order is assigned.

3. INTERVIEW- Personal interview was taken from the patients in order to gain certain information about the social problems they might face in their daily life. They were asked about the perception of their personal life taking some important points in consideration like number of family members, financial status, earning member of the family, relationship with family, relatives, neighbors, colleagues, position in society etc. They were also asked about how they feel for their own health or illness and how far they are able to cope with it.

Method and Procedure:

Initially permission was taken from the concerned Head/doctor of medical college and clinic. Then Fear of Personal Death Scale & questionnaire for Quality of life was administered on 100 cancer patients (50 breast cancer and 50 leukaemia cancer patients), age ranging from 25-40 years. Patients were told that their responses would be kept confidential and would be used only for research purpose. The questions were answered according to their personal feelings and perception keeping their own state in mind. Test administration and scoring was done according to the instructions given in the test manual. After the test administration, personal interview of
the patient was also taken in order to get information regarding the social problems they face in their daily life. Finally 20 (10 breast cancer and 10 leukaemia cancer patients) cancer patients were selected for yoga-based intervention.

ANALYSIS OF DATA:

To test the significance of difference in the Quality of Life and Fear of Death Anxiety scores among Breast cancer patients and Leukemia cancer patients Wilcoxon Mann Whitney ‘U’ was Used.

PART-‘B’

OBJECTIVE:

To study the effectiveness of Yoga-Based Intervention (Kapalbhati Pranayam) in reducing the Death Anxiety Level and enhancing the Quality of Life of Leukaemia and Breast Cancer patients.

HYPOTHESIS:

Yoga-based intervention (Kapalbhati Pranayam) would produce ameliorating effect on the death anxiety level of leukaemia and breast cancer patients.

DEFINITION OF THE TERMS USED:

Yoga- Yoga is an ancient Indian philosophy and way of life, where complete harmony between our body and mind is achieved by special exercise (posturing), breathing and meditation. The aim of yoga is to live and healthy living and attain self-enlightenment. The word “Yoga” is derived from the Sanskrit root ‘Yuj’, which means to join or to yoke. In philosophical terms,
yoga refers to the union of the individual self with the universal self. Yoga means to Yoke (to unite) with the source of our being. In Yoga through practices of holding a variety of body position or ‘asana’, and the centering of the mind and breath in a meditative way, the practitioner increases body awareness, posture, flexibility of body and mind and calmness of spirit.

**Pranayam**- Pranayam is an aspect of Yoga that deals with breathing. Pranayam actually means a ‘pause in the movement of breath’. It is a method of controlling Prana or life force through the regulation of breathing. It is the breathing process or the control of the motion of inhalation, exhalation and the retention of vital energy. Kapalbhati, Ujjayi (the loud breathing), Anulom Ujjayi, Vilom Ujjayi are some types of Pranayama Swami Ramdeva recommended that Kapalbhati Pranayam is most suitable exercise for cancer patients.

**Kapalbhati Pranayam**- Kapalbhati is a breathing technique used specifically for cleansing. It removes mucus from the air passages, relieves tension and clears blockage in the chest. This is achieved via deliberately breathing faster, and at the same time using only abdominal breathing, not chest breathing. The breath is short, rapid, and strong using the lungs as a pump, and creating so much pressure to clear air passages, from the lungs up through the nostrils. ‘Kapala means ‘skull’, and bhati means ‘that which brings lightness’. Kapalbhati is a good thing to do when feeling heavy or dizzy in the head. The benefits of kapalbhati are Aabha, Teja Constipation, Hepatitis B, Diabetes, Stomach problems, Allergic problems, Asthma. Concentration, and even for different types of cancer and AIDS.

**Yoga Based Intervention:**

Yoga based intervention approaches are used in the management of cancer-related problems which focuses on pain, appetite control, side effects associated with chemotherapy and
radiation therapy and other treatments of cancer. Pain is a relatively common problem among cancer patients and often provokes anxiety or depression, which may exacerbate its severity. Relaxation therapy, hypnosis, cognitive-reappraisal techniques visual imaging, self-hypnosis and yoga based interventions like Pranayam, Anulom- Vilom, have all proven to be at least somewhat useful in the management of pain due to cancer (Turk & Fernandez, 2001).

SAMPLE:

First stage cancer patients were being included in the sample for part-‘B’ of the study. Thus, Yoga-Based Intervention was given to 10 Leukemia and 10 Breast Cancer Patients.

TECHNIQUE:

In Kapalbhati all the emphasis is done on the exhalation. The abdomen is drawn inward toward the spine on the exhalation working in concert with the diaphragm which moves upward from the abdomen to force out the air in the lungs. This forms a vacuum in the lungs which then automatically sucks in the air to equalize the internal and external air pressure. As soon as the lungs fill, then they are immediately too emptied through the inward motion of the abdomen toward the spine as above. This is repeated in a comfortable and rapid rhythm with emphasis on the exhalation only. As first the abdomen muscles get tired. After a few weeks of practice that will not bother the practitioner ever again. The lungs or throat may become uncomfortable. Perform the practice with the least amount of friction and noise.
Method and Procedure:

Yoga based intervention to 10 breast and 10 leukemia cancer patients was given to enhance the QOL and reduce the level of death anxiety. QOL and death anxiety results obtained in part ‘A’ of study served as baseline or pre-measures for this part of the study. Kapalabhati pranayama was taken as a part of yoga based intervention. Kapalabhati pranayama included the following steps-

- The patients were asked to sit comfortably on the floor or chair in the Padamasan procure and asked to keep this spine erect.

- They patients were asked to exhale so that the belly is sucked into the spine forcing the air out of the nose. Patients were asked to the place a hand on her belly to feel the belly actively pumping. Patients were made to Performa 45-60 exhalation per 30 sec.

- Patients were instructed to keep a steady rhythm and start with 2-3 rounds of 30 exhalations and gradually increase the exhalations it comfortable.

- It was made sure that the patients were not breathing rapidly two many time but after a few rapid breaths take several slow ones.

- The above intervention was continued for six months. After six months, post measures of breast cancer patients and leukemia cancer patients were done in order to study the difference in level of death anxiety and quality of life due to yoga based intervention.

APPROACH:

To analysis the significance of difference between pre and post intervention measures Wilcoxon Signed Ranks Test was used.