

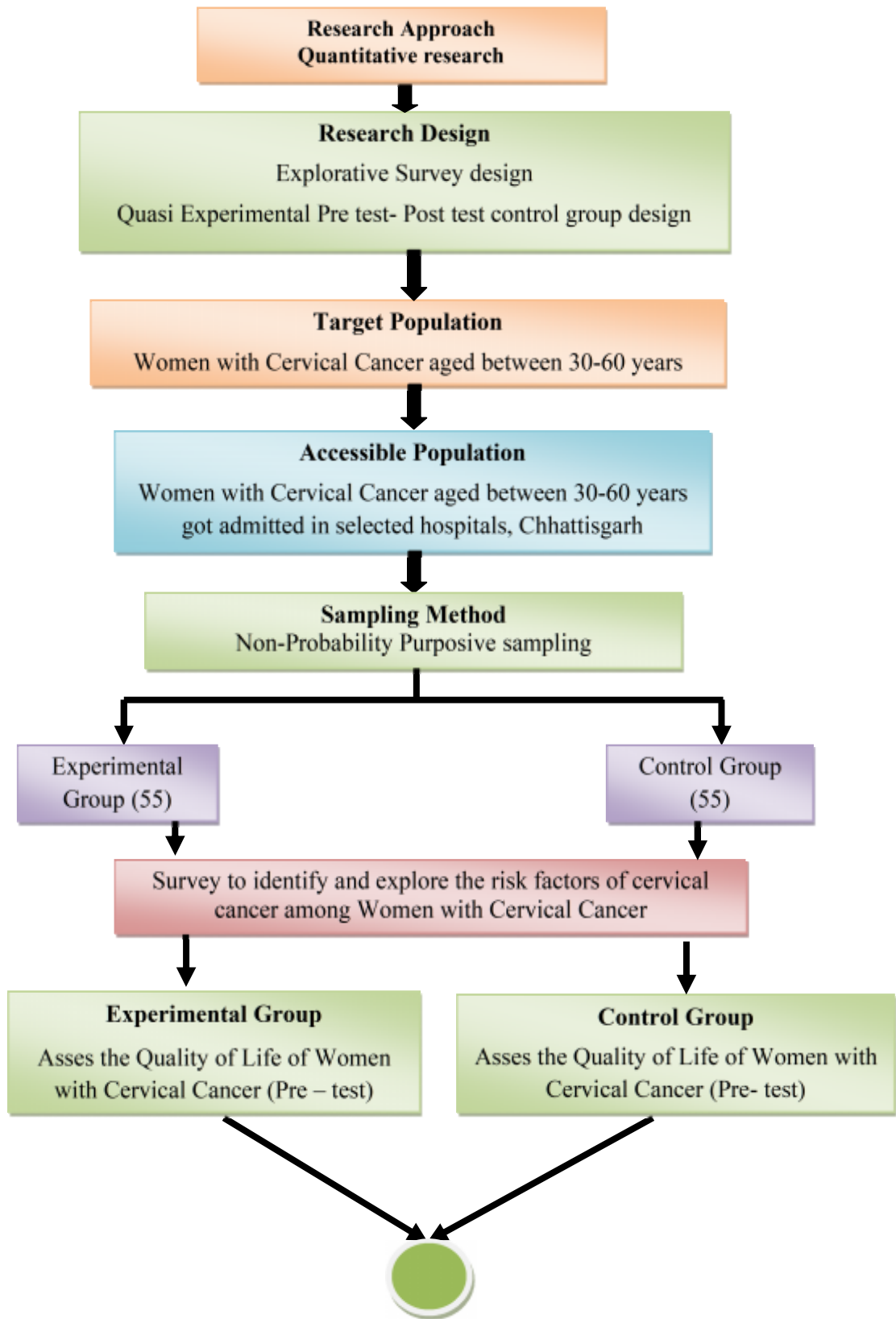
### **III. METHODOLOGY**

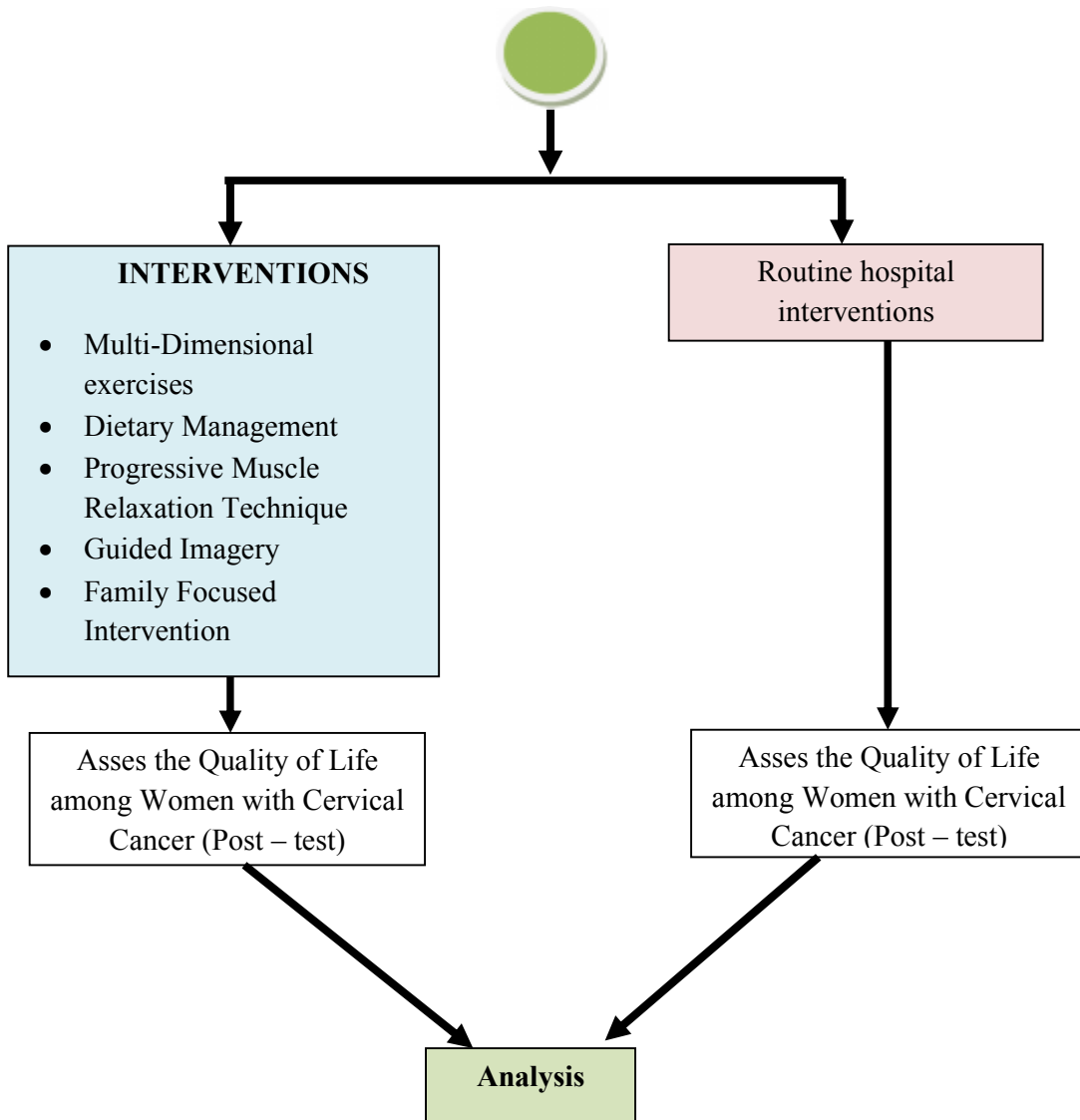
A type of cancer that occurs in the deepest part of uterus is known as cervical cancer. Even though it is a protectable cancer, its existence is on the rise in many developing nations due to late stage diagnosis. Screening for cervical cancer is important as the women often do not show symptoms until the disease has advanced. Improvement in women knowledge on the causative aspects of cervical cancer and motivation for regular pap smears will help to control the disease. (Narayana, 2017).

Quality of Life is a superior well-being in Physical, Emotional, Social, Spiritual, Psychological, Intellectual and Cultural aspects of human being. Cervical cancer women have both physical illness and emotional issues that have an influence of life quality. These women believe they are sick and are not contributing members of their communities. They often loss their self-esteem result in suicidal attempt and not showing interest for further treatment (Li et al., 2015). The life quality will help to predict patients' survival rate with cancer. (Thapa, 2018). Improvement in life well-being will increase the rate of survival of women with cancer of cervix. (Fernandes et al., 2015). The study was planned to identify and explore the risk factors of women with cervical cancer and provide better life quality in Social, Physical, Spiritual, Psychological, Intellectual and Cultural factors to improve the survival rate through implementing Multi-dimensional exercises, Progressive muscle relaxation therapy, Guided imagery, Dietary management and Family focused interventions.

#### **RESEARCH PROCESS**

This part of the study explains about the research methodology implemented to analyse the risk factors involved with cancer of cervix and implement the interventions to promote better life quality among women suffering from cancer of cervix. It includes research approach, design of research, setting, population, criteria for sample selection, sampling technique, variables of the study, creation and description of tools and technique of data analysis and interpretation. (Figure 4).





**RESEARCH PROCESS**

**FIGURE 4**

## **VARIABLES OF THE STUDY**

It is described as “anything that has a quantity or quality that varies. The dependent variable is the variable, a researcher is interested in. An independent variable is a variable believed to influence the dependent variable. Confounding variables are defined as interference caused by another variable.”

The analysis consists of variables like Research variable, Independent variable, Dependent variable, and other influencing variables.

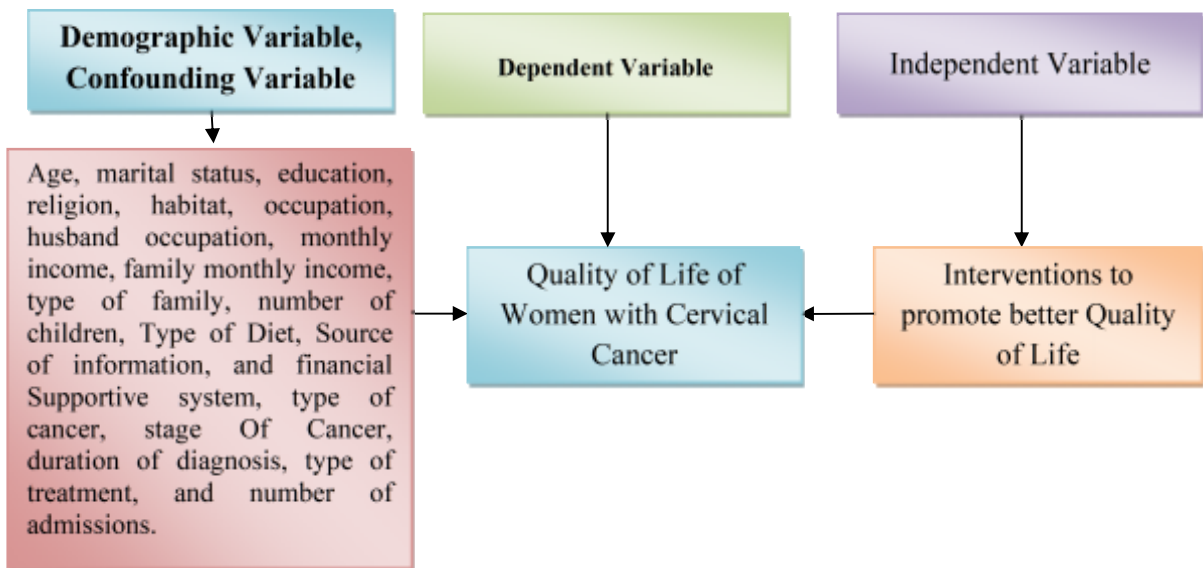
The research variable consists of causative aspects of cervical cancer including Age at Marriage, Family Income, Dietary Pattern, Personal Habits, Marital Status, Number of Marriages, Husband Marital Status, Number of Deliveries, Type of Delivery, History of Abortion, Type of Abortion, Age at First Delivery, Pre-Marital Sexual Relationship, History of Birth Control Measures, History of Immunodeficiency Disorders, and History of Sexually Transmitted Diseases and Women Underwent PAP Smear Test.

Independent variable in the study is interventions to promote better Quality of Life. Interventions include Multi-Dimensional exercises, Dietary management, Progressive Muscle Relaxation Therapy, Guided imagery, and Family focused interventions.

Dependent variable is Quality of Life of Women with Cervical Cancer.

The other influencing variables include Age, Marital Status, Education, Religion, Habitat, Occupation, Husband Occupation, Monthly Income, Family Monthly Income, Type of Family, Number of Children, Type of Diet, Source of Information, and Financial Supportive System.

The confounding variables include the Types of Cancer, Stage of Cancer, Duration of Diagnosis, Type of Treatment, and Number of Admissions. (Figure 5).



## VARIABLES

FIGURE 5

The design formulated for the study comprised of two phases:

- A. Survey to identify and explore the risk factors of cervical cancer.
- B. Interventions to promote better quality of life among women with cervical cancer.

### A. SURVEY TO IDENTIFY AND EXPLORE THE RISK FACTORS OF CERVICAL CANCER

Survey is a group of questions inquired continuously to a section of population to statistically get the characteristics of the whole people. (McKee, 2016). A survey research allows the participants to state directly on their own thoughts, feelings and behaviors. Analyses are used to raise the level of understanding in the areas like research, social and composition. (Wikipedia, 2018).

A survey was done to identify and investigate the risk factors of cervical cancer among women with cervical cancer got admitted in chosen hospitals. The procedure adopted for survey consists of the following steps:

1. Selection of the research area.
2. Selection of the samples.
3. Selection of the method.
4. Framing the research tool.
5. Conduct of the survey.
6. Analysis and presentation of the data.

## 1. Selection of the Research Area

Research Setting or research area is the physical location and condition in which data collection take place in a study. The selection of an appropriate setting is important because the setting can influence the way people behave or feel and how they respond.

The study took place at two research settings.

- a. Apollo BSR Cancer hospital is 450-bedded cancer specialty hospital with advanced technology.
- b. Jeevan Rekha hospital has 300 beds and is multi-specialty hospital with the separate wing of oncology department.



**CHHATTISGARH STATE MAP LOCATING RESEARCH SETTING**

**FIGURE 6**



**APOLLO BSR HOSPITALS**

**FIGURE 7**



**APOLLO BSR CANCER HOSPITALS**

**FIGURE 8**



**JEEVAN REKHA HOSPITAL**

**FIGURE 9**

### **a. Apollo BSR Cancer Hospital**

Bhilai is officially called Bhilai Nagar in Durg district of Chhattisgarh state. It is located 8 km towards east from district headquarters Durg. Bhilai is a major industrial city in India as well as education hub of Central India. (District Profile) (Figure 6).

The health care industry is changing day to day and all of the health care organizations are concentrating on providing excellent care and management to the patients admitted in their hospitals. The hospitals in Bhilai have great foundation. The city has an impeccable goal for outside patients and patients across in India. The hospitals in Bhilai provides great facilities which gives quality medical services requiring little no effort for patients. The most popular treatments are sought in Bhilai are Cardiac bypass surgery, Orthopedic surgery, Cancer treatments and other procedures in the areas of advanced medicine. Apollo is one of the famous hospitals in Bhilai city.

Apollo hospital is known as Apollo BSR hospital. It is a joint venture of BSR health care and Apollo hospitals Chennai. It was started in 2007. It is one of the popular private hospitals in Bhilai, assisted well with the foresight to provide the finest patient care and is furnished with technically innovative health care amenities. It is a 450-bedded hospital with the separate building of cancer care hospital. A team of well-trained medical and non-medical staff and well experienced medical specialists work throughout the day to offer various services. The specialties and treatments offered by Apollo BSR hospital includes Cardiology, Arthroscopy, Nuclear medicines, Cardio vascular surgery, Venerology, and Cancer care. (Figure 7).

Apollo BSR cancer care hospital has 150 beds for inpatients of various types of cancers. It has three floors and equipped with advanced technologies and recent medical updates in cancer treatments. The past five years (2014-2018) statistics of cervical cancer diagnosed in Apollo BSR Hospital were 342 and facilitated with the treatments. (Figure 8).

### **b. Jeevan Rekha Hospital**

Rajnandgaon, which is one of the historically enhanced places of India is a part of the Rajnandgaon District. The splendid history, gorgeous nature, and plenty of resources make this as one of the developing cities in India. Rajnandgaon is a culture centered city. The wealth of the city determined by the standard of education and number of quality

hospitals. There are around sixty-one hospitals in the district including community health centers. (District Profile). (Figure 6).

Jeevan Rekha, it is one of the leading well-known hospital in Rajnandgaon. It is a 300 bedded hospital providing care to various specialties with the separate wing of cancer department. A team of well-trained medical staff, and experienced clinicians work 24 x 7 to offer various services.

It has a multi-specialty area of Preventive medicine, Diabetes management, Obstetrics and Gynecology, Hip, Ankle, Knee surgeries and Cancer Care. It has an outpatient and inpatient facility of oncology department. There are 30 beds in inpatient department, the hospital equipped with advanced technologies and recent medical updates in cancer treatments. The past five years (2014-2018) statistics of cervical cancer diagnosed in Jeevan Rekha hospital are 217 and facilitated with the treatments. (Figure 9)

## **2. Selection of the Samples**

Sample is defined as a group or small portion taken for measurement that is arrived from a group of larger population. This should be an agent of the larger group of people to make sure that it is possible to simplify the data results from the research sample. The samples for the present study included the women with cervical cancer between 30 to 60 years of age. (Ponto, 2015).

“Sample size is the number of individual samples measured or observations used in a survey or experiment.” (Zamboni, 2017).

There are around 54 hospitals in and around Bhilai and Rajnandgaon. Using the statistics of hospital and patient ratio the size of the sample was established and the samples were selected using Non-probability purposive sampling technique. A total of 110 samples were selected to conduct the survey. The investigator selected the samples centered on the proposed inclusion and exclusion criteria.

### **a. Inclusion Criteria**

- i. Women got admitted as an inpatient with Cervical Cancer in general and special wards of Apollo BSR Cancer hospital, Bhilai and Jeevan Rekha Hospital, Rajnandgaon. Cervical cancer stage I, stage II and stage III women were included for the study

- ii. Women with cervical cancer got admitted for the treatment of Hysterectomy surgery, Chemotherapy and Radiation therapy for a minimum of eight weeks period.
- iii. Women diagnosed with cervical cancer for a period of one to five years.
- iv. Women with cervical cancer who were interested to participate in the study.

#### **b. Exclusion Criteria**

- i. Women with cervical cancer who were critically ill or unconscious.
- ii. Women with cervical cancer above 60 years of age.

### **3. Selection of the Method**

Interviewing is an important technique of data collection used in survey research. Interview method is a human interface between the interviewer and interviewee. The best part of this method is we can identify the nonverbal response of the interviewee and following that will be able to clarify the proposed question. It is possible for the interviewer to utilize analytical remarks to collect additional information with regard to a particular trait and also can get explanation for an answer if it is not clear. (Singleton and Straits, 2009). It can be a powerful technique in gathering accurate information. It helps to verify the information then and there and obtain additional information from the interviewee.

Hence the interview method was used for data collection in this study. One to one interview was done to collect the risk factors of women.

### **4. Framing the Tool**

Anything that becomes a means of collecting data for the study is called as research tool or a research instrument. For example, observation forms, interview schedule, questionnaires, and interview guides are all classified as research tools. (APA resources, 2015).

An interview schedule was used as a tool to collect information on risk factors of cervical cancer among women with cervical cancer.

An interview schedule is a list that contains a group of defined questions that serve as a guide for researchers, interviewers, and investigators to collect data or information about a particular issue or a topic. The interviewer would use the schedule and fill up the answers given by the respondents while the original interview. (Martin, 2016).

The interview schedule was prepared after extensive literature review and expert guidance to accomplish the goals of the study (Appendix II). The tool comprised of three components such as:

**a. Demographic Profile:** The demographic profile included information on Age, Marital Status, Education, Religion, Habitat, Occupation, Husband Occupation, Monthly Income, Family Monthly Income, Type of Family, Number of Children, Type of Diet, Source of Information, and Financial Supportive System.

**b. Health History:** The health history included the stage of cancer, type of cancer, duration of diagnosis, type of treatment and number of admissions.

**c. Risk factors of Cervical Cancer:** It includes personal risk factors, family welfare and sexual risk factors. Personal risk factors are age at marriage, family Income, dietary Pattern consumption of balanced diet, personal habits, marital status, number of marriage and husband marital status. Family welfare and sexual risk factors are number of deliveries, type of delivery, history of abortions, type of Abortions, age at first delivery, pre-marital sexual relationship, history of family planning measures, family history of cancer, history of Immune deficiency disorders, history of sexually transmitted diseases and underwent PAP smear test.

## **5. Conduct of the Survey**

Survey is termed as "the collection of information from a sample of individuals through their responses to questions" (Check and Schutt, 2012). Different methods are followed to do a survey such as talking through phone, sending mails, and at times face-to-face. Mostly it is used to elaborate about the behavior and reaction of human beings, it is often followed in the psychological and social research. (Singleton and Straits, 2009).

Survey was conducted after obtaining permission from the Ethical Committee for Research of the Institution and hospital Ethical Clearance Committee to obtain the data.

A good rapport was established with the samples before conducting the survey. The actual object of the study was described to the samples and Informed Consent was obtained in both oral and written form. Constant effort was taken by the investigator to collect reliable and accurate data from the samples. Anonymity of the sample was ensured. The samples were given assurance for the confidentiality of the data. The samples were

able to provide the answers and share the information in connection to the causative agents of cancer of cervix.

## **6. Analysis and Presentation of the Data**

Analysis of data is defined as a process of investigation, cleansing, converting, and displaying the aim of finding suitable information, notifying the conclusions, supplementing the decisions, and creating solutions to problems by the way of examining and interpreting the data. The steps in his process are to find out the issue, establishing the readiness of needed information, finalizing the solutions and sharing the information that is associated to the cancer of cervix on which methods are applicable for responding the questions of interest, to apply the various evaluation methods, to summarize and publish the results. (Wikipedia, 2018).

Analysis refers to breaking a whole into its separate components for individual examination. The segregation of the data into various individual components for an assessment is known as analysis. The collection of first-hand information and making it available as a suitable information for finding out solutions is known as data analysis. It outlines exactly which type of statistics will be used to answer each research hypothesis. (Bihani and Patil, 2014).

The data obtained from the survey were coded and percentage analysis was computed. Percentage analysis was adapted for representing the demographic data, health history and risk factors. The findings were tabulated, analysed and presented in Chapter IV- Results and Discussion.

## **B. INTERVENTIONS TO PROMOTE BETTER QUALITY OF LIFE AMONG WOMEN WITH CERVICAL CANCER.**

Intervention is a researcher designed program to improve the life quality of women with cervical cancer. This will help in enhancing the life quality of women. Therefore, the needs of the women were addressed by integrating interventions in the standard care that are designed to meet the individual needs and thus improve their life quality. It had the following components,

1. Selection of the Sample.
2. Selection of the Interventions.
3. Framing of the Evaluation Tool.

4. Conduct of the Interventions.

5. Evaluation of the Programme.

### **1. Selection of the Sample**

The women aged between 30-60 years medically detected with cervical cancer stage I, II and III between 1-5 years of diagnosis admitted as an inpatient in Apollo BSR Cancer hospital, Bhilai and Jeevan Rekha Hospital, Rajnandgaon for a minimum of eight weeks of period and undergone survey for analysis of the risk factors was selected as a sample. The purposive sampling technique was used and 110 samples were selected which comprised of experimental (55 women) and control (55 women) groups.

### **2. Selection of the Interventions**

Cervical cancer is a devastating disease which needs to be treated through Multi-disciplinary approach such as Conventional management, Adjuvant therapy and Complementary therapies; so, the patients may improve physically, psychologically, socially and spiritually. Complementary therapies are used along with the standard medical treatments. These are noted to help in enhancing the life standards of the patients to a satisfactory level. (Krosh, 2010).

In the second part of the study the specific therapies were selected as interventions and implemented to promote better life quality among women who were suffering from cancer. The interventions were,

- a. Multi-Dimensional Exercises.
- b. Dietary Management.
- c. Progressive Muscle Relaxation Therapy.
- d. Guided-Imagery.
- e. Family Focused Interventions.

#### **a. Multi-Dimensional Exercises**

Multi-Dimensional Exercises is focusing on physical capacity there by relieving the Cancer Related Fatigue (CRF). It includes,

- i. Range of Motion Exercises and
- ii. Breathing Exercises.

## Benefits

It helps for maximum oxygen uptake, shows improvement in muscle strength, significant reduction in cancer related fatigue, improvement in physical functioning, role functioning, increased range of motion, better ability to perform daily living, maintain general wellbeing.

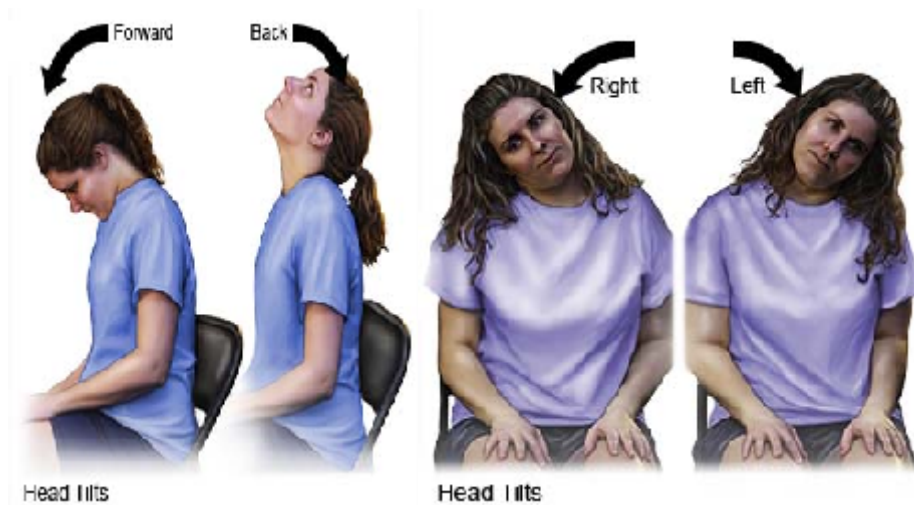
### i. Range of Motion Exercises:

Joint function can be improved by following the range of motion exercises. It helps in moving each joint to its full range of motion. Movement can help in maintaining the joint flexibility, decrease pain, and enhance strength and balance.

## Steps

### Neck exercises

**1. Tilting of Head front and back:** Gently bow your head and try to touch your chin to your chest. Raise your chin back to the starting position. Tilt your head back as far as possible so you are looking up at the ceiling. Return your head to the starting position.



**HEAD TILTS EXERCISE**

**FIGURE 10**

**2. Tilting of Head sideways:** Slowly turn the head on sideways so the ear is brought towards the shoulder. Shoulder should not be raised to touch the ear. The shoulder should be kept unmoved. Now the head is to be returned to the original position.

**3. Turning of Head:** The head should be turned to look toward the shoulder. Position the chin downwards so that to try and touch the shoulder. The shoulder not be raised towards the chin. Turn the face to front again.

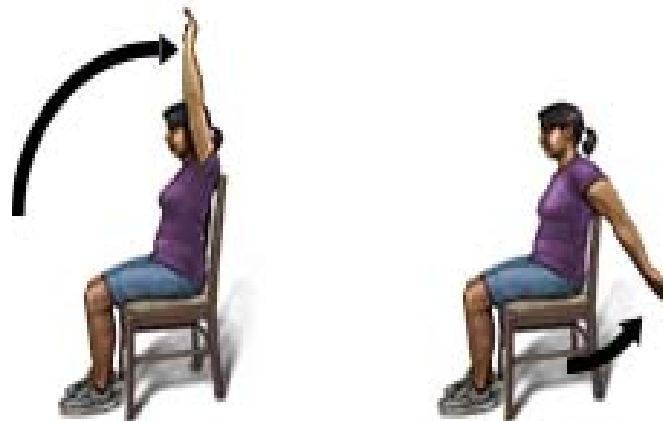


**HEAD TURN EXERCISE**

**FIGURE 11**

#### **Elbow and Shoulder Exercises**

**4. Movement of Shoulder, Up and Down:** Should rise the arm in front and after that move it towards and above the head. Try and raise so that the ear is touched by the inner side of the arm. Now take the hands backwards down to the side. Try and take it towards back to the farthest point behind the body. Now return back the arm to the original place.

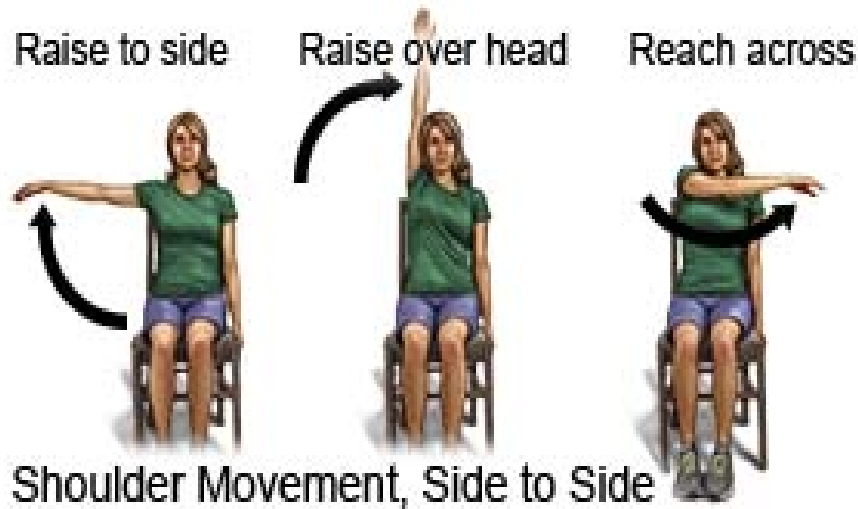


**Shoulder Movement, Up and Down**

**SHOULDER MOVEMENT, UP AND DOWN EXERCISE**

**FIGURE 12**

**5. Movement of Shoulder, Side to Side:** To move the arm upwards on the side and after that over the head to the farthest point achievable. Now move it to the side. Move the arm in front side of the body so that to touch the shoulder on the opposite side. Now replace the arm to the original point.



**SHOULDER MOVEMENT, SIDE TO SIDE EXERCISE**

**Figure 13**

**6. Elbow Bends:** Bend the elbow with the palm turned forward. Use the fingertips and try to reach the shoulder. Position back the arm to its original position.

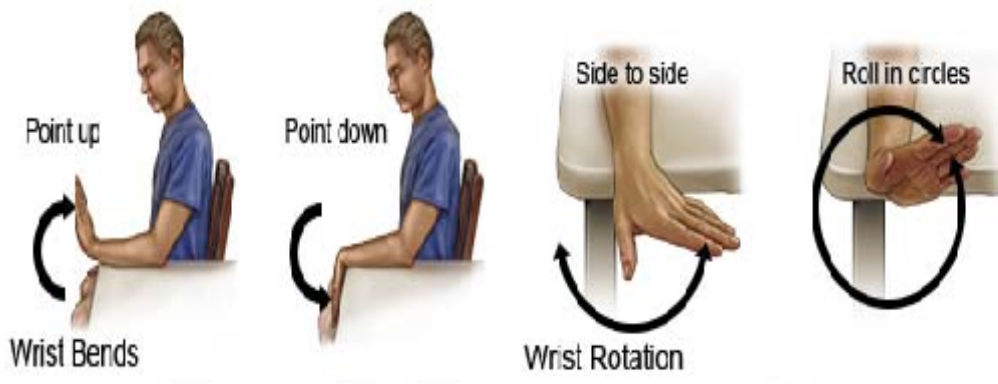


**ELBOW BENDS EXERCISE**

**FIGURE 14**

## Wrist and arm exercises

**7. Bending of the Wrist:** To bend the hand towards the wrist and direct the fingers upwards to the sky. Now bring the hand downwards and direct the fingers facing the ground.



### WRIST EXERCISES

FIGURE 15

**8. Rotation of Wrist:** Wave the hand sideways. After that rotate the hand in a single direction followed by rotating in opposite direction.

**9. Palm up and Down:** Maintain yourselves in a still position and pull the elbow that is bent, towards your side. Now face the palm facing the floor and turn it upwards facing the sky. Repeat this again.

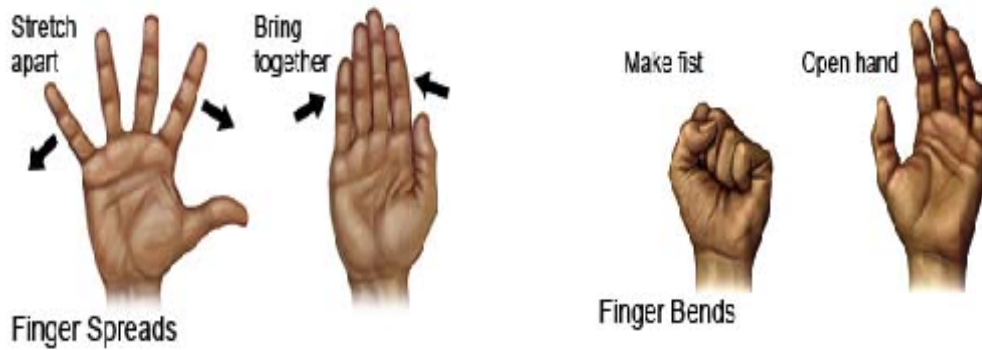


### PALM EXERCISES

FIGURE 16

## Exercise to Hand and Fingers

**10. Bending of Fingers:** First create a fist that is tight and after that open it wide and relax the hand.



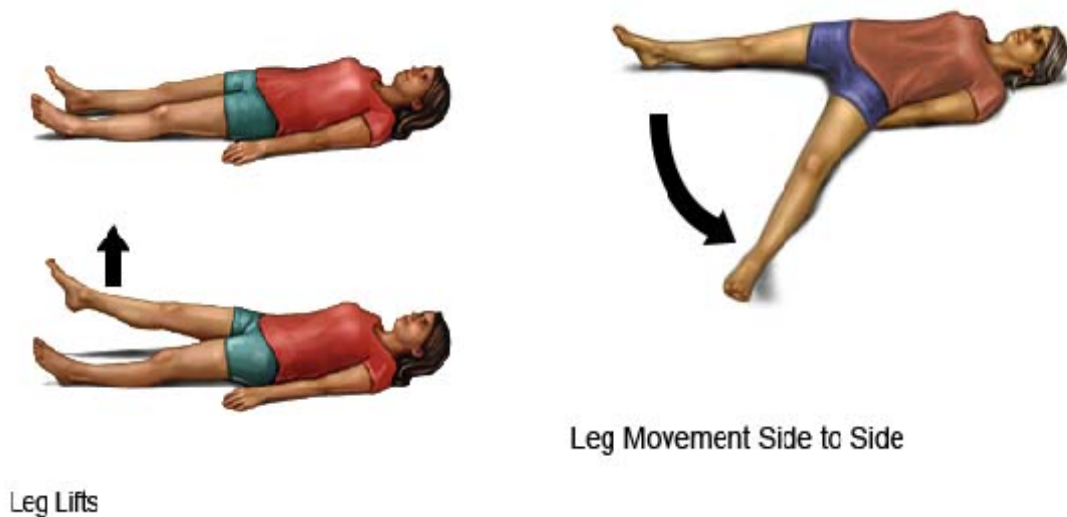
### FINGER EXERCISES

FIGURE 17

**11. Spreading of Fingers:** After opening the hand, the fingers need to be stretched as further as possible. Now bring them together.

## Exercises to the Leg

**12. Lifting of Leg:** To bring the leg upwards so the foot is 6 to 12 inches above. The leg should be held in air for a couple of seconds and return the leg back.





## LEG EXERCISES

FIGURE 18

**13. Movement of Leg sideways:** Foot needs to be flexed so that the toes face the sky. After this bring apart the leg on the side to the farthest point. Position back the leg.

**14. Rotation of Leg in and out:** Position the leg straight down above the bed. Roll towards center and make the big toes touch the bed. Now do the opposite manner, so that the small toe touches the bed.

### Exercises to the Foot and Ankle:

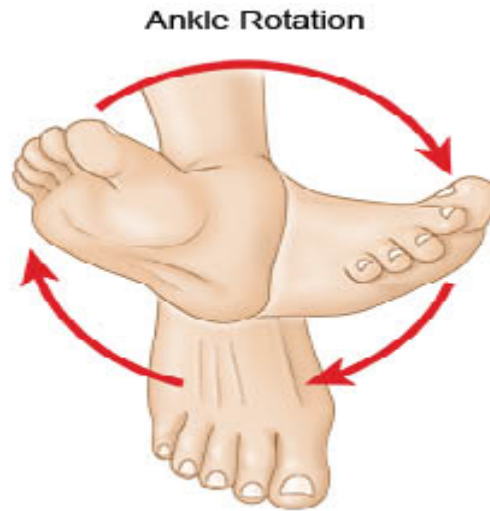
**14. Ankle bends:** Raise the heel higher to the possible level by placing the toes on ground. Now bring down the heel. Place the heel on floor and raise the toes to the maximum height possible.

**15. Rotation of Ankle:** Keep the foot little over the floor by rising it. Now the ankle should be rolled in a circular angle. After this roll the ankle in a circular angle on the opposite side.

**16. Bending of Toe:** The toes need to be twisted towards the foot sole. Now bring it straight. Rotate towards the sky. Now again straighten it.

**17. Spreading of Toe:** Take away the toes towards the side and bring it back again to the center). raise the heel higher to the possible level by placing the toes on ground. Now

bring down the heel. Place the heel on floor and raise the toes to the maximum height possible. (<https://www.deserthandtherapy.com/>).



## **ANKLE AND TOE EXERCISES**

**FIGURE 19**

### **ii. Deep Breathing and Coughing Exercises**

It is mainly used to improve air exchange or to have a good breathing function. The women were asked to breathe air through the nose and breathe the air out via mouth and cough after a deep inhalation.

#### **Steps**

- Position yourself in a relaxed angle like lying on the back having the knees in a bent position, sideways lying or in sitting stance.
- Keep the hands over the stomach; via nose a deep breath needs to be taken; proceed with this and stop until the lungs are filled with air and it will be noticed that the hand is pushed by the stomach.
- To blow the air outside in a single shot and now to breathe slowly with pursed lips; while breathing out, make sure to pull the stomach inside; repeat these steps and to make five breathing runs.
- To take a deep breath again and to hold air for about 3 seconds and after that huff for three times (it is like creating a mist on a glass); during the last huff, to cough out deeply from the lungs and not from the throat.

- Follow again the above steps until five times. (Sunnybrook Health Sciences Centre).

Multi-dimensional exercises performed in the morning between 6 am to 10 am for 15 minutes every day individually for a minimum of 20 sessions and maximum of 28 sessions. Range of motion exercise for 8 minutes and breathing exercises for 7 minutes implemented every day.

## **b. Dietary Management**

Eating problems like nausea, vomiting or decreased appetite are common during cancer treatment. Diet plays a major role in meeting the nutritional demand, fighting the cancer tissues and protecting against the opportunistic infections. It includes two phases namely,

- i. Preparation of Menu plan.
- ii. Diet counseling based on the need of the cancer patients.

### **Benefits**

Diet management help with side effects like nausea, diarrhea, or taste changes, maintain body weight, improve muscle mass, provide more energy and prevent delays or breaks in treatment.

#### **i. Preparation of Menu plan**

The dietary intake of antioxidants and vitamins is found to have significant preventative results against cancer of the cervix. The increased intake of fruits and vegetables are found to be effective.

Menu plan was prepared in the form of diet chart and given to the samples immediately after the admission. Samples were asked to follow the menu plan and ongoing assessment was done to find out the food pattern of the samples. Menu plan as follows:

## **Menu Plan**

- 6.00 am (Early Morning): A glass of warm water.
- 7.00 am: 1 glass of Grass or carrot Juice.
- 8.00 am: 1 glass warm Milk (without Sugar) + Fruit (Papaya/Chickoo) (1 bowl) or cooked vegetables (1 bowl)
- 11.00 am: 1 bowl of Veg. Soup or 1 glass of Coconut water + 5-6 pieces of Almond/ Walnut.
- 1.00 pm: 1 bowl Salad/Boiled Vegetables/ Raita + 1 bowl Curd/ 1 glass Butter Milk /Milk without Sugar.
- 4.00 pm: 1 glass of warm Milk (without Sugar) + Dates/ Roasted channa dal 6.00 pm: 1 glass of Fresh Fruit Juice /Sugarcane Juice/ Raw Vegetable Juice.
- 8.00 pm: 1 bowl Salad/Boiled Vegetables/ Raita + 1 bowl Curd/ 1 glass Butter Milk /Milk without Sugar.
- 10.00 pm: 1 glass warm milk (without sugar). (<https://mangaljeevan.com>).

Samples were guided to choose the options of food in the menu plan. This will help to tolerate effects from drugs, reduce the probability of infection, and help in healing quickly. During discharge samples were asked to follow the menu plan at home as a follow up.

### **ii. Diet counseling**

Diet counseling was given on the aspects of managing nutrition and weight. Patients were asked to consume foods containing more antioxidants, vitamins, Carbohydrates (fruits, vegetables, and whole grains), healthy fats (mono unsaturated and polyunsaturated fats), Proteins (fish, poultry, lean red meat, eggs, low-fat dairy products), Vitamins and minerals and more consumption of water.

### **c. Progressive Muscle Relaxation technique**

Jacobson's Progressive Muscle Relaxation Technique was implemented to reduce the muscle tension there by relieving the symptoms of fear, anxiety and stress.

Dr. Edmund Jacobson, in 1930, developed a systematic method for dealing with stress and accomplishing a deep state of relaxation.

## **Steps**

### **Pre procedure:**

First take a comfortable position. To be comfortable on the bed by lying down on the back. Keep the body totally loose. Stay quietly. Eyes to be closed tightly. After this the practice can be started and focus carefully to have feel of the muscles in the body. Now again position the body fully loose, relax and free.

### **Procedure:**

- To tighten the right fist to the maximum point of tightness possible. To feel the tightness on the muscles of the palm.
- Be in a still position for a little while and then free the same and allow it to be completely loose. After this to breathe slowly and freely.
- Clench your left fist repeat as in right fist.
- Now clench both fists at a time.
- Bending the arms and clenching the fist: To tight the muscles of the arm until it is felt and then loosen it, and feel light. Hands to be kept in a straight position. Now can feel the lightness and to become relaxed.
- Keep the arms straight and stiff and bring it closely to the body and the tension of the muscles is felt now at the back portion of the forearms and arms. After this, loosen it and be relaxed and this needs to be repeated. Breathe in and out slowly and freely.
- Forehead wrinkling: Bring the eyebrows on the top direction and tighten it until feeling the tension in forehead and after that to relax out freely. A sensation of comfortability is felt in the forehead and can relax freely. This needs to be repeated. The sensation of calmness can be felt and to be relaxed and keep the whole body loosely.
- Eyebrow switching: Imagine to glare at anyone, the tension is felt within the eyebrows, gradually ease it out. Now a tightness is felt in the head and be relaxed. Repeat the same and the tension is felt and upon relaxing calmness is felt.
- The teeth to be bitten as tight as possible. The tension is felt in the cheek muscles. To loosen it gradually and to feel lighter. The sensation of calmness is felt and need to relax. This should be repeated.

- By bending towards front the chest is touched by the chin. The face is turned to the right side to maximum extent possible so that the neck muscles need to feel the tension, same to be repeated on the opposite direction. To stay relaxed and calm and to repeat this again.
- The head is bent towards the backside and should be turned to the left and right. The tension is felt and to release it slowly. The sensation of soothing is felt within and to be relaxed. This has to be repeated.
- Bending the shoulders above to form an arc, to do it as tighter as possible. Do this until muscles are tensed and after that to release it slowly. The difference can be felt. Stay calm and relaxed. The whole body to be kept light, loose and free. This needs to be repeated.
- Backward bending of the shoulders: The shoulders are pressed on the bed to the maximum tightness. After the tension is felt and then released gradually. To keep them fully free and loose. This process needs to be repeated. Now to be more relaxed.
- After taking a deep breath the chest needs to be expanded to the maximum possible. The comfortable sensation is felt and to breathe freely and to be relaxed. This needs to be done again.
- When the air is inhaled well the stomach feels tightened up all over, to release it slowly and breathe freely. The light feeling in the abdomen is felt and to be relaxed now. This needs to be done again.
- Tension is felt by shrinking the stomach as much as possible inside. To gradually release and feel light. Notice the difference and to repeat this again. Can feel quieter and ease.
- The back bone's lower part to be bend upward. After tension is felt to straighten gradually. Feel the calmness and the difference before and after. Can feel quieter and ease. The same should done again.
- The thigh muscles need to be tightened to the maximum extent. After the tension is felt then release it gradually. The difference is felt and a feeling of calmness is noted inside and can be relaxed. The whole body needs to be kept loose and free. Stay relaxed and quiet. This needs to be repeated periodically.
- The calf muscles need to be tightened by bending the heel downwards. The tension felt inside before releasing it gradually. This is made lighter and loose. To stay

calm and relaxed. After this the toes are bent upwards – tension is felt in the toes and legs and to gradually free them and to have them loose and free. The calmness is felt within and to relax deeply. To stay calm and relaxed. The toes need to be bent downwards until the maximum extent of tightness possible. The tension is felt within the feet and toes and to release it gradually. The difference is noticed. The above steps to be repeated. A sensation of calmness is felt in the legs and toes. Now again to stay free and quiet.

- A deep breath to be taken gradually and release it slowly. The whole body to be kept loose, free and light. Feel the lightness that grows in the various parts of the body. Now relax deeper and further again and again.

The entire sequence of progressive muscle relaxation method has taken approximately half an hour initially and later with regular training the duration required was less than half an hour. The therapy was implemented every day morning between 6 am -10 am individually for a minimum of 20 sessions and maximum of 28 sessions.

#### **d. Guided Imagery**

It is a method of visualization where the person can dream sounds, pictures, smells and vibrations.

##### **Steps**

- Search for a calm place and sit there comfortably in a relaxed position and to keep the eyes closed.
- The legs and arms should not be crossed or folded to avoid blood circulation issue which can create a numb feeling and tingling sensation.
- Take a deep breath. The abdomen needs to be expanded using the muscles of the abdomen for filling the lungs with air. Breathe out gradually as if like in whistling. To take a deep breath and breathe out gradually for three stretches. This will help in relaxation.
- To imagine about a picture that is peaceful or to visualize an enjoyable place visited by one. The image should be a symbol of relief in one's own way. Imagining like a large stone placed on the body is pushing one down with pain-this situation can be taken as an example. Imagine like light air balloons are attached to the stone and once that is taken away the pain is released.

- If the pain is thought to be as lightning and thunderstorm that pours on the body and so to think about the treatments given which are like a smooth gush of wind that takes the rain and the clouds away. Sunshine and warmth are replaced rain and thunder. To imagine that air is smelling moist and neat and the rain water is filled on the lovely flowers and the grass beneath is plush and green. Also, there are birds in a pond. The quiet status of the water is only disturbed by a wave caused by the smooth paddling of the ducks.
- To imagine like the immune system is improved when a warm healing light passes through the place and this destroys the cancerous cells. (<https://www.dana-farber.org/health-library/articles/guided-imagery/>).

Guided imagery was performed in the evening between 7 pm to 10 pm for 15 minutes to 20 minutes individually for a minimum of 15 sessions and maximum of 20 sessions.

**e. Family Focused Intervention.** The caregivers and the patients show their emotions towards cancer equally. It affects their physical and social well-being in relation to nature of illness, disease prognosis, financial demands, sexual activity and various other accountabilities.

**Procedure:**

**i. Psychoeducational Training**

- It is a training of patients and care givers to understand the nature of disease, clinical symptoms, different diagnostic measures, various treatment modalities and disease prognosis.
- Training of importance of adherence of health care facility in timely manner.
- Psychological acceptance of the disease and planning measures to improve survival rate.
- Education to the care givers to face the physical demands of the patient.

**ii. Skill Training for Development of Coping, Communication and Problem-Solving Skills.**

- Cancer is a debilitating disease which makes the entire family to undergo sufferings.
- Importance of adaptation of stress and overcoming by applying coping strategies like Meditation, Laughter therapy and Music therapy etc.

- Developing appropriate communications to solve problems in the area of sexual needs, demands and changing family roles and responsibilities.
- Developing problem solving skills in Body image, self-esteem and financial needs.

### **iii. Therapeutic counseling for development of therapeutic relationship.**

- Importance of therapeutic relationship with health care professionals and adherence to the treatment in an appropriate manner.

Family focused intervention was performed weekly once for women with cancer and caregiver for 20 minutes. The total session was eight for each patient. It helps in improving patients and care givers' physical and social well-being.

### **3. Framing of the Evaluation Tool.**

Standardized scales were adopted in order to assess the quality of life of women with cervical cancer. The research tool used for assessing the life quality is EORTC (**THE EUROPEAN ORGANIZATION FOR RESEARCH AND TREATMENT OF CANCER**) Quality of Life assessment scale, it consists of 2 scales.

#### **a. EORTC 30-item Quality of Life scale (QLQ-C30)**

#### **b. EORTC 24-item Quality of Life scale (QLQ-CX24)**

#### **a. EORTC 30-item Quality of life scale (QLQ-C30)**

The 30-item EORTC QoL questionnaire (QLQ-C30) is a psychometrically robust, cross-culturally accepted questionnaire that was designed to be applicable to a broad spectrum of cancer patients as a core questionnaire. The EORTC scale consist of 30 items (i.e. single questions), collectively 24 in a group which falls into multi-item scales (nine), that is of 5 function scales, 3 symptom scales and one global health status scale. It has 6 single-item scales also.

- Five function scale consists of physical, role, emotional, cognitive, and social. Physical functioning (Items 1–5), Role functioning (Items 6, 7), Emotional functioning (Items 21, 24), Cognitive functioning (Items 20, 25) and Social functioning (Items 26, 27).
- Three symptom scales consist of fatigue, nausea/emesis, and pain. Fatigue (Items 10, 12, 18), nausea/emesis (Items 14, 15), and pain (Items 9, 19).

- iii. Six single-item scales consist of dyspnea, sleep disturbance, appetite loss, constipation, diarrhoea, and financial impact. Dyspnea (Item 8), sleep disturbance (Items 11), appetite loss (Item 13), constipation (Item 16), diarrhea (Item 17), and financial impact (Item 28).
- iv. Global QoL scale.

The range of scores falls between 0 to 100 for all the scales and single-item measures. A better functioning level is noted when the scores are high in the functioning scales and global health status scales. (better condition of a patient). Symptoms are felt to be more if the scores are high in symptom and single-item scales. (worsening condition of a patient). (Appendix III).

#### **b. EORTC 24-item Quality of life scale (QLQ-CX 24)**

The QLQ-CX24 developed in a multidisciplinary, multicultural, setting comprises 24 items (i.e. single questions), consisting of 3 multi item scales and 6 single-item scales.

- i. Three multi-item scales consist of Symptom Experience (Items 1–7, 9, 11–13), Body Image (Items 15–17) and Sexual/Vaginal Functioning (Items 20–23).
- ii. Six single-item scales consist of Lymphoedema (Item 8), Peripheral Neuropathy (Item 10), Menopausal Symptoms (Item 14), Sexual Worry (Item 18), Sexual Activity (Item 19), Sexual Enjoyment (item 24).

In items 19 and 24 (activities related to sex and enjoyment of sex), if the scores are high it denotes the functioning is better. The sexual/vaginal functioning scale (items 20–23) and single item 24 are intended only for a subset of patients who are active sexually, however the single items 18 and 19 are meant to be answered by all patients.

EORTC scales are designed in such a way that it transforms without any deviation all the scales and item scores to a 0-100 scale, where a high score denotes better functioning level (sexual activity and sexual enjoyment items) and for all other disciplines more the score the symptoms are high and more problematic functioning or status.

(EORTC) Quality-of-Life questionnaire administered through interview schedule, face to face. It takes 10-15 minutes to complete both the scale for each patient. Four-point Likert scale was used as a Scoring key. Scoring of each item is as follows 1-Not at all, 2-A

little, 3- Quite a bit, 4-Very much. Scores for each of the items are summarized to obtain total score. (Appendix IV).

Validity of the tool is how well an instrument (i.e. a test or questionnaire) measures a theoretical construct.

The prepared instrument along with the problem statement, aims, hypotheses, operational definition, scoring key were subjected to experts. The content validity of the tool was established by giving it to 9 experts from the field of Women Studies, Medical physicians, Oncologist, experts from Nursing fields and Psychologist. There was 100% agreement among all the experts with response to the tools with few suggestions to modify and simplify some items. Hence the tool was noted to be a valid one for the study.

Reliability is a measure of the stability or consistency of test scores. In order to establish the reliability of the tool it was administered to patients. Reliability was calculated by using test re- test method ( $r = 0.83$ ). The reliability of the tool was established and found to be statistically reliable for the study.

#### **4. Conduct of the Interventions**

Li et al (2017) stated that patients with cervical cancer received complementary therapy along with treatment modalities showed improvement in life standard. It was suggested that by improving women's Quality of Life after the therapy, specialists should also offer routine and customized interventions based on the women's need.

For conducting interventions, Non-Probability purposive sampling technique was adopted and 110 samples were selected for the study fulfilling the Inclusive and Exclusive criteria. The samples were divided in to two groups as experimental (55 samples) and control group (55 samples) based on the research setting. Two hospitals were selected as a research setting for conducting a study, one hospital samples were considered as experimental group and the other hospital samples were considered as control group. The research scholar has undergone specific training in Progressive Muscle Relaxation Therapy, Guided Imagery, and Family Focused Intervention. (Appendix I)

A good rapport was established with the samples before implementing intervention. Prior permission was taken from the higher authorities of the hospital. The purpose of the study was explained to the samples and Informed Consent was obtained in both oral and written form.

Life quality was assessed using EORTC scale before interventions for both the groups. Experimental group samples were given interventions along with the routine hospital treatment whereas control group were receiving only routine treatment from hospital.

The interventions comprised of complementary therapies such as multi-dimensional exercises, progressive muscle relaxation therapy, dietary management, guided imagery and family focused interventions to promote life quality and to improve the survival rate of women. The interventions were implemented as per the schedule. The schedule is presented in Table I:

**TABLE I**  
**INTERVENTIONAL SCHEDULE**

Sl. No	Intervention	Session	Time	Duration	Total schedule	
					minimum	maximum
1	Multi-dimensional exercises	Morning	6 am-10 am	15 minutes	20	28
2	Progressive Muscle Relaxation therapy	Morning	6 am-10 am	15-20 minutes	20	28
3	Guided Imagery	Evening	7 pm-10 pm	15-20 minutes	15	20
4	Family focused intervention	Evening	7 pm-10 pm	20 minutes	8	8

Interventions were given for a period of eight weeks. The Post Test was conducted after eight weeks.

For Dietary management Menu plan was prepared in the form of diet chart and given to the samples immediately after the admission. Samples were asked to follow the menu plan and ongoing assessment was done to find out the food pattern of the samples.

### **5. Evaluation of the Programme**

The evaluation of the intervention was done using expressive and inferential statistics. The outcomes of the interventions for improvement of quality of life were evaluated as given below:

- a. Percentage Analysis of EORTC 30-item Quality of life scale (QLQ-C30).
- b. Percentage Analysis of EORTC 24-item Quality of Life scale (QLQ-CX 24).
  - i. Paired “t” test to assess the Quality of Life (EORTC score) before and after intervention among experimental group.
  - ii. Paired “t” test to assess the Quality of Life (EORTC score) before and after among control group.
  - iii. ‘t’ test to analyse the alteration in Quality of Life (EORTC score) after intervention between control and experimental groups.

The results are presented in Chapter IV Results and Discussion.