Chapter III

RESEARCH METHODOLOGY
DESIGN OF THE STUDY

The focus of the present research was to assess the characteristics of the population under study and to test for the inter relationships among variables. Hence the design adopted was diagnostic in purpose and cross sectional in approach.

The researcher intended to bring the (hospitalised) cancer patients within the purview of the study and describe their characteristics in terms of variables such as socio-demographic variables, death anxiety, family burden, perceived social support, quality of life and coping patterns.

The procedure used in the study was planned to obtain as complete and accurate information as possible. The major steps comprising the design are the statement of the problem, significance of the study, formulation of the objectives, specifying and identifying the sources of data to be studied, selecting and designing appropriate methods and tools of data collection, choosing the sample design, coding, tabulation, processing and analysing the obtained data (Wilkinson and Bhandarkar 1984). The research design decisions have been made with enough provisions for protection against bias and truthfully representing the population by choosing adequate sample by probabilistic method.

Statement of the Research Problem

Cancer, as a life threatening and a dreaded illness, apart from its gruesome physiological symptoms, induces a lot of psychological distress and trauma in its victims and their family members. Cancer and its treatment have painful and far-reaching impacts on the patient and his/her family.

Among the various implications that a cancer patient confronts, the most critical is the acute psychological anxiety and the eventual distress. In addition to the trauma faced by the patient, the family members also go through a traumatic
experience of having to face the possibility of death, enduring physical pain and the
disability caused by it.

The treatment received by the patient is apparently only for the palliative care
and for the symptoms exhibited by the illness, in the medical point of view. Equal
importance has to be given to the psychological aspect of the illness. The patient
himself is under depression by being aware of the fact that cancer, the treacherous
disease, has invaded his body. His near and dear ones also undergo equal amount of
psychological distress as the patient himself and hence would not be in a state to help
the patient. The practitioner of the medical profession who is in charge of the patient
can only afford time to spend for the medical treatment probably due to the numerous
patients being admitted on account of the disease.

There is a misconception about the disease not being curable among those who
have been affected by the disease. When the mind believes in the worst, the organic
component of illness worsens for there is an interaction between the two.

Taking into consideration all the above aspects, it was thought appropriate and
necessary to point out that it is the psychological support offered to the patient and the
family members that would help them tide over this traumatic period of their lives.

In recent years, the medico-sociological approach to illness has been focusing
on the importance of the psychosocial components of any given illness. This is more so
in the case of chronic disabilities which can affect the patients’ personal and social
functioning and bring about serious upheavals in the family interaction pattern.

It was against this backdrop that the study was taken up by the researcher to
be able to contribute to a better understanding of the psychosocial factors that would
govern the day-to-day living of cancer patients. An assessment of the death anxiety,
coping pattern, family burden, social support network and quality of life was found
necessary to get an insight into the psychological state of the patient and the
psychological make-up of his/her family.
Significance of the study

Professionals in health care have become increasingly concerned of the psychosocial aspects of health and illness. Health practitioners firmly believe in the interaction between the psychic and organic components of illness. Prior studies clearly indicate that the patient’s illness has its impact on his/her psychosocial functioning and can even affect his interaction with his family (Fitzpatric, Carol and Barry, 1990; Miller and Jessica, 1991).

The physiological and psychosocial problems among cancer patients is a matter of great concern to health care professionals, psychologists and social workers. So far no major psychosocial research has been conducted among the cancer patients. The main reason is that this problem is mainly studied by medical professionals who have limited their probe predominantly to technical aspects of the disease. The practitioner of the medical profession who is in charge of the patient can hardly afford to spend time for purposes other than the medical treatment due to the numerous patients being affected by the disease.

But the problem of cancer has to be viewed from psychosocial angle, in addition to pathological and pharmaceutical areas. This has warranted the attention of professionals like clinical social workers, who basically deal with the psychosocial and economic aspects of various illness groups.

The study, would primarily contribute to a better understanding of the psychosocial factors that govern the day-to-day living of cancer patients and its impact on his/her family. The findings of the study could be of immense value to therapists in developing and strengthening innovative psychosocial models of treatment which would benefit the cancer patients and their families. A study like this can also serve as an eye-opener to the concerned in their bid to appreciate the psychosocial problems of cancer patients in depth and to take appropriate measures in their treatment package.
Objectives of the study

The general aim of the present study is to analyse the interaction of psychosocial factors for the most predominant types of cancer in males and females and to explore the associations and influences these factors have on each other.

The specific objectives of the study have been cast as follows:

1. To study the associations among the sociodemographic factors and the psychosocial factors.
2. To test for associations among the various cancers by site and the psychosocial factors.
3. To understand the mutual influences and associations existing among the psychosocial factors in patients with cancer.
4. To study the coping behaviour exhibited by the patients undergoing hospitalised treatment of cancer.
5. To evaluate the quality of life of patients undergoing hospitalised treatment for cancer.

Hypotheses

- Female cancer patients have more death anxiety than male patients.
- Male cancer patients exhibit better coping behaviour than female patients.
- Male and female cancer patients do not differ with regard to the level of perceived family burden.
- Female cancer patients have lesser social support than the male patients.
- Male and female cancer patients do not differ with respect to their quality of life.
• The different types of cancer patients do not differ in their level of death anxiety, coping behaviour, family burden, perceived social support and their quality of life.

• Higher the perceived social support, better the quality of life, better the coping behaviour, lesser will be the level of death anxiety among cancer patients.

• Higher the quality of life, better the level of perceived social support, better the coping behaviour, lesser will be the level of family burden for the cancer patients.

Having presented the detailed research problem, attention is now drawn to the methodological specifications observed in order to fulfil the strictures of scientific social research based on the deductive logic. The conceptual content of the study enjoys sufficient theoretical support. Attempts on the part of the researcher to ensure quality of empirical data, freedom from possible inaccuracies and biases, and the generalisability of findings, have been operationalised in the procedural dimensions reported in paragraphs that follow:

**Universe and sampling**

The study was conducted at the Regional Cancer Centre (R. C. C.), Trivandrum. R. C. C. is the nodal cancer control agency for the State of Kerala. The centre has been recognised as a WHO collaboration centre for Cancer Control Programmes in developing countries and serves the people of Kerala and the border districts of the neighbouring state of Tamil Nadu.

The researcher selected the sample base for the study from the Hospital Cancer Registry (H. C. R.) Annual Report published in 1995 treating the same as the sampling frame. The Hospital Cancer Registry, managed by the Regional Cancer Centre conforms to the standards set by Indian Council of Medical Research (I. C. M. R.) for registering data reporting.
The Registry has contributed significantly to the research output of the Centre and played a key role in the planning, implementation & evaluation of the Cancer Control programmes for the state of Kerala and for the National Cancer Control Programmes of India.

The H. C. R collates regular and periodic information on Cancer cases reporting from:

1. Regional Cancer Centre, Trivandrum
2. Out-patient and In-patient wards of Medical College Hospital, Trivandrum
3. Medical Records Department, Medical College Hospital, Trivandrum
4. Out-patient clinics and wards of SAT hospital for women and children, Trivandrum
5. Out-patient dental clinics.
6. Pathology Reports.

The data recording sources of the Registry have been the same since its beginning in 1982. The collected data was coded according to I. C. M. R. Format and was entered into the computer for validation purposes by the software developed by the Information systems division of the Regional Cancer Centre. Validated data was sent to the Technical Wing of the National Cancer Registry Programme (I. C. M. R.) for a second validation. The corrected final data was then analysed and the tables and figures generated using the software.

As the entire processing was found to consume longer time, the researcher based the sampling on the figures given for the year 1993 of the Hospital Cancer Registry which was published in 1995.

The researcher was able to identify the leading sites of cancer in Males and Females from the H. C. R Annual. Based on the rank order of the ten leading sites of male and female cancer patients, the first three ranks that were the most commonly occurring were selected to be studied. The details were as shown under:
<table>
<thead>
<tr>
<th>Rank*</th>
<th>Site of Cancer</th>
<th>No. In 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Oral Cavity</td>
<td>609</td>
</tr>
<tr>
<td></td>
<td>Lung</td>
<td>401</td>
</tr>
<tr>
<td></td>
<td>Pharynx</td>
<td>250</td>
</tr>
<tr>
<td>Female</td>
<td>Breast</td>
<td>672</td>
</tr>
<tr>
<td></td>
<td>Cervix</td>
<td>459</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>320</td>
</tr>
</tbody>
</table>

*The rank trend was found to be the same in the years 1992 and 1993*

As the Regional Cancer Centre accounted for 80% of the respondents (C.M.R. Registry, 1991, 1992), the available data for most commonly occurring types of cancer among Males and Females were converted to 80% and the corresponding figures were projected for the years 1994, 1995 and 1996 using the Simple Regression Equation, \( y = a + bx \). The averages were worked for the years 1995 and 1996 and 165 of each group was fixed as the sample size for the study. The units of observation from each category were chosen at random using lottery method to fulfill the quota decided as fifteen percent of forecasted figure in each category. The nature of cancer and health conditions made it impossible for some of the patients to respond. There were also some patients who were non co-operative. These were replaced by further draw.

The total number of samples covered under each type of cancer are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>72</td>
<td>Breast</td>
</tr>
<tr>
<td>Lung</td>
<td>52</td>
<td>Cervix</td>
</tr>
<tr>
<td>Pharynx</td>
<td>41</td>
<td>Oral</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>Total</td>
</tr>
</tbody>
</table>
Definitions

Psycho-social problems

Theoretical:
Psycho-social problems is theoretically defined as the term applied to phenomena in the individual having a social bearing either in origin or in outcome (James Drever: A dictionary of psychology, p-230)

Operational:
In the present study, psychosocial has been used as a term for different problems like death anxiety, coping, quality of life, family burden and social support that cancer patients are facing during the course of illness.

Psychological problem

Theoretical:
Any event that causes mental or emotional disharmony to an individual by destroying the normal balance of his mind.

Operational:
Feelings of death anxiety and coping behaviour caused by the disease of cancer in mind of a cancer patient in such a way that it disrupts the balance of his mind.

Operational Definitions

Death Anxiety
It is the emotional reactions and the cognitive responses that are evinced by the patients towards the concept of death and the anticipation of one’s own death. The degree to which death anxiety manifests in the patients and the factors which mediate its experience is assessed by the researcher.
Coping

Coping in this study is assessed using a checklist of items which are considered coping behaviours and strategies. They include overt activities that the person engages himself or herself in cognitive strategies acquired by the individual, and the various techniques that one uses to make one’s illness experience more bearable.

Social Problems

Theoretical:
Any event that affect the relation of an individual with other persons in the society and that which disrupts the normal social living of that individual.

Operational:
Any change in the normal way of living, in the attitude towards family, and in the social relationships and difficulty in making adequate situational adjustments which are caused by the disease of cancer in the life of a cancer patient like quality of life, social support and family burden.

Operational definitions

Family Burden
Family Burden in this study is measured by assessing the family member on 7 dimensions.

1. Financial Burden.
2. Disruption of routine activities.
3. Disruption of Family leisure.
4. Disruption of Family interaction.
5. Effect on physical health of others.
6. Effect on mental health of others and
7. Overall subjective well-being.
Social Support Appraisal

It is the degree to which Perceived Social Support is experienced by the patient from his/her social environment in their interactions with his/her friends and family.

Quality of Life

Researcher in this investigation has used a schedule which assesses the patient’s evaluation of his/her attitude towards himself/herself and the changes that the person perceives in the various aspects of his/her life.

Cancer

Theoretical:

A general term used to indicate a group of diseases characterised by various types of malignant neoplasms, most of which invade surrounding tissues, may metastasize to several sites and are likely to recur after attempted removal and might cause death of the patient unless adequately treated. (Medical Dictionary, 22nd Edn Page 197)

Operational:

The different classification of cancer such as Oral, Lungs and Pharynx among males and Breast, Cervix and Oral among females.

Cancer Patients (Hospitalised)

Theoretical:

An individual who is diagnosed and having treatment for cancer in a hospital.

Operational:

An inpatient who is undergoing treatment for cancer such as Oral, Lungs and Pharynx among males and Breast, Cervix and Oral among females, at the Regional Cancer Centre, Trivandrum.
Data collection

The method used for data collection was mainly direct interviews (face to face) with the respondents using a pretested interview schedule. Researcher also observed the different overt behaviours of the respondents when the interview was in progress. To check the variety of the responses, it was cross checked with family members and other significant persons in the life of every respondent. Researcher took about six months beginning from November, 1995 for covering four wards at the Regional Cancer Centre, Trivandrum.

Tools of data collection

In dealing with the real life problems of cancer, the secondary data available from the registry alone were felt grossly inadequate. Primary data were therefore elicited from the respondents themselves relating to their real life situations and experiences as the same was necessary to fulfil the needs of the study.

In choosing the technique to be utilised for the purpose of collecting primary data, the researcher had to take into account considerations such as: who are to be the respondents, the value of investigation, objective and scope of the inquiry, also the available time and other sources.

Considering the above mentioned aspects, appropriate tools were devised and selected to elicit the required information effectively. For this purpose, a thorough analysis of literature was done. The construction of schedules and questionnaire were based on scales relevant to the objectives and variables in the study. The tools that were selected are detailed below.
Socio Demographic Schedule

This tool elicits the socio-demographic details of the sample. This was framed by the investigator himself in accordance with the needs of the present study. For the purpose of constructing a tool, both questionnaire and interview methods were considered. For a population of this nature, establishment of sufficient rapport with the respondent was felt very pertinent. This could be achieved, only by interviewing them. Hence, preparation of a schedule to guide the interview which ensures uniformity and depth of the elicited information was necessary.

The first part explored the personal profile of the respondent and elicited information of the respondent on age, sex, marital status, education, occupation, income, nature of the place of residence, hobbies, religion, caste, habits.

The next part consisted of items pertaining to history of cancer in the family, perceived stage of disease, the various methods for diagnosis, various treatments, systems of medicine adopted for treatment, the primary and secondary effect of cancer, use of prosthesis.

The interview schedule also contained items to elicit information on the impact of cancer on the patients' spouse, family, employment, religion and society. In the last part the role of any voluntary organisations in helping the patient in any way is also assessed. The final version of the schedule is included in the appendix.

Death Anxiety Scale

Formerly death anxiety was assessed based on a number of interview procedures with lengthy questions and also by the administration of TAT cards. It was Donald I Templer (in 1970) who developed the Death Anxiety Scale (DAS) by a procedure that was somewhat different from that of the Fear of Death Scale (FODS) by Boyar (1964). The DAS items reflect a wider range of life experience.
Forty items were derived on a rational basis. Twenty three of these were keyed "true" and seventeen were keyed "false". Rating was done for all the forty items based on: (i) Irrelevance of death anxiety (ii) slightly associated with death anxiety (iii) moderately associated with death anxiety (iv) considerably associated with death anxiety and (v) very greatly associated with death anxiety.

Point biserial correlation were then computed and the 15 items with significant items - total score correlations constituted the final DAS. Nine of the 15 items were keyed "true" and the remaining six were keyed "false". Internal consistency and test - retest reliability were determined.

**Validity**

The validity of the DAS was investigated by two procedures:

a) In an effort to establish the construct validity of the DAS, test was done on psychiatric patients in a state mental hospital also using control groups. Presumable high death anxiety psychiatric patients were found to have significantly high Death Anxiety Scale scores than control patients.

b) Death Anxiety Scale scores correlated significantly with Boyars FODS scale, another death anxiety questionnaire and with a sequential word association task. DAS correlations with MMPI variable were also obtained.

**Scoring**

A weightage of +1 was given to each correct item and the incorrect item was scored as 0. The total score was computed which could range from 0 to a maximum of 15. Respondents with higher DAS scores were said to have increased death anxiety.

The final version of the scale is provided in Appendix.
Family burden interview schedule

Earlier studies by workers were on the assessment of social burden on the discharge of chronic patients to the community. Later studies pointed out that the stress caused to the families by the patient was an important factor in determining the patients acceptance by the family. This aspect was assessed in greater detail. It was the work of Grad and Sainsburg (1963) that made headway in assessing the burden felt by patients families, on a three-point scale. The scale was tested for reliability and the result was that there was 75 percent agreement among three interviewers.

No such work had been reported in an Indian setting. The economic and cultural conditions in India being vastly different from those of the Western World, the areas of family burden and the pattern of accepting or rejecting patients may be entirely different. Keeping this in mind, Shaila Pai and R.L. Kapur developed a standardized method of assessing the burden on the family, which could be applied to Indian culture.

As a first step in the construction of the interview schedule, free unstructured interview was conducted with one relative of each of 40 patients at an out-patient clinic. The focus was on various areas of burden the families might have experienced due to the patients illness. Their responses were to be objective and concrete. The content was analysed in terms of the various categories of burden experienced. Later, another new twenty four interviews which were recorded were distributed among six professionals in the psychiatric field. They were to group into general categories the various items of burdens. On comparing the categorization thus collected with that prepared by the investigator earlier, it was found to be broadly similar.

The semi-structured interview schedule can be used in comparing the effect on the family of different types of illness. The schedule has given consistent results, and has also been found to have a high correlation with the social functioning of the patients (Shaila Pai and R.L. Kapur page 3 and 4)

The 24 possible items thus picked were arranged in six different categories. The categories of burden are:
1. Financial
2. Effect on Family routine
3. Effect on family leisure
4. Effect on family interaction
5. Effect on physical health of other family members
6. Effect on mental health of other family members.

Each item under the different categories was then converted into a question for the definitive interview schedule.

*Scoring*

The rating for each general category as well as for each individual item is done on a three point scale. Each item is to be recorded as: severe burden, moderate burden or no burden. The severe burden response is given a weightage of 2, moderate burden response is scored as 1 and no burden response is counted as zero. The total score in the test is the score of all the above three.

\[
\begin{align*}
\text{Total of severe burden response} & = x \times 2 \\
\text{Total of moderate burden response} & = x \times 1 \\
\text{Total of no burden response} & = x \times 0 \\
\text{Total score} & =
\end{align*}
\]

*Reliability*

The reliability of the Family Burden Interview Schedule was examined by the following method. One relative of each of 20 patients was interviewed by three raters, who sat together with one of them putting the questions to the relative. Each rater made individual assessment of the burden felt by the relative and made independent scoring. The ratings were then compared and the difference were examined for statistical significance by determining a reliability co-efficient, the method being based
on two way analysis of variance (Winex, 1962). The reliability score was above 90 percent for 20 items, and between 87 and 89 percent for the other four, which is extremely high.

Validity

To test the validity of the instrument, the subjective burden as reported by each relative was scored on a similar three-point scale. It was considered that of the overall objective burden assessed by the raters was highly correlated with the subjective burden as reported by the relative, it would be an indirect, though not an absolute, method of measuring the instruments’ validity. The correlation coefficient between the mean total scores on each item as assessed by the professional raters and the relatives was \( 0.72 (df=1) \) sufficiently high. The final version of the schedule is included in Appendix

Quality of life

A generally accepted definition of quality of life is not available. A set of questions for the Quality of Life is designed by S Kaasa, A. Mastekaasa and S. Naess. They defined quality of life in terms of the patient’s subjective evaluation of his/her life and situation.

The psycho social well being questionnaire is composed of a 10 question scale and 2 global quality of life questions. The selection of questions was based on inventories of well being used in quality of life studies in general population. Five positive and five negative questions are used to correct for the acquiescence response set, which has been joined to be a problem in some quality of life studies. Acquiescence is the tendency of the respondent to agree with any question regardless of the content.
**Scoring**

The responses to each item were scored on a 5 point scale ranging from ‘not at all’ to ‘all the time’ given values from 1 to 5. The global questions were scored on a 7 point scale giving values from 1 to 7. A low score on the responses represented a high quality of life.

The final version of the schedule is provided in Appendix.

**Coping checklist**

This was developed within the transactional perspective by Rao (1982) for use with an urban Indian population. The transactional model used referred to the individual’s “Cognitive and behavioural efforts to manage the internal and external demands of the person environment transaction that is resources” (Folkman, Lazarus, Gene and Dilongis, 1986) coping behaviours related for the tool were required to serve one of the three functions (a) to change a stressful situation, (b) to control the meaning of the situation and (c) to control emotional distress in relation to stress. Therefore problem focused, emotion focused and appraisal focused coping behaviours were included in this instrument.

The coping checklist comprised 70 items and responses were scored in a binary fashion. Yes/No indicative of presence of positively responded items were summed up to represent the size of the coping repertoire.

The procedure assessed the individuals coping patterns of resources in terms of the tendency for use in certain stressful situations (Rao, 1986). The tool was kept open ended allowing the individual to report additional coping behaviours.

The modified version of the coping checklist was used first by Verman N. (1989 in her unpublished doctoral thesis titled “Life stress, Social support and coping in individual with Psychological distress”. The tool was modified as there were certain items not relevant to the population.
These items were deleted and three commonly noted responses to stress were added. The final version of the tool contained 56 items.

The response categories were modified to include frequency of coping behaviours rated on a five point scale. The scale ranged from never to always. The response categories were as follows:

1. Never - If the method of coping was never used at all.
2. Seldom - If used 25% of the time.
3. Sometimes - If used 50% of the time.
4. Often - If used 5% of the time.
5. Always - If used 100% of the time.

The categories were summed to arrive at a total coping repertoire of the subject. The final version of the checklist is provided in Appendix.

**Perceived social support appraisal**

Social support is a relevant aspect in the life of the cancer patient. Hence it was felt necessary to assess the social support system as perceived by the respondents.

The social support Appraisal prepared by Alan Vaux with Philips, Holy, Thomson, Williams and Stewart in the year 1993 was taken for the assessment. This instrument's 23 items elicited the support perceived from three sources, namely family, friends and others. The items were based explicitly on Cobbs (1976) definition of social support and was designed to get the individuals belief that he/she is loved, esteemed and involved with family, friends and others. The items were found to be very simple and easily understandable to individuals of all backgrounds.

Few other scales which were analysed for assessing social support included those developed by Taidy (1985), Hinderson et al (1980) and Turner et al (1983). Taidy's measure of social support was primarily concerned with to the ratings of satisfaction with network support rather than subjective appraisals, Eventhough Hendersons' (1980) instrument aims to measure the availability and adequacy of attachment and social integration, it was discarded since the items were overlapping.
and also too technical to be understood by the Indians. Turner’s instrument (1983) seemed to be too general. It was simple to assess the level of individuals’ feeling of being loved, esteemed and involved. All these scales were not found appropriate for this study.

Scoring:

The 23 items of the tool are measured on a 4 point scale - Strongly agree, Agree, Disagree and Strongly Disagree. Those items with positive responses were scored as 4, 3, 2 and 1. A score of 1, 2, 3, 4 is assigned to the items eliciting negative responses. Higher the score better is the social support.

Statistical analysis and inferences

On completion of the data collection, the data collected were edited coded and tabulated. The statistical treatment of data was achieved through computer applications, using the SPSS (Statistical Package for Social Sciences). Data analysis comprised appropriate statistical techniques including percentage analysis ‘t’ test, ANOVA multiple regression and correlation.

In order to identify any pattern in the sample, percentage analysis were conducted. Cross tabulation was done with the data for male and female and for the three different types of predominantly occurring cancer in each category in Oral, Lung and Pharynx for males and Breast, Cervix and Oral for females.

Student’s t-test was employed for comparison of means of psychosocial variables between male and female.

Analysis of variance was conducted between male and female and different categories of cancer to find if there is any significant variation across these categories. ANOVA is a statistical measure used when the data is based on an interval scale. It measures the level of dispersion of the means compared and estimate the level of
cluster of the variable around the mean. Mathematically it is the average squared deviation from the mean. In this process, it takes into account all differences and assigns additional weight to extreme cases. Anova as a measure of dispersion plays an important role in locating the variable which accounts for or explains the variance within the group and between the groups. Correlation analysis was also conducted to find out how the dependent variables vary along with other independent variable.

Multiple Regression Analysis is a method used to study the relationship of a single quantitative dependent variable with several variables. The multiple regression analysis is used for testing a variety of hypothesis concerning the nature and strength of effects of the several explanatory variables on quantitative dependent variable. Regression analysis has been found to be very useful in the evaluation of effects of a variety of variables, which cannot be subjected to experimental controls but which are nevertheless of primary importance. Hence multiple regression analysis between psychosocial variable and demographic data was conducted.

**Chapterisation**

The report of the study is presented in five chapters. The first chapter deals with the introduction of the study and the second chapter gives an account of the available literature on the variables included in the study. In the third chapter the methodology adopted for investigating and analysing research problems is presented. The fourth chapter comprises the analysis and interpretation of the data collected. The final chapter contains the major findings of the study and suggestions for future research.

**Limitations of the study**

The study was limited to selected types of cancer like Oral, Lung and Pharynx among males and Breast, Cervix and Oral among females.
The specific respondents from each category were chosen at random using lottery method. The nature of cancer and health conditions made it impossible for some of the patients to respond. There were also some patients who were non-cooperative. These were replaced by further draws to fulfill the quota of sample in each category. This might have increased the probability of a cancer patient to be selected in the sample who was left out in the initial draw for random sampling.

The sample for the study was confined to patients undergoing treatment for cancer at the Regional Cancer Centre, Trivandrum. Hence careful decisions are to be made for generalisations of the findings of the study.