Chapter I

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Background of study

Cancer is a group of complex diseases with various manifestations depending on the body system affected and the type of tumour cells involved. Cancer can affect people of any age, gender, ethnicity or geographic region and can occur at any site or tissue of the body (Park K., 2015). The trauma of being diagnosed and treated for cancer greatly affects psychosocial functioning including home care management, health and welfare services, cost, job, relationship, recreation, sexuality and body image (Wright, Kiely, Lynch, Cull, & Selby, 2002).

Cancer is a main community health issue of the world. Globally, cancer is the one of the most common causes for morbidity and mortality. The results from GLOBOCAN (2012) show that worldwide there were an estimated 14.1 million types of newly diagnosed cancer and 8.2 million estimated deaths due to cancer and projected a rise by at least 70% by 2030. Among men, the five most common sites of cancer diagnosed in 2012 were the lung (16.7%), prostate (15%), colorectal (10%), stomach (8.5%), and liver (7.5%). The second and third causes of deaths occur from lung and liver. Among women, the five most common incident sites of cancer from the total were the breast (25.2%), colorectal (9.2%), lung (8.7%), cervix (7.9%), and stomach (4.8%). Combining both the genders, the five most common incident sites of cancer were the lung (13% of the total), breast (11.9%), colorectal (9.7%), prostate (7.9%), and stomach (6.8%); cancers of these five sites constitute half of the overall global cancer burden (Ferlay, et al., 2015). Death from these five types of cancers
between both the genders were 3,378,622 with five year prevalence was 11.236 million (Saranath & Khanna, 2014).

As per the ICMR report published in May 2016, the expected new cancer cases in India is around 14.5 lakh, and they also reported that the figure is likely to reach 17.3 lakh in 2020. About 7.36 lakh people are expected to have deaths due to this disease in 2016, the report also revealed that only 12.5% of patients come for treatment to hospital in early stage of the cancer. “Cancer of breast with estimated 1.5 lakh (over 10 percent of all types of cancer) new cases during 2016 is the number one cancer. Cancer of the lung is the next with estimated 1.14 lakh (83,000 in males and 31,000 in females) new cases during 2016 and 1.4 lakh cases in 2020” reported by ICMR (Nandakumar, 2016).

As per GLOBOCAN 2012 cancer report (IARC, 2014) estimates in India, the five most common cancers among both the genders were breast (14.3%), cervix (12.1%), mouth (7.6%), lung (6.9%), and colorectal (6.3%). Death due to these five cancers are 302,124. The five common cancers among men were lung (11.3%), mouth (11.3%), stomach (9.1%), colorectal (7.7%), and oro-pharynx (6.6%); deaths from these cancers were 180,670 with five year prevalence as 235,840. The five common cancers among women were breast (27%), cervix (22.9%), colorectal (5.1%), ovary (5%), and mouth (4.3%) with 345,191 cancers; deaths from these cancers were 193,664 with five year prevalence as 833,106 (Saranath & Khanna, 2014).

The cancer mortality is another key measure of the cancer burden; recent estimates suggest that in 2010, about 555,000 people died from cancer in India. Seventy-one percent of the deaths occurred in people aged between 30 and 69 years. Among men the three most
common cancers were oral (22.9%), stomach (12.6%), and lung cancers (11.4%); and cervical (17.1%), stomach (14.1%), and breast cancers (10.2%) were most common among in women (Dikshit, et al., 2012).

Another National Cancer Registry Programme (NCRP) ICMR reported on time trends in cancer incidence rates in India (2010 - 2020) stated that “Total cancer cases are likely to go up from 97,978 in 2010 to 1,148,757 in 2020. The tobacco-related cancers for males are estimated to go up from 190,244 in the year 2010 to 225,241 in the year 2020. Similarly, the female cases will go up from 75,289 in year 2010 to 93,563 in the year 2020” (Takiar, Nadayil, & Nandakumar, 2010).

In 2011, “The estimated new cancer cases were nearly 1,193,000 with increased number among females (603,500) than males (589,800). A study of six cancer registries in India revealed that the estimated 0.44 million deaths due to cancer during the year 2011 while 0.51 million and 0.60 million persons are likely to die from cancer in 2016 and 2021 and likely to increase to 0.70 million by year 2026. It is projected that a total number of new cases in males will increase from 0.59 million in 2012 to 0.93 million by the year 2026. In females new cases of cancer is projected to increase from 0.60 million to 0.94 million” (DSouza, Murthy, & Aras, 2013). During the period 2012, in Bangalore Kidwai hospital a total number of 17,617 new patients registered, of which 8,687 cases were confirmed to have cancer. The proportion of cancers in females was higher (55.1%) than in male (44.9%) of the total cancers (Gowda, Ramesh, & Vijay, 2014).

The cancer patients experience a variety of symptoms - such as pain, diarrhoea, and cough, shortness of breath, nausea, weakness, fatigue, fever, and confusion. Inadequate
management of symptoms might hinder the performance of the daily activities of an individual. The treatment of symptoms will help to relieve the suffering and improve the quality of life (Paleri, Kumar, & Thankam, 2005). Eighty percent of the cancer patients experience pain, making it the most frequent and distressing symptom and a foremost worry for the household caregivers. Education of the caregivers regarding pain and its management is significant in the care of tumour patients. Self-confidence of the family caregiver needs to be enhanced in the management of cancer pain to improve the Quality of Life (QOL) of the patients and their caregivers. The high level of emotional distress, the low level of physical and social functioning and the QOL are accounted for advanced symptom load among the adult cancer fighters (Vallerand, Collins-Bohler, Templin, & Hasenau, 2007).

Among the critically ill cancer patients moderate to severe symptoms were observed; loss of appetite (92.73%) being the most common and nausea (54.55%) the least common symptom reported. Pain was the most distressing symptom reported by 40% of patients and 64.55% of patients had disturbed sleep due to the presence of one or more symptoms (Gupta, Sahi, Bhargava, & Talwar, 2016). The struggle with symptoms and the decreased QOL continue for the cancer survivors and their caregivers throughout their survivorship. Age and income were associated with the QOL of the caregivers (Horng-Shiuann & K, 2015).

A secondary analysis study was carried out in the USA among 61 women with breast cancers to assess the barriers to symptom management and its effect on the QOL. Researchers identified three possible barriers to symptom management viz., “negative beliefs about managing symptoms, perceived negative attitudes of healthcare providers, and
difficulties in communicating about the symptoms”. Out of them the difficulty in communicating the symptoms to the health care providers was the most frequently reported barrier. The barriers to symptom management may be the cause of poor self-care of symptoms which in turn can result in lower levels of psychosocial quality of life. It was hypothesized that the levels of barriers were related to age, education and worse health of the individual (Yeom & Heidrich, 2009).

Smith (2010) had done a RCT to assess the outcome of patient communication on pain management. The study was carried out among 89 females with breast cancer with an intervention of in-person pain education/communication for 30 minutes and followed up for 12 weeks. The patients who were interactive about their symptoms reported fewer barriers and better pain relief. The result showed that pain education was effective in reducing the pain barriers in the intervention group (Smith, DuHamel, J, & Winkel, 2010).

Borneman (2010) conducted an interventional study among 187 cancer patients to reduce the barriers for pain and fatigue management. Four educational sessions were provided for the experimental group whereas the control group availed regular care. The outcome was measured at base line, first - month and third - month after intervention. The result showed that there was a significant increase in knowledge and reduction of pain and fatigue areas (Borneman, et al., 2010).

It is essential to recognize the severity of obstacles to effective cancer pain management in every nation and determine the priorities for eliminating them to increase the cancer symptom management for all in need (WHO 2002).
The symptoms have a major impact on QOL among the patients of breast cancers. Greater symptom load has been associated with the advanced levels of emotional suffering and worse levels of physical and societal functioning, and global quality of life (Heidrich, Egan, Hengudomsub, & Randolph, 2006). Thus, effective management of symptoms can improve the QOL in breast cancer patients (Heidrich, et al., 2009). Unfortunately, there have been limited investigations into designing interventions to help the patients with progressive malignancy so far.

A research was conducted in Hong Kong among 39 cancer patients with pain and the data were collected with the tool Barrier Questionnaire - Taiwan (BQT) by interview method. This study revealed that most of them had reluctance in reporting pain, use of painkillers and effectiveness of medicine for pain. The barriers recognised were addiction, tolerance, side effect, physician distraction, good patient, fear of injection and disease progression. It was recommended that health education might help to remove patients' misunderstandings about cancer pain and the health specialists should consider alternate methods to reduce pain (Chung, French, & Chan, 1999).

A study was conducted among 288 cancer patients with different types of cancers on treatment to assess the barriers to communication on fatigue. The information was composed by using fatigue controlling barriers tool. The study showed that the different types of cancer patients have different levels of barriers. The higher barriers were the fear of distracting the doctor (mean 3.44, SD 0.76), no medication interventions (mean 3.39, SD 0.64), and general medication concerns (mean 3.33, SD 0.62). The other concerns were religious attachment (F = 4.357, p = .005), kind of cancer (F = 3.81, p = .05), and place of treatment (t = .305, p =


which affected the reporting of fatigue. The result revealed that the concern for being a good patient and the lower level of education were associated with the patient-related barriers to communicating fatigue. Finally, the author suggested that the health care providers should plan to improve the condition of the patient with various cancer diagnoses (Shun, Lai, & Hsiao, 2009).

Chang et al., (2002), carried out a study on 37 cancer patients in Taiwan to analyse the patient related barriers to pain management and overcome it, in a home based setting. Barrier Questionnaire - Taiwan (BQT) tool was used to collect the data and it was found that the barrier mean score was high before the intervention. The barriers were dependence, disease advancement, and tolerance. The cancer pain education programme helped to improve the adherence to the analgesics regimen (from 22% to 72%) and led to decrease in fallacies and fears about using painkillers and reporting pain (Chang, Chang, Chiou, Tsou, & Lin, 2002). These barriers were found to be contributing to patients’ reluctance to report pain, as well as their use of recommended analgesics, which in turn contributed to poor pain control (Edrington, et al., 2009).

Majority of the cancer patients (90%) experience at least moderate pain during their illness and 42% of them suffer with poorly managed pain. The fear of unrelieved pain was so strong that 69% of the cancer patients reported that they would consider suicide if their pain reached unacceptable level. Oliver et al., (2001) did a study to individualise the patient training in terms of pain management among 67 cancer patients. However, it was found that there was no significant difference between the experimental and the control groups in terms of pain severity. Average pain severity enhanced significantly more among the intervention group than the control group (P = .014) and suggested that the patient centred intervention
may improve pain control by overcoming the three types of barriers viz., system related, personal, and professional (Oliver, Kravitz, Kaplan, & Meyers, 2001).

In the metastatic stage of the disease, which is usually incurable, it becomes important to provide palliation to improve the symptom management than to go in for life extending treatments such as aggressive chemotherapy and radiotherapy. However, the dilemma to choose the correct plan of action is always faced by the patients, their caregivers, and their physicians (Lin, Lai, & Lo, 2001); 37% of women with cancer had anxiety and 41% had depression from those who did and did not receive chemotherapy (Tiezzi, et al., 2016). Iceland cancer patients also experienced anxiety and depression, which affected their QOL (Saevarsdottir, Fridriksdottir, & Gunnarsdottir, 2010). Fatigue is experienced commonly by cancer patients especially those with the advanced disease (Stone, Richards, A'Hern, & Hardy, 2000). Cancer related fatigue could affect the QOL of the patients in various ways (Charalambous & Kouta, 2016).

A study was conducted among 40 Turkish cancer in-patients who were suffering with pain. The patients were randomly allotted to intervention and control group. The information was collected using the “McGill Pain Questionnaire, the Numeric Rating Scale, and the Barrier Questionnaire-Revised”. The patients in the intervention group received an educational brochure on pain and an instructive slide programme of brochure with the patients. The patients in the control group received routine clinical care. The data collected from both the groups after 2, 4, and 8 weeks showed that the intervention group had improvement in the pain severity and low barriers to symptom management when compared to the control group ($p < .05$). The findings suggest that the incorporation of patient
education programme during the process of routine care of cancer patients with pain may improve the quality of symptoms management (Yildirim, Cicek, & Uyar, 2009).

Most of the time around 50% and all the time around 25% of the cancer patients had pain. However, good pain relief experienced by only 10.9% of cancer patients. Pain interfered with their routine activities also. Hence, there is a need for better approach to improve cancer pain management (Liang, et al., 2015). A challenging approach towards symptom management in clinical oncology is required and there is a need for individually designed interventions to improve the symptom burden among breast cancer patients (Sarenmalm, Browall, & Gaston-Johansson, 2014). Review article findings emphasized the importance of patient/family education on communication, personalized care, use of more non-pharmacological strategies, self-management of pain and rearranging multidisciplinary roles on patient-centred care and outcomes (Luckett, et al., 2013). A booklet on pain education programme was found to be effective in overcoming patient-related barriers to cancer pain management in Taiwan (Chang, Chang, Chiou, Tsou, & Lin, 2002). Interventions can be supportive in enlightening the QOL of cancer patients suffering from different types of cancer and at various stages of illness and treatment, ranging from diagnosis to the palliative treatment stage (Dagnelie, et al., 2007).

A study was carried out in Michigan to evaluate the knowledge and the obstacles to symptoms controlling among 46 caregivers of cancer patients. The study found barriers on the concern of opioid related side effects (93.6%), disease evolution (80.5%) and fear of dependence (78.2%). The total barriers score was higher among unemployed caregivers ($r = -.300, p = .043$) and showed significant inverse association between the caregivers’
knowledge on symptom management and the overall barriers score ($r = -.356, p = .015$).

Home care of cancer patient is very demanding especially in the area of symptoms management. Knowledge and apprehensions of caregivers regarding management of symptoms can be improved by education (Vallerand, Collins-Bohler, Templin, & Hasenau, 2007).

Caring for patients with advanced disease involves many concerns for the caregivers. Family caregivers more often experience psychophysical and social distress. In an advanced disease, caregivers play a dynamic role in providing aid with the events of daily living, medicines, eating, transport and sensitive support, and communicating with specialists about the patient’s illness. All aspects of health of the caregiver get affected in the process of caring for the cancer patients. Caregivers often experience worry, sadness, and physical symptoms, restriction of roles and activities and stress in matrimonial relations (Given, 2005). Both the patient and caregiver outcomes are significantly improved when the caregiver’s needs are assessed and education or counselling is provided. Most of the terminally ill cancer patients were cared at home by their family members, without formal home care services (Emanuel, Fairclough, & Slutsman, 2000).

Unrelieved pain was the major concern among the cancer patients. Research has revealed that the un-alleviated pain has adverse impact on patients’ and family caregivers’ temper, functional status, and QOL. However, the patients with cancer are hesitant to report pain and take opioid (American Pain Society, 2003) due to many factors/beliefs such as they can tolerate the pain and manage without medications. This leads to inadequate communication of pain to clinicians, taking fewer medications than recommended, or
becoming gratuitously inactive. Hence, patients’ disinclination to report pain or to use pain medicines is a major barrier to actual symptom management (Fahey, et al., 2008).

Meta-analysis was done from 29 RCTs published from 1983 to 2009 in Michigan on interventions with family caregivers of cancer patients. The purpose of the study was to analyse the types of interventions offered and define the effect of those interventions on various caregiver outcomes. The caregivers were trained in psychoeducational, therapeutic counselling, and skills training. These interventions showed positive outcomes in reducing the caregiving burden, the usage of effective coping strategies and higher self-efficacy, and improved QOL (Northouse, Katapodi, Song, Lingling, & Mood, 2010).

Lin (2000) did a study in Taiwan on barriers to pain management of cancer with a goal to relate the attitudes of the patients and the caregivers in pain management and to define the barriers that were related to patient hesitancy to take analgesics or family caregivers’ hesitancy to administer analgesics. The findings of the study showed that the patients scored significantly higher barrier than the family caregivers did. The patients and family caregivers’ barrier subscale score and the total score were significantly correlated and the patient hesitancy to take analgesics was significantly related to their family caregiver’s hesitancy to administer analgesics ($\chi^2_{(1)} = 7.74$, $p < .01$). The patients whose pain was adequately managed with medication reported significantly lower barrier score than those who were not receiving adequate medication ($\chi^2_{(157)} = 2.10$, $p < .01$).

It is essential to identify the severity of the barriers to effective symptom management among the cancer patients in every country and determine the priorities for eliminating them in order to improve symptom management in cancer for all in need and
improve their QOL in the later stage. Regarding barriers to symptom management, the studies done in India could not be found. The researcher as a community health nurse was accompanying the home care delivery team of Kasturba Hospital, Manipal for home visits. During the home visits, the researcher observed the disturbed life of the patients and their caregivers due to cancer. Keeping this in mind, the researcher decided to do a study in Karnataka state to improve the QOL of advanced cancer patients and their caregivers by providing continuous individualized home-based care. The goal of this research initiative was to develop and test the interventions to overcome barriers to symptom management and thereby decrease the suffering and improve the health and QOL of persons living with cancer.

**Statement of the problem**

Effect of perceived barriers to symptom management on Quality of Life (QOL) and the effectiveness of a multicomponent intervention among the cancer patients in selected cancer hospitals of Karnataka State.

**Purpose**

The purpose of the study is to identify the self-reported symptoms, perceived barriers to symptom management, and QOL of patients suffering from different types of cancers and to assess the perceived barriers to symptom management and the QOL of caregivers of those patients. These findings further help to adopt strategies to improve the QOL of the cancer patients and to control and manage the symptoms related to cancer by overcoming the barriers in the family environment and in the community. In future, these strategies, if it is found useful, may be adopted in all the cancer centres and empower the patients and their caregivers to improve their QOL.
Objectives of the study

The study was done in two phases. The objective of each phase is given separately.

Objectives of the phase I were to:

1. Assess the self-reported symptoms among the cancer patients by using self-reported symptoms assessment tool.

2. Identify the perceived barriers to symptom management among cancer patients by using perceived barriers to symptom management tool.

3. Assess the QOL among the cancer patients by using QOL questionnaire.

4. Identify the perceived barriers to symptom management among the caregivers by using perceived barriers to symptom management tool.

5. Assess the QOL among the caregivers by using QOL questionnaire.

6. Find the relationship between
   a) different domains of QOL of cancer patients.
   b) perceived barriers to symptom management and QOL of caregivers.
   c) perceived barrier to symptom management between patients and caregivers.

7. Find the association between
   a) perceived barriers to symptom management and QOL of cancer patients.
   b) perceived barriers to symptom management of cancer patients’ with their demographic and disease related variables.
   c) perceived barriers to symptom management of caregivers’ with their demographic variables and their patients disease related variables.
   d) QOL of cancer patients’ with their demographic and disease related variables.
e) QOL of caregivers’ with their demographic variables and their patients disease related variables.

Objective of the phase II:

8. To evaluate the effectiveness of multicomponent intervention in terms of
   a) difference between the mean pre and post-test score of self-reported symptoms of cancer patients.
   b) difference between the mean pre and post-test score of QOL of cancer patients.

Assumptions

The study assumes that the cancer patients will
- have some knowledge about their disease (cancer)
- experience certain symptoms during illness
- feel free to express the barriers to symptom management experienced during illness

Hypotheses

All the hypotheses were tested at 0.05 level of significance.

H$_1$: There will be significant relationship between the
   H$_{1,1}$: domains of QOL of cancer patients
   H$_{1,2}$: perceived barriers to symptom management and QOL of caregivers
   H$_{1,3}$: perceived barriers to symptom management among patients and caregivers.

H$_2$: There will be significant association between
   H$_{2,1}$: perceived barriers to symptom management and QOL of cancer patients.
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H$_{2.2}$: perceived barriers to symptom management of cancer patients’ with their demographic and disease related variables

H$_{2.3}$: QOL of cancer patients’ with their demographic and disease related variables

H$_{2.4}$: perceived barriers to symptom management of caregivers’ with their demographic variables and their patients’ disease related variables.

H$_{2.5}$: QOL of caregivers’ with their demographic variables and their patients’ disease related variables.

H$_3$: There will be significant difference between the mean pre and post-test score of

H$_{3.1}$: self-reported symptoms of cancer patients.

H$_{3.2}$: QOL of cancer patients

Operational definition

Cancer patients: In this study, the cancer patients refers to people who are diagnosed as having cancers of breast/cervix/head and neck/lung or GIT region.

Effectiveness: Effectiveness is defined as the reduction in symptoms of suffering and improvement in QOL of cancer patients after introduction of multicomponent intervention as measured by symptom assessment scale and quality of life questionnaire.

Caregivers: Caregivers are those who are closely related to cancer patients (spouse, parents, children or siblings) and mostly involved in patient care at least 2-3 hours per day.

Barriers: The barriers refers to threats or difficulties perceived by the cancer patient or their caregivers to manage the symptoms of cancer which may distress the quality of life of patient or caregivers. This was collected by structured interview with cancer patients and caregivers by using perceived barriers to symptom management tool.
Quality of life: In this study the quality of life of cancer patients is assessed by the structured validated questionnaire - Indian scenario (CI-QOL-Q- version II) designed and validated by Vidhubala E, et al., (2011) with a reliability of Cronbach alpha of .90 and split-half reliability of .80. The maximum score is 176 and the minimum score is 41.

QOL of caregivers is assessed by using QOLLTI-F (Quality of Life in Life-Threatening Illness - Family Carer Version) which was developed by Dr Robin Cohen (2006) of the Division of Palliative Care, Department of Oncology and Medicine, McGill University. The test-retest reliability for the QOLLTI-F tool was .78 for the seven domain scores. The maximum score is 160 and minimum score is ‘zero’ (Cohen, et al., 2006).

Symptoms: In this study, the symptoms refers to a departure from normal function or subjective experience which is noticed by the patients suffering from the cancer of breast/cervix/head and neck/lung or GIT region as measured by self-reported symptom assessment tool.

Multicomponent intervention: In the present study, the multicomponent intervention includes: Education provided to the cancer patients with the help of a booklet on symptom management, pranayama (Anuloma viloma, Chandrabhedhana and Brahmani) and relaxation technique. The details of multicomponent intervention package are given in Appendix 8.

Duration of illness: In this study, the duration of illness refers to period from the time of diagnosis until the first day of data collection.
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**Stage of Cancer**: Stage of cancer refers to malignant disease from stage III or IV as documented in the patient records.

**Conceptual framework**

The conceptual framework for the study was developed based on Nola J Pender’s Health Promotion Model as shown in Figure 1.
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**Individual Characteristics**

*Prior related behavior:*
- Severity of Symptoms
- Perceived barriers
- Quality of Life (QOL)
- Functional ability*

**Personal Factors:*
- Age
- Gender
- Education
- Income of the family/month
- Marital Status
- Type of Cancer
- Stage of Cancer
- Relationship with care giver
- Awareness on cancer
- Mode of treatment
- Duration of illness/treatment

**Behaviour Specific Cognition & affects**

*Perceived benefits of action:*
- Anticipated reduction in Symptoms/ sufferings
- Anticipated improvement on QOL

*Perceived barriers in action:*
- Personal, Professional, Financial and Communication (symptoms like pain, fatigue etc.)
- Lack of knowledge on managing symptoms

*Perceived self-efficacy:*
- Willingness and motivation to perform pranayama and relaxation to reduce symptoms of suffering and improved QOL

*Activity related affect:*
- Reduction of pain, fatigue, relaxation of full body
- Improved QOL

*Interpersonal influences:*
- Caregivers
- Health care providers
- Mass Media

*Situation influences:*
- Multicomponent intervention:
  - Pranayama
  - Relaxation
  - Education

**Behaviour Outcome**

*Intermediate Competing Demands and Preferences:*
- Performing regularly pranayama and relaxation

*Commitment to a plan of action:*
- Compliance to the intervention
- Improved QOL
- Reduced symptoms

**Health Promotion Behaviour:**
- Improved QOL
- Enhanced functional ability*
- Reduction in severity of symptoms

*Not included in the study*

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*Figure 1: Conceptual Framework adopted for self-reported symptoms, barriers to symptom management and quality of life of cancer patients based on Nola J Pender (1996), Health Promotion Model.*
The health promotion model (HPM) proposed by Nola J Pender (1982; revised, 1996) was designed to be a complementary counterpart to models of health protection. It defines health as a positive dynamic state not merely the absence of disease. Health promotion is directed at increasing a client’s level of wellbeing. The health promotion model describes the multi-dimensional nature of persons as they interact within their environment to pursue health (Basheer & Khan, 2012).

The model focuses on the following three areas:

- Individual characteristics and experiences
- Behaviour-specific cognitions and impact
- Behavioural outcomes

The health promotion model (HPM) notes that each person has unique personal characteristics and experiences that affect the subsequent actions. The set of variables for behaviour specific knowledge and impact have important motivational significance. These variables can be modified through nursing actions. Health promoting behaviour is the desired behaviour outcome and the end in the HPM. Health promoting behaviour should result in improved health, enhanced functional ability, and better QOL at all stages of development. The final behavioural demand is also influenced by the immediate competing demand and preferences, which can derail intended health promoting actions.

**Individual characteristics**

**Prior related behaviour:** It includes the similar behaviour in the past. In this study, they are severity of symptoms, poor quality of life, and perceived barriers.
**Personal factors:** This includes biological, psychological, and socio-cultural variables. These factors are predictive of a given behaviour and shaped by the nature of the target behaviour being considered. In this study, the personal factors include age, gender, education, family income, marital status, type of cancer, stage of cancer, and relationship with caregivers, duration of illness and treatment, and mode of treatment.

**Behaviour specific cognition and impacts**

The components of this include perceived benefits, perceived barriers, perceived self-efficacy, activity related affect, interpersonal influences, and situational influences.

Perceived benefit is the anticipated outcome that occurs for health behaviour. In this study, it includes the reduction of self-reported symptoms and improvement in QOL.

The perceived barriers to action are the anticipated, imagined or real blocks, and personal costs of understanding a given behaviour. In this study, it includes lack of knowledge on symptom management and barriers to symptom management.

Perceived self-efficacy is the judgement of personal capability to organize and evaluate a health promoting behaviour. The perceived self-efficacy influences the perceived barriers to action. Therefore, the higher efficacy results in the lowered perceptions of barriers to the performance of the behaviour. In this study, the perceived self-efficacy is the willingness and motivation to perform *pranayama* and relaxation to reduce the symptoms of suffering and improvement in QOL.

Activity related affect is the subjective, positive or negative feelings that occurs before, during & following a behaviour based on the stimulus properties of the behaviour.
itself. Activity related affect influences perceived self-efficacy, which means the more positive the subjective feelings, the greater the feeling of efficacy. In turn, increased feeling of efficacy can generate further positive impact. In this study, it includes the feelings that occur before, during and after the practice of pranayama and relaxation technique by the cancer patients.

Interpersonal influences are the cognition concerning behaviour, beliefs or attitudes of the others. Interpersonal influences include norms, social support and modelling. Primary sources of interpersonal influences are families, peers and health care providers. In this study, they include expectation of family caregivers about health of the cancer patients and promotion of pranayama by the health care providers.

Situational influences are personal perceptions and cognition of any given situation or context that can facilitate or impede behaviour. This includes the perception of options available, demand characteristics and aesthetic features of environment in which the given health promotion is proposed to take place. The situational influences may have direct or indirect influences on health behaviour. In this study, the situational influences under multicomponent intervention are pranayama, relaxation, and teaching provided to cancer patients.

**Behaviour outcome**

These include commitment to a plan of action, immediate competing demand, and preferences and health promoting behaviour to reduce the self-reported symptoms and improve the QOL.
Assurance to plan of action is the concept of purpose and identification of a planned strategy leading to the implementation of health behaviour. In this study, it includes performing regular pranayama and relaxation by the cancer patients, by then it reduces the symptoms burden and improves the QOL.

Competing demands are those alternative behaviours over which individuals have low control because there are environmental contingencies such as work or family care responsibilities. Competing preferences are the alternative behaviours over which the individuals exert relatively high control. In this study, the high control is performing regular pranayama and relaxation by the cancer patients.

Health encouraging behaviour is the termination point or action product focused to attaining positive health outcome such as optimum wellbeing, individual fulfilment, and useful living. In this study, the promoting behaviour is measured in terms of the reduced symptoms and improved QOL.

**Delimitation**

The study is delimited to:

- selected cancer hospitals all over Karnataka State
- patients aged above 30 years, diagnosed to be in third or fourth stage of breast/cervix/head and neck/lung or GIT region cancers
- caregivers’ are those who are closely related to cancer patients and mostly involved in patient care at least 2-3 hours per day
Summary

This chapter dealt with need for the study, statement of the problem, purpose and objectives, assumption, hypotheses and definition of terms, and conceptual framework of the study.

Outline of the study

The report of the study is presented in following chapters:

Chapter II: Review of literature: Presents an overview of the related research and non-research literature.

Chapter III: Methodology: Deals with the methodology adopted for the study, data collection process, and plan for data analysis.

Chapter IV: Analysis and Interpretation: This chapter presents data analysis and interpretation.

Chapter V: Major findings, discussion, conclusion, implications, limitations and recommendations: Presents major findings, discussion, conclusion, and implications to nursing, limitations and recommendations for further studies.