Use of Complementary Therapies by Patients with Cancer in Bangladesh

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ABSTRACT

Cancer prevails and is still increasing as a major killer disease around the world. Because of the side-effects of conventional treatment and the experience of its symptoms, cancer patients want to take all available treatment modalities, including complementary therapies. Most of the related studies have been conducted in developed countries. Complementary therapies (CT) are beings used as palliative or supportive care with the well documented effects of controlling cancer pain, relaxing mind-body, reducing side-effects of conventional treatments, and improving the quality of life. A few are known about the uses and the reasons for their use of CT in Bangladesh. This study aims to describe the types, reasons and outcomes of the uses of complementary therapies. A cross-sectional descriptive survey was conducted with 165 patients with lung, breast, and cervical cancer at the National Institute of Cancer Research and Hospital, Bangladesh. Data were collected using structured and open-ended questionnaires, and analyzed using descriptive statistics and content analysis.

The findings of the study indicated that adult patients with an average age of 45 years participated in this study. All subjects used at least one type of CT (77%). Among the major types, the use alternative medical methods (70.9%) leads, followed

by mind-body intervention (34.5%). Regarding the subtypes of CT, many used homeopathy (62.4%) and others used prayer (75.4%). The main reasons subjects stated for using CT included being in pain (52.1%), belief in gaining relief from symptoms (63.0%), receiving family support (57.0%), and receiving little benefit from using CT (66.7%). Furthermore, the findings indicated that there was lack of health personnel support for the use of CT. In addition, the subjects in the study reported that they satisfied to include CT with conventional treatment. Therefore, results from this study recommended to include the assessment of the use of CT among the cancer patients. Moreover, it is also recommended to add CT using contents in developing health education program for cancer patients and add in developing for oncology nurses training program.

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CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

Cancer is a disease resulting from the uncontrolled growth of cells, leading to malignant cellular tumors. Cancer is the most chronic life threatening disease (American Cancer Society [ACS], 2008). Indeed, its prevalence is still increasing as a major killer disease around the world. In 2008, there were an estimated 12 million new cancer cases and 7.6 million cancer deaths throughout the world. About 20,000 cancer deaths occur per day (ACS, 2008). In the United States of America (USA) 2.4 million and in Asia 7.6 million cancer cases were alive in 2002. In 2002, the new cancer cases in different regions were as follows; North America 15%, South-America 7%, Africa 6%, Europe 26% and Asia 45% (Kamangar, Dores, & Anderson, 2006). The International Union Against Cancer (IUAC) predicted that worldwide new cancer cases will increase 50% to 100%, from 10 million in 2000 to 20 million in 2020 (Jones, Chilton, Hajek, Immarino, & Laufman, 2006).

In Bangladesh, the estimated cancer caseload was around 800,000 in a country of nearly 160 million people. Approximately 200,000 new cases are being added every year. Around 150,000 cancer patients die annually. The prevalence of cancer was 7.10, the incidence rate being 1.8, and the mortality rate being 1.3 per 1,000 persons, as compared to an overall crude death rate of 4.8 per 1,000 persons (Shamim, 2006). In Bangladesh the most common cancer cases were; lung cancer 16.5%, breast cancer 12.0%, and cervical cancer 9.0 % (National Institute of Cancer Research & Hospital [NICRH], 2008).

The public perception of cancer generally means the individual senses an alteration of the future, feelings of uncertainty, or simply the suggestion of "death" (Samur, Bozuck, Kara, & Savas, 2001). Cancer imposes a variety of physical, emotional, and financial impacts to patients, families, and loved ones; it also has an impact on the patient's quality of life. Cancer patients suffer from illness, instability in life, pain, unhappiness and economic loss (Kim, 2007). Philip and Miner (2004) found that cancer patients developed psychological stress, depression and anxiety due to their isolation from family and friends. The reason for this was body surface ulceration, development of mass/tumor outer surface of the body, loss of body weight, and both fecal and urinary incontinence. In terminally ill cancer patients, 45% of cancer patients desired to die due to depression, pain, and low family support (Lam, 2004). Overall, after diagnosis of cancer, patients felt shock, disbelief, fear, anxiety, guilt, sadness, grief, depression and anger (Kim).

Conventional cancer treatments consist of surgery, radiotherapy, and chemotherapy (Bosanquet & Sikora, 2006). The conventional treatments are given consecutively or concurrently. Conventional treatment has some side-effects and cannot cure the cancer as a whole. Multimodal therapy intensifies the side-effects of cancer treatments (Bosanquet & Sikora). Because of the side-effects of conventional treatments many patients seek to integrate such efforts, therefore they try to find other modalities of treatment (Yang, Chein, & Tai, 2008). Cancer patients want complementary therapies in addition to conventional treatment (Verhoef, Balneaves, Boon, & Vroegindewey, 2005).

Complementary Therapies (CT) are the selected therapeutic methods, products, or treatment by a practitioner or by the patient themselves. These are

practiced in conjunction with conventional mainstream medicine, as a health service for patients or by themselves respectively. Complementary therapies include a wide range of therapies. According to the National Centre for Complementary and Alternative Medicine [NCCAM] complementary therapies are categorized into five types. These are: (a) alternative medical methods such as traditional Chinese medicine or Ayurveda; (b) mind-body intervention such as meditation and prayer; (c) biologically based therapies such as herbs and vitamins; (d) manipulation and body based methods such as massage; and (e) energy therapies such as qigong or reiki (Molassiotis et al., 2005).

Complementary therapies are being used increasingly throughout the world (Fisher & Ward, 2000). The prevalence of CT use was estimated to be 25% in the British, 50% in German, 42% in French, and 69% in Australian populations (Richardson, Sanders, Palmer, Greisinger, & Singletary, 2000). According to Ernst, Schmidt, and Baum (2006), 48% to 66% of breast cancer patients were using complementary therapy; usually in parallel with their modern treatments. Another study found that there was a high prevalence (93.2%) of complementary therapies used by patients with cancer in eastern Turkey (Gozum, Tezel, & Koc, 2003). Limited data on definite figures of CT use among cancer patients are available in Bangladesh. However, Zahid and Hossain (2009) revealed that, in general, people (87.5%) like to use CT for their health problems.

According to Andersen's behavioral model, some factors influence the use of health services. Three determinants, predisposing characteristics, enabling resources and needs, were proposed (Andersen, 1995). Predisposing characteristics include demography, social structures, and health beliefs. For demographic characteristics age,

sex, and marital status were included. For societal structure education, religion, and income per month were included. Health beliefs refer to people's attitudes, values and knowledge about health services, which influence their subsequent perception of the need to use health services (Andersen). Cancer patients believe that the CT is a holistic approach (Wasner, Klier, & Borasio, 2001). The CT has less side effects, is beneficial, non-toxic, improves the quality of life, relieves symptoms, has anticancer effects, eliminates toxins, improves the body's healing mechanism, and improves immune systems (Eustachi, 2007; Rakovitch et al., 2005; Spadacio & Barros, 2008).

The enabling resources include personal, family, and community resources. For the enabling resources income level, family support, and birth place, were included (Fouladbakhsh, Stommel, Given, & Given, 2005). In Turkey and Iran studies found that people with high incomes and living in urban areas used more CT (Montazeri, Sajadian, Ebrahimi, Haghighat, & Harirchi, 2007; Tas et al., 2005). Cancer patients used CT as part of family and friend support, (Verhoef, Hilsden, & O' Beirne, 1999).

The needs included perceived and evaluated needs. For perceived needs, cancer patients' perceptions regarding the symptoms and measures taken to prevent the symptoms were included. Evaluated needs included professional expert measurements such as diagnosing the cancer site, the duration after cancer diagnosis, the cancer stages, and the conventional treatment received (Andersen, 1995; Fouladbakhsh & Stommel, 2007). The researchers found that patients at cancer stage IV use 72% and at cancer stage I used 31.2% of CT (Micke et al., 2009; Paltiel et al., 2001). Regarding cancer sites, patients with breast cancer (26%) and gastrointestinal cancer (27%) used more CT than those with head and neck cancer (10%) (Montazeri

et al., 2007). Regarding the treatment therapy, Mathews, Sellergren, Hou, List, and Fleming (2007) revealed in a European journal that radiotherapy treatment influenced to the use of CT.

Regarding the use of complementary therapies, nursing professional should rethink about staff competency, patient assessment, and patient-focused care. Communication between patients and health care professionals should initiate dialogue on complementary therapies for the better understanding of patient's choices concerning treatment options. Therefore this present study should be helpful to healthcare providers as they could get clearer ideas about the reasons and the uses of CT among cancer patients.

Complementary therapies are increasingly used around the world (Fouladbakhsh et al., 2005). The researcher's personal experience in clinical practice with lung cancer patients shows that patients used CT with conventional treatment. The cancer patients were not completely satisfied with the conventional treatments. Cancer patients added CT in order to reduce cancer symptoms and the side-effects of conventional treatment and to gain mental well-being. Currently, there is no known study about the use of complementary therapies among cancer patients in Bangladesh. Therefore, this study was proposed to survey the current uses of CT among cancer patients in Bangladesh. It could offer base line information for further study in this area.

Objectives of the Study

1. To identify the use of complementary therapies including the types, methods, frequency of use, and duration of use by cancer patients in Bangladesh.

2. To determine the reasons and outcome of using complementary therapies by cancer patients in Bangladesh.

Research Questions of the Study

1. What are the types, methods, frequency of use, and duration of complementary therapies used by cancer patients in Bangladesh?

2. What are the reasons and outcomes of the use of complementary therapies by cancer patients in Bangladesh?

Conceptual Framework of the Study

The Andersen's Behavioral Model was used to guide the selection of study variables (Andersen, 1995). This model was selected because of the following reasons: (1) it had ability to identify factors related to the use of health services; (2) it could be applied to the use of CT by diverse cancer patients; and (3) it had ability to be modified for use with CT and the health services that cancer patients choose. According to Andersen's Behavioral Model, health services had the following three broad classes of determinants: (1) predisposing factors; (2) enabling resources; and, (3) patients' needs.

Predisposing factors are an individual's natural tendency to use health services. The predisposing factors refer to demographics, societal structure and health beliefs. The demographic characteristics were the individual's characteristics that

represent biological imperatives, which influence an individual's propensity to use health services. The societal structure indicators were education, religion, occupation, and income per month related life style, which influenced the use of health services. The uses of complementary therapies were dependent on the patient's health belief. Health beliefs refer to the patient's knowledge, attitudes, and values regarding their health, health services and enabling resources that influenced their subsequent perception of the need to use health services.

Enabling resources involve both personal and community resources which influence patients to use health services as well as complementary therapies (Andersen, 1995). In this present study, enabling resources included personal, family, and community resources. These were made up of income level, geographical location, and relationships established with the healthcare providers. These influence the cancer patient's perception about their need to use complementary therapies.

Needs refers to the perceived need and evaluated need. Perceived need is the care seeking and adherence to medical regimen, which might be described as an individual's perceptions of their health status or state of illness (Andersen, 1995). Perceived need is the individual's perception regarding the presence of illness, response to illness and measures taken to prevent illness (Fouladbakhsh & Stommel, 2007). In this present study, the cancer patient's perceived needs were the symptoms experienced by the cancer patients, and the outcome received from CT use, which influenced them to use complementary therapies. On the other hand, evaluated need represented the professional judgment about people's health status and their need for medical care. The evaluated need was focused on the health status of an individual such as actual diagnostic reports, the severity of symptoms, their measurement and the

treatment received (Fouladbakhsh & Stommel). Thus the perceived need focused on the individual's perceptions in response to illness. Both the perceived and evaluated needs influenced cancer patients to use CT.

The use of CT refers to the selected therapeutic methods, products, treatments or any treatment modalities used in conjunction with conventional mainstream therapies by the cancer patients. This is done with the intent to cure cancer, to reduce the cancer symptoms, to minimize the side-effects of conventional treatments, and to provide emotional and psychological reassurances (Ernst, Schmidt, & Baum, 2006). The complementary therapies include: (a) alternative medical methods; (b) mind–body intervention; (c) biologically based therapy; (d) manipulation and body based methods; and, (e) energy therapy (Molassiotis et al., 2005).

In this study, the health services focused on types of complementary therapies used by the cancer patients. The reasons for using complementary therapies by the cancer patients consisted of predisposing characteristics (health beliefs), enabling resources (personal/family, and community) and needs (perceived and evaluated needs).

Definition of Terms

Use of complementary therapies

The use of complementary therapies refers to the types, frequency, methods, and duration of CT being used in conjunction with conventional treatment by cancer patients. The use of complementary therapies was measured by the self-report questionnaire developed by the researcher.

Reasons for using complementary therapies

The reason for the use of complementary therapies refers to the opinions of cancer patients regarding their use of complementary therapies. This included their beliefs about CT, their enabling resources, their perceived and evaluated needs, and the outcome of CT use. The reasons for the use of complementary therapies were determined by the self-report structured and open-ended questionnaires developed by the researcher.

Outcomes of the use of complementary therapies

The outcomes of complementary therapies use refers to the opinions of cancer patients who received benefits from using CT.

Scope of the Study

This descriptive research investigated the types, frequency, method, duration, reasons, and outcomes of complementary therapies used by cancer patients in Bangladesh. The subjects were suffering with lung, breast, and cervical cancer; and were recruited from the out-patients departments of the National Institute of Cancer Research and Hospital, from November, 2009 to February, 2010.

Significance of the Study

The findings of the study could contribute to nursing practice, nursing education, and the development of further research on the Bangladesh nursing profession as follows:

1. In terms of nursing practice, the findings should help in caring for cancer patients. This includes the assessment of the use of CT and the development of a guide for health education programs for cancer patients.

2. In terms of nursing education, the findings could provide information to guide the development of training course related to the complementary therapy use by cancer patients.

3. In relation to nursing research, the study findings could be used as baseline information for the use of complementary therapy and its types, methods, frequency of use, and duration of use by cancer patients. It should also show the reasons for and the outcome of its use

CHAPTER 2

LITERATURE REVIEW

This chapter reviews the literature and related information relevant to the study as follows:

1. Overview of Cancer
    - 1.1 Definition of cancer
    - 1.2 Incidence of cancer
    - 1.3 Causes of cancer
    - 1.4 Impact of cancer
    - 1.5 Cancer treatment
2. Complementary Therapies
    - 2.1 Definitions
    - 2.2 Extent of use of complementary therapies
    - 2.3 Types of complementary therapies
3. Role of Complementary Therapies in Cancer Patients
4. Andersen's Behavioral Model in the Uses of Complementary Therapies
5. Reasons for use Complementary Therapies by Cancer Patients
6. Healthcare System in Bangladesh
7. Complementary Therapies use in Bangladesh

Summary

Overview of Cancer

Definition of cancer

Cancer is a continuous, unwanted, uncontrolled and destructive growth of abnormal cells that have developed from the body's own previously normal cells. Cancer begins when something has changed in one or more of the cells in the body, causing them to continue to divide and form new cells that are unwanted. The term cancer is derived from the Latin word, Crab, and at one time cancer was likened to a 'crab' with claws that grows into the surrounding tissues causing damage (Stephens, 2002).

Cancer means a malignant tumor. Cancer comprises a broad group of malignant neoplasms. Cancer is invasive and tends to metastasize to new sites. It spreads directly into surrounding tissues and may be disseminated through the lymphatic and circulatory systems (Thomas, 2001).

Cancer is thus an abnormal and uncontrolled growth of cells, which proliferate continuously and do not maintain any normal cellular rule. It is invasive and tends to metastasize to other areas of the body. The cancer cells spread through the lymphatic and circulatory systems of the body. As a result, the number of cells increases leading to the destruction of the physiological processes of the body. These metastases cause cancer malignancies in the body as well as an unusual death (Perry & Burgess, 2002).

The stages of cancer are used to analyze and compare groups of cancer patients. The main purpose is to establish international agreement on the classification of cancer cases and to share clinical experience with others without any ambiguity. There are many bases for the classification of cancer: the anatomic site; the extent of

the disease; the duration; the signs and symptoms; the age, sex and histological type and grade. The American Joint Committee on Cancer (AJCC), the American Cancer Society (ACS) and the WHO international classification of Disease for Oncology (ICD-O) have jointly agreed on the stages of cancer based on feature of the three components: the Tumor, Node, and Metastasis (TNM) (Cotran, Kumar & Robins, 1994). The TNM system is the expression of the anatomic extent of disease: T-the extent of primary tumor; N-the absence or presence and extent of regional lymphnode metastasis; and M - the absence or presence of distant metastasis.

The use of the numerical subsets of the TNM components indicates the progressive extent of the malignant disease. The following code is used: T0, T1, T2, T3, T4, N0, N1, N2, N3, M0, and M1. TX means the Primary Tumor, This cannot be assessed. T0 means there is no evidence of primary tumor, the carcinoma in situ, and T1, T2, T3, T4 indicates the increasing and/local extent of the primary tumor. NX means the regional lymph nodes cannot be assessed. N0 means no regional lymph nodes metastasis and N1, N2, N3 indicates increasing involvement of the regional lymphnode. The distant metastasis is M and MX means the distant metastasis cannot be assessed. M0 means no distant metastasis and M1means distant metastasis. The staging based on the TNM is used internationally. It helps to avoid ambiguity in the classification of the cancer stages. It gives a standard measure throughout the world (Fleming et al., 1998).

Incidence of cancer

In Bangladesh, it was estimated there were around 800,000 cancer patients in the country out of the 158 million people and about 200,000 new cases were diagnosed every year. Around 150,000 cancer patients die annually. The prevalence

rate was 7.10, the incidence rate was1.8, and the mortality rate was 1.3 per 1,000 persons as compared to an overall crude death rate of 4.8 per 1,000 persons (Shamim, 2006).

Different types of cancer have been present in Bangladesh. In 2008 the cancer registry in NICRH revealed that the incidence rates for different cases were; 16.5% Lung cancer, 12.0% breast cancer, 9.0 % cervix cancer, 6.1% lymphnode and lymphatic cancer, 4.7% esophagus cancer, 3.6% stomach cancer, 2.7% larynx cancer, 2.4% liver cancer, 2.0% tongue cancer and 3.1% unknown. Therefore, this data indicates that the three most common cancers were lung cancer, breast cancer, and cervical cancer in Bangladesh (NICRH, 2008).

In Bangladesh breast cancer poses a serious health problem and leads to death as in other developing countries (Love, 2006). Limited data on definite the figures are available for breast cancer in Bangladesh. However it has been estimated that around 1.2 million Bangladeshi women have been suffering from breast cancer and among them 35,000 die every year (Zabeen, 2005). Currently it is estimated that approximately 200,000 women are suffering from breast cancer and about 40,000 new cases are developing annually in Bangladesh (Raup-Krieger, Roberto, Roberto, & Love, 2009).

Cancer of the cervix is the third most common cancer in Bangladesh. In 2008 the cervical cancer incidence rate was 18.6, and the mortality rate 9.4 per 100,000 people per year. Just over 50 million women aged more than 15 years were at risk for cervical cancer. It was estimated that every year 12,931 cases were added. In 2008, the total cervical cancer death was 6561. The cervical cancer was caused by smoking

(2.9%), multiple pregnancies (3.0%), the use of oral contraceptives (26.2%) and unsafe sex behavior (22.5%) (WHO Report, 2009).

Cancer may affect any site of the body. Among the sites of the body, the eight most common cancers in the world are lung cancer, female breast cancer, colorectal cancer, stomach cancer, prostate cancer, liver cancer, cervical cancer and esophageal cancer. The incidence of different cancers is as follows: lung 1.35 million per year; breast cancer 1.15 million; colorectal cancer 10.0 million; stomach cancer men 6.0 million, and women 3.0 million per year. The incidence of prostate cancer in Asia was 4.7 million and in America it was 119.9 million per year. With respect to liver cancer, 626,241 new cases are detected per year in the world. Cervical cancer accounted for 493,100 cancers per year in the world. In addition, esophageal cancer was the eighth most common cancer in the world. The incidence of esophageal cancer was two-fold higher in less developed countries than in the more developed countries. The highest number of cases was reported in Asia. The incidence rate was two to three folds higher in males than in females (Kamangar, Dores, & Anderson, 2006).

There were 3.6 million males and 4.0 million females living with cancer in Asian countries. In China, 1.6 million males and 1.5 million females are cancer survivors. In Mongolia, the mortality rate was the highest (204/100,000) of all the Asian countries. Korea, Singapore, Taiwan, Japan & China have mortality rates of 180-154/100,000. In Thailand, cancer patients number 0.2 million (Pfizer Medical Division Report., 2008). In India in 2001, the cancer crude death rate was 37.7 males and 42.0 females per100,000 population and 850, 000 new cancers & 580,000 cancer-related deaths occurred every year (Indian Cancer Society [ICS], 2005).

Cancer can therefore be considered a worldwide clinical problem. In 2008, there were an estimated 12 million new cancer cases and 7.6 million cancer deaths throughout the world. About 20,000 cancer deaths occurred each day (ACS, 2008). In USA, 2.4 million cancer cases were alive in 2002. The new cancer cases in other countries were: North America 15%, South-America 7%, Africa 6%, Europe 26% and Asia 45%. It was predicted that worldwide new cancer cases will be increased by 50 to 100%, from 10 million in 2000 to 20 million in 2020 (Kamangar, Dores, & Anderson, 2006).

Causes of cancer

Primarily a cancer develops from the interaction between host factors and exogenous agents. Genes also influence the development of cancer, including hormonal patterns, and immunological capacities. The sex hormones influence the development of uterus, breast, ovary, and prostate cancers. For example, the estradiol hormone increases breast cancer. Secondly, the cancer may occur because of the mutation of genes from the multiplication of cells. This does not mean that cancer is only heritable. Cancer may also occur from a particular interaction with environmental factors. The environmental factors may be: physical, such as solar radiation and ionizing radiation; chemical, such as. vinyl chloride, 2-naphthylamine, and benzopyrene; biological, such as the hepatitis B virus, and the human papiloma virus. All these influence the development of cancer (WHO, 2002).

Generally most cancers are caused by abnormalities in the genetic material of the transformed cells (Kinzler & Vogelstin, 2002). These abnormalities may be due to the effects of carcinogens such as tobacco, smoking cigarettes, cigars and pipes, chewing tobacco and taking snuff. They may also be caused by diet, ultraviolet

radiation, alcohol, exposure to radiation and certain chemicals and toxins. Other causes include hormone replacement therapy, diethylstiblistrol, a family history of cancer, infectious agents and a previous history of cancer. Heritability may be a cause of cancer by a complex interaction between carcinogens and host genomes (Jones et al., 2006; Otto, 2000).

Impact of cancer

Cancer makes various impacts on patients' lives, including physical, psychological, familial and financial. The physical impact affects the patient's quality of life which is often diminished by nausea, extreme fatigue and other adverse effects of modern treatments. In addition, cancer patients have to confront their frightening fates, the worse situation in their lives. Moreover, they suffer from illness, lack of stability, pain, unhappy periods, and wastage of time and money (Kim, 2007).

Cancer patients also have potential side-effects related to their treatment. Nausea and vomiting may be caused by the stimulation of the vagus nerve by serotonin released by cells in the upper gastrointestinal tract (Alexander, Fawcett, & Runciman, 1999). Approximately 70 to 80 percent of patients treated with chemotherapy experience nausea with vomiting which may occur within a few or 24 hours or more. This happens despite prophylactic treatment with anti-emetics after or before chemotherapy treatment (Smith & Tonen, 2007).

However, chemotherapy mainly affects the fast-dividing cells of the body, such as the blood cells and the cells of the mouth, stomach, and intestines. The common side-effects of chemotherapy were decreasing the immune system by infection and sepsis, gastrointestinal distress and nausea and vomiting. These effects cause rapid weight loss to occur. Chemotherapy cancer treatment is physically

exhausting for the patient and as a result fatigue occurs. This may lead to mild to severe neutropenia, anaemia, fever, pain, erythema, hair loss, memory loss, vertigo, hematoma, dry mouth (called xerostomia), psychosocial distress, hemorrhage, water retention, sexual impotence, and secondary neoplasms (Smith & Tonen, 2007).

Radiotherapy treatment also has painful side-effects for cancer patients. The radiation side-effects had acute and chronic. The acute side-effects were nausea, hair loss, fatigue or malaise, low blood count, skin irritation and mucositis. The mucositis may be occurred the mucous membrane of the mouth, pharynx, esophagus, trachea, bowel, bladder or rectum. The symptoms resulting from the inflammation, irritation and dysfunction caused by the mucosal reaction depend on the site of the radiation. In addition, the other side-effects were discomfort and dysphasia, coughing, hoarseness and tracheitis, dysuria and frequency of micturation, and diarrhoea and abdominal cramps. The chronic side-effects were scarring, carcinogenicity and genetic effects. The overall treatment of cancer, such as surgery, chemotherapy and radiotherapy, had the common side-effects of pain, fatigue, nausea and vomiting (Smith & Tonen, 2007; Sohl, Schnur, & Montogomery, 2009).

As to the societal aspects, a cancer patient's family members and friends were also affected by the impact of cancer. Sometimes family members, friends and relatives isolated the cancer patients due to ulceration of the body surface, and both fecal and urinary incontinence. Consequently the cancer patients developed psychological stress, depression and anxiety (Philip & Miner, 2004). On the other hand, Byers (2009) found that due to their low socio-economic status, some cancer patients diagnosed at an advanced stage received less treatment, and had a higher risk of death within five years of the diagnosis of cancer.

The psychological aspects of cancer had a greater impact on patients, patient's life partners and family members. After the diagnosis of cancer, both patients and partners felt sadness, anxiety, anger and hopelessness. Some couples faced challenges to their relationship. Fear of losing a partner and the stress of cancer created more problems among the couples (Kim, 2007). The cancer patients' spouses face high physical, social and emotional demands. Psychological factors cause depression and marital role problems in spouses (Northouse, Mood, Templin, Mellon, & George, 2000). Even the cancer patients' spouses' activities and social involvements are often restricted because of the patients' illness. The fear of the death of a spouse creates as much psychological distress as the actual loss (Abernethy, Chang, Seidlitz, Evinger, & Duberstein, 2002). In addition, cancer patients react negatively with cancer diagnosis. Similarly the spouse and family members are negatively react to the diagnosis of cancer. Cancer patients and family members share their shock and grief initially. Insomnia, loss of appetite, disturbances and problems at work are suffered by the cancer patients and their family members (Ryst, 2004).

With respect to the spiritual aspects, 45% of terminally ill cancer patients desired to die due to depression, pain, and low family support (Lam, 2004). Overall, after the diagnosis of cancer, patients felt shock, disbelief, fear, anxiety, guilt, sadness, grief, depression and anger (Kim, 2007). McClain, Rosenfeld, and Breitbart (2003) defined spiritual well-being as "the sense of meaning and purposes in life, faith, and comfort with existential concerns". This is considered an important element in assessing the quality of life of terminally ill patients. To establish the spiritual well-being in advanced cancer patients, Lin and Bauer-Wu (2003) found that reduced anxiety, hopelessness, and increased coping with illness were correlated. Balboni et al.

(2007) revealed that in advanced cancer patients the spiritual needs were supported minimally or not at all by the medical system. Between 50%-95% of cancer patients view spiritual support as a need (Elizabeth et al., 2004). Similarly Simon, Crowther, and Higgerson (2007) found that cancer survivors stress the importance of spiritual support to cope and recover from the cancer.

Therefore cancer causes different suffering in different ways. The physiological, social, psychological, spiritual, and overall economic impact influenced patients' sufferings. Bangladesh is a developing country. Bangladeshi peoples have also been suffering from economic loss from cancer. Islam, Jabber, Farjana, and Chowdhury (2008) revealed that cancer treatment was expensive. Cancer treatment causes economic loss. The highest loss was from surgery followed by chemotherapy, radiotherapy and laboratory investigation. These authors also revealed that the cost of lung cancer treatment was higher than that of cervical cancer and breast cancer.

Cancer treatment

The primary goals of cancer treatments are: cure, prolongation of life, and improvement of the quality of life. Cure refers to three components: recovery or remission from all evidence of disease; minimal or no risk of recurrence; and restoration of functional health. The basic principles of cancer treatments are: surgery, radiotherapy and chemotherapy (WHO, 2002). The three main kinds of treatment: surgery, radiotherapy, and chemotherapy are used alone or in combination for treating cancer, or sometimes to prevent cancer. As a general rule, surgery and radiotherapy are given for cancer localized to certain parts of the body. However chemotherapy is directed towards more widespread disease (Barraclough, 1999).

Chemotherapy means using drugs in the treatment. In oncology the term is usually used as shorthand for cytotoxic chemotherapy, immunotherapy, using substances interferon, and interleukin and hormone therapy (Barraclough, 1999). Chemotherapy may cure certain cancers. Usually chemotherapy is used in disseminated cancer cases. Chemotherapy can lead to cure in Hodgkin's disease, non-Hodgkin's lymphomas, germ cell tumors, leukemia's, and lung cancer (WHO, 2002). Most cytotoxic drugs act by damaging DNA, the "genetic code" within the cell nucleus. This damage prevents cancer cells from dividing and leads to death (Barraclough).

Radiotherapy is the most important method of curing local cancer. Radiotherapy is effective in the treatment of head and neck cancers, cervix cancers, prostate cancers, early Hodgkin's disease, and brain tumors. Radiotherapy is often administered before surgery, after debulking surgery, with gross residual tumors, or after surgery without clear excision margins (WHO, 2002). Barraclough (1999) stated that radiotherapy is the use of high energy irradiation to destroy unwanted tissue. The main use of radiotherapy is in the treatment of cancer. Radical radiotherapy is given with the aim of curing. It is the treatment of choice for some cancers, which are highly sensitive to radiation, or those which would be difficult or impossible to remove by surgery because of their position in the body.

Complementary Therapies

Definitions

The term complementary refers supplying something that is lacking in another system or entity (Thomas, 2001). The therapeutic methods used as supplementary

to the main treatment are called complementary therapies. Complementary therapy takes a balanced view with conventional therapy. Other terms used for treatment that is similar to complementary therapy include “fringe medicine”, “quack medicine”, “unorthodox”, “irregular” or “cult medicine”(Kohatsu, 2002).

The term complementary therapies usually refers to the therapies that are used as an adjunct to conventional treatment and the alternative therapies are those that are used as an alternative to conventional medical treatment (Verhoef, Hilsden, & O’Beirne, 1999). According to the NCCAM the term “complementary therapy” is defined as a selected therapeutic method, product or treatment by a practitioner used in conjunction with conventional, mainstream medicine as a health service for patients (Molassiotis et al., 2005). The most widely used definition is suggested by the WHO, the Cochrane Complementary Medicine Field and the ACS as “Complementary refers to the supportive methods that are used to complement, or add to, mainstream treatments” (Ernst, Schmidt, & Baum, 2006). On the other hand, the term “alternative therapy” is defined as a selective therapeutic method, product, or treatment, by a practitioner used instead of conventional medical therapy (Fouladbaksh et al., 2005).

Complementary therapies are generally called the use of non-allopathic remedies by the traditional health care practitioners. Complementary therapies are usually defined as the use of non-allopathic remedies that typically fall outside traditional formal healthcare practices. However, many complementary therapies are well accepted in nursing intervention. Complementary therapies are often supplementary to mainstream healthcare. The aims of CT are to provide comfort or care rather than a cure. CT may induce a feeling of well-being or relaxation; that may enhance a person’s quality of life (Al-Windi, 2004).

Extent of use of complementary therapies

Complementary therapies have been widely used by cancer patients in the world. In developed countries, a study in the United State (US) showed that breast cancer patients used CT. It was found that 64% of participants regularly used diet and nutritional supplements (Lengacher et al., 2002). In the US another study revealed that 56.3% of gynecological cancer patients used CT. The commonly used therapies included nutritional supplements, prayer, and green tea (VonGruenigen et al., 2001). In UK, a survey study found that 29% of cancer patients regularly used relaxation, medication, and medicinal teas (Scott, Kearney, Hummerston, & Molassiotis, 2005). In Germany, a study found that, overall, 59% cancer patients were using CT. Most commonly they used vitamins, homeopathy, and prayer (Micke et al., 2009).

In developing countries like China, a study showed the use of complementary therapies by Chinese women with breast cancer (Cui et al., 2004). They found that 98% of patients used CT. The most popular complementary therapy was traditional Chinese medicine (86.7%) and the rest used physical exercise. In Turkey, a study found that 93.2% of cancer patients used herbal therapy; especially women, and the younger patients of both genders were using alternative therapy (Gozum, Tezel, & Koc, 2003). In Iran, a study revealed that out of 625 cancer patients, 35% (219) cancer patients were using CT. The most commonly used were prayer and spiritual healing (Montazeri et al., 2007). In Bangladesh, this kind of study has not yet been undertaken.

Types of complementary therapies

According to the NCCAM, Complementary and Alternative Medicine has categorized complementary therapy practices into five major types: (i) alternative medical methods; (ii) mind-body interventions; (iii) biological based therapy; (iv)

manipulative and body based methods; and (v) energy therapies (Molassiotis et al., 2005).

Alternative medical methods. Science based on traditional medicine has been handed down from ancient times. It provides natural treatment, such as Ayurveda, Chinese medicine, and Homeopathy. Ayurvedic means the nature of laws in the entire life with the art of harmonious living. Ayurvedic therapy objectives are to maintain health and to heal disease. In Ayurvedic therapy, the health and healing processes are maintained by natural means. Therefore, the Ayurvedic therapies are natural therapies which are used to approach the treatment of disease. Ayurvedic medicine is total health care, which is used to treat or improve everything (Khun, 1999). In addition, Chinese medicine is a complex system of diagnostic methods that take into consideration the person as whole, not just isolated symptoms. In Chinese medicine, the "pattern of disharmony" is discovered and treated accordingly. The objective is to increase both the ability to function and the quality of life. Chinese medicine has been established and based on the two complementary forces-yin and yang, and the five elements: fire, earth, metal, water, and wood. The five elements give rise to the five tastes by which all-medicinal plants are evaluated (Keegan, 2001).

In Chinese Medicine (CM), acupuncture and herbs are mostly used. Shu, McCulloch, Xiao, Broffman, and Gao (2005) suggested that chemotherapy with Chinese herbs stimulate the immune response. Tumor response increased more in the experimental group than in the control group. The total sample was 2079 Hepatocellular carcinoma cancer patients who had an improved survival of 12 months duration. Therefore, this finding suggests that herbal medicine with chemotherapy was beneficial to the Hepatocellular carcinoma patients. In addition, lung cancer patients

received benefit from Chinese herbs. McCulloch et al. (2006) revealed that astragalus based Chinese herbal medicine increased the effectiveness of platinum-based chemotherapy in lung cancer patients. Among them 940 patients reported reduced risk of death and 2472 reported improved tumor response at 12 months duration.

Homeopathy is a system of healing therapy based on the similarities of laws. The founder of homeopathy, Dr. Samuel Heinemann, established homeopathy based on the natural laws of "like cures like" (Khun, 1999). Heinemann explained that a person with a rash reduced the rash creating substances. Homeopathic therapy treats the causes not symptoms. Thompson, Montgomery, Douglas, and Reilly (2005) revealed that homeopathy reduced the symptoms of a group of breast cancer experimental patients more than the control group. In this study the total sample was 53 breast cancer patients, the duration was 16 weeks and there was a 95% confidence interval of p=0.17. Homeopathic therapy is effective in cancer treatment. Research analysis revealed that the median time of cancer development was 31 days in the experimental group whereas it was 26 days in the control group (P=.0002) (Jonas et al, 2006).

Mind-body intervention. Mind-body intervention indicates the science of focusing on intervention between the body and mind by using techniques such as meditation or prayer. Meditation is a way of relaxation. Actually, the meditation is systematic and there is continued focusing of the attention on a single target perception such as a sound or mantra. There may be continual holding of specific attention, or a technique is used that allows a person to investigate the process of his or her consciousness and experience. This helps to discover the more basic underlying qualities of existence. When other thoughts enter the mind, the person is taught to

notice them and gently return to his or her mantra. Concentrating on the mantra prevents any destruction of thoughts. Meditation focuses on the awareness of feelings, images, thoughts, and sounds that pass through the mind without concentrating on them. The goal of mediation is to set up a calmer, cleaner, and non-reactive state of mind. Meditation improves many aspects of human life and enhances the immune function, relieves pain, and reduces anxiety and insomnia (Khun, 1999).

Prayer is a religious practice. Sometimes people use this religious practice for therapeutic purposes to get relief from symptoms or cure from disease. Prayer also considers the cultural needs to help the patients with their fear and anxiety and become for some an integral part of the end of-life care as well as end-of life-process. (Coyle-Demetrio & Demetrio, 2007).

Biologically based therapy. This is the science of using biochemical such as herbs, vitamin, nutrition and shark cartilage (Molassiotis et al., 2005). Herbal medicine is known as botanical medicine (Lee, Lin, Wrensch, Adler, & Eisenberg, 2000). The plant or plant parts are used as a medicine such as the leaf, flower, stem, seeds, fruits, and bark (Ernst, 2003). A fourth of all drugs come from plant sources. Herbal drugs are mainly from plant sources. The US Food and Drug Administration (FDA) approved 16 herbs that are safe. Many conventional drugs like morphine or codeine come from the opium poppy, atropine comes from the belladonna. Cancer drugs come from the plant sources such as vincristine and vinblastine from periwinkle and taxol comes from the pacific yew. These drugs are used more in cancer management. In biologically based therapy nutrition and vitamin are also used (Khun, 1999).

The botanical plants contain vitamins and minerals. The plant sources of vitamins and minerals are easier and more effective to use than animal sources. The

various vitamins supplements are believed to have anticancer properties and increase the immune functions (Yap et al., 2004). Vegetarian diets have enzyme 6-desatruase, which helps to decrease the viability of cancer cells (Khun, 1999). In cancer patient management, a vegetarian diet increases the protective nutrients and decreases the carcinogen nutrients. In a vegetarian diet there are no added vegetable oils and this maximizes the protective nutrients. As a result, a vegetarian diet prevents cancer and increases the prognosis of cancer disease (Lee et al., 2000).

Cancer patients also used vitamins to prevent cancer. Vitamins A, C, E, and the minerals, zinc, enzyme, and Beta-carotene and antioxidants are used in cancer management. Some herbs have anti oxidant value such as green tea and pycnogenol. Vitamin E decreases the incidence of prostate cancer. Vitamin A, E, and C help to decrease the side-effects of chemotherapy and radiotherapy. Vitamins have many functions to maintain cancer improvement such as decreasing the O_2 free radicals, and decreasing the incidence of cancer. Some plants like onions, garlic, strawberries, grapes, and raspberries detoxify carcinogens, decrease the initiation of cancer, increase the activity of protective enzymes, and enhance immune functions. In addition vegetables and teas have the effect of limiting the progression of cancer. Citrus fruits and cucumbers inactivate the mechanism of breast cancer (Khun, 1999).

Moreover, cancer drugs may come from animal sources like shark cartilage. Shark cartilage is a popular anticancer remedy, and is obtained from sharks. Shark cartilage is extracted from the heads and fins of sharks. Shark cartilage has proteoglans and glycoprotein as well as protein and calcium salts. Shark cartilage has added as a complementary therapy in cancer patients. Finkelstein (2005) pointed out that the antiangeogenic properties of shark cartilage fight against cancer. Shark

cartilage contains protein, which stops the angiogenesis as well as the process of blood vessel development. Commercially shark cartilage has other names like Cartilate, Benefin, AE-941, U-995, Neovastat, and Better shark MC (Ernst, 2009). Shark cartilage has been evaluated as effective in complementary cancer treatment. Kitahashi et al. (2006) revealed that shark cartilage inhibits pancreatic carcinogenesis. The researchers found that pancreatic duct carcinoma was lower in group 3 (1.4±0.9) than in group 1 (3.1±2.0) ($P<0.05$). In the experimental group 2, the incidence of pancreatic duct carcinoma was significantly reduced as well as pancreatic duct carcinoma (0.2±0.4) ($P<0.01$) compared with group 1 (1.4±0.7). In addition shark cartilage has been effective in other cancer management such as vascular cancer. Shark cartilage was able to deal with tumor neovascularization (Beliveau et al., 2002).

In addition the researchers cited that cartilage fractions or liquid extracts were able to inhibit the proliferation of capillaries induced by tumor cells. The Neovastat inhibits tumor growth of the breast carcinoma, humanglioblastoma, and bone and lung metastasis.

Manipulation and body based methods. The manipulation of body parts requires the science of touching or using the hands as medical instruments to stimulate the body such as through massage (Yap et al., 2004). Massage therapy refers to a process of systematic and scientific manipulation of soft tissue of the body (Ernst, 2003). In massage therapy, many techniques are used like stroking, percussion, shaking, compression, friction, kneading and vibration. Massage gives many benefits such as improved blood flow in muscles, removed waste products in the cells, provides cleansing of deep cells and enhances lymphatic flow, reduces stress and enhances mind–body concentration (Khun, 1999). The benefit of massage therapy was

effective in relaxing and reducing muscle tension (Coyle-Demetrio & Demetrio, 2007). Kutner et al. (2008) revealed that massage therapy improved the pain among advanced cancer patients. In addition, one study of 63 breast cancer patients 75% reported that massage therapy was effective in reducing fatigue, promoted a feeling of wellness, and improved sleep quality (Pruthi, Degnim, Bauer, Depomple, & Nayer, 2009). Regarding improving the quality of life, another study among 51 cancer patients revealed that massage therapy had potential benefits to reduce side-effects of chemotherapy, and radiotherapy. It also improved the perceived quality of life (Sturgeon, Wetta-Hall, Hart, Good, & Dakhil, 2009).

Energy therapy. Sciences using techniques to maintain body structure and the balance of bio-field energy include Qigong and Reiki (Yap et al., 2004). Qigong is a combination of two words; "Qi" or "Chi" means energy and Gong means work or exercise. Qigong is exercise which provides energy. There are many qigong exercises like breathing exercises, longevity methods, and internal training. Khun (1999) mentioned that qigong was effective in relieving cancer pains, preventing, treating and curing cancer. It is a Japanese word meaning universal life force. Reiki considers the several kinds of energy in nature and the universe like transcendental, inner light, cosmic, radiant and universal energy. Reiki gives the body direct access to transcendental, universal, radiant, and light energy. When a person is properly "attuned" to the inner processes, universal energy can be accessed and used by the practitioner to balance and release energy. As a result, energy movement helps the body to come into the natural state of balance and it begins to heal. In addition, Reiki helps people be relaxed, it reduces pain, enhances emotional release, and feelings of well-being (Khun, 1999). In cancer patients, Reiki is used to manage pain, reduce

symptoms, and be relaxed through touching. A study of breast cancer patients receiving radiotherapy found a significant difference among the control group (n=15) compared with the experimental group (n=15). The experimental group was treated with radiotherapy and reiki. This reduced their cancer related fatigue as well as improved their health related quality of life (Roscoe, Matteson, Mustian, Padmanban, & Morrow, 2005).

Role of Complementary Therapies in Cancer Patients

Complementary therapy has played a potential role in cancer patients. Cancer Patients are faced with numerous treatments decisions about both conventional treatment and complementary therapies (Ohlen, Balneaves, Bottoroff & Brazier, 2006). Perhaps the interest in CT is because of the needs of the patient when conventional medical practices fail to satisfy their demands or patients develop some side-effects from the conventional treatment (Baum, Ernst, Lejeune, & Hornber, 2006).

Complementary therapy is an umbrella term covering a multitude of different interventions. Many cancer patients used CT for palliative and supportive care. CT has a potential role in improving the quality of life in different ways (Ernst, 2000). For example, complementary therapy is effective in controlling cancer pain by relaxation therapy of the mind–body. In a randomized control trial study it was found that breathing exercises and muscle relaxation were significantly better in controlling pain in the cancer patients than in the control group (Ernst, 2000). Other researchers have revealed that side-effects of chemotherapy in cancer patients such as nausea and emesis were significantly reduced by yoga as CT. The sample size was 62. The

subjects were divided into two groups: a control group (n=34), and a yoga group (n=28) (Raghavendra et al., 2007). Other complementary therapies like massage therapy, touch therapy, and relaxation therapy improved the patients' quality of life by decreasing the pain and distress symptoms (Gilber, Iron, & Goren, 2001). Kutner et al. (2008) in a randomized trial study revealed that massage therapy was significantly effective and beneficial in reducing the pain levels and distress symptoms and increased the patient's quality of life compared with the control group. Researchers also found that massage therapy improved mood in the experimental group. Molassiotis, Potrata, and Cheng (2009) concluded from the 16 studies among 3992 cancer patients that complementary therapy, such as Chinese Herbs, potentially helped the prevention or alleviation of side-effects of the conventional therapy and inhibited the tumor growth thus improving the recovery and prolonging life.

Complementary therapy like acupuncture has been used to treat symptoms of the side-effects of cancer treatment. Researchers revealed that acupuncture was used for various purposes in cancer patients. The acupuncture was effective for chemotherapy induced nauseas, vomiting, neutropenia, radiation induced xerostomia, fatigue, pain depression and the anxiety of the cancer patients (Lu, Dean-clomer, Doherty-Gailman, & Rosenthal, 2008). Above all complementary therapy also reduced psychological distress. Gilbar, Iron, and Goren (2001) recommended that complementary therapy might become part of conventional treatment for cancer patients to reduce psychological distress.

In addition, vitamins and antioxidants are also used as complementary therapy with conventional treatment. Antioxidants including vitamin C enhances growth inhibitory effects on tumor cells and protects the normal cell against the

effects of cancer (Stoute, 2004). Vitamin C with chemotherapy acts as a safeguard and has an effective role in cancer treatment. The researcher suggested that chemotherapy with vitamin C in cancer treatment increased the survival time. This was found in the study of terminal cancer patients that revealed that the experimental group treated chemotherapy with vitamin C were more likely to survive than the control group in 1000 cancer patients (Stoute, 2004).

Andersen's Behavioral Model in the Use of Complementary Therapies

Andersen's behavioral model of health services provided a framework which could be applied for use with complementary therapies. The Andersen behavioral model was used to guide and to assist the understanding of why people use or seek health services including complementary therapies. This behavioral model disclosed that people's use of health services is a function of their predisposition to use services and reason which enables or impedes their use and their need for care (Fouladbakhsh, Stommel, Given, & Given, 2005; Fouladbakhsh & Stommel, 2007). Each component of the health behavioral model made individual contributions to the use of health services. Predisposing characteristics, enabling resources, need, and the uses of health services are described as follows:

Predisposing characteristics

In the health behavior model, the predisposing variables refer to the demographic, societal structures and health beliefs. The demographics characteristics are the individual characteristics which represent the biological imperatives which influence an individual's propensity to use health services or resources. In this model, the demographic and social structure might not be a reason for using health services

(Andersen, 1995). The community lifestyle and cultural or religious practices influence an individual's or a family's predispositions to use complementary therapies (CT), which were included in the health behavior model. The traditional beliefs and practices which passed from generation to generation may strongly influence the use of CT (Fouladbakhsh & Stommel, 2007). Health beliefs refer to people's attitudes, values and knowledge about health services, which influence their perception of the need to use health services (Andersen, 1995).

Values and attitudes about ones responsibility for self-care influence the use of CT, which people learn from the family/community. Community lifestyle refers to the way one lives in his/her community. Community lifestyle also influences the use of CT. If approaches to CT are simply an expected part of daily living, it predisposed one to use them. Thus in a certain family or community who use a CT on a regular basis the therapy develops as a norm and is valued within that family or community (McEvoy, 2003; Walsh, 2003). In this study, predisposing characteristics include demographic characteristics such as age, sex, marital status, and social structure. These may be identified as education, income level, religion and health beliefs indicated as values, attitudes and knowledge (Fouladbakhsh & Stommel, 2007).

Enabling resources

The CT health care model consists of the same enabling resources as identified in the behavioral model for the use of conventional health services and adds potential reasons relevant to CT use. The enabling resources identified in this model were those conditions or resources that enable the use of complementary therapies. These include resources specific to individuals and families that potentially influence and support CT use. Health insurance as an enabling resource is excepted because

health insurance is not available for people in Bangladesh. The family, friends or support of relatives, the region as the place of residence, and the relationship with the health personnel all influence the use of health services (Fouladbakhsh & Stommel, 2007). Here enabling resources involve both the personal and community resources needed to be present for the use of health resources as well as the use of complementary therapies. Personal or family support and community resources enable an individual to use health services. Among them personal, family and community resources such as income, family support, geographical location and established relationships with the care provider influence the use of complementary therapies (Fouladbakhsh et al., 2005).

Need

The theoretical construction of need in the behavioral model includes both evaluated needs and perceived needs. Both of these needs were constructed through the experience of illness. The potential indicator of evaluated needs examined in association with the use of complementary therapy includes diagnosis of morbidity such as cancer and other chronic illnesses. In cancer the stage, site, and cancer treatment are determined. In the perceived need, the reason includes the perception of health status as defined in the behavior model. The perceived need is seeking care and adherence to the medical regimen, which might be described as an individual's perceptions of health status or state of illness (Andersen, 1995). This perceived need includes perception of present illness as experience of symptoms. The individual responses to illness would be going to use something for it. The measures taken to prevent illness and maintain it as complementary therapy means its use and continuing it (Fouladbakhsh & Stommel, 2007).

Evaluated need indicates the professional judgment about people's health status and their need for medical care (Andersen, 1995). Evaluated need is not simple or primary need. An evaluated need is described by biological science through valid and reliable measurement. Evaluated need reveals the professional expert measurement such as the diagnostic report of disease, disease severity and the treatment received (Andersen; Fouladbakhsh & Stommel, 2007). In cancer patients, the evaluated need is identified as the cancer diagnosis associated with the cancer site, cancer stage, and types of cancer treatment. These may influence the use of CT (Fouladbakhsh et al., 2005; Fouladbaksh, 2006).

Uses of health services

In the CAM health care model using the health behavior model, the concept of the use of health services were modified and expanded beyond the conventional one of provider directed health services. It includes self-directed CAM use. In fact, the CAM approaches are often used independently without supervision by the provider or practitioner (Fouladbakhsh & Stommel, 2007).

In this study, the use of health services refers to the selected therapeutic methods, products, treatments or any other methods. The methods are used in conjunction with conventional mainstream therapies by cancer patients with the intent to cure cancer, to reduce the symptoms of cancer, and to minimize side-effects of conventional treatments. They also provide emotional and psychological reassurance as a health service for patients or by patients themselves (Ernst, Schmidt, & Baum, 2006). The complementary therapies include: (a) alternative medical methods-using science based on traditional medicine, methods handed down from ancient times, and providing natural treatment, such as Chinese medicine and Ayurveda; (b) mind-body

intervention-indicating the science focusing on intervention between body and mind by using different techniques such as meditation, prayer, learning the holy Quran, Bible, Gita and Tripitok, and involving patients in ceremonial activities; (c) biological based therapy - using the science of using biochemical's such as herbs; (d) manipulation and body based methods-manipulation of body parts that requires the science of touching or using hands as medical instruments such as massaging; and (e) energy therapy-using science-based techniques to maintain body structure and biofield energy like Qigong and Reiki (Yap et al., 2004).

The health services focused on in this study will include the types of complementary therapies used by cancer patients. The reasons why complementary therapies are used by the cancer patients in this study will be included as predisposing characteristics (demographic, social structure and health beliefs), enabling resources (personal/family, community) and needs (perceived and evaluated needs).

Reasons for Uses of Complementary Therapies

Generally, illness is associated with a convergence of biological, psychological, and social factors. However, conventional medicine with its focus on the biological causes of disease is not sufficient to acknowledge the interrelatedness of mind, body and spirit that is essential to holistic care. The reasons for CT use are not limited to biological disequilibrium; psychological and socio-cultural factors also influence a patient's decisions and preference to use CT (Paltiel et al., 2001).

From the literature review, it was found that there were many reasons for using complementary therapy to reduce symptoms, such as severe pain, loss of appetite, weight loss and psychological well-being. Most of the commonly expressed

reasons for using CT were improving a patient's physical well-being and improving the quality of life (Liebert, 2008). Liebert reported that 41% patients used CT to improve their physical well-being, and 29% used it because it might help. Conventional drug therapy had physical side effects. Patients always want to avoid the side-effect and want to be free from them. Lengacher et al. (2006) indicated that cancer patients used CT to reduce the side-effects of drugs. Sometime patients were dissatisfied about traditional medical care; they used diet and nutritional supplements and stress reducing techniques. Shen et al. (2002) found that cancer patients used CT to increase the immune system, to relieve the side-effects of surgery, radiation, and chemotherapy treatment. A study showed that 63.5% cancer patients used CT to treat or cure cancer, 17.3% to do everything to fight cancer, 10.7% to improve their physical well-being, 4.9% use CT to improve their psychological/emotional well-being, 2.9% to get relief symptoms, and 1.9% to improve the body's ability to fight the cancer (Ezeome & Anarado, 2007).

Health beliefs are attitudes, values, and knowledge which, influence subsequent perception of the need for and use of health services. Here, beliefs indicate the faith held on the uses of complementary therapy regarding cancer patients and how all this fits in with their own values, attitudes and philosophical orientation towards life. The majority of cancer patients' believed that complementary therapies were beneficial to them (VonGruenigen et al., 2001). Cancer patients believed they would benefit from complementary therapies thus getting hope from the complementary therapies (Richardson, Sanders, Palmer, Greisenger, & Singletary, 2000). Rakovitch et al. (2005) revealed that 87% of cancer patients believe complementary therapies gave hope, 46% believed them safe, 47% believe there was no significant toxicity, 53%

believed they had a sense of control, 60% believed in the relief of their symptoms, 61% that they improved the quality of life, 36% that overall they cured cancer and 32% that they prevented the spread of cancer.

Need is a state that requires supply or relief, a pressing occasion for something, a necessity or urgent want. The need is something that is necessary for a human being to live a healthy life. Needs are distinguished from wants because not satisfying it would cause a clearly negative outcome such as dysfunction or death. The need can be objective and physical, such as for food and water, or it can be subjective and psychological, such as the need for self esteem. It can also be an unmet need which is needed for a little more happiness (Karl, 2009). In cancer patients a need refers to the reasons why the cancer patients desire to use complementary therapy in relation to the cancer patient's symptoms and side-effects of conventional treatments. The reason may be to fight distress, achieve physical and emotional well-being, or reduce pain, nausea, vomiting, or to survive and cope with suffering (Ezeome & Anarado, 2007; Lengacher et al., 2006; Nahleh & Tabbara, 2003; Shen et al., 2002; Sparber et al., 2000).

Healthcare System in Bangladesh

Bangladesh is a developing country in South-East-Asia. The total population of Bangladesh is 158.60 million. The male population is 71.0 million and the female is 67.60 million. In the total population, 68.7% people live in rural areas and 31.3%, people live in urban areas. The area of the country is 147,570 square kilometers. The density of population is 926 per square kilometer (Health Bulletin, 2007). The government of Bangladesh is committed to ensuring basic health care services to the

people of the country. The national health policy is to provide quality health care by ensuring preventive, curative and rehabilitative care (Reza, 2008).

The Bangladesh Ministry of Health and Family Welfare is responsible for developing, coordinating, and implementing the national health care programs. The Government's policy objectives in the health care sector are to provide a minimum level of health care services for all, primarily through the construction of health facilities in rural areas and the training of health care workers. In the Bangladesh health care system there are three levels: primary, secondary, and tertiary. Primary health care level provided in rural areas consists of a Thana health complex, Union Health and Family Welfare Centers (UHFWCs), and rural dispensaries.

The UHFWCs and Thana health complexes provide the first contact between the people and the health care system and is the nucleus of primary healthcare delivery. District hospitals and some infectious disease and specialized hospitals constitute the second level of referral for health care. The basic curative and preventive services are provided at health complexes and union sub-centers. Complicated cases are referred to district hospitals, medical college hospitals and specialized hospitals for proper diagnosis and better management.

Thirteen medical college hospitals and eight postgraduate specialized institutes with attached hospitals constitute the third level of health care. At UHFWCs and some Thana health complexes treatment is provided by medical assistant and family welfare visitors. In the primary and secondary level, that is at the UHFWCs, Thana health complexes and Districts hospitals, there are no treatment facilities for cancer patients (Health Bulletin, 2007). The Bangladesh Government appoints

ayurveda and homeopathy doctors to a few district hospitals but they provide general treatment (Government of Bangladesh, 2006).

Cancer care facilities are provided only at the tertiary level hospitals, such as medical college hospitals and specialized postgraduate hospitals, and at the one government ayurvedic medical college hospital (Health Bulletin, 2007). The cancer patients are referred to the hospital by their physician. Cancer treatment is very expensive. Sometimes people fail to continue cancer treatment (Islam, et al, 2008). Bangladesh is a developing country in which cancer is a serious health problem. The cancer problem is very serious because of poverty, illiteracy and other disease associated with poor nutrition and lack of basic health knowledge among the people (Shamim, 2006). The government health services have indoor and out-door services and free services for all people. People only have to buy a ticket for five-taka for services such as out-door treatment and care. But people do not always get medicine or diagnostic and therapeutic services with this ticket. These services depend upon the availability of government supplies. In accord with the physician advice, the patients also go to the hospital for follow-up care (NICRH, 2005).

In the private sectors there are traditional healers like kabiraj, totka, herbalists, practitioners of folk medicine, faith healers or religious people, such as the pir and fakir, as well as homeopathic practitioners, rural medical practitioners. These all provide medical care to the people. Most traditional practitioner practices are at the villager's level. Usually they use natural products to treat people to solve health problems. Only homeopathy practitioners practice the homeopathic medication (Haq & Tareq, 2009). All these informal providers are deeply embedded in the local community and culture and are easily accessible. They provide inexpensive services

to the villagers with occasional deferred payment and payment in kind being accepted instead of cash (WHO, 2009).

At the hospital level the government has appointed ayurvedic doctors and homeopathic doctors who advise about the traditional medical system. However, the ayurvedic and homeopathic doctor are not available in all hospitals (Government of Bangladesh., 2003). Usually the people undergo complementary therapy from the local healer or the local complementary therapy practitioner. In 1988, the Bangladesh government included ayurvedic medicine and homeopathic medicine in the national health policy, the national drug policy, and the national five year program (Government of Bangladesh., 2003). In addition, the Bangladesh government has appointed 45 medical officers from ayurvedic and homeopathic graduate physician to different district allopathic hospitals. Further recruitment for the rest of all district and upazila health complex hospitals is being undertaken. The ayurvedic and homeopathic medical doctors (CT Practitioners) are playing a vital role in maintaining the health of the people in Bangladesh (Government of Bangladesh, 2006). The ayurvedic and homeopathic medical doctors are treating the people on top of using modern medicine. Zahid and Hossain (2009) indicate that the CT practitioner and patient ratio is 1:47 and on average 66 persons visit CT practitioner per day. The Bangladesh government has developed a health policy to ensure that both modern medicine and complementary therapies are available for the people in the same government hospital as similar facilities. The people will choose the one they prefer for their health problem (Haq & Tareq, 2009).

Complementary Therapies Use in Bangladesh

Since Vedic period (about 3,000 years ago) Bangladesh has had a rich and varied flora for use as medicinal plants. Bangladeshi people use plants as home remedies from a long time ago. Complementary therapies have become an integral part of the Bangladeshi people (Government of Bangladesh, 2006). Usually people use many complementary therapies for general health problems. Most of the people use CT when they fail to obtain a cure or get treatment using scientific medicine or modern medicine. As a result, people go to kabiraj, totka, herbalists, practitioners of 'Folk Medicine' and faith healers and can thus easily undergo CT for their cancer problems. Of the complementary therapies, people, most commonly use Ayurveda, homeopathic healing, meditation, prayer, herbs, water blessed by a religious person or local healer, animal extracts, natural plant products, healers and mantras. Today people in Bangladesh can gain access to complementary therapies through the government hospital. This kind of service has been approved by the Ministry of Health and Family Welfare for use with modern treatment (Haq & Tareq, 2009).

In Bangladesh, there is ayurvedic medicine, unani, hamdord, and homeopathic pharmaceuticals are also available. The ayurvedic, unani, hekimi and other forms of folk practitioner use herbal medicines in Bangladesh. The villagers and tribal community people use most of these herbal products. The people believe in herbal products as complementary therapy as they are natural products (Government of Bangladesh, 2006).

This is especially so when the complementary therapy is available in their locality. Usually complementary therapy is less expensive, and there is no need to undertake medical diagnosis (Haq & Tareq, 2009). People can access this therapy at

any time. There is no procedure to access complementary therapy when treating their health problems. Therefore, complementary therapy is easily accessible to the people. Recently the WHO has approved and recommended the use of herbal medicine as an alternative system of medicine to provide health care services at the primary health care level (Independent Report, 2005).

Summary

Cancer causes more suffering than all other diseases. It has a greater impact on patients, patients' life partners, and family members in the physical, psychological and spiritual aspects. Complementary therapies are the therapies which combine with modern cancer treatment to reduce suffering, get benefits and alleviate symptoms. The complementary therapies (CT) include alternative medicine, mind–body intervention, biologically based therapy, manipulation and body based methods, and energy therapy. According to Andersen's behavioral model, people use health services as they are predisposed to use health services with enabling resources and due to their needs as reasons. In this study, the focus is on health services that use complementary therapies for cancer patients.

The Bangladesh health services have developed from the primary level to tertiary level, from the union health complex to highly specialized hospitals. But cancer treatment facilities are only available in the tertiary level hospital. The complementary therapies are available throughout the country. People use CT for their health problems even though they suffer from cancer. Bangladeshi people believe that CT reduces symptoms, the side-effects of conventional treatment, and increases mental satisfaction. Patients do not usually explore using CT with health personnel. In

Bangladesh, as far as the researcher knows, there have been no previous studies regarding CT use among cancer patients. The researcher would like to find out the extent of and the reasons for the use of CT among cancer patients in Bangladesh.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents the research design, population, sample, instrumentation, ethical considerations, data collection procedure, and data analysis.

Research Design

A cross-sectional descriptive survey design was used to elicit information about the types and reasons for the use of complementary therapies among cancer patients.

Population

The population of this study was all adult lung cancer, breast cancer and cervical cancer patients.

Setting

This survey research study was conducted in the National Institute of Cancer Research & Hospital (NICRH), Mohakhali, Dhaka, Bangladesh. The NICRH is the only national referral hospital for cancer patients in Bangladesh. This hospital is situated in the capital city Dhaka. The NICRH has 200 beds for indoor patients'. Cancer patients are referred to this hospital from all primary, secondary, and tertiary levels of government hospitals, private hospitals and clinics. This hospital provides care to both rural and urban people at the top specialized level. Most cancer patients visit this hospital at least once during their cancer treatment.

This is the top specialized hospital for cancer treatment in Bangladesh. It has post graduate teaching facilities for medical doctors who treat cancer patients. The NICRH has chemotherapy, radiotherapy, and surgery units. Everyday 30-40 patients visit this hospital. In 2008, the total number of out-patients was 16,530 (NICRH, 2008). For this reason, the researcher decided to select this hospital to collect data from cancer patients in Bangladesh.

Sample

The samples of this study were lung, breast and cervical cancer patients who used complementary therapies with conventional treatment and came to the out-patient department for follow-up visits to the NICRH, Dhaka, Bangladesh. The purposive sampling method was used to select the sample based on the following inclusion criteria.

(1) Patients who were used CT with conventional treatment equal and more than 18 years old

(2) Patients who were able to communicate and agreed to participate

Sample Size

The sample size of the study was estimated using a proportional estimation formula for the number of population. Patients with cancer who visited the out-patient department numbered 16,530 in 2008 (NICRH, 2008). A sample of 1% for the larger population (>10,000) is suitable for descriptive studies (Rosner, 2006). By taking 1% of the total number patients from the previous year, the required sample size in this study was 165. Fifty-five patients of each commonly found cancer sites-lung, breast

and cervical cancer-were recruited. In addition, 10 subjects from each group were asked open-ended questions to obtain additional information regarding the reasons for using CT. The 10 subjects in each group were selected because of their experiences of continuously using CT with conventional treatment for at least last three months.

Instrumentation

The instrument used for data collection comprised of closed and open-ended questionnaires. The instrument was made up of two parts. Part 1 comprised demographic and health related questionnaire (DHRQ). Part 2 comprised: (i) types of CT use; (ii) belief, symptoms and outcome of CT use; (iii) enabling resources of CT use; and (iv) open-ended questionnaire. The instrument was developed after an extensive literature search on cancer patients' use of complementary therapies. Inquires were also made within the local community in Bangladesh for the forms of complementary therapy being used by cancer patients (Appendix A).

Part 1: *Demographic and Health Related Questionnaire (DHRQ)*

The demographic and health related questionnaire consisted of two sections. Section (i) was made up of demographic variables and section (ii) of health related variables. The demographic variables consisted of age, sex, birthplace, marital status, level of education, occupation, income per month, and religion. The health related variables consisted of four items to identify the professional judgments of diagnosis. These included duration after diagnosis of cancer, cancer sites, cancer stages and conventional treatment received by the subjects. These health-related variables indicated the evaluated need of the subjects (Andersen, 1995). The evaluated need

related information was filled up by the researcher from the medical records of the subjects.

Part 2: Section (i): *Complementary Therapy Use Questionnaire*

The CT use questionnaire made up of four items to measure the types of complementary therapies use, methods of use, frequency, and duration of use according to five types of complementary therapies. Each major type and subtype of CT use consisted of "Yes/No" question in boxes. Responses were given as tick (√) marks. "Yes" indicated the type of CT used and "No" indicated the type of CT was not used. The experience and frequency of use included 6 question items, the method of use included 3 items, and duration of use included 4 items. Subjects rated the items that matched their opinion or experience of using CT. Descriptive statistics were used to analyze the data in terms of frequencies and percentages.

Section (ii): *Belief, Symptoms, and Outcome of CT Use Questionnaire*

Belief in the use of CT consisted of 6 items and symptoms for uses of CT had 7 items. Each item had a "Yes-No" option. Subjects were asked to tick (√) the box according to their opinion. A tick for "Yes" indicated that the subject believed or had symptoms concerning their uses of CT, and "No" indicated the subject did not believe, or had no symptoms for their use of CT. In addition, for the levels of benefit for the uses of CT, subjects gave a single tick (√) mark for the received benefit of the use of CT according to their choice.

Section (iii): *The Enabling Resources Related Questionnaire* (ERRQ)

The enabling resources included 21 items listed under 3 topics: available information about CT; persons who supported the use of CT; and available source of CT. Subjects were asked about their supporting resources regarding the use of CT by

using “Yes-No” responses to questions. “Yes” indicated that the subjects used CT regarding that support and “No” indicated they did not use CT regarding that support. Each subscale was then described in terms of frequency and percentage.

Section (iv): *Open-ended Questions*

There were nine items in the open-ended questions. This section was set for only 30 subjects who had currently used at least three months of complementary therapies with conventional treatment. The open-ended questions were used to understand the in-depth reasons, outcomes, and types of CT used.

Validity of the Instrument

Three experts in the cancer area examined the content validity of the original English instrument. These included two academic nursing staff of the Faculty of Nursing, Prince of Songkla University with expertise in the instrumentation field. One oncology nurse educator at the College of Nursing, Bangladesh, with good knowledge in the field of complementary therapy, also examined the content validity of the instrument in the Bangladesh context. The researcher modified the instrument based on the experts’ recommendations (Appendix B).

Reliability of the Instrument

The questions about Complementary therapy use were tested for test-retest reliability with 20 cancer patients, who were admitted with similar characteristics to the subjects in the actual study. The researcher asked each subject to answer to the instrument twice, with a 7-day interval. The findings revealed that the correlation

coefficients between two time points ranged from .97-1.00, which were considered highly reliable.

Translation of the Instrument

The instrument was initially developed in the English language. However to use them for the data collection process in Bangladesh, the instrument was translated into the Bengali language using the back translation technique (Sperder & Develis, 1994). Three bilingual translators translated the instrument. The first translator translated the English version instrument into the Bengali version. The second translator back translated the instrument from the Bengali version into the English version. The third translator clarified and identified the differences in all items of both versions. Then the researcher made final adjustment to establish the same meanings within acceptable limits (Appendix C).

Ethical Consideration

This study was conducted with the intention of protecting the human rights of all subjects. Following approval by the Institutional Review Board (IRB) of the Faculty of Nursing, Prince of Songkla University, Thailand, permission for data collection in this study was obtained from the Director of National Institute of Cancer Research and Hospital, Dhaka, Bangladesh. The subjects who were willing to participate in this study were asked to sign a consent form. The subjects were assured that they had the right to refuse to participate in the study at any time. The identities of the subjects were coded in order to keep confidentiality and anonymity. In addition, a

tag number was added with the subject's hospital visiting card, to prevent replication among the subjects (Appendix D).

Data Collection

Data were collected from November 2009 to February 2010. The data collection consisted of two phases; the preparation and the implementation phase.

Preparation phase

1. The researcher submitted the thesis proposal to the Institutional Review Board (IRB) of the Faculty of Nursing, Prince of Songkla University, Thailand for consideration of the ethical of human rights aspects.

2. After getting approval from the IRB, the researcher asked permission to collect data from the Hospital director of the National Institute of Cancer Research and Hospital, (NICRH), Mohakhali, Dhaka, Bangladesh.

3. The researcher explained the study objectives and data collection processes to the out-patient department nurses and physicians in order to get cooperation from them.

Implementation phase

1. The researcher asked the out-patient department head nurse to get permission from the patients who were willing to meet the researcher.

2. The researcher explained the purposes of the study to subjects, and asked for their agreement to participate in the study.

3. The researcher gave the written consent form to the agreeable subjects and gave a commitment to maintain confidentiality and anonymity and that there would be no harm to them from participating (Appendix E).

4. The researcher gave the questions to the subjects with an explanation as to how to answer the question. That took about 30 minutes. Then the researcher checked whether the answers were completed or not, and in the latter case, the subjects were asked to complete them.

5. During data collection the researcher observed the subject's duration of CT use. The subjects who used CT for 3 months or more duration were asked open-ended questions about this.

Data Analysis

The data were analyzed by using computer software. Descriptive statistics were used for answering the research questions. The personal characteristics and health related data of the subjects were described in frequencies, means, standard deviations, and percentages. The use of complementary therapies, dealing with the types, frequency, methods, and duration of use, were described in frequencies and percentages. The reasons and outcomes, including beliefs, symptoms, and support through enabling resources, were presented in terms of frequencies and percentages.

In addition, simple content analysis was used to analyze the qualitative data from the open-ended questions that dealt with the belief, symptoms, reasons, and outcomes of the uses of CT. The steps of the content analysis followed those suggested by Elo & Kyngas, (2008). They involved selecting the unit of analysis, selecting the meaning of the unit, and presenting the findings.

1. The open-ended information was translated from the Bengali language into English by three bilingual translators. The researcher selected the unit of analysis. The unit of analysis is the whole interview dealing with the open-ended question. The

unit is large enough to be considered as a whole yet small enough for it to be kept in mind as the context for the meaning of the unit. In this study, the information obtained by each open-ended question became the unit of analysis. In addition, the researcher organized and based the experiences of using CT on 3 types of cancer, lung, breast and cervical cancer.

2. The researcher concentrated on each piece of transcribed data as a whole and tried to capture the overall sense of the cancer patients' experiences of using CT. At this step the researcher read and re-read the data to understand its significance to the study.

3. The next step involves the researcher trying to capture the themes or significant meaning of the information, the result being called the unit of meaning. The unit of meaning is defined as the words, sentence or paragraphs containing aspects related to the experiences of study. At this step the researcher selected the units of meaning by concentrating on the key answer to each question. An example is question 4, the reasons for CT use. The units of meaning were the reasons for the use of CT. Then the researcher also tried to establish group similarities and dissimilarities of the reasons for the uses and categorized them according to each group of cancer patients.

Then the researcher compared the data from one informant with that from others and finally made groups of the same findings (Polit & Beck, 2008; Elo & Kyngas, 2008). Finally the researcher described the findings of each open-ended question; for example, the types of CT used and the symptoms of CT use in relation to the sites of the cancer. The lung cancer patients used homeopathy therapy for reducing the symptoms of pain. The breast cancer patients used meditation for reducing

the symptoms of distress, anxiety, and insomnia. The cervical cancer patients used nutrition to reduce their weakness.

CHAPTER 4

RESULTS AND DISCUSSION

This cross sectional descriptive study was conducted at the National Institute of Cancer Research and Hospital (NICRH), Mohakhali, Dhaka, Bangladesh. A total of 165 cancer patients were interviewed by using closed and open-ended questionnaire. The main objective of the study was to determine the types of complementary therapies used and reasons in addition to conventional therapy. The results of this study are presented in relation to the Andersen behavioral model for the use of complementary therapies in the following sequences: use of complementary therapies including the types, methods, frequency, and duration of CT use. In addition, the reasons for and outcomes of using CT are presented in the following sequences: demographic characteristics, beliefs related to CT use, availability of support for CT use, patients needs and outcomes of CT use.

Results

Use of Complementary Therapies

This section presents the results of the use of complementary therapies with regard to their types, methods, frequency and duration of use. The results of complementary therapies types are presented in the following sequences: alternative medical methods, mind-body intervention, biological based therapies, manipulation and body based methods, and energy therapies. Individual methods for each category of complementary therapies are explored.

Types and methods of CT use

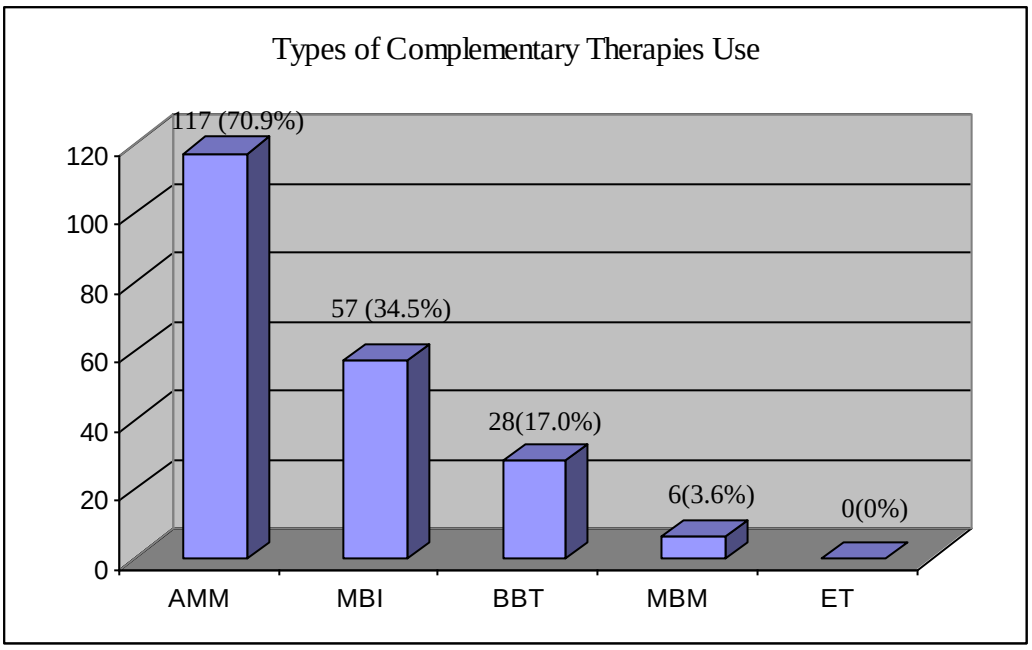
All subjects in the study used at least one type of complementary therapy (77%). The number of types of complementary therapies being used ranged from 1-3 types (Table 1). Among the types of complementary therapies, alternative medical methods was used by the highest number of subjects, 117 (70.9%), followed by mind-body intervention (34.5%) (Figure1).

In alternative medical methods, the majority of the participants used homeopathic treatment (62.4%), then ayurvedic medicine (39.3%). About two-thirds of the subjects were practicing meditation for treating their ailments (66.7%). Among the mind-body interventions, the highest percentage of subjects was practicing prayer (75.4%). In biological based therapy, the highest percentage of subjects used herb (71.4%), followed by nutrition (21.4%). A few of the subjects used vitamin and animal extracts. Only six subjects were used manipulation and body based methods. In this study, the data revealed that Bangladeshi cancer patients did not use energy therapy and Chinese medicine. Regarding methods of use, all types of CT were used by mouth and by practice for prayer, meditation, and massage (Table 2).

Table 1

Frequency and Percentage of Number of Types of Complementary Therapies Use (N=165)

Number of complementary therapy type being used	*n*	*%*
1 Type	127	77.0
2 Types	33	20.0
3 Types	5	3.0



Note. Percentage exceeds a hundred due to multiple responses.
AMM = alternative medical methods; MBI = mind-body intervention;
BBT = biological based therapies; MBM = manipulation and body based methods;
and ET = energy therapies

Figure 1

Frequency and Percentage of Complementary Therapies Used (N=165)

Frequency and Duration of CT Use

These findings indicated the frequency and duration of types of CT used. The data revealed that 41.3% of the subjects used ayurvedic medicine regularly at that data collection time, whereas homeopathic medicine used 57.5% of the subjects. Most of them (67.4%) had used ayurveda for less than three months. There was no one who used ayurveda for more than 12 months. In homeopathy therapy, the higher users (49.3%) used for 3-6 months duration and lower users (45.2%) for less than 3 months duration. In the mind-body intervention the majority of the subjects were using it

currently on a regular basis. Meditation was used currently on a regular basis (86.8%) and none of them used previously on a regular basis. The highest (93.0%) of used prayer currently on a regular basis and the lower number of subjects (4.7%) used previously several times. Only a few of the subjects (7.0%) used traditional healers. For duration, most of them used prayer and traditional healers for less than three months.

Most of the biological based therapies were used currently on a regular basis. Among the biological based therapies, majority of the subjects (70%) used for less than three month duration. In manipulation and body based methods, the massage therapy was used currently on a regular basis (33.3%) whereas some of the subjects previously used on a regular basis (16.7%). Among them an equal percentage of subjects (50%) used less than 3 months or for 3-6 months duration (Table 2).

Table 2

Frequency and Percentage of Use of Complementary Therapies Classified by Types, Methods, Frequency, and Duration (N=165)

Types of complementary therapies used among the cancer patients		Method of use	Frequency of use						Duration in months			
			Previously use			Currently use						
		Oral/ local	Once n (%)	Several n (%)	Regular n (%)	Once n (%)	Several n (%)	Regular n (%)	<3 n (%)	3-6 n (%)	7-12 n (%)	>12 n (%)
Alternative Medical Methods	Ayurveda 46 (39.3%)	Oral	4(8.7)	11(23.9)	3(6.5)	0.0	9(19.6)	19(41.3)	31(67.4)	13(28.3)	2(4.3)	0.0
	Homoeopathy 73 (62.4%)	Oral	5(6.8)	11(15.1)	9(12.3)	00	6(8.2)	42(57.5)	33(45.2)	36(49.3)	1(1.4)	3(4.1)
Mind-body Intervention	Meditation 38 (66.7)	Practice	0.0	3 (7.9)	0.0	0.0	2(5.3)	33(86.8)	24(55.8)	10(23.3)	8(18.6)	0.0
	Prayer 43 (75.4%)	Practice	0.0	2(4.7)	0.0	0.0	1.23	40(93.0)	24(55.8)	10(23.3)	1(2.3)	8(18.6)
	Traditional Healer 4 (7.0%)	Practice	2(50)	1(25.0)	0.0	0.0	0.0	1(25.0)	4(100)	0.0	0.0	0.0
Biological Based Therapies	Herb 20 (71.4%)	Oral	2(10.0)	4(20.0)	2(10.0)	0.0	4(20.0)	8(40.0)	14(70.0)	5(25.0)	0.0	1(5.0)
	Nutrition 6 (21.4%)	Oral	0.0	0.0	0.0	0.0	3(5.0)	3(5.0)	2(33.3)	2(33.3)	2(33.3)	0.0
	Vitamins 1 (3.6%)	Oral	0.0	0.0	0.0	0.0	0.0	1(100.0)	1(100.0)	0.0	0.0	0.0
	Animal extracts 2 (7.1%)	Oral	0.0	1(5.0)	0.0	0.0	0.0	1(50.0)	1(50.0)	1(50.0)	0.0	0.0
Manipulation and body based Methods	Massage 6 (100%)	Practice	1(16.7)	2(33.3)	1(16.7)	0.0	0.0	2(33.3)	3(50.0)	3(50.0)	0.0	0.0

Note. Percentage exceeds hundred due to multiple responses

Reasons for Use of CT

Complementary therapies were being used for various reasons. Using Andersen's behavioral model, the data relating to reasons are presented in the following sequences: predisposing factors (demographic characteristics and beliefs related to CT use), enabling resources (availability of support from family, friends, & health personnel) and patients needs (perceived needs and evaluated needs).

Demographic characteristics of the subjects:

The adult subjects involved in this study had a mean age of 44.75 (SD ± 10.99) years ranging from 19-70 years. The highest percentages of the subjects were in the age group 40-49 years (32.1%). Two-thirds of them were female (68.5%) living in the rural area (66.7%). The majority of the subjects was married (87.3%) and followed the Islamic religion (84.8%). Two-fifths (41.8%) of the subjects had no formal education, followed by primary level of education (27.3%), and secondary school certificate (15.2 %). About half of the subjects (47.9%) were unemployed. In addition, half of the subjects (48.5%) had a monthly family income of less than Taka 5000 (Approximately US $ 72/ month) (Table 3).

Table 3

Frequency and Percentage of the Demographic Characteristics of the Subjects (N= 165)

Subjects Characteristics	*n*	%
Age (years) M = 44.75, SD = 10.99, min-max = 19 to 70 years		
40	48	29.1
40-49	53	32.1
50-59	39	23.6
≥60	25	15.2
Gender		
Male	52	31.5
Female	113	68.5
Residence		
Rural	110	66.7
Urban	55	33.3
Marital status		
Single	4	2.4
Married	144	87.3
Widow	14	8.5
Divorced	3	1.8
Religion		
Islam	140	84.8
Hindu	21	12.7

Table 3 *(Continued)*

Subjects Characteristics	*n*	%
Christian	1	0.6
Buddhist	3	1.8
Level of education		
No formal education	69	41.8
Primary	45	27.3
SSC	25	15.2
HSC	16	9.7
Bachelor/ and above	10	6.1
Occupation		
None	79	47.9
Farmer	22	13.3
Business	3	1.8
Employed	36	21.8
Retired	25	15.2
Monthly income (BD. Taka)		
<5000	80	48.5
5000-10000	61	37.0
>10000	24	14.5

Note. 1 US $=70 Taka, SSC=Secondary School Certificate, HSC=Higher Secondary School Certificate

Beliefs related to CT use

Beliefs about the uses of CT indicate the beliefs Bangladeshi cancer patients have for using CT. Data revealed that the highest percentage of the subjects used CT because they believed it would relieve of symptoms (63.0%), followed by curing cancer (34.5%), reducing side-effects (27.9%), preventing the spread of the disease (6.1%), feeling hopeful (4.8%), and other beliefs (1.8%) (Table 4).

Table 4

Frequency and Percentage of Beliefs for Uses of Complementary Therapies (N=165)

Subjects Characteristics	*n*	%
Belief on uses for CT		
Relieve symptoms	104	63.0
Cure cancer	57	34.5
Reduce side-effects	46	27.9
Prevent spread	10	6.1
Feel hopeful	8	4.8
Other beliefs	3	1.8

Note. Percentage exceeds hundred due to multiple responses

Availability of support for CT use

Sources of knowledge regarding CT: Subjects received knowledge of the use of CT from friends (32.7%), family members (23.6%), mass media (17.6%), traditional healers (13.9%), other cancer patients (13.9%), CT practitioners (7.3%), and health personnel (3.0%). In addition, regarding the sources of support for using

CT, most subjects mentioned they received support from their family members (57.0%) followed by relatives (30.9%). In addition, 12.7% received support from their friends. Regarding performing CT, more than two-fifths obtained therapies from CT practitioners (46.1%), followed by traditional healers (35.8%), relatives (6.7%), family members (5.5%), and friends (3%). However, 12.1% of the subjects stated that they had obtained complementary therapies themselves (Table 5).

Table 5

Frequency and Percentage of Availability of Support for CT Use (N=165)

Variables	*n*	%
*Sources of Knowledge Regarding CT		
Friends	54	32.7
Family members	39	23.6
Mass media	29	17.6
Traditional healers	23	13.9
Other cancer patients	23	13.9
CT practitioner	12	7.3
Health personnel in the hospital	5	3.0
Sources of support for use of CT		
Family member	94	57.0
Friends	21	12.7
Relatives	51	30.9

Note. *Percentage exceeds hundred due to multiple responses

Table 5 *(Continued)*

Variables	*n*	%
*CT performers		
CT Practitioners	76	46.1
Traditional healers	59	35.8
Patients	20	12.1
Relatives	11	6.7
Family members	9	5.5
Friends	5	3.0
Natural resources	8	4.8
Market	1	0.6

Note. *Percentage exceeds hundred due to multiple responses

Patients' need

The needs include perceived and evaluated needs. For the perceived need, the cancer patient's indicated their perceptions regarding the symptoms and measures taken to prevent the symptoms. For evaluated needs the professional experts' measurements indicated: the cancer diagnosis site; duration after cancer diagnosis; cancer stages; and conventional cancer treatment received.

Subjects reported that, for their perceived needs, they used CT when they had the following symptoms: pain (52.1%), followed by distress (24.8%), nausea and vomiting (17.6%), anxiety (15.2%), and alopecia (11.5%) (Table 6).

Table 6

Frequency and Percentage of Symptoms for Using CT (N=165)

Subjects Characteristics	*n*	%
Symptoms for using CT		
Pain	86	52.1
Distress	41	24.8
Nausea and vomiting	29	17.6
Anxiety	25	15.2
Insomnia	22	13.3
Alopecia	19	11.5
Others	21	12.7

Note. Percentage exceeds hundred due to multiple responses

However for the evaluated needs it was found that more than two-fifths (43%) of the subjects had 3-6 months duration from the cancer diagnosis. For the site of the cancer, lung, breast, and cervical cancer were distributed equally as planned (55 cases per cancer site). Nearly half of the subjects had stage II cancer (45.5%) and more than three-fourths of the subjects received chemotherapy (78.2%) at the time of collecting data. Evaluated needs indicated the subjects' health related characteristics (Table 7).

Table 7

Frequency and Percentage of Health-Related Characteristics of the Subjects (N=165)

Subjects' Characteristics	*n*	*%*
Duration of illness after diagnosis (months)		
<3	64	38.8
3 – 6	71	43.0
7 – 12	17	10.3
>12	13	7.9
Stages of cancer		
Stage I	67	40.6
Stage II	75	45.5
Stage III	23	13.9
Pattern of conventional treatment		
Chemotherapy	129	78.2
Radiotherapy	32	19.4
Surgery	4	2.4

Outcomes of Use of CT

Majority of the subjects reported they had received a little benefit (66.7%), and 27.9% received moderate benefits in their cancer treatment, and 3.0% reported that CT had very beneficial effects. Only 2.4% thought that they did not get any benefit from the complementary therapies (Table 8).

Table 8

Frequency and Percentage of Benefit Received from the Uses of CT (N=165)

Subjects Characteristics	*n*	*%*
Level of benefit received from using CT		
None	4	2.4
Little	110	66.7
Moderate	46	27.9
Very much	5	3.0

Content Analysis

This study's findings revealed that the cancer patients used CT to reduce the following symptoms: pain, anxiety, dyspnoea, cough, nausea and vomiting, restlessness, insomnia, weakness, and alopecia. The subjects stated that they used complementary therapies with modern treatment and received degrees of benefits. Among the complementary therapies, the subjects reported that they used homeopathy, ayurveda, massage, meditation, herbs, prayer, and nutrition therapy. These content analysis findings ensured and enriched the quantitative findings (Appendix F).

The subjects reported that they used homeopathy to reduce their pain. They believed that homeopathy therapy acts internally, slowly and deeply in the disease process, and has no side-effects. They had previous experience of benefit received from the uses of homeopathy. In addition they used homeopathy to reduce dyspnoea. Above all, they felt that the combination of both conventional treatment and homeopathy reduced symptoms completely and effectively. Ayurveda was used to reduce coughing. The subjects believed that they used ayurveda because it is natural

and uses safe drugs, reduces symptoms completely, and has no side effects. The subjects reported that ayurveda reduced coughing effectively more than modern treatments. The subjects also used massage therapy to reduce pain. They believed that massage acts slowly and has no side effects. They had previous experience of pain reduction from massage therapy. The subjects commented that they received better benefit from using massage with conventional treatment. In addition they stated that they used meditation to reduce anxiety and insomnia. During meditation the subjects became calm, quiet, and their minds were refreshed. The subjects also believed that meditation reduces anxiety safely and in better ways than the conventional treatment. They reported that meditation reduced insomnia slowly and naturally. Regarding herbs, the subjects believed that herbs increase saliva secretion, taste and act at once. They also believed that herbs are natural and safe drugs. The subjects commented that they were satisfied with herbs used with the conventional treatment. Moreover, the subjects reported that they used prayer to reduce anxiety. They believed that prayer increased confidence, made them feel peaceful, and brought happiness. After prayer, they felt mental satisfaction (Appendix F).

Discussion

This study offered evidence regarding the use of complementary therapies among cancer patients in Bangladesh who were able to actively participate in conventional treatment, chemotherapy, radiotherapy, and surgery. All subjects in the study used at least one type of CT. This number is higher than what Islam and Farah (2008) estimated earlier. They found that 70-75% of the population of Bangladesh

used complementary and alternative medicine (CAM) for the management of their health problems of different kinds. This may be explained by the fact that of the many health problems, cancer is the most distressing and has many painful symptoms. As the cancer patients experienced the many symptoms and side-effects of modern treatment, they wanted to take all other available treatment methods (Yang, Chein, & Tai, 2008). Therefore, the study aimed at identifying the use of complementary therapies including the types, methods, frequency, and duration of use; and the reasons for and outcome of using complementary therapies by cancer patients. The findings of this study are discussed below in relation to the research questions and using the Andersen behavioral model.

Use of Complementary Therapies

This section is a discussion of the use complementary therapies with regard to their types, methods, frequency, and duration of use. The findings of this study are discussed in relation to the context of Bangladesh and they are compared to studies of other countries.

Types and methods of CT use

There were different types of CT used by the Bangladeshi cancer patients. Majority of them used at least one type of complementary therapy (77.0%). Some of them used more than one type of CT (Table 1). Among the major types, most of the subjects used alternative medical methods (70.9%), followed by mind-body intervention and the lowest number used manipulation and body based methods. There was no use of energy therapies by Bangladeshi cancer patients.

Among the alternative medical methods, homeopathy was the most used in Bangladesh (62.4%) (Table 2). From the researcher's experience, in Bangladesh, homeopathic treatment is more available than ayurveda. This is because sometimes it takes time to find ayurveda treatment. But homeopathic treatment is available everywhere as it is run as a small business. Many people handle such business everywhere in Bangladesh. People also undergo homeopathic treatment for their other health problems. In addition, people stated that the homeopathic treatment is cheaper, easy to access, and has fewer side-effects (Haq & Tareq, 2009). For the rural people of Bangladesh, family members prefer to use homeopathy. In addition, the homeopathy doctors in Bangladesh mentioned that 70% of their patients visited them for treatment of tumors (Haq & Tareq, 2009). In Texas, USA, Richardson et al. (2000) showed that there was evidence of using homeopathy as a CT for cancer patients (17.6%). The use of homeopathic therapy in cancer patients is appropriate in the Bangladesh context. In contrast, the Toronto University Cancer Care Unit found that homeopathic therapy was used less (4%) (Rakovitch et al., 2005). Furthermore, in the UK, Manchester University showed that few people (3.8%) used homeopathy as CT (Molassiotis et al., 2005). The Manchester and Toronto University studies were both in developed countries.

There are many complementary therapies available in developed countries than developing countries such as Bangladesh. This study finding of quantitative data indicated that, only ayurveda, homeopathy, and prayer are more available in Bangladesh. Therefore Bangladeshi cancer patients used homeopathic therapy more than those in developed countries. This finding is similar to the open-ended data.

Most of the subjects use homeopathy for various purposes: to reduce pain, to reduce cough, and to reduce dyspnoea (Appendix F).

In mind-body intervention, faith based prayer was the most used CT (75.4%) (Table 2). The Bangladeshi people have great belief in religion. In their cultural context they used prayer according to their religious beliefs. Usually they practiced prayer for any health problem. The people believe that by praying they could be freed from the disease or the symptoms will be reduced. Above all, the people feel satisfaction after prayer and achieve peace of mind (Appendix F). In a developing country like Nigeria, it is evident that there was a high prevalence of faith-based prayer (Ezeome & Anarado, 2007). This finding is similar to the Bangladesh context. As both of the countries are developing countries, with a majority of Muslim people, they have similar socioeconomic and cultural contexts. Another study in South Africa among Indian people found that spiritual measures and herbs were common forms of CT (Singh, Raidoo, & Harries, 2007). Bangladesh and India are more similar in their cultural contexts. Therefore, Bangladeshi people used prayer as spiritual therapy. The findings of both the study in Nigeria and South Africa are similar to those of the Bangladesh context.

Moreover, Bangladeshi people used herbs most as complementary therapy in biological based therapies (71.4%) (Table 2). One study in Bangladesh, regarding the Unani medical service delivery throughout the country, found that 55.5% of the females use herbs (Kabir, Haque, & Paul, 2009). Another study in the USA revealed that herbs were used as complementary therapy by cancer patients (38.0%) (Richardson et al., 2000). This finding is in accord with the use of herbs by Bangladeshi cancer patients. In addition this finding is confirmed by the content analysis as the

subjects used herbs in reducing their nausea and vomiting. They have belief in herbal therapies and they have experienced the benefits received (Appendix F).

In addition, only six subjects used massage in the manipulation and body based method. In Bangladeshi cancer patients, massage is not popular because culturally it is not accepted. People use massage at home their families. In Bangladesh the majority of the people are Muslim (Health bulletin, 2007). Muslim women use curtains and scarves. Usually the women do not want to open their cloths in front of other people. In addition, the Muslim people do not like their body to be touched by a person of the opposite sex in accord with their religious beliefs. Moreover there are not enough massage centers in Bangladesh. In addition, the subjects expressed in open-ended data that they believed the massage only has a local effect. The massage has no inner effects so they don't like to use massage (Appendix, F). This finding is in line with developed countries. One study revealed that out of 251 cancer patients, only 23 subject used massage (Rakovitch et al., 2005). Another study was conducted in a developed country Canada where there was little use of massage (26%) (Heyler et al., 2006). In both the above studies massage therapy was little used by cancer patients. The findings of the content analysis revealed that:

> *"Bangladeshi cancer patients have no strong belief in massage therapy and they think that massage therapy has only local effects"* (Appendix, F).

In addition there was little history of family use of massage therapy. Therefore, these findings are in line with massage use in Bangladeshi cancer patients. As for the methods of use of CT, all subjects reported that they used CT by mouth and only practiced prayer, meditation and massage therapy (Appendix F).

Frequency and duration of CT use

Bangladeshi people have had earlier experience of the use of CT with health problems (Islam & Farah, 2008). With the health problems of cancer, the patients felt that there were long durations of symptoms and side-effects from modern treatment (Yang, Chein, & Tai, 2008). Therefore cancer patients joined complementary therapies with conventional treatment (Verhoef et al., 2005). Similarly, this study finding found that the subjects used CT more frequently than in previous times. Whereas 6.5% previously used homeopathic therapy currently 41.3% used it. In consequence previously they used it on a less regular basis than currently. The rest of all other therapies were also used less previously and currently are used more. These include meditation, prayer, traditional healers, herbs, nutrition therapy, vitamins, animal extracts, and massage. The cancer symptoms and associated suffering influence the use of CT (Yang, Chein, & Tai, 2008). This finding indicated that the subjects realized the benefits after adding CT to modern treatment. The benefits as well as the outcomes of the use of CT were confirmed by the open-ended data (Appendix, F). The subjects reported that they received benefits after using CT with conventional treatments (Table 8).

Regarding the duration of CT use the findings indicated that most of the therapies were used less than 6 months duration. These findings are similar to all types of CT (Table 2). In addition, this finding is related to the open-ended responses. Out of one hundred sixty five subjects only thirty subjects used CT equal to or for more than three months duration. This finding is related to the Bangladesh context. In Bangladesh cancer treatment and diagnosis facilities are not available in primary and secondary level hospitals (Health Bulletin, 2007). Usually the cancer patients are

diagnosed late. After diagnosis, most of the cancer patients' deaths occur within a few years (NICRH, 2005). In addition they give first priority to conventional treatment and they add CT last. Therefore usually there is only a small duration for the use of CT (Table 7).

Reasons for Use of CT

Several reasons could be explained implicitly and explicitly for the use of CT. Andersen's model of predisposing factors (demographic characteristics and beliefs related to CT use), enabling resources (Availability of support from family, friends, & health personnel) and patients need (Perceived need and evaluated need) was used to explain the reasons why cancer patients in the study used CT.

Demographic characteristics

The cancer patients involved in this study were middle aged adults (average 45 years). Findings from this study agree with the annual report of the NICRH (2005), in which it was revealed that the mean age of cancer patients was (48 years). In this study, the highest percentage of age group was 40-49 years (32.1%) (Table 3), which was similar to the unpublished record of NICRH (2008). This age group may receive adequate information regarding CT and that may contribute to their decision to take CT as evident from the fact that all of them used at least one type of CT. One study conducted in USA by Richardson, Sanders, Palmer, Greisinger, and Singletary (2000) revealed a similar finding that the majority of cancer patients used CT with conventional treatment. However, most of the subjects were female (68.5%). In this study, the subjects were categorized in three groups: breast cancer, cervical cancer, and lung cancer. Each group had an equal number of 55 subjects. Among all subjects,

two-thirds were female (113) and one-third was male (52) according to the type of cancer. In cervical and breast cancer all subjects were female whereas in lung cancer only two cases were female and the rest were all male. In fact lung, breast, and cervical cancer provide the highest number of cancer cases in the Bangladesh (NICRH, 2008).

The majority of the subjects (84.8%) was Muslim and married (87.3%), which is consistent with the Bangladesh context. Bangladesh is a Muslim country and 90% of its people are Muslim and 10% are of other religious beliefs. Most Bangladeshi people are married before they are 30 years old. This result is in line with the census report of 2001 which showed Islam 89.7% and Hindu 9.2% (Health Bulletin, 2007). A European survey revealed that most participants were married (N=703; 74%) (Molassiotis et al., 2005).

The subjects' level of education was mostly less than primary school. About half of the subjects were unemployed (47.9%) and the rest of the subjects had monthly incomes of less than Bangladesh taka 5000 (48.5%) per months (equal to US $ 857 per annum).This finding is similar to the annual report of NICRH (2005) that showed that more than 80% cancer patients were earning less than 5000 taka/month. This condition is characteristic of the lower socioeconomic classes in Bangladesh. Bangladesh is a developing country and has more rural area than urban. This study reported that the rural subjects made up the highest percentage of 66.7 and the urban were the lower percentage of 33.3. This result is in accord with the Bangladesh population context; the rural population has a higher percentage (68.7) than the urban (31.3) (Health bulletin, 2007).

From this study finding suggests that complementary therapies are more available in rural areas than in urban areas in Bangladesh. In Bangladesh, conventional health facilities are poor in rural areas. The secondary and tertiary level hospitals are at district and divisional levels (Health Bulletin, 2007) whereas complementary therapies such as herbs, prayers, biologically based therapy and homeopathy are more available in rural areas (Haq & Tareq, 2009; Kabir, Haque, & Paul, 2009). Therefore, the users of complementary therapies are found in rural areas rather than in urban areas. This is in contrast to a previous study in Turkey, where rural and urban areas are nearly the same percentage at 46.9 and 48.2 respectively (Tas et al., 2005).

Beliefs Related to CT use

Regarding belief about the uses of CT, cancer patients have beliefs about the use of CT. It is evident that patients' comments regarding the uses of CT are considered in their beliefs. In this study most of the patients believed that they use CT in the belief it will relieve their symptoms (63%) (Table 4). One-third of the subjects believed in curing cancer and one-fourth of them believed in reducing the side-effects by using CT. This data was supported by the content analysis report. The study subjects reported that they use CT because of their belief it would relieve symptoms, cure cancer, and reduce side-effects (Appendix F).

Usually the people do not want to take any method of treatment modalities of CT for their ailments with conventional treatment. If they have no belief about them or anyone to influence them as about using CT might benefit if they previously used CT. During the course of the disease people want to get free from the disease or relief from the symptoms. In Bangladesh, most people live in joint families. Such people are

friendlier. During the disease the patients receive information from the family or friends (Haq & Tareq, 2009). In this study the findings also showed that patients received information from family and friends (32.1% and 23.6%, respectively). In this situation, they want to take all available treatment possibilities through belief in the therapies or from influence by family members or friends. The beliefs which cancer patients hold about using complementary therapies include: the holistic approach is best; that CT has less side-effects and is non–toxic; there is a change in life style and an improved quality of life; there is relief of symptoms and anti cancer effects; toxins are eliminated; the body's healing mechanisms are improved; and the immune system is improved (Rakovitch et al., 2005; Eustachi, 2007; Spadacio & Barros, 2008). Previous study findings confirm those of this study (Rakovitch et al., 2005). In addition, the open-ended information supported the study findings (Appendix F).

Availability of support for use of CT

The subjects knew about CT through several sources including friends, family members, mass media, traditional healers, and CT practitioners. They also reported that they knew about it from other patients and health personnel (Table 5). As mentioned earlier, CT has long been practiced in Bangladesh and became known to the public. Many complementary and alternative medicines are advertised in local newspaper (Islam and Farah, 2008). Such advertising makes CT known to a wide range of people. A wide variety of sources of information were used to enable the patients to select CT. These were: the sources of knowledge and support, and the availability of resources in their local community (Molassiotis et al., 2005). In this study, a majority of Bangladeshi cancer patients received information regarding the use of CT from their friends, family members, and mass media (Radio, TV &

Newspapers). Most of the information regarding uses of CT is advertised in newspapers in Bangladesh (Islam & Farah, 2008).

The majority of Bangladeshi people live in a joint family. Family member take care of the other people in the family. For example, when one member of the family suffers from cancer for a prolonged period, the other family members supports them to use CT. (Ezeome & Anarado, 2007; Swisher et al., 2002). In addition, while friends visit their sick friends, they share their feelings with each other and advise them to take traditional medicine as complementary therapies for relieving their symptoms (Haq & Tareq, 2009). Similarly, friends, family members, and mass media seemed to be the most important sources of information (Molassiotis et al., 2005; Swisher et al., 2002). In contrast, regarding sources of information, one study in UK showed that the highest percentages of sources of information were media, friends and the least were family members (Scott, Kearney, Hummerston, & Molassiotis, 2005). UK is a more highly developed country than Bangladesh. In the UK, the media is more established than in Bangladesh.

In this study, the cancer patients received more than fifty percent support from their family members followed by their relatives and friends. Similarly, Verhoef, Hilsden, and O'Beirne, (1999) found that cancer patients were encouraged to use CT by family members and friends. Content analysis revealed that Bangladeshi cancer patients have a history of use of complementary therapies by their family members (Appendix, F). Usually, family members influence cancer patients to use CT, when the cancer patients are not satisfied with the conventional treatment. One unpublished survey in Bangladesh found that most of the family members supported their cancer patients in using CT (Haq & Tareq, 2009).

Moreover, the availability of resources also influenced the use of CT. In this study fifty percent of the cancer patients had been informed about the CT by CT practitioners, followed by traditional healers and themselves. In Bangladesh, different kinds of CT practitioners are available: homeopathic, ayurveda and herbal (WHO, 2009). The homeopathy, ayurveda and herbal practitioners advised the cancer patients to take remedies from their shops. Therefore, CT practitioners are the major sources of CT in Bangladesh. These findings agree with the study of Ezeome and Anarado (2007). They found that most of the CT sources were CT practitioners, followed by relatives, friends, and the open market. From the researcher's experience, complementary therapies are available more from complementary therapy-practitioners. Complementary therapy practitioners advised about complementary therapies and sell the CT products from their own dispensaries. In addition, some traditional healers make the products in their home and sell them to the patients (Islam & Farah, 2008). As a result the traditional healer has come to be a CT resource person. In addition, sometimes the cancer patients buys CT themselves from the market in such way they could be a CT source for ginger, and herbal drugs.

Patients' needs

Two types of need can be specified: perceived need and evaluated need. Perceived need is the individual's perception on the part of the cancer patient regarding the presence of illness, response to illness and measures taken to prevent illness (Fouladbakhsh & Stommel, 2007). The perceived need indicates the symptoms which influence them to use CT. Among the symptoms, pain was the highest motive for the use of CT (52.1%) (Table 6). The symptoms indicated the presence of illness.

The presence of illness comes as well as the symptoms. How patients respond to their illness, as well as the measures they take to prevent it, influence their use of CT.

Cancer patient's symptoms occur because of the disease and the side-effects of modern treatments. Nausea and vomiting occur because the chemotherapeutic drugs' stimulate the vagus nerve by serotonin secretion. In addition chemotherapy affects the first dividing cells of the body decrease the immune system as a result, so infection, sepsis, and weight loss occur. Mucosal reaction from the radiotherapy occurs as inflammation, irritation, and dysfunction (Smith & Tonen, 2007; Sohl, Schnur, & Montogomery, 2009). A meta-analysis of the relationship between response expectancies and cancer treatment's related side-effects revealed that the side-effects of cancer treatments commonly caused pain, fatigue, nausea, and vomiting (Sohl, Schnur, & Montogomery). In this study the symptoms were found to be pain, distress, nausea and vomiting, anxiety, insomnia, alopecia and others. These symptoms influence the use of CT. The subjects reported that the pain was the greatest symptoms for using CT. Most of the cancer patients had common symptoms of pain (Sohl, Schnur, & Montgomery). The majority of the subjects stated that the complementary therapies are safe, non-invasive and generally considered to be free of toxicity.

Similar beliefs were found in the contents analysis (Appendix, F). Thus the cancer patients use CT to get relief from pain. Pharmacologic treatment of pain does not always reduce the cancer pain and may produce difficult side-effects (Cassileth, Trevisan, & Gubuli, 2007). In contrast, Taiwan researchers found that pain was the lowest reasons for using CT; whereas boosting the immune system was the most

significant reason (Yang, Chien, & Tai, 2008).This difference in the findings reflects differences in beliefs. In the open responses one subjects expressed that the following:

> "*The cancer pain doesn't reduce fully in conventional treatment because conventional treatment acts only on a temporary basis on the symptoms. The complementary therapies act deeply and slowly on the disease. As a result the symptoms disappear clearly and cure the disease*" (Appendix, F).

The evaluated need was the health related characteristics: This study finding indicated that the majority of the cancer patients who used CT suffered from the disease for less than six months (81.8%). They were at the second stage of cancer (45.5%). They had been treated with chemotherapy (78.2%) (Table7). Cancer diagnosis and treatments facilities are not available in rural areas of Bangladesh. Most of the people live in rural areas. In addition, the district hospitals do not have sufficient cancer treatment facilities (Health Bulletin, 2007). As a result, the people spend more time having their cancer diagnosed. Therefore they are finally diagnosed at a late stage of cancer. After diagnosis, they may nor live longer (NICRH, 2005). In consequence, as they are diagnosed late, the opportunity for surgical treatment is over. In addition, due to the lack of radiotherapy facilities, only chemotherapy is easily accessed by Bangladeshi cancer patients.

Furthermore, the chemotherapy side-effects and treatment related symptoms appear more than with radiotherapy. The cancer patients treated with chemotherapy experienced more common symptoms like lack of energy, coughing, pain, loss of appetite, nausea, and insomnia (Can, Erol, Aydiner, & Topuz, 2009). In addition, all conventional treatments have side-effects. The side-effects of chemotherapy are more prominent than the other therapies. Similarly, in the USA, Nahleh and Tabbara (2003)

found that breast cancer patients used complementary therapies to minimize the side-effects of conventional treatments. In the content analysis, the study subjects enriched the findings by showing that they used CT to reduce side-effects such as nausea and vomiting, distress, alopecia, and insomnia (Appendix, F). Furthermore, health factors such as physical and psychological symptoms: distress influence cancer patients to use CT (Bishop & Lewith, 2008). It is also seen that late stage cancer patients develop more symptoms than in the early stage of cancer. A similar study in Canada revealed that most of the subjects used CT having stage II (65%) cancer and half of them having chemotherapy treatment (55%) (Rakovitch et al., 2005).

The majority of the Bangladeshi patients had little education. In this study, nearly fifty percent of subjects had no formal education (41.8%). They did not want to wait for their treatment to be effective over a long duration. They wanted early recovery from disease or reduced symptoms. As cancer is a chronic disease, they wanted to take all the treatment available to reduce their symptoms in order to get satisfaction at least (Appendix, F). These findings are similar to those of Heyler et al. (2006). They showed that the more strenuous the treatment, the more likely the patient is to use CT. Heyler et al. also found that the highest percentage (81%) of chemotherapy patients used CT.

Outcome of Use of CT

Outcomes indicate the level of benefit subjects actually receive by using CT. Almost all of the subjects received a little or moderate benefit from the use of CT (Table 8). They believed in the benefits of CT. Bangladeshi people have the habit of using CT for their other health problems (Islam, & Farah, 2008). Therefore they have

developed beliefs about using CT gradually. In Bangladesh, a survey of homeopathic therapy revealed that 70% of tumor patients use homeopathy (Haq & Tareq, 2009). One study in USA revealed that the pharmacologic treatment of pain did not reduce the pain effectively. But a combination of complementary therapies reduced pain effectively and improved the quality of life (Cassileth, Trevisan, & Gubuli, 2007). Similarly, in this study the Bangladeshi cancer patients' perceived pain was reduced effectively when adding complementary therapy to the modern treatments (Appendix, F). Another study showed that the combination of both methods of treatment used by the cancer patients, such as conventional therapies and complimentary therapies, there were better outcome than if only conventional therapy is used (Gilbar, Iron, & Goren, 2001). However the researcher did not ask whether CT can help to reduce the particular symptoms they experienced.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This descriptive study was designed to explore the use of complementary therapies and the reasons for and outcome of use by patients with cancer in Bangladesh. One hundred sixty five patients with lung, breast, and cervical cancer were recruited purposively from the out-patient department of the National Institute of Cancer Research and Hospital, Mohakhali, Dhaka, Bangladesh. The cancer patients were asked to fill in a set of closed-ended questionnaires to measure the main variables, in addition to 9 open-ended questions. The data were analyzed by using descriptive statistics. This chapter describes the conclusions, strengths and limitations, implications and recommendations based on the findings of the study.

Major Findings

This study found that most of the subjects were female and had an average age 45 years. The majority of the subjects were Muslims. The subjects of the study stated that they used at least one type of CT (77%). Among the major types of complementary therapies uses, the alternative medical method was used by the highest number of subjects (70.9%), followed by mind-body intervention (34.5%). Moreover, among the subtypes of each therapy, of the subjects 62.4% used homeopathy as an alternative medical method and 75.4% used prayer in mind-body intervention. None used of Chinese medicine and energy therapies. In addition, the majority of the cancer patients received a little benefit from the use of CT (66.7%).

Regarding the reasons, the study findings indicated that though the subjects had the highest belief in relief of symptoms. Next was the availability of family and friends in supporting the use of CT. Most of them used CT for the relief of pain, and there was much use of homeopathy and prayer for reducing their symptoms.

Strengths and Limitations

The strength of this study lies in the number of study subjects (165) which was established by using a proportional estimation formula from the total population (16,530). A sample of 1% for the larger population (>10,000) is suitable for descriptive studies (Rosner, 2006) and this indicates the strength of the study. The finding of this study can be generalized for understanding the concepts and use of complementary therapies including the types, methods, frequency, duration, reasons, and outcomes. The quantitative data was confirmed by the detail provided by the qualitative data. The subjects added more detailed and relevant information in response to open-ended questions.

However, the present study also has some limitations. The female sample was twice the size of the male sample. The generalization of the findings may be biased towards female cancer patients. Another limitation is that this study used purposive sampling to recruit the patients who used complementary therapies with conventional treatment of patients and this was limited to patients diagnosed with lung, breast, and cervical cancer. Each group of cancer cases was 55 subjects as previously planned. Therefore, this group does not represent the patients with other cancer sites. In addition, this limits the generalizablity of the findings because of the study subjects were limited to lung, breast, and cervical cancer sites.

Implications and Recommendations

The findings of the study offer the following implications and recommendations.

Nursing education

It is evident in this study that there is a lack of health personnel support regarding the uses of CT presented by cancer patients. Thus training programs regarding the uses of CT should be offered for oncology nurses. In addition, the study findings could be used by nurse educators as research evidence in teaching their students about the complementary therapy used by cancer patients. Therefore it is recommended that, in order to adjust nursing care for cancer patients in Bangladesh, the use of complementary therapies should be extended among cancer patients.

Nursing practice

The findings provide an additional insight when nurses provide care to cancer patients. The findings will help oncology nurses to care for cancer patients by including the assessment of the use of CT as a guide to develop health education programs for cancer patients. This knowledge will help to provide more comprehensive care and establish rapport between cancer patients and oncology nurses. In addition the oncology nurses will allow the cancer patients to add the complementary therapies to the conventional treatment to satisfy the patients.

Nursing administrators

Nurse administrators could use the study findings to ask health policy makers to allocate budgets for training oncology nurses regarding the uses of complementary therapies among the cancer patients. This should improve the quality of care and develop health education programs for cancer patients.

Nursing research

This study should contribute to a better understanding of the complementary therapies used by cancer patients, including the types, methods, frequency, duration, outcomes, and reasons. The following recommendations are based on the findings. The findings from the study should provide base line data for future studies in the use of CT among cancer patients in Bangladesh. A replication study is recommended to see the effects on an equal number of male and female cancer patients and on all sites of cancer. In addition, a quantitative study is needed to find out the level of the benefits gained regarding the types of CT use. In addition, an experimental study is also needed to find out which symptoms are reduced by the different types of CT with or without conventional treatment.

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APPENDICES

APPENDIX A

INSTRUMENTS

Respondent ID Code: Unit: Date:

Part 1: Demographic and health related questionnaire

I will ask some personal data including demographic and income related questionnaire. Please answer the best choice and tick (√) in the space available.

Section I: Demographic Question

1. Age in years ----------years

2. Gender ☐ (1) Male ☐ (2) Female

3. Living Place ☐ (1) Rural ☐ (2) Urban

4. Marital Status ☐ (1) Single ☐ (2) Married ☐ (3) Widow /Widower ☐ (4) Divorced

5. Religion Status ☐ (1) Islam ☐ (2) Hindu ☐ (3) Buddhist ☐ (4) Christian

6. Educational Status ☐ (1) No formal education ☐ (2) Primary ☐ (3) SSC ☐ (4) HSC ☐ (5) Bachelor/ Master ☐ (6) Others

7. Occupation ☐ (1) None ☐ (2) Farmer ☐ (3) Business ☐ (4) Employment ☐ (5) Retirement

8. Monthly Income ☐ (1) < 5000 Taka ☐ (2) 5,000-10,000 Taka ☐ (3) >10,000 Taka

Section II: Health Related Question

(This section will be filled up by the researcher from medical record of the subjects)

1. Duration of illness after cancer diagnosis

☐ (1) < 3 months

☐ (2) 3-6 months

☐ (3) 7-12 months

☐ (4) > 12 months

2. The diagnosis of cancer site

☐ (1) Lung

☐ (2) Breast

☐ (3) Cervical

3. The stage of cancer

☐ (1) Stage I

☐ (2) Stage II

☐ (3) Stage III

☐ (4) Stage IV

4. The conventional treatment is receiving at the data collection period

☐ (1) Chemotherapy

☐ (2) Radiotherapy

☐ (3) Surgery

☐ (4) Others, specify please----------

Part 2: This Questionnaire has four sections

Section (i) Types of Complementary Therapies Uses Questionnaires.

Please read each statement of the uses of Complementary therapies regarding the types, frequency, method, and duration of CT use and tick the answers that match with your experience

Types of complementary therapies used		Experience of using CT & How often do you use	How did/do you use the CT?	How long did / have you used The CT?
Alternative Medical Methods (1) Yes ☐ (2) No ☐	Chinese Medicine (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Locally apply O Orally O Others---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Ayurveda (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Locally apply O Orally O Others---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Homeopathy (1)Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Locally apply O Orally O Others---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Other (1) Yes ☐ (2) No ☐ If yes, please specify---------- ----------	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Locally apply O Orally O Others---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years

Questionnaire Continued

Types of complementary therapies used		Experience of using CT and how often do you use with cancer?	How did/do you use the CT?	How long did/ have you used the CT?
Mind body intervention (1) Yes ☐ (2) No ☐	Meditation (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Practice O Others---------- ---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Pray (1)Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Practice O Others---------- ---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Traditional healer remedies (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Practice O Others---------- ---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Other (1) Yes ☐ (2) No ☐ If yes, please specify---------- ----------	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Practice O Others---------- ---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years

Questionnaire Continued

Types of complementary therapies used		Experience of using CT and how often do you use with cancer?	How did/do you use the CT?	How long did/ have you used the CT?
Biological based therapies (1) Yes ☐ (2) No ☐	Herb (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Nutrition (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Vitamin (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Animal extract (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Other (1) Yes ☐ (2) No ☐ If yes, please specify---------- ----------	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years

Questionnaire continue

Types of complementary therapies used		Experience of using CT and how often do you use with cancer?	How did/do you use the CT?	How long did/ have you used the CT?
Manipulation and body based methods (1) Yes ☐ (2) No ☐	Massage (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Locally O Practice O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Other (1) Yes ☐ (2) No ☐ If yes, please specify------	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O Orally O Practice O Others---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years

Questionnaire Continued

Types of complementary therapies used		Experience of using CT and how often do you use with cancer?	How did/do you use the CT?	How long did/ have you used the CT?
Energy Therapies (i) Yes ☐ (ii) No ☐	Qigong (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O practice O Others---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Reiki (1) Yes ☐ (2) No ☐	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O practice O Others---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years
	Other (1)Yes ☐ (2) No ☐ If yes, please specify---------- ---------- ----------	O Previously Once O Previously Several times O Previously Regular basis O Currently Once O Currently Several times O Currently Regular basis	O practice O Others---------- ---------- ---------- ----------	O <3 month O 3-6 month O 7-12 month O > 1years

Section (ii) Reasons for uses of CT

Please read each statement of the uses of complementary therapies regarding the beliefs on CT, symptoms for CT use and benefit of CT use and tick the correct one that best describes your experiences about the reasons of CT uses.

	The reasons for uses of CT	**Yes**	**No**
1	For which belief do you use CT		
	Cure cancer		
	Prevent spread		
	Relieve symptoms		
	Reduce side effects		
	Feel hopeful		
	Others specify_____		
2	For what symptoms do you choose to use CT		
	Anxiety		
	Insomnia		
	Nausea & vomiting		
	Distress		
	Pain		
	Alopecia		
	Others specify _____		
3	What is the level of benefit you have received from using CT		
☐	None		
☐	Little		
☐	Moderate		
☐	Very much		

Section :(iii) Enabling resources related questionnaire.

Please read each statement and tick the correct one that best describes your enabling resource about the uses of complementary therapies.

	The resource enable you to use CT	**Yes**	**No**
1	You came to know about the use of CT		
	From family members		
	From friends		
	From health personnel in the hospital		
	From mass media (TV, Radio, Newspaper, Magazine)		
	From traditional healer		
	From CT practitioner		
	From same cancer patient		
	From others		
2	You received support to use CT from		
	Family Member		
	Friends		
	Relatives		
	None		
3	You got CT from (sources)		
	Family member		
	Relatives		
	Friends		
	Market		
	Natural resources		
	CT practitioner		
	Traditional healer		
	Yourself		
	Others		

Section : (iv) Open-ended Questionnaires

Respondent ID Code: Unit:

In this section, researcher will ask only 30 subjects who have been currently using CT at least 3 months.

1. What is your current treatment (radio therapy, chemotherapy and surgery) and medications? ----------
2. What are the most common signs / symptoms that affect your health? ----------
   ----
3. What are the most common three complementary therapies that you use?
   CT -I ---------- CT-II ----------
   CT-III----------
4. Why do you choose to use the complementary therapies at present ?----------
   CT-I ----------
   CT-II ----------
   CT-III ----------
5. How long have you been using the complementary therapies? ----------
   ----
6. How often do you use the complementary therapy and how do you use each of the complementary therapy?
   CT-I----------
   CT-II----------
   CT-III----------
7. Are there any beliefs that make you use the complementary therapy? ----------
   If yes, please explain your belief ----------
8. Do you have any family member who used complementary therapy? If yes, what kind of CT had he used?

   ----
9. What is the outcome that you have received from each therapy? and why do you think that ?----------
   ----

THANK YOU FOR YOUR COPERATION

APPENDIX B

VALIDATION OF THE INSTRUMENT CHECK

The content validity of the questionnaire was determined by three consulting experts. Two experts were from Thailand and one expert from Bangladesh. The expert's name is listed bellow:

1. Dr. Wantanee Wiroonpanich

   Assist. Professor, Department of Pediatric Nursing,

   Faculty of Nursing, Prince of Songkla University,

   Thailand.

2. Dr. Tippamas Chinnawong

   Assist. Professor, Department of Medical Nursing,

   Faculty of Nursing, Prince of Songkla University

   Thailand.

3. Saleha Khatun

   Lecturer, College of Nursing,

   Dhaka University,

   Mohakhali, Dhaka, Bangladesh.

APPENDIX C

BACK TRANSLATION OF THE INSTRUMENTS

Three persons worked on back translation of the instrument. “Survey Questionnaire for Uses of Complementary Therapies by Patients with Cancer in Bangladesh”

The back translator’s name is listed bellow:

1. Mrs. Taslima Begum

   Lecturer, College of Nursing,

   Dhaka University, Bangladesh.

   She was translated the questionnaire from original English to Bengali version.

2. Ms. Dipty Khatun,

   Assist. Professor & Department of English,

   Govt. Titumir College, National University,

   Mohakhali, Dhaka, Bangladesh.

   She was translated the questionnaire from Bengali to English Version.

3. Dr. Samaresh Chandra Hazra,

   Assist. Prof. Department of Skin and VD,

   Bangladesh Sheikh Mujib Medical University,

   Dhaka, Bangladesh,

   He checked the linguistic discrepancies both the original English version questionnaire and back translated English version questionnaire.

APPENDIX D

PERMISSION LETTERS

FACULTY
OF

PRINCE OF SONGKLA UNIVERSITY

P.O. BOX 9, KHOR HONG, HATYAI
SONGKHLA, THAILAND, 90112
FAX NO. 66-74-212901
TEL. NO. 66-74-286456,
66-74-286459

MOE 0521.1.05/3345

October 21 , 2009

Director of National Institute of Cancer Research
And Hospital (NICRH), Mohakhali, Dhaka,
Bangladesh

Dear Sir.

This letter is to inform you that Mr. Biplab Halder, a master student of the Faculty of Nursing, Prince of Songkla University, Thailand, is taking a thesis in his last semester. As passed of the requirement of the course, he has to conduct a research study in Bangladesh. His thesis entitled: "A Survey of Complementary Therapies Used by the Patients with Cancer in Bangladesh." Under the supervision of Asst. Prof. Dr. Ploenpit Thaniwattananon. The thesis proposal has been approved on 13 October 2009. Therefore, he will try-out research instruments and collect data from paitents at National Institute of Cancer Research And Hospital (NICRH), Mohakhali, Dhaka, Bangladesh. During 1 month (December, 2009 – January, 2010)

I will be greatly appreciated if Mr. Biplab Halder, is permitted to collect his data in your hospital, as it will provide valuable information for medical nursing care for hospitalized surgical patients.

If you need any further information regarding his study, please do not hesitate to contact us at the above address or e-mail us at: ploenpit.t@psu.ac.th. as his advisor.

Sincerely Yours,

Sang-arun

Assistant Professor Sang-arun Isaramalai, PhD., RN
Acting Dean,
Faculty of Nursing
Prince of Songkla University
Hat Yai, Songkhla 90110
THAILAND

Government of the People's Republic of Bangladesh
Office of the Director
National Institute of Cancer Research & Hospital
Mohakhali, Dhaka-1212.

Memo no-NICR&H/2009/ 2354 Date: 13/12/09

To
Director
& Line Director
Nursing Education & Services Programme
Directorate of Nursing Services
Dhaka.

Sub : Permission for research work on "A Survey of Complementary Therapies Used by Patients with Cancer in Bangladesh"

Reference : DNS/NES/Re-251/09/744, Date :08/12/2009.

In reference to the above mentioned subject you have requested for Biplab Halder to do research on the topics named "A Survey of Complementary Therapies Used by cancer Patients in Bangladesh" at National Institute of Cancer Research & Hospital, (NICR&H) which is a research institute, We appreciate such kind of research works. He may be allowed to perform his research works by collecting the data from the respective patients without using the laboratory facilities.

Sincerely,

13/12/09
Prof. (Dr.) Mollah Obayedullah Baki
Professor & Director, Radiotherapy
National Institute of Cancer Research & Hospital
Mohakhali, Dhaka-1212.

CC :

1. Professor of Radition Oncology, NICR&H..
2. Professor of Medical Oncology, NICR&H..
3. Professor of Surgical Oncology, NICR&H..
4. Professor of Gynae Oncology, NICR&H..
5. Associate Professor of Cancer Epidemiology, NICR&H..
6. Assistant Professor of Genitourinary Surgical Oncology, NICR&H.
7. Assistant Professor Sang-arun Isaramalai, PhD., RN
   Acting Dean, Faculty of Nursing, Prince of Songkhla University
   Hat Yai, Songkhla 90110, THAILAND.

APPENDIX E

INVITATION AND INFORMED CONSENT FORM

Dear Patients

My name is Biplab Halder. I am a senior staff nurse in the NIDCH at Mohakhali, Dhaka -1212 of Bangladesh. Now I am Master student of Nursing Science in Prince of Songkla University, Thailand. I am conducting a nursing research project to survey of complementary therapies used by patients with cancer in Bangladesh. If you agree to participate in this project, you will be interviewed to complete the questionnaires; which will take time 30 minutes. Please give me your answer as accurately as you can.

Your personal identity and all answers will be confidential. The information gathered will be revealed and remain anonymity and confidentiality. The benefit of the research is your awareness of types of complementary therapies being used in Bangladeshi cancer patients. You may withdraw from the research at any time if any potential harm without any effect on the conventional treatment or nursing care for you. Your participation in this study is voluntary. There is no cost to participate in this study and no financial award. Your signature in this form will indicate that you understand this form and willing to participate in this research.

----------	----------
Signature of the subject	Signature of the researcher
Date ----------	Date----------

Thank you very much for your participation. If you need information or have any questions, please contact with me Biplab Halder, at National Institute of Disease of the Chest and Hospital, Mohakhali, Dhaka, Bangladesh or Mobile # 8801552302016 or E-mail: biplabshilpi@yahoo.com

APPENDIX F

CONTENT ANALYSIS

Content Analysis

The Researcher categorized the information for lung, breast, and cervical cancer from the open-ended questions. Four characteristics of the uses of CT were coded out of nine open-ended questions: belief, symptoms, reasons, and outcome. The subcategories were then made on the basis of types of CT use: homeopathy, ayurveda, meditation, herb, nutrition, prayer, and massage therapy. The total number of open-ended questions answered by this group was n=30 out of the sample of 165. However, after the researcher read and re-read each category and the data from open-ended interviews in detail, he tried to make sense of and compare the data. Finally the researcher found common similarities and categorized the data into three categories: (1) lung, (2) breast, and (3) cervical cancer.

Category (1) Description of the lung cancer

The descriptions of the lung cancer category reflected the mainly types of CT use for having symptoms, beliefs and outcomes received. The details from the informants were as follows:

(1.1) Homeopathy used to reduce pain

It was found that four informants out of ten used homeopathy to reduce their lung cancer pain. The pain was located on the scapula, the back side of the lower lobe and the front side too. They believed that homeopathic therapy acts slowly and deeply on the disease. Above all, the homeopathic therapy has no side-effects. Previously

they received the benefits of pain reduction from homeopathic therapy. They thought that homeopathy reduces the symptoms, and cures the disease completely compared with the modern treatment.

(1.2) Homeopathy used to reduce coughing

Among the ten informants one of them used homeopathy to reduce coughing. The informants stated that he had a continuous cough. He believed that homeopathy may reduce the cough. The homeopathy therapy acted slowly and deeply on the disease and could stop the cough production internally. Above all, the homeopathy therapy had no side effects and could reduce the symptoms completely.

(1.3) Homeopathy used to reduce dyspnoea.

Among the ten informants two of them use homeopathy to reduce dyspnoea. The informants stated that he had continuous dyspnoea. He believed that homeopathy may reduce the dyspnoea. The homeopathy therapy acts slowly and deeply on the disease. In addition informants expressed that a combination of CT and modern treatment reduced the symptoms completely and effectively.

(1.4) Ayurveda used to reduce coughing

One informant use ayurveda to reduce coughing. The informants stated that he had a continuous cough. He believed that CT as ayurveda may reduce the cough. Ayurveda derived from natural resources. The ayurveda is a safe drug and has no side-effects. He received benefits in that his cough was reduced after taking ayurveda. He thinks that ayurveda reduces the symptoms completely, has no side-effects, and reduces coughing more completely than the modern treatment.

(1.5) Massage used to reduce pain

Among the ten informants two of them use massage to reduce their lung cancer pain. The pain was located on the scapula, back side of the lower lobe and front side too. They believed that massage may reduce the cancer pain. The massage therapy acts slowly, locally and has no side-effects. Previously they received the benefit of less pain. They realized that modern treatment and massage therapy together works better than only using modern treatment.

Category (2) Description of breast cancer

The descriptions of the breast cancer category reflected the mainly types of CT use in terms of symptoms, beliefs and outcomes received. The details given by the informants were as follows:

(2.1) Meditation used to reduce anxiety and insomnia

Among the ten informants four of them used meditation to reduce their anxiety and insomnia. The anxiety was developed from thinking of the future: the cancer prognosis (cancer cured or not?), loss of beauty, loss of breast feeding facility for their baby, and the relationship with the husbands. As a result of anxiety, they might develop insomnia. They believed that meditation may reduce anxiety. During meditation, they became calm and quiet, the mind sets on God and the mind was refresh. They stated that they previously reduced anxiety by meditation. They thought that meditation reduces anxiety safely and in a better way than modern treatment and meditation has no side-effects. They reported that reducing anxiety by modern treatment had side-effects which were feeling tired, sleepy, and there were temporary effects.

(2.2) Herbs use to reduce Nausea and vomiting

Three of the ten informants use herbs to reduce their nausea and vomiting. After receiving chemotherapy they felt nausea and vomiting more than before. They believed that herbs may reduce the nausea and vomiting. The herbal therapy acts at once and changes the vomiting motion. Taking the herbs increases saliva secretion, increases the taste, and reduces the nausea and tendency to vomiting. Above all, herbs therapy has no side-effects. The herbs are natural products. The natural resources are helpful for human being. They were natural resources for helping humans.

(2.3) Prayer used to reduce restlessness

Among the ten informants one of them uses prayer to reduce restlessness. After chemotherapy and radiotherapy she felt restless. She felt burning sensation all over the body. She believed that CT such as prayer may reduce the restlessness. The prayer acts slowly and deeply in the mind. Above all, the prayer therapy has no side-effects. She had previous experience of restlessness reduced by the use of prayer. She thinks that prayer reduces the symptoms. After praying she felt calm, quiet, refresh, and had increased mental satisfaction. Therefore her restlessness was reduced in this way.

(2.4) Homeopathy use to reduce pain

Four informants out of ten use homeopathy to reduce their breast cancer pain. The pain was located on the scapula, and radiated to the back and front sides of the breast area. They believed that homeopathy may reduce the cancer pain. The homeopathy therapy acts slowly and deeply on the disease and has no side-effects. They also stated that the outcome after using homeopathy was that the pain was reduced.

(2.5) Meditation use to reduce insomnia

Among the ten informants, two of them use meditation to reduce their insomnia. The insomnia developed from thinking of the future. They believe that meditation may reduce their insomnia. After practicing meditation they felt calm and cool in the mind. They had previous experience of reducing insomnia by taking meditation. They thought that meditation reduces insomnia slowly and naturally. They also reported that meditation is better than the modern treatment because modern treatment has side-effects but meditation has no side-effects.

Category (3) Description of cervical cancer

The descriptions of the cervical cancer category reflected mainly the types of CT used for symptoms, beliefs and outcomes received. The details reported by the informants were as follows:

(3.1) Homeopathy used to reduce pain

Among the ten informants, three of them use homeopathy to reduce their cervical cancer pain. The pain was located on the lower abdomen, and radiated to the back. They believed that CT as homeopathy may reduce the cancer pain. The homeopathic therapy acts slowly and deeply in the disease. Above all, the homeopathic therapy has no side-effects. Previously they used homeopathy and the pain was reduced more completely than with the modern treatment.

(3.2) Nutrition used to reduce weakness

Three informants out of ten use nutrition to reduce their weakness. They did feel weakness after chemotherapy. In addition, after radiotherapy they felt weakness too. They could not take food. They felt nausea and a vomiting tendency after

chemotherapy. They believed that nutrition may reduce their weakness. Nutrition gives them extra energy, reduces vomiting and vomiting tendency, and reduces weakness. Nutrition therapy has no side-effects. The nutrition therapy acts slowly, increases energy, and reduce the weakness. They think that nutrition reduces the symptoms of weakness, and makes them strong. Therefore they use nutrition with modern cancer treatment.

(3.3) Homeopathy use to reduce alopecia

Among the ten informants two of them use homeopathy to reduce their alopecia. After receiving chemotherapy they were losing hair on the scalp and all over the body. They thought that the hair loss occurred due to the side-effects of modern treatments. Therefore homeopathy could reduce the side-effects of modern treatments. In addition from a paper advertisement they had heard that homeopathy can reduce alopecia. Also they believed that homeopathy is a safe drug. Previously they used homeopathy for other health problems and received benefits. Therefore they use homeopathy because homeopathy is available all over the country, and is cheap and easy to access. Regarding the alopecia problem, after few days of homeopathic use; they observed that alopecia was reduced.

(3.4) Herbs use to reduce nausea and vomiting

Two of the ten informants use herbs to reduce their nausea and vomiting. After receiving chemotherapy they felt nausea and vomiting more than before. They believed that CT using herbs may reduce the nausea and vomiting. The herbal therapy acts at once and changes the vomiting motion. During the taking of herbs the saliva secretion increased, taste increased, and the nausea and vomiting tendency was

reduced. The informant's beliefs and outcomes were the same as the beliefs and outcomes by using herbs to reduce nausea and vomiting in lung cancer patients.

(3.5) Use of prayer to reduce anxiety

Among the ten informants two of them use prayer to reduce anxiety. After taking chemotherapy and radiotherapy they felt anxiety. This was because they thought about what may happen in future regarding the therapies and cancer prognosis. They believed that prayer may reduce the restlessness. Prayer increased belief and confidence. Above all, they stated that prayer therapy has no side-effects and previously anxiety was reduced by prayer. After prayer, they felt quiet, and this increased their mental satisfaction. Every day they practiced prayer regularly and their anxiety was reduced.

VITAE

Name Biplab Halder

Student ID 5110420065

Educational Attainment

Degree	Name of the Institution	Year of Graduation
Bachelor of Nursing	College of Nursing Dhaka University, Bangladesh	2004
Diploma in Orthopedic Nursing	Nursing Institute, Barisal, Bangladesh	1995
Diploma in Nursing	Nursing Institute, Barisal, Bangladesh	1994

Scholarship Awards during Enrollment

2008-2010 Scholarship for Master Degree in the Faculty of Nursing, Prince of Songkla University, funded by, Ministry of Health, Bangladesh Government.

Work position and Address

Senior Staff Nurse (RN), National Institute of Disease of the Chest and Hospital, Mohakhali, Dhaka, Bangladesh.

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E-mail: biplabshilpi@yahoo.com