STRESS AND COPING STRATEGIES OF PATIENTS RECEIVING CHEMOTHERAPY AT HOSPITAL UNIVERSITI SAINS MALAYSIA

by

HASNIDA BINTI ISMAIL

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LIST OF ABBREVATION

HUSM: Hospital Universiti Sains Malaysia

NCR: National Cancer Register of Malaysia

RAM: Roy Adaptation Model

WHO: World Health Organization

STRESS AND COPING STRATEGIES OF PATIENT RECEIVING CHEMOTHERAPY AT HOSPITAL UNIVERSITI SAINS MALAYSIA

ABSTRACT

Stress is defined as a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being. While, coping strategies defined as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. The purpose of this study was to study the relationship between stress and coping strategies of patient receiving chemotherapy at Hospital Universiti Sains Malaysia (Hospital USM). A cross-sectional survey was using a set of self-administered questionnaire from the combination of Perceived Stress Scale and Ways Coping Strategies. A total of 110 respondents were involved in this study. Data was analyzed using SPSS version 22.0 and Chi-square test was used to analyze descriptive data. All the respondent involved in this study were from ward 1 Timur Depan, 3 Selatan, and Radiotherapy and Oncology Department (NROD) in HUSM, age ranged from 18 to 85 years old (M =51.82, SD = 15.086), which shows majority of female patients with 71 (64.5%) and monthly income RM501-RM2000 have the highest participant which is 41 (37.3%) from the total participants. This study revealed that there was a significant association between the level of stress and coping strategies (p=0.002) and there were no significant association between selected demographic data (age (p=0.068), gender (p=0.662), and monthly income (p=0.094) with level of stress. Cancer patients undergoing chemotherapy experienced moderate level of stress symptom. However different coping strategies were adopted to cope with their illness, chemotherapy treatment, practical and family problems, emotional and physical symptoms. In future research, investigation of interactions between the impact of individual coping strategies and specific stressors will reveal more about the dimensionality, as well the nature of coping in general.

STRES DAN STRATEGI MENANGANINYA BAGI PESAKIT-PESAKIT YANG MENJALANI KEMOTERAPI DI HOSPITAL UNIVERSITI SAINS MALAYSIA

ABSTRAK

Stres ditakrifkan sebagai hubungan antara seseorang dengan alam sekitar yang dinilai oleh seseorang itu sebagai membebankan atau melebihi sumber masing-masing dan membahayakan kesejahteraannya. Walaubagaimanapun, startegi menangani ditakrifkan sebagai sentiasa berubah usaha kognitif dan tingkah laku untuk menguruskan permintaan luar dan / atau dalaman khusus yang dinilai sebagai mencukai atau melebihi sumber orang itu. Tujuan kajian ini adalah untuk mengkaji hubungan antara stress dan strategi menanganinya bagi pesakit-pesakit yang menjalani kemoterapi di Hospital Universiti Sains Malaysia (Hospital USM). Satu kajian keratan rentas telah menggunakan satu set soal selidik yang dilakukan sendiri daripada gabungan Persepsi Skala Tekanan dan Startegi menanganinya. Seramai 110 orang responden telah terlibat dalam kajian ini. Data dianalisis dengan menggunakan perisian SPSS versi 22.0 dan ujian Chi-square digunakan untuk menganalisis data deskriptif. Semua responden yang terlibat dalam kajian ini ialah dari wad 1 Timur Depan, 3 Selatan, dan Radioterapi dan Jabatan Onkologi (NROD) di HUSM, umurnya adalah di antara 18 hingga 85 tahun (M = 51.82, SD = 15,086), yang menunjukkan majoriti pesakit wanita dengan 71 (64.5%) dan bulanan pendapatan RM501-RM2000 mempunyai peserta yang tertinggi iaitu 41 (37.3%) daripada jumlah keseluruhan peserta. Kajian ini membuktikan bahawa terdapat hubungan yang signifikan antara tahap tekanan dan strategi menghadapi ($p = 0.002$) dan tidak ada hubungan yang signifikan antara data yang dipilih demografi (umur ($p = 0.068$), jantina ($p = 0,662$), dan pendapatan bulanan ($p = 0,094$) dengan tahap pesakit tekanan. Pesakit kanser yang menjalani kemoterapi mengalami stress tahap sederhana. Walau bagaimanapun strategi menangani yang berbeza telah digunakan untuk mengatasi penyakit mereka, rawatan kemoterapi, masalah praktikal dan keluarga, emosi dan gejala-gejala fizikal. dalam kajian masa depan, penyiasatan interaksi antara kesan strategi daya tindak individu dan tekanan tertentu akan mendedahkan lebih lanjut mengenai kematraan, serta sifat menghadapi amnya.

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Cancer is one of the leading causes of mortality and morbidity in the world. Cancer may be an intricate genetic disease that is brought primarily by environmental factors. The occurrence of cancer may be expanding due to the growth and aging of the population. The reception of lifestyle practices that know to increase cancer risk, for example, smoking, poor diet, physical inactivity, and reproductive changes (including lower parity and later age at first birth), have further increased the cancer burden in less economically created nations (Torre et al., 2015).

The origin of the word cancer is credited to the Greek physician Hippocrates (460-370 BC), who is considered the "Father of Medicine". Hippocrates utilized those terms carcinos and carcinoma to describe non-ulcer forming and ulcer-forming tumors. . In Greek, these words refer to a crab, most likely applied to the disease because the finger-like spreading projections from a cancer called to mind the shape of a crab. In spite the crab analogy of Hippocrates and Celsus will be at present used to describe malignant tumors, Galen's term is now used as a part of the name for cancer specialists – oncologists (American Cancer Society, 2011).

In the other hand, the cancer was define a variety group of diseases in which some of the body's cells become defective and multiplies out of control (Series, 2011).These abnormal cells invade and damage the tissues around them, and sooner or later spread (metastasis) to other parts of the body and can cause further damage. If the spread of these

tumors is not controlled, they can result in death. However, not all tumors are invasive (Series, 2011).

Additionally, there are about 14.1 million new cancer cases and 8.2 million cancer deaths occurred in 2012 worldwide (Torre et al., 2015).The most frequently diagnosed cancers that are leading causes of death in men and women in less developed countries are lung and breast cancer. However, in developed countries, prostate cancer is the most frequently diagnosed cancer among men and lung cancer is the leading cause of cancer death among women. Other frequently diagnosed cancers worldwide include those of the liver, stomach, and colorectal among males and those of the stomach, cervix uteri, and colorectal among females (Torre et al., 2015).

In Malaysia, there are about 90-100,000 people are living with cancer. According to National Cancer Register of Malaysia (NCR), there are 21,773 Malaysians being diagnosed with cancer but estimated that almost 10,000 cases are unregistered every year. Increasing population and longer life spans contributes to rise of cancer. Less than 10% of cancers happen in children compared to over 50% in men and 35% in women aged 50 and above. Cancer occurs more in females than males with a ratio of male to female 1:1.2 (National Cancer Society Malaysia, n.d.).

Patients who are diagnosed with cancer would generally require treatment which also known as chemotherapy. Usually, patient with cancer stage IV will receiving chemotherapy. Chemotherapy can be defined as use of drugs or chemicals to treat an illness or disease, such as cancer and also called "chemo" (Partner, n.d.). Besides that, most people associate chemotherapy with the treatment of cancer. Variety drug are used to treat cancer but not all cancers are treated with the same drugs or in the same way (Partner, n.d.).

Chemotherapy can be given alone or with other treatments and it can assistance different treatments work better. Today, there are many different kinds of chemotherapy. So the way you feel during treatment may be very different from someone else.

Chemotherapy drugs affect both normal cells and cancer cells. Although chemotherapy targets fast-growing cancer cells, it also can damage or destroy normal cells. This effect on normal cells can cause side effects. However, most normal cells can repair or replace themselves over time. Not all chemotherapy drugs produce side effects, and side effects vary depending on the treatment used and the person receiving it. People receiving similar treatments can experience different side effects (Partner, n.d.).

Diagnosis and treatment of cancer is universally viewed as a stressful and lifening experience. Stress may be an arranging particular idea for understanding a wide range of behaviours that may contributed to adaptation to continuum of experience that occur during the trajectory from diagnosis, through treatment, follow-up care, and survivorship (Waldrop, O'Connor, & Trabold, 2011). Stress also defined as a state brought on by any situation that threatens or appears to threaten a person's sense of well-being, thus challenging the person's ability to cope (Comer & Gould, 2013).

World Health Organization (WHO) state that stress generally refers to experience that is either novel, uncontrollable, unpredictable or a threat to one's ego (Quinlan et al., 2014). Stressful situations that originate from one's social environment (or social stressors) include extreme poverty, violence or long-term care of a very dependent family member or friend. In other words, stress is define as a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being (Grady et al., 2016)

Patients adapt to living with cancer by employing various coping strategies. Waldrop et al., (2011) stated that coping is characterized as the cognitive and behavioral effort that are employed to manage, reduce, or tolerate the internal and external demand of stressful and threating experience. There are three features in the coping process such as the contrast between what the person think about a new threat or demand and what would usually be done, what the person does within a specific context, and change in thought and actions as a stressful experience unfold (Waldrop et al., 2011).

Coping is defined as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Grady et al., 2016). Positive coping strategies can minimize or even nullify the adverse psychosocial effect of cancer, while negative coping strategies may contribute to stress.

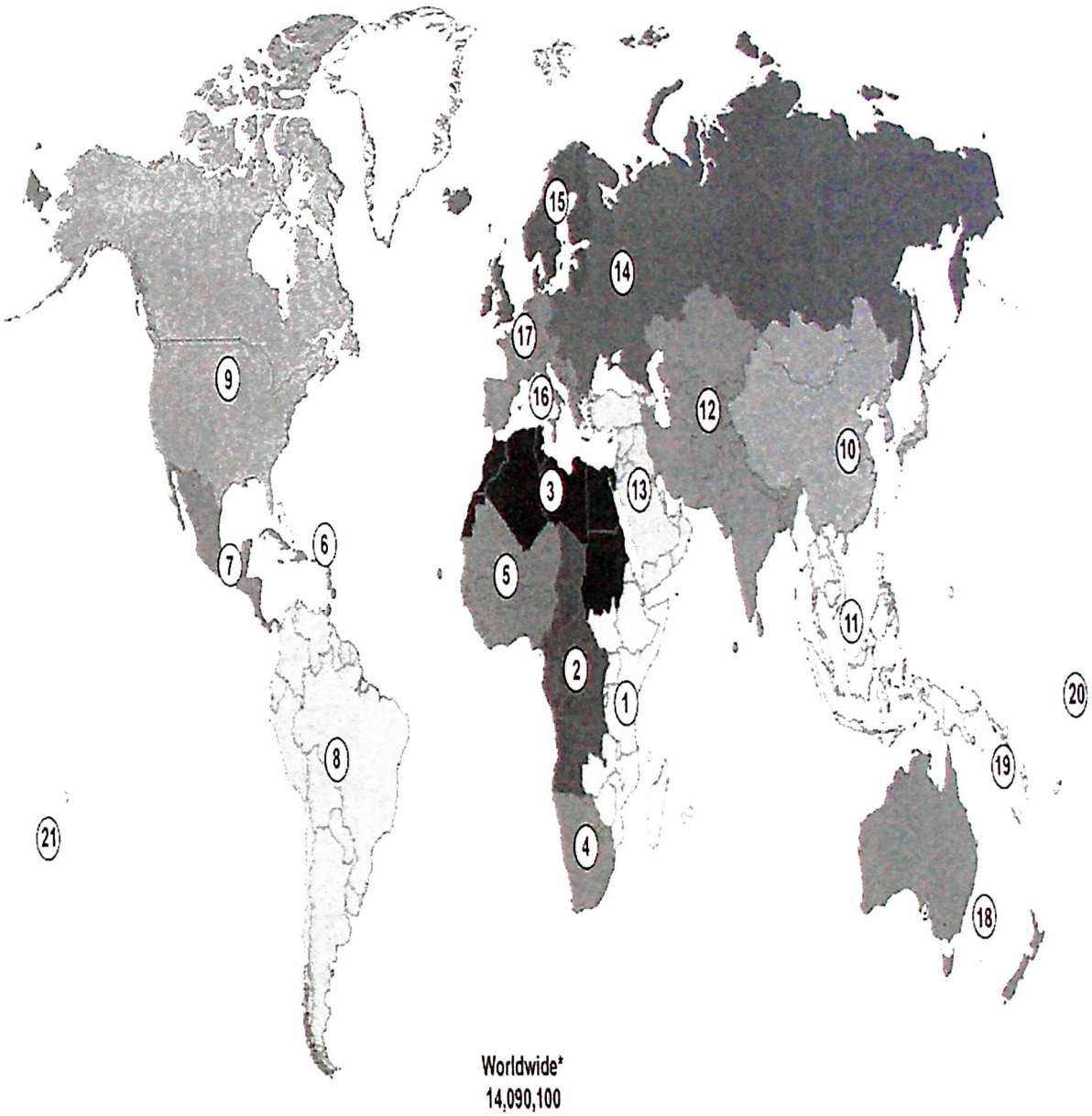

Figure 1.1: Estimated Number of New Cancer Cases in 21 World Areas, 2012 (Torre et al., 2015).

1.2 Problem Statements

Cancer is a major health problem in the United States and many other countries in the world (Siegel, Ma, Zou, & Jemal, 2014). One in four deaths in 2014 the United State is due to the cancer (Siegel et al, 2014). In 2015, an estimation one million people diagnosing with cancer (Facts, 2015). In 2015, almost 171,000 of the estimated 589,430 cancer death in the United Stated will be caused by tobacco smoking (Facts, 2015). Lung cancer is the leading cause of death of cancer among men, while breast cancer is a leading cause of death from cancer among women (Facts, 2015).

In Malaysia, there are limited numbers of cross sectional studies about stress and coping strategies of patients receiving chemotherapy. In Kelantan, about 536 patients were receiving chemotherapy from 1st September 2014 until 1st September 2015 at Hospital Universiti Sains Malaysia (HUSM). About 134 patients were receiving chemotherapy in year 2015 from June until August at Hospital Universiti Sains Malaysia.

The treatment for cancer patient option includes chemotherapy and radiotherapy. Unfortunately, these treatments are very taxing both physically and emotionally. This is particularly true for chemotherapy that can last for many months. Body's reaction to chemotherapy depends on a number of things, such as length of treatment, the dosage prescribed and your personal health history. The possible side effect of chemotherapy such as nausea and vomiting, fatigue, mouth sores, nerve damage, neutropenia and infection, diarrhea, constipation, and hair loss (Loprinzi et al., 2014). The frequent chemotherapy treatments and side effect along with the prospect of facing certain death will influence personal's quality of life. Most of these studies about stress and coping strategies were conducted in the Western countries. This kind of study however, is very

limit in Malaysia. Stress and coping strategies is a big issue and less recommended among cancer patient in Malaysia. It's also problems where coping strategies indicated the quality of life. So, it increase in number of patients that not compliance or refuse the chemotherapy treatment because of the side effect.

Usually, patients receiving chemotherapy will face stress. Chemotherapy is one of treatment that use chemical to treat cancer (Quinlan et al., 2014). However, this treatment will give a lot of side effect to the patient. Thus, it can cause stress among patients who is receiving chemotherapy. So, increase in number of patients that not compliance or refuse chemotherapy treatment because of the side effect. At this stage, the researchers managed to find a few published studies.

However, chemotherapy has a lot of advantages. Chemotherapy treatment will help patient to survive with their cancer. However, chemotherapy also gives the disadvantage to the patients. It will give side effect to patient based on body reaction to the drug that will be used in the treatment. Furthermore, the cost is really expensive and its take long duration time to complete all the cycle. All of this can lead to the stress among patient. So, coping strategies should be exposing to the patient to handle their stress regarding side effect of chemotherapy by public awareness.

In order to understand the stress and coping strategies of patients receiving chemotherapy, the Roy Adaptation Model (RAM) was chosen as the conceptual framework for this study.

1.3 Research Objective

1.3.1 General Objective

To study the relationship between stress and coping strategies of patient receiving chemotherapy at Hospital Universiti Sains Malaysia (Hospital USM)

1.3.2 Specific Objectives

1) To identify the level of stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia
2) To assess the variety of coping strategies that use among patient receiving chemotherapy at Hospital Universiti Sains Malaysia
3) To determine the association between selected demographic data (age, gender, socio-economic status) and level of stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.
4) To assess the association between stress and coping strategies among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

1.4 Research Questions

1) What is the level of stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia?
2) What are the varieties of coping strategies that use among patient receiving chemotherapy at Hospital Universiti Sains Malaysia?
3) What is the association between selected demographic data (age, gender, social-economic status) and level stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.
4) What is relationship between stress and coping strategies among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

1.5 Hypothesis

1) H_o 1 = There is no significant association between selected demographic data (age, gender, socio-economic status) and level stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

   H_A 1 = There is a significant association between selected demographic data (age, gender, socio-economic status) and level of stress among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

2) H_o 1 = There is no significant association between stress and coping strategies among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

   H_A 1 = There is a significant association between stress and coping strategies among patient receiving chemotherapy at Hospital Universiti Sains Malaysia.

1.6 Definition of term

Stress	Stressful situations that originate from one's social environment (or social stressors) include extreme poverty, violence or long-term care of a very dependent family member or friend (Grady et al., 2016). In this study, the stress was identified based on level of stress. This measurement is adopted by Cohen, Kamarck, & Mermelstein, (1983) and Cohen & Williamson (1988).
Coping Strategies	The cognitive and behavioral efforts that are employed to manage, reduce, or tolerate the internal and external demand of stressful and threating experience (Waldrop et al., 2011). This measurement is adopted and modified based on literature review and research Susan Folkamn & Richard S. Lazarus related to topic Ways Coping Strategies

1.7 Significance of the study

This study focused on stress and coping strategies of patient with side effect from chemotherapy. The patient also will expose to the commonly coping strategies with stress.

The study is necessary to gain an understanding of the behaviour of person receiving chemotherapy. This understanding of behaviour will assist health professional in planning quality care.

Therefore the patients will be more willing and cope with stress effectively. As a result, patients will be able to cope with stress and take the appropriate and effective step to help them to improve their quality of life.

In summary, the significance of this study would the extension of knowledge concerning stress and coping strategies to persons receiving multiple courses of chemotherapy. Also this study would identify coping strategies that could be successfully in managing stress during chemotherapy.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the main focus of this research is to study stress and coping strategies of patients receiving chemotherapy at Hospital Universiti Sains Malaysia. This chapter will provide an overview of the study.

2.2 Review of Literature

2.2.1 Association between demographic data with stress

There are several study conducted to see the association between socio-demographic data with stress. Previous multiple study found that there was relationship between stress and age, gender, education level, employment status, and income (Cohen & Janicki-Deverts, 2012) . Other than that, study also found that there was relationship between race/ethnicity with stress.

2.2.2 Prevalence of stress among patients receiving chemotherapy

Prevalence is an epidemiological measure used to determine how commonly a disease or condition occurs in a population. It is also used how much of a particular disease or condition is there in a population at a particular point in time (Indrayan, 2013).

In Korea, a study was conducted by Gall, Guirguis-Younger, Charbonneau, & Florack (2009) stated that Zabora et al., reported an overall prevalence of psychological distress of 35.1% among 4496 patients with various cancers. Carlson et al., after assessing

2776 cancer patients visiting a large Canadian tertiary cancer center concluded that 37.8% experienced significant distress. In addition, a study was conduct in Malaysia among breast cancer patient stated that the prevalence for depression was 19.1% and prevalence for anxiety was 24.1% (Hassan et al., 2015).

2.2.3 Side effect experience of patient receiving chemotherapy

A study was conducted by Jakobsen & Herrstedt (2009), stated that cancer patients receiving chemotherapy may experience a variety of side-effects, such as pain, nausea, vomiting, hair loss, weight changes, fatigue and anxiety; however, the most commonly reported side-effect is fatigue. In addition, Loprinzi et al. (2014) stated that a person's body's reaction to chemotherapy depends on a number of things, such as the length of treatment, the dosage prescribed and their personal health history. Moreover, most side effects are short term, but some can last throughout your treatment and others may last long after treatment is finished.

A study has reported that the most common and unpleasant side effects to chemotherapy are nausea and vomiting (Jakobsen & Herrstedt, 2009). Cisplatin, the chemotherapeutic agent with the highest emetic potential, was introduced in the late 1970s. Antiemetic prophylaxis existed does not effective at that time. Therefore, in the early 1980s, the two most feared side effects to chemotherapy were vomiting and nausea (Jakobsen & Herrstedt, 2009).

2.2.4 Coping strategies using among patient receiving chemotherapy

Studies have reported several kinds of coping strategies using among patient receiving chemotherapy. Coping processes may be aimed at problem-solving; such as doing something to alter the illness threat, self-management of the illness, seeking advice and accepting treatment, or at the management of the emotional distress that is associated with the illness (Hoffman, Lent, & Raque-Bogdan, 2013). The coping process begins with the diagnosis of cancer and ends when cancer survivors achieve a new balance. Patients with cancer in the clinical trial have consented to participate with a hope to improve, or to realize stability with, the disease as a result of the treatment (Hoffman, et al., 2013).

2.3 Conceptual / Theoretical Framework

2.3.1 Roy Adaptation Model (RAM)

This study will use theory by Sister Callista Roy (1964) which is known as Roy Adaptation Model (RAM) to help the researcher understand the population's under study stress and coping strategies towards chemotherapy. The model has some of the characteristics of systems theory and some of the characteristics of stress and interaction theories. Roy borrowed and expanded on theories from others, including Selye (1936), Helson (1964), and Maslow (1970). In addition, RAM focuses on the individual (person) as a bio-psychosocial adaptive system and describes nursing as a humanistic discipline that "places emphasis on the person's own coping abilities to achieve health". This model relies heavily on stress theory, the notion of adaptation, and the ability of nursing to facilitate client adaptation or coping with stress (See Figure 2.1). From stress theory, Roy selected the concepts of stressor, stress, and adaptation for her model (Rice, n.d). The key components of the RAM as illustrated.

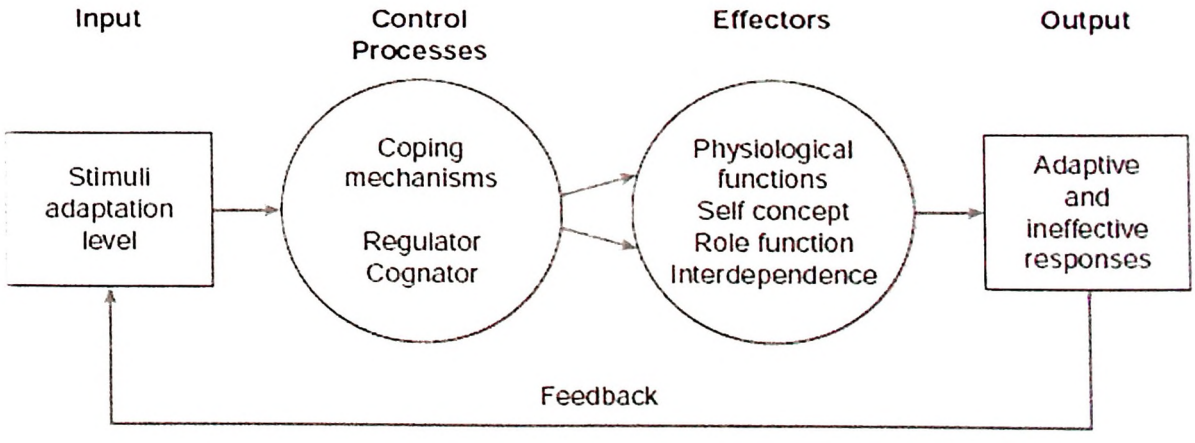

Figure 2.1: Theoretical Framework Roy Adaptation Model (Sister Callista Roy , 1964)

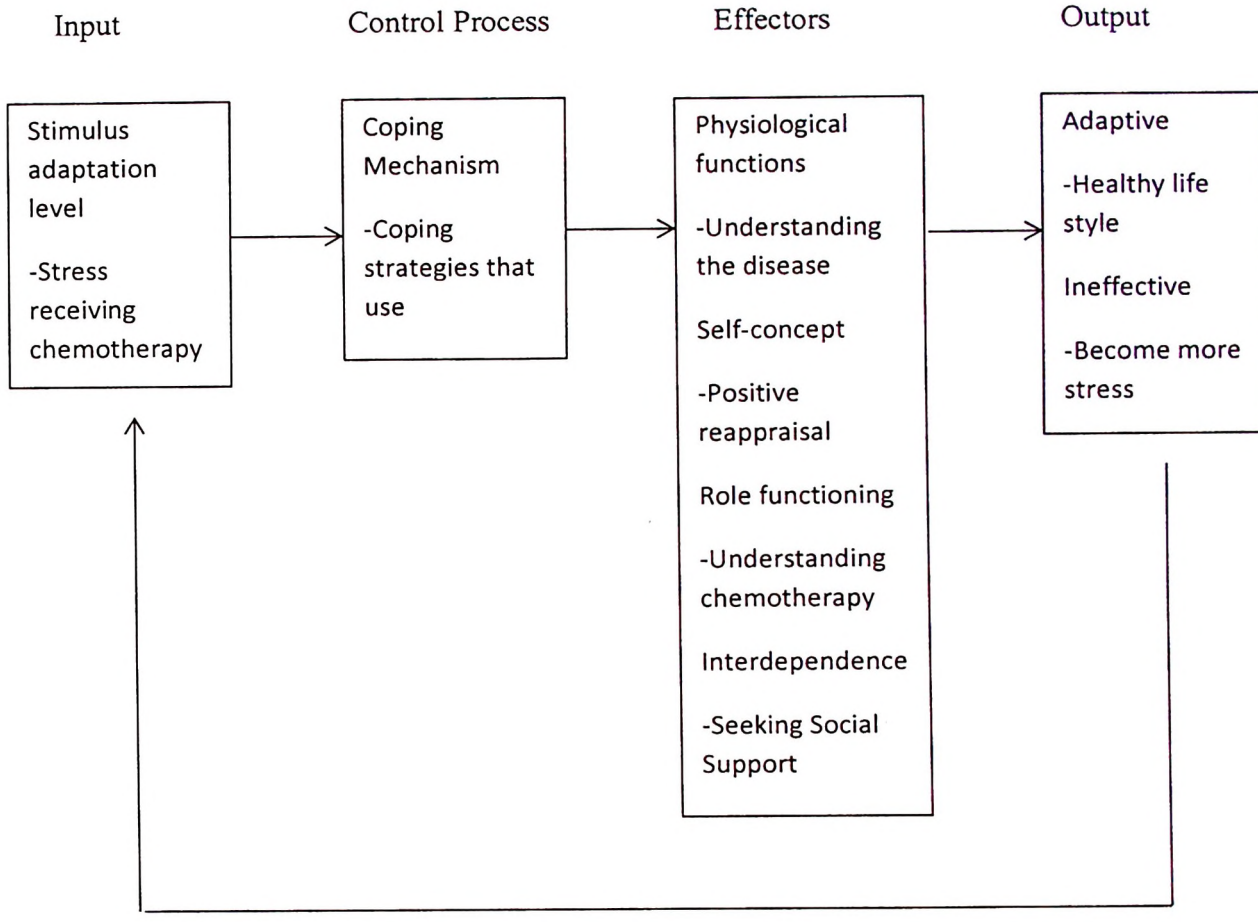

Figure 2.2: Conceptual Framework Roy Adaptation Model

The conceptual framework for this survey is to investigate a population' stress and coping strategies that related to receiving chemotherapy. This theory will discuss about how patient cope with their stress. The result is either adaptation or maladaptive (ineffective) responses. Ineffective responses (coping) result in illness. Adaptive coping results in health. The goal of nursing is to "maintain and enhance adaptive behavior and to change ineffective behavior to adaptive".

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This is a study of stress and coping strategies of patients receiving chemotherapy at Hospital Universiti Sains Malaysia. Within this chapter the researcher outlined and discussed the most appropriate methods of design, sample selection, data collection and analysis. There also a description of the ethical considerations necessary to completed the proposed study.

3.2 Research Design

Quantitative research method where's the data was collected through the cross-sectional and descriptive study. The objective of choosing the design is to assess the relationship between stress and coping strategies of patient receiving chemotherapy at Hospital Universiti Sains Malaysia. A self- administered questionnaire was used.

3.3 Population and Setting

The study was conducted on both male and female patients receiving chemotherapy at Hospital Universiti Sains Malaysia. The total respondent's estimation by Record Unit of Hospital Universiti Sains Malaysia are 134 respondents.

3.4 Sampling Plan

The sample in this study consists of patient receiving chemotherapy at Hospital Universiti Sains Malaysia. The sample respondents who met the inclusion criteria were included in this study.

3.4.1 Inclusion and Exclusion Criteria

Inclusion Criteria

1) Male and female, age 18 years old and above

2) Patient's receiving chemotherapy at 3 Selatan, 1 Timur Depan and Nuclear Medicine, Radiotherapy and Oncology Department (NROD), Hospital Universiti Sains Malaysia

3) Able to speak and write in English or Bahasa Malaysia.

4) Karnofsky Performance Status >50 (Fit to participate)

Exclusion Criteria

1) Pediatric patients

2) Having cognitive and hearing problems, which may affect their understanding on questionnaires and communication

3) Refused to participate in this study.

3.4.2 Sampling Method

In this study, the samples were selected using the convenience sampling method. This convenience sampling is a type of non-probability sampling. All patients with cancer were selected based on the inclusion and exclusion criteria. These types of sampling method allow the researcher to make a self-selection of patients that willing to participate.

3.4.3 Sampling Size

Figure 3.1 show Raosoft sample size calculation software was used to calculate the sample size and to ensure the accuracy by avoiding sampling error during representatives and parameters of the sample. The population size for male and female patients at Hospital Universiti Sains Malaysia which was receiving chemotherapy in 3 months is 134 that were identified by researcher.

After considering on the objectives of this study the highest sample size is 100. To determine the sample size for this study, an analysis by using the Raosoft sample size calculator which is set confidence level 95% and the margin of error that can be tolerance is 5% or 0.05. As a result, the sample size obtain are 100.

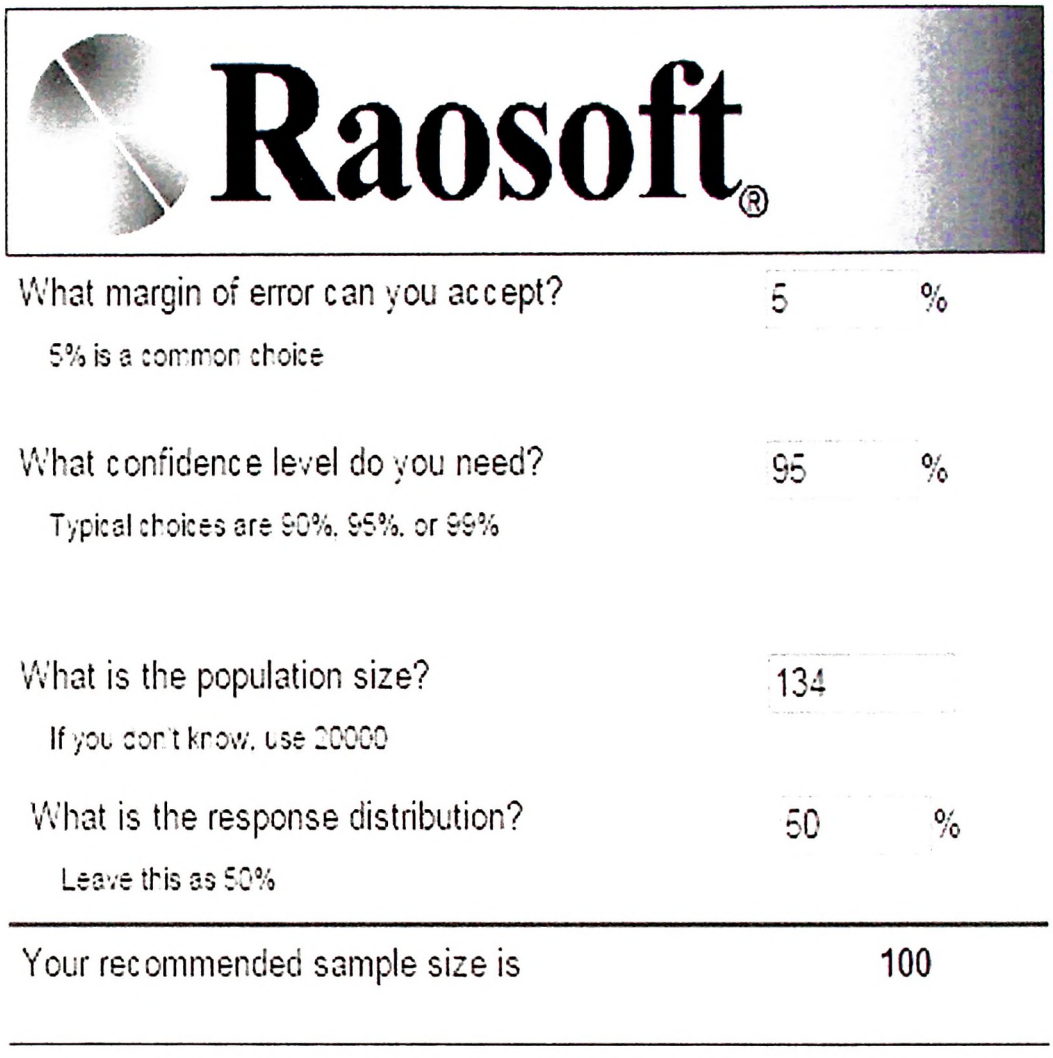

Figure 3.1: Sample size calculation by using Raosoft software.

The drop out for this study is 10% of calculated sample size is recorded. Therefore the total participation for this study was:

=100 + drop out of 10 %

=100 + 10

=110 participants

3.5 Variable

3.5.1 Variable Measurement

The variables that usually present in research were independent and dependent variables. The independent variable is variable that manipulated by researcher while the dependent variable is the response that is measure (Shuttlewoth, 2008).

The independent variables were selected based on the demographic data. The demographic data include age, gender, and socio-economic status.

For the dependent variable in part B of questionnaire, percentage applied to measure the participants perceived stress scale categorize as low, moderate, and high level of stress. The measure of psychological stress used in these surveys was the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983 ; Cohen & Williamson, 1988). This questionnaire is measure by using 10 item Likert scale. The scale is rank from 0= never, 1=almost never, 2=sometimes, 3=fairly often, and 4=often.

For the dependent variable in part c questionnaire, percentage applied to measure the participant coping strategies score categorized as poor, intermediate and high coping strategies. This questionnaire is measure by using 12 item Likert scale. The scale is rank from 0=does not apply or not use, 1=used somewhat, 2=used quite bit and 3=used a great deal. This part consists of 4 variables. First variable consist of 2 questions, the second variable consist of 4 questions, third variable consist of 3 questions and fourth variable consist of 3 questions.

3.5.2 Variable Scoring

For PSS questionnaire that adapted from author was given scoring. After the questionnaire was completed to answer, the each item was analyzed through summed of score for a group of items. The total score is 40 and will convert to the percentage which is the low stress 0-37%, while for moderate stress is 38%-75% and high stress is 76%-100%. For Coping Strategies questionnaire, the total score is 36 with scoring which is the poor coping strategies is 0-33%, while intermediate coping strategies were 34%-68%, and high coping strategies is 69%-100%.

Table 3.1: Stress and coping strategies scoring

Category	Percentage (%)	Mark
Level Of Stress		
High	76-100	31-40
Moderate	38-75	16-30
Low	0-37	0-15
Coping Strategies		
High	68-100	25-36
Moderate	34-67	13-24
Low	0-33	0-12

3.6 Instrumentation

3.6.1 Instrument

A Self-administered questionnaire was used in this study. The self-administered questionnaire was a survey technique that required the participants to complete the questionnaire by themselves (Self-Administered Survey, n.d). A questionnaire (Appendix A) that related to stress of patients receiving chemotherapy is adapted for this study based on the questionnaire in published by Sheldon Cohen (Perceived Stress Scale) and the questionnaire for coping strategies were self-develop questionnaire. These items were adopted and modified based on literature review and research Susan Folkamn & Richard S. Lazarus related to topic Ways Coping Strategies. The questionnaires are categorized into three parts as follow:

Part A: Demographic data

For this section, the demographic data which comprise of four questions that include age, gender, employment status and monthly income .For age, participant had choice 18-39, 40-59, 60-79, and >80. For the gender, the participant had choice either male or female. In the employment status section include government, non-government, self-employed and others. Lastly, for monthly income, participants choice such as RM0-RM500, RM501-RM2000, RM2001-RM4000, and >RM4000.

Part B: Perceived Stress Scale

This section consists of 10 items. All the item ask about feeling and though during chemotherapy session.