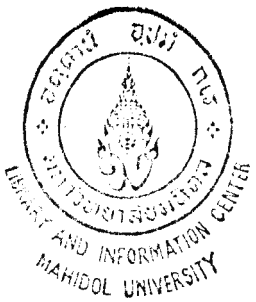

SEVERITY OF SIDE EFFECTS, SELF-ESTEEM, SOCIAL SUPPORT, AND ROLE ADAPTATION OF CERVICAL CANCER PATIENTS RECEIVING RADIATION THERAPY

LUPPANA KITRUNGROTE

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Luppana Kitrungrote
.....
Miss Luppana Kitrungrote
Candidate

Yupapin Sirapo-ngam
.....
Asst. Prof. Yupapin Sirapo-ngam, D.S.N.
Chairman

Malee Lerdmaleewong
.....
Assoc. Prof. Malee Lerdmaleewong, M.N.
Member

Panwandee Putwatana
.....
Assoc. Prof. Panwandee Putwatana, D.Sc.
Member

Sarikapan Wilailak
.....
Assoc. Prof. Sarikapan Wilailak, M.D., Thai Board of Obstetrics and Gynaecology, Sub Board in Gynecologic Oncology
Member

Virat Pairachvet
.....
Asst. Prof. Virat Pairachvet, M.D., Diplomate, Thai Board of General Radiology
Member

Liangchai Limlomwongse
.....
Prof. Liangchai Limlomwongse, Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Prakit Vathesatogkit
.....
Prof. Prakit Vathesatogkit, M.D., ABIM.
Dean
Faculty of Medicine, Ramathibodi Hospital
Mahidol University

Thesis

entitled

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Luppana Kitrungrote
.....
Miss Luppana Kitrungrote
Candidate

Yupapin Sirapo-ngam
.....
Asst. Prof. Yupapin Sirapo-ngam, D.S.N.
Major-advisor

Panwadee Putwatana
.....
Assoc. Prof. Panwadee Putwatana, D.Sc.
Co-advisor

.....
Asst. Prof. Virat Pairachvet, M.D.
Co-advisor

.....
Prof. Liangchai Limlomwongse, Ph.D.
Dean
Faculty of Graduate Studies

.....
Assoc. Prof. Yuwadee Luecha, Ed.D.
Chairman
Master of Nursing Science
Faculty of Medicine
Ramathibodi Hospital

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Luppana Kitrungrote

**4136494 RAAN/M: MAJOR: ADULT NURSING;
M.N.S. (ADULT NURSING)
KEY WORDS : ROLE ADAPTATION/ SIDE EFFECTS/
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CERVICAL CANCER / RADIATION**

LUPPANA KITRUNGROTE: SEVERITY OF SIDE EFFECTS, SELF-ESTEEM, SOCIAL SUPPORT, AND ROLE ADAPTATION OF CERVICAL CANCER PATIENTS RECEIVING RADIATION THERAPY. THESIS ADVISORS: YUPAPIN SIRAPO-NGAM, D.S.N., PANWADEE PUTWATANA, D.Sc., VIRAT PAIRACHVET, M.D. 118 P. ISBN 974-664-670-2

This descriptive study is aimed to describe role adaptation and to ascertain predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of patients with cervical cancer receiving radiation. The sample was comprised of 86 women recruited from the outpatient radiotherapy unit at six hospitals in Bangkok, during February to June 2000. The inclusion criteria were woman with cervical cancer who (1) were married and lived with their spouses, (2) had been receiving radiation (3,000 cGy) at least for a 3-week period, (3) had no prior treatment with radiation or chemotherapy, (4) were able to understand and speak Thai, and (5) agreed to participate in the study. The five self-administered questionnaires used to collect data were: Demographic and Clinical Data Form, Severity of Side Effects Questionnaire, Rosenberg Self-esteem Scale, Personal Resource Questionnaire 85-Part II, and Role Adaptation Questionnaire. Data were analyzed using descriptive statistics and mulitple regression analysis

Results showed that cervical cancer patients receiving radiation had levels of "rather good role adaptation", as indicated by scores above two thirds of the mean on the Role Adaptation Questionnaire. The combination of social support, self-esteem, and severity of side effects accounted for 54.8% of the variance in role adaptation of cervical cancer patients receiving radiation. Education did not contribute significantly to the variance in role adaptation in this population. This study is important for nurses concerned with the management of side effects, social resources, and self-esteem that are significant factors in enhancing role adaptation of the patients with cervical cancer receiving radiation therapy.

4136494 RAAN/ M: สาขาวิชา: การพยาบาลผู้ใหญ่; พย.ม. (การพยาบาลผู้ใหญ่)

ลัพณา กิจรุ่งโรจน์: ความรุนแรงของอาการข้างเคียง ความรู้สึกมีคุณค่าในตนเอง แรงสนับสนุนทางสังคมและการปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษา (SEVERITY OF SIDE EFFECTS, SELF-ESTEEM, SOCIAL SUPPORT, AND ROLE ADAPTATION OF CERVICAL CANCER PATIENTS RECEIVING RADIATION THERAPY). คณะกรรมการควบคุมวิทยานิพนธ์: ยุพาพิน ศิรโพธิ์งาม, D.S.N., พรรณวดี พุธวัฒนะ, วท.ด. (โภชนศาสตร์), วิรัตน์ ไพรัชเวทย์, พ. บ. 118 หน้า ISBN 974-664-670-2

การวิจัยครั้งนี้เป็นการวิจัยเชิงบรรยาย เพื่อศึกษาการปรับตัวด้านบทบาทหน้าที่และอำนาจการร่วมทำนายของ ความรุนแรงของอาการข้างเคียง ความรู้สึกมีคุณค่าในตนเอง แรงสนับสนุนทางสังคมและการศึกษาที่มีต่อการปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษา กลุ่มตัวอย่างจำนวน 86 รายเป็นผู้ป่วยที่มารับการรักษาแบบผู้ป่วยนอก ณ หน่วยรังสีรักษาของโรงพยาบาล 6 แห่งในกรุงเทพ ระหว่างเดือนกุมภาพันธ์ ถึง เดือนมิถุนายน พ.ศ. 2543 มีคุณสมบัติตามเกณฑ์กำหนด คือ (1) มีสภาพสมรสคู่และยังคงอาศัยอยู่กับสามี (2) กำลังได้รับรังสีรักษาอย่างน้อย 3,000 cGy และอย่างน้อย3 สัปดาห์ (3)ไม่เคยมีประวัติการได้รับรังสีรักษาหรือเคมีบำบัดมาก่อน (4) สามารถพูดและฟังภาษาไทยได้ (5) ยินดีเข้าร่วมในการวิจัย เก็บรวบรวมข้อมูลโดยการใช้แบบสอบถามจำนวน 5 ชุด ประกอบด้วยแบบสอบถามข้อมูลส่วนบุคคลและด้านสุขภาพ แบบสอบความความรุนแรงของอาการข้างเคียง แบบสอบถามความรู้สึกมีคุณค่าในตนเอง แบบสอบถามแหล่งประโยชน์ของบุคคลและแบบสอบถามการปรับตัวด้านบทบาทหน้าที่ ข้อมูลถูกนำมาวิเคราะห์ด้วยสถิติบรรยายและการวิเคราะห์ถดถอยแบบพหุ

ผลการวิจัยพบว่าผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษามีการปรับตัวด้านบทบาทหน้าที่ในระดับค่อนข้างดีจากการที่มีค่าคะแนนมากกว่า 2 ใน 3 ของคะแนนเฉลี่ยรวมของแบบสอบถามการปรับตัวด้านบทบาทหน้าที่ นอกจากนี้พบว่า แรงสนับสนุนทางสังคม ความรู้สึกมีคุณค่าในตนเองและความรุนแรงของอาการข้างเคียงสามารถร่วมทำนายความแปรปรวนของการปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษาได้ถึงร้อยละ 54.8 อย่างมีนัยสำคัญทางสถิติ ส่วนการศึกษาไม่สามารถทำนายการปรับตัวด้านบทบาทหน้าที่ของกลุ่มประชากรดังกล่าว การศึกษาครั้งนี้จึงเป็นสิ่งสำคัญสำหรับพยาบาลในการคำนึงถึงการจัดการเรื่องความรุนแรงของอาการข้างเคียง ความรู้สึกมีคุณค่าในตนเองและแหล่งสนับสนุนทางสังคม ซึ่งเป็นปัจจัยสำคัญในการส่งเสริมการปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษา

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CHAPTER I

INTRODUCTION

Background and Rationale

Adult women have multiple roles. They have the major roles as wife and mother to maintain the well-being of their family and also the role of caregiver in caring for aging parents (Facione, 1994: 60; Murray & Bachman, In Johnson, et al., Eds., 1996: 84; Trippet & Bryson, 1995: 37). Additionally, most women work outside the home for additional family income because of economic constraints and societal changes (Soonthornhada, A. In Yoddumnern-Attig, B., et al., Eds., 1992: 65). Women also have a social and public responsibility (Havighurst, 1972 cited by Schaie & Willis, 199: 61). All of these roles have social expectations of achievement and accomplishment and tend to contribute to problems of health in women (Barnett & Marshall, 1992: 9-32; Bird & Fremont, 1991: 115; Thanapoom, S., 1992: 97).

From the annual statistical reports of the National Cancer Institute of Thailand between 1994-1996, cervical cancer was the most prevalent female cancer, with the highest incidence in the middle-aged group (35-60 years). This high incidence has partially resulted from reluctance by Thai women to engage in early screening programs and insufficient awareness of prevention and control programs for this disease (Srisupundit, S. & Israngura-na-ayudhya, N. In Linasmita, V. & Srisupundit, S., Eds., 1999: 477). Another factor is that the Thai health care system has limited screening facilities (i.e., pap smear) and resources needed for screening tests as well as

a policy of health insurance that does not include reimbursement for cervical cancer screening tests (Pongthavornkamol, K., 2000: 4). Another problem is that most women who have been diagnosed at the early stage of the disease refuse medical treatment and seek traditional treatments instead. Therefore, women with cervical cancer are most likely to present at a late stage of the disease. Treatment at this stage often leads to the use of treatments including combinations of radiation, surgery, and/ or chemotherapy.

Radiotherapy (RT) is one of the most common treatment modalities for curing cancer of the cervix in its initial stages and for reducing complications of the disease in the terminal stages (Einhorn, 1996: 75). Although RT has many advantages, it can produce many side effects that impact both physical and psychological health (King, et al., 1985: 59; Oberst, et al., 1991: 75-76; Teparax, S., 1992: 49-51). Physical side effects including diarrhea, dysuria, fatigue, and other symptoms that limit the patients' social functioning. Psychological side effects involve both general and personal problems. For instance, patients often have fear and anxiety of the RT (Rotman & John, In Rerez & Brady, Eds., 1987: 1287-1288), uncertainty about the success of treatments, fear of recurrence (McMullin, 1992: 853), loss of feminine identity (Krouse, 1985: 45-49), and concern for sexual dysfunction or infertility (Burke, 1996: 239-241). All of these feelings are difficult to express, and many patients tend to suffer emotional upset, loneliness, decreased self-confidence, and low self-esteem (Chatrkaw, K., 1995: 22-23; McMullin, 1992: 852). All of these factors can contribute to problems of role behaviors, such as a treatment noncompliance or dropping out of treatment programs (Miller, 1992: 398- 400).

Most patients have to visit the hospital daily for RT. Not only are they exhausted from using public transportation, but they may also be tired and fatigued from side effects and unpleasant symptoms during the course of treatment. Exhaustion, tiredness, and fatigue can affect patients' role performances (Oberst, et al., 1991: 76). The ability to perform usual roles of mother, wife, and worker is diminished (Holland, In Holland, et al., Eds., 1993: 1020).

The Roy Adaptation Model (RAM) (Roy & Andrews, 1991: 349) views a person as having three types of roles in society: primary, secondary, and tertiary. The primary role is described as those behaviors related to age, gender, and developmental stage. For example the primary role would be those behaviors associated with being a 40-year-old middle-aged woman. A secondary role would be those behaviors, presumably permanent, that a person assumes to complete the tasks associated with a developmental stage and primary role. For example, a middle-aged woman may be faced with the tasks of being a wife, a mother, and a teacher. A tertiary role is normally temporary and freely chosen by individuals such as club or association members. These three types of roles vary throughout life depending on various stimuli. Roles are altered at particular points in time when the person is confronted with specific circumstances, e.g., being sick. The circumstance of being sick directs a person to inevitably take on a sick role. The sick role, which is temporary in nature, is generally classified as a tertiary role, but it becomes a secondary role when the illness becomes chronic. Adaptation to role changes requires effective coping mechanisms. Ineffective coping mechanisms leads to inappropriate role functioning; such as role conflict, role distance, or role failure.

In most women who have been diagnosed with cervical cancer, a chronic illness, are treated by courses of RT and undergo major role change. These include reducing and losing current secondary role tasks and integrating the sick role into their life. Experiencing a major role change or transition to a new role produces stress. Women receiving treatment for cervical cancer must face complex treatments and alterations in most social aspects of life. Changes within the secondary roles and the adoption of new roles require the incorporation of new knowledge and standards of behavior for role performances (Meleis, 1975: 265). There is also a guarded effort and difficulty for these patients to maintain other existing secondary roles effectively during the course of radiation. These patients need much support from others to adjust to effective role functioning.

Social support refers to as the psychosocial and tangible aid provided by significant others and/or social networks (Tiden &Weinert, 1987: 614). A person receives various types of social support including intimacy, opportunities for social integration, opportunities for nurture and reassurance of worth. Also important are helping persons available to provide informational, emotional, and material help (Brandt & Weinert, 1981: 277). Numerous studies have been conducted showing the important function of social support for chronically ill patients. Social support is a major means of assisting patients to develop greater self-confidence and feelings of autonomy and control in responding to and modifying their environment. Social support enhances adaptive role performance which improves physical recovery, psychological well-being, and social functioning (Cobb, 1976: 300-314; Gasemgitvatana, S., et al., 1996: 70; Hanucharurnkul, S., 1989: 22; Pender,1996: 265).

Level of education has also been associated with role adaptation. Several studies have shown positive relationships between educational achievement and role adaptation (Chanpaung, V., 1991: 80; Jalowiec, 1981: 14; Pender, 1987: 161-162; Tongtanunam, Y. 1998: 69).

There are few studies of relationships between chronic illness and role performance in Thai middle-aged women; and no nursing research has been conducted on the role adaptation of patients with cervical cancer receiving RT. This study focuses on secondary roles of being wife, work (inside and outside the home), and the sick role. This is important because all of these roles are often permanent to which women must adapt and which usually include significant problems for the remainder of their lives (Nuwayhid, In Roy & Andrews, Eds., 1991: 349).

In this study, the Roy Adaptation Model was used as a conceptual framework to study the severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patients receiving RT. The results of this study are important for professional nurses to develop effective nursing interventions that promote role adaptation of patients receiving RT for cervical cancer. Providing interventions focused on support and resources can enhance role performance and in doing so patients can achieve social integrity.

Conceptual Framework

The Roy Adaptation Model regards a person as an adaptive system and an open system which interacts with a constantly changing environment. The environment is made up of internal and external stimuli. The stimuli are categorized into three classes: focal, contextual, and residual. When the individual confronts stimuli, coping

mechanisms are activated. Behavioral responses to stimuli occur in one or more of four adaptive modes: physiological, self-concept, role function, and interdependence and can be either adaptive responses or ineffective responses. Adaptive responses are those that promote the person's integrity or wholeness. The person's integrity is behaviorally demonstrated when the person is able to meet goals of adaptation, survival, growth, reproduction, and mastery. Ineffective responses neither promote integrity of the person nor contribute to goals of adaptation (Roy & Andrews, 1991: 6-19).

According to Roy (1991: 17-18), the person is a bio-psycho-social being whose behavior is viewed in relation to the four adaptive modes that she defined. Although these modes are frequently seen separately, they must be interrelated in a complex way. They are depicted as four overlapping circles, central to which is a circle representing the coping mechanisms (Figure.1). As an illustration of interrelationships, it can be noted that the physiological mode in the diagram is intersected by each of the other three modes. Behavior in the physiological mode may have an effect on or act as a stimulus for one or all of the other modes. Futhermore, a given stimulus may affect more than one mode or a particular behavior may be indicative of adaptation in more than one mode.

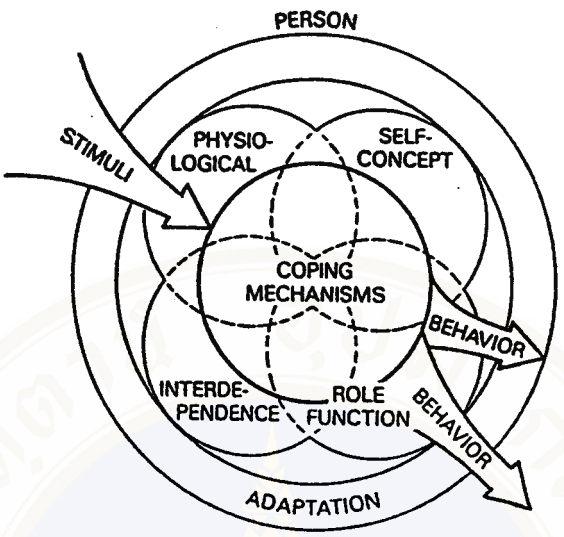

Figure 1. The person as an adaptive system (Roy & Andrews, 1991: 17)

This study focused on adaptive role behaviors. The fulfillment in the role function mode generates social integrity. Roy (1984: 284-305) has stated that role performance is an action taken in relation to expected behaviors for a particular role. The roles that a person occupies in society are classified as primary roles, secondary roles, and tertiary roles. Primary roles determine the majority of a person 's behavior at a given time and are a function of age, gender, and developmental stage. Secondary roles are those roles described to individuals who undertake to complete tasks related to their developmental stage and primary roles. Secondary roles are stable over time. Tertiary roles are related to secondary roles; they are those roles that a person voluntarily chooses and are transient in nature. Tertiary roles also enhance effective secondary role development.

Each of the three role types has both instrumental behaviors that are personal actions related to a person's role, and expressive behaviors that are personal feelings,

attitudes, and likes or dislikes related to a person's role (Parson & Shils, 1951 cited by Andrews, In Roy & Andrews, Eds., 1991: 350). Each person acts in a variety of roles throughout any given day. Social integrity is maintained through role cues and culture norms which are acquired through personal perception and social learning (Roy & Robert, 1981: 264). In addition, expressive and instrumental behaviors are affected by four requirements that are viewed as necessary within the social structure to allow a person to develop role behaviors (Parsons & Shils, 1951 cited by Andrews, In Roy & Andrews, Eds., 1991: 351). These requirements form major stimuli for role behaviors and consist of: 1) a consumer, 2)a reward, 3)access to facilities, and 4) cooperation/ collaboration. Other stimuli that commonly influence behaviors in the role function mode have been identified as social norms, physical makeup, chronological age, the individual's self-concept, role models, knowledge of expected behaviors, physical and/or emotional well-being, and performance in other roles.

Using the Roy Adaptation Model , this study viewed RT as the focal stimulus that activates behavioral responses in three modes by patients with cervical cancer. These modes are: physiological, self-concept and interdependence; and the behavioral response to these three modes serve as stimuli for the forth mode of role function. The physiological mode was viewed as the severity of side effects. The self-concept mode was indicated by self-esteem.The interdependence mode was defined as social support. This study includes education as a factor in the formation of adaptive role behaviors. Relationships among these factors are shown in Figure 2.

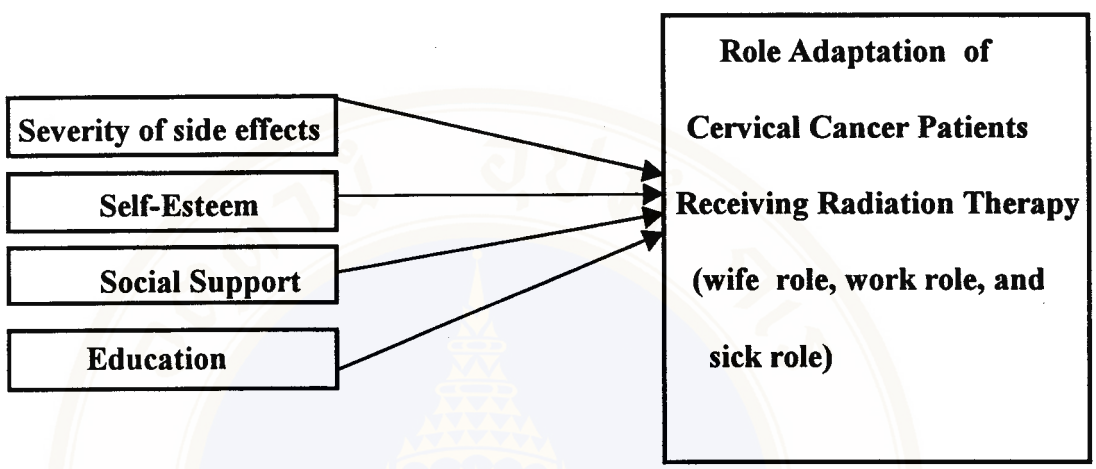

Figure 2. Research Framework

Research Questions

The research questions of this study were:

1. What is role adaptation of cervical cancer patients receiving radiation therapy ?.
2. How can the severity of side effects, self-esteem, social support, and education predict role adaptation of cervical cancer patients receiving radiation therapy ?.

Objectives

The objectives of this research were:

1. To describe role adaptation of cervical cancer patients receiving radiation therapy.

2. To ascertain the predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patients receiving radiation therapy.

Hypothesis

Severity of side effects, self-esteem, social support, and education can predict role adaptation of cervical cancer patients receiving radiation therapy.

Scope of the Study

The patients with cervical cancer receiving radiation were recruited from the radiotherapy department of six hospitals in Bangkok: Ramathibodi Hospital, Siriraj Hospital, Chulalongkorn Hospital, Rajavithi Hospital, Pramongkutklao Hospital, and Vajira Hospital. Data was collected from February to June 2000. Severity of side effects, self-esteem, social support, education, and role adaptation were determined by questionnaires.

Definition of Terms

Severity of side effects is those acute side effects that can be attributed to radiation therapy as perceived by patients with cervical cancer. It was measured by the questionnaire that was developed by the researcher. The 10 items of side effects consisted of skin reaction, food intake, nausea, vomiting, diarrhea, dysuria, frequent urination, fatigue, sleep problems, and emotional alteration. Higher scores indicate higher severity of side effects.

Self-esteem refers to a positive or negative attitude toward oneself, based on evaluation of self-worth, including feelings of self-criticism, self-satisfaction and self-acceptance. It was measured by the Rosenberg Self-Esteem Scale, Thai version (Srimoragot, P., 1993). Higher scores indicated higher self-esteem and present more favorable attitudes toward the self.

Social support means relational provision including intimacy, social integration, opportunity for nurturing behavior, reassurance of worth, and the availability of informational, emotional and material help. It was assessed by the Personal Resource Questionnaire 85-Part II (PRQ 85- Part II), Thai version (Soomlek, S., 1995). Higher scores indicated higher perceived social support.

Role adaptation refers to both instrumental and expressive behaviors to be performed by the patients occupying a specific role. In particular, a role set of secondary roles is composed of wife, work, and sick roles that relate to the framework of the role function mode of the Roy Adaptation Model (Roy & Andrews, 1991). Role adaptation was measured by the Role Adaptation Questionnaire developed by the researcher. Higher scores illustrated more effective role adaptive behaviors.

Education in this study was the highest level of formal education that patients had completed. It was measured by counting the total number of years in school.

Expected Outcomes and Benefit

The results of this study would be beneficial for health care providers in terms of:

1.Providing specific information about the description of role adaptation and the influences of the severity of side effects, self esteem, social support, and education on role adaptation of cervical cancer patients receiving radiation.

2.Encouraging nurses to facilitate cervical cancer patients performing adaptive role performances. It is expected that the findings would encourage nurses to utilize social resources in promoting patients' adaptive behaviors during a session of radiation.

3.Being useful for the development of future research with cervical cancer patients and other kinds of chronically ill patients.

CHAPTER II

LITERATURE REVIEW

A number of literature sources, articles, and topics related to this study were reviewed. Relevant information was presented in sequence as follows: (1) cervical cancer and radiation therapy, (2) the Roy Adaptation Model, (3) role adaptation of cervical cancer patients receiving radiation therapy, and (4) factors influencing role adaptation including severity of side effects, self-esteem, social support, and education, respectively.

Cervical Cancer and Radiation Therapy

Cervical cancer

Cervical cancer is a significant health problem that most commonly occurs in Thai women at the age of 35 to 60 years (National Cancer Institute, 1994: 7; 1995: 5; 1996: 6). Although the exact cause is unknown, the relevant risk factors of cervical cancer are increased in prostitutes and in women who first have coitus at a young age, multiple sexual partners, and sexually transmitted disease. Additionally, there are non-sexually-related factors that have been found to be associated with cancer of the cervix. These include cigarette smoking, possibly oral contraceptive use, age, economic status, ethnicity, social factors, and culture. The symptoms of patients with cervical cancer vary on stages of disease. Pervasive disease is usually detected by screening from cervical cytology. Patients with early invasive disease may be asymptomatic. Patients with invasive cervical cancer frequently present clinically with

abnormal vaginal bleeding, often following coitus. These may be associated with a clear or foul smelling vaginal discharge. Pelvic pain may result from locally advanced disease or tumor necrosis. The triad of sciatic pain, leg edema, and hydronephrosis is almost always associated with extensive pelvic wall involvement by tumor. Patients at an advanced stage of cervical carcinoma may have hematuria, dysuria, or incontinence from a vesicovaginal fistula caused by direct extension of the tumor to the bladder. In addition, external compression of the rectum by a massive primary tumor may cause rectal symptoms, such as constipation and rectal bleeding (Bristow & Karlon, In Scott, et al., Eds., 1999: 819; Eifel, et al., In DeVita, et al., Eds., 1997: 1433, 1438; Ibbotson & Wyke, 1995: 746-748). As a result, the exact nature and extent of the disease must be completely and carefully determined to ensure proper staging and subsequently optimal treatment.

Nowadays, there are many treatments for carcinoma of the cervix including surgery, radiation therapy, and chemotherapy. Using single or combination therapies is considered based on the patient's factors, histological type, stage of disease, and response to the treatment. Although the treatment of cervical cancer varies, radiotherapy is preferred to treat most patients with cervical cancer. In this study, thus, the researcher was particularly interested in studying patients with cervical cancer receiving radiation therapy.

Radiation therapy

Radiation therapy (radiotherapy) is one of the most commonly applicable treatment modalities for all stages of cervical cancer patients regardless of age, body habitus, or coexistent medical conditions (Bristow & Karlon, In Scott, et al., Eds.,

1999: 824; Einhorn, 1996: 75). Radiotherapy has multiple applications in treatment. It may be given (1) with curative intent in early stage cases, (2) to help control local disease, (3) as an adjuvant to surgery, chemotherapy, or biologic therapy, and (4) as palliative treatment (Marcial & Marcial, 1993: 1439; Woodruff, 1996: 324; Yasko, 1982: 631-648).

Radiation therapy uses high-energy rays to damage cancer cells and stop them from growing. The radiation may come from a large machine (external radiation) or from radioactive materials placed directly in the cervix (Brachytherapy). Most patients receive both types of radiation therapy.

With external radiation, the fractionation and duration of the treatment vary. This treatment depends on the size of tumor, combined therapy, the total dose to be delivered, and the daily fractionated dose. The purpose of whole pelvic external therapy is to decrease tumor volume and reduce anatomic distortion. A typical schedule for a patient to receive a total tumor dose of 4,000-5,000 cGy might require the patient to come to the treatment department 5 days a week for a total of 4-6 weeks with the daily fractionated dose being 180 -200 cGy per day (Hollon, In Moossa, et al., Eds., 1991: 1783; Marcial & Marcial, 1993: 1439).

Brachytherapy is the use of intracavitary radiation sources (isotopes) to treat cancer by temporary loading of radioisotope-pellets in contact with the cervix by a variety of applicators. The goals of intracavitary irradiation are to improve local tumor control and preserve vital organ function. The total amount of time that an implant is left in place depends on the dose of radioactivity with which the patient is treated. The implant may be a low dose rate (LDR) technique that uses the expense of inpatient

hospitalization 1-2 days. In recent years, however, a high dose rate (HDR) technique that uses remote controlling after loading has been developed and gained in popularity. This is because it is a cost-effective treatment with decreased hospitalization, low to nonexistent radiation exposures and greater convenience for the patient and the physician (Einhorn, 1996: 78; Hilderley & Dow, In McCorkle, et al., Eds., 1996: 345-350).

Roy Adaptation Model

According to the Roy Adaptation Model (RAM)(Roy & Andrews, 1991: 6-7), a person is viewed as an holistic, adaptive system, and a whole being in constant interaction with a changing environment. Within the changing world, the person must adapt to maintain his/her own integrity.

The human adaptive system receives input from the external environment and from the internal person. Roy (Roy & Andrews, 1991; 7-10, 13-15) identifies input as stimuli and categorizes these stimuli as focal, contextual and residual stimuli. The focal stimulus is the one that immediately confronts the person and necessitates adaptation. Contextual stimuli are internal and external factors that enlarge the effect of the focal stimulus. Residual stimuli are other unknown factors that may affect behaviors in the situation but cannot be validated. Confronting stimuli in a constantly changing environment, the person responds to those stimuli through regulator and cognator coping mechanisms. The regulator mechanism is passed by physiological processes, whereby the person responds automatically through neural, chemical, and endocrine processes. The cognator mechanism is an individual adaptation that includes

psychosocial coping processes and responses to stimuli through cognitive and emotional pathways that involve perception, learning, judgment, and emotion.

When individuals confront stimuli, their coping mechanisms are activated, causing behavioral responses. The behavioral responses occur in one or more of the four adaptive modes (Roy & Andrews, 1991: 15-19):

The physiological mode describes the way in which an individual responds physically to the stimuli in the environment. The self-concept mode focuses on the psychological and spiritual aspects of the person and involves the need for one to know oneself in order to be or exist with a sense of unity. This mode encompasses perceptions of the physical self and the personal self. The role function mode underlines the need for social integrity by focusing on the activities associated with the various roles that one occupies and acts throughout life. The interdependence mode focuses on interactions related to the giving and receiving of love, respect, and value. The basic need is termed affectional adequacy (feeling security in nurturing relationship). Two specific relationships within this mode are significant others and support systems.

The person's behavioral responses can be either adaptive, and thus promoting the integrity or wholeness of the human system: survival, growth, reproduction, and mastery, or ineffective, and not contributing to the goals of adaptation of human system. These responses act as feedback or further input to the system, allowing persons to decide whether to increase or decrease efforts to cope with the stimuli.

The goals of nursing (Roy & Andrews, 1991: 20, 28) are to assist the person to adapt in each of the four modes and to decrease ineffective responses. Nursing

activity is conducted through a six-step approach to the nursing process: assessment of behavior, assessment of stimuli, nursing diagnosis, goal setting, intervention, and evaluation.

In this study, the researcher focused on the adaptive role behaviors in the social dimension based on the Roy Adaptation Model (Roy & Robert, 1981: 260-271; Roy, 1984: 284-235, 405-427; Roy & Andrews, 1991: 348-382). In other words, the researcher was interested in examining the role function mode of the RAM. Since Roy actually derived her theory from role theory proposed by Turner and Merton, a brief discussion of Turner and Merton's work will be presented next. Turner (1956) defined role as the collection of behavioral patterns deemed appropriate for individual position or status in a society. Merton (1957) posited that individuals have multiple roles at the same time because they interact with different people in society at a certain period of time. Turner and Merton's definitions of role are reflected in Roy and her colleagues' work as Andrews defined the role as the functioning units of society; each role exists in relation to another. What is most important that the role function mode is needed for social integrity (Roy & Andrews, 1991: 348).

Roy further defined the role set as the complement of the role relationship in which persons are involved by virtue of occupying a particular social status on position (Merton, 1957 cited by Roy & Robert, 1981: 261). If a person's position in a society is variously defined, then he/she has as many role sets as there are ways of defining his/her position. The role set is classified into three types based on Banton's work (Banton, 1965 cited by Nuwayhid, In Roy, Ed., 1984: 286). (1) Primary roles determine the majority of activities that the person engages in at a particular period of

life. It is determined by developmental stage, gender, and age, (2) Secondary roles are taken as those behaviors that a person assumes to fulfill the tasks associated with developmental stage and primary role. These roles influence the individual's behaviors in a variety of societies. The secondary roles are typically stable and not readily relinquished since the person develops and masters them over a period of time. Problems of role function usually occur in these roles, and (3) Tertiary roles are met, normally temporary, and freely chosen by the individual. They are related primarily to a person's secondary role, but may be related to primary role as well.

Furthermore, Roy identified the components of role behaviors to assist in the assessment of developing roles that refer to the process of adding new roles as one matures through life. These components are defined as expressive behaviors and instrumental behaviors (Parsons & Shils, 1951 cited by Andrews, In Roy & Andrews, Eds.,1991: 350-351). Expressive behaviors are the naturally emotional behaviors resulting from interaction that allow the person to express role-related feelings and attitudes in reasonable ways. Instrumental behaviors are physical actions performed by the individual during performance of the role to accomplish a certain goal. Expressive behaviors and instrumental behaviors are affected by four requirements which are viewed as necessary within the social structure to allow a person to develop role behaviors (Parsons & Shils, 1951 cited by Andrews, In Roy & Andrews, 1991: 351-352, 354). These requirements establish major stimuli for role development that consist of: (1) a consumer- the need for immediate feedback from an appropriate and receptive person or the individual benefits from the person's performance of role behaviors, (2) a reward- a constituted network that will provide feedback on one's role

performance or reward that the person receives for behavioral role performance, (3) access to facilities and set of circumstances- the need to feel that one has what is needed to accomplish the task and the availability of material to perform role behaviors, and (4) cooperation or collaboration- the positive emotion and belief that the setting in which the role is performed provide the climate needed to fulfill the role and the degree to which the individual is allowed time to perform role behaviors. In addition, there are other important stimuli which affect the development of role behaviors involving social norm, physical makeup and chronological age, self-concept, physical and/or emotional well-being, role models, knowledge of expected behavior, and performance in other roles.

Roy and Robert (1981: 264) explained that each person has many roles within a role set, and each role has given expectations coming from self, others, and society. To articulate roles and expectations, the individual necessarily needs to learn role cues and culture norms. Furthermore, to maintain the balance of a role set and reduce role strain, the person also has six social mechanisms needed for articulating roles. For instance, he/she evaluates the relative importance of various positions, gives the person a larger measure of autonomy, diminishes to competing pressures when insulates role activities, compromises when contradictions are plain, has mutual social support among status occupants, and may delete roles from his/her role set.

Nurses are responsible for diagnosing individuals experiencing health problems and their effects on role function on a regular basis, so that nurses will be able to assist them to adapt to new roles as expected by social and personal self. Nursing diagnosis is essential for effective nursing interventions. Nursing diagnoses associated with role

function have been proposed by Nuwayhid. The following diagnoses reflect either adaptive or ineffective behaviors(Nuwayhid, In Roy & Andrews, Eds., 1991: 367-371).

(1) Effective role transition. The behaviors occur when the individual exhibits adaptive expressive behaviors, and a few adaptive instrumental behaviors that partially meet with the social expectations associated with the assigned role.

(2) Ineffective role transition. The behaviors occur when the individual exhibits adaptive expressive behaviors but exhibits ineffective instrumental behaviors for a particular role because of a lack of role models, knowledge or education.

(3) Role distance. The behaviors associated with the role are not compatible with self-concept. The individual presents both instrumental and expressive behaviors appropriate to a particular role, but these behaviors differ significantly from prescribed behaviors for the role.

(4) Role conflict. The behaviors refer to inconsistent expectations held by a person, or by other persons, for a given role in the role set or by inconsistent expectations among the roles of the person's role set. Role conflict can be specified as intrarole conflict and interrole conflict. Intrarole conflict occurs when a person fails to exhibit either instrumental or expressive behaviors, or both, appropriate for a role, as a result of the incompatible expectations from self or one or more persons in the environment concerning the individual's expected behavior. Interrole conflict is seen when a person fails to exhibit the appropriate instrumental or expressive behaviors as a result of the role set having one or more roles with expected behaviors that are incompatible.

(5) Role failure. The behaviors occur when a person shows an absence of expressive behaviors or exhibits ineffective expressive behaviors or shows an absence of instrumental behaviors or exhibits ineffective instrumental behaviors for a specific role.

In summary, a person is an adaptive system and an open system. In society, the person has to interact with and respond to others over time to meet the need for social integrity. At a particular moment in time, the individual has to engage in multiple roles. The person also needs to learn role cues, social norms, and have social coping mechanisms to articulate each of his/her role, and reduce role strain. There are four major stimuli including consumer, reward, access to facilities, and cooperation to allow the person to develop role behaviors. Furthermore, there are other stimuli, such as physical makeup, self-concept, role models, knowledge of expected behavior, physical/ emotional state, and performance in other roles which may affect either adaptive or ineffective role behavior.

Role Adaptation of Cervical Cancer Patients Receiving Radiation Therapy

A role is a typical occupant of a given social position and a given situation who is expected to behave in a certain manner. In other words, by virtue of social, cultural and personal expectations, a specific designated role, and a particular behavioral pattern which a person should hold as he/she occupies a particularly structural position within that society (Oppong & Abu 1985 cited by Yoddumnern-Attig, B. In Yoddumnern-Attig, B., et al., Eds., 1992: 4). Loveys (1990: 57) defined a role as behavioral expectations or prescriptions for a person enacting a particular role

and for those who interact with her or him. Therefore, a role is a set of behaviors by which a person participates in a social group.

Middle-aged adult women are a population group who have a great number of various roles in society. For middle-aged adults, the major development tasks, in Erikson's terms, involve issues of generativity-creativity and productivity in family life (children) and work. Stagnation, the opposite, is the basis for mid-life crisis (Erikson, 1963 cited by Nuwayhid, In Roy, Ed., 1984: 294-295). Havighurst (1972, cited by Schaie & Willis, 1991: 61) and Stevenson (1977, cited by Catanzaro, 1990: 66) summarized that the specific developmental tasks of middle age were: taking responsibility for physiological changes, reaching and maintaining satisfactory performance in one's occupation, adjusting to aging parents, assisting teenage children to become responsible and happy adults, relating to one's spouse as a person, assuming social and civic responsibility, and developing leisure-time activities. Oppong and Abu, (1985, cited by Yoddumnern-Attig, B., 1992: 4) particularly addressed seven roles and statuses of women including parental, occupational, spouse, domestic, kinswomen, citizen, and individual. In this regard, middle-aged women play multiple roles at any given time in a complex society. Each role contains many activities, purposes and power, and each represents a particular set of social relationships. Roles usually overlap with norms in as much as they involve persons doing the things demanded by the norm. Thus, they require the combination of new knowledge and standards of behavior accepted by the social group in which one participates in order to develop the skill necessary to decrease conflict of multiple roles (Meleis, 1975: 265), to fulfill their roles, and to meet social integrity (Nuwayhid, In Roy, Ed, 1984: 286).

Although many middle-aged women are in good health and have no limitation on activities that interfere with their daily lives, many middle-aged adults do have a chronic illness (Catanzaro, 1990: 65). For instance, according to annual reports on cancer in Thai females, cancer of the cervix mostly occurs in the middle-aged (35-60 years) (National Cancer Institute, 1994: 7, 1995: 5; 1996: 6). Women with cervical cancer are usually treated by radiated therapeutic session. The advantage of radiation therapy is that it can cure the cancer or relieve patients' symptoms. The disadvantage is that it may directly impact on a women' s identity or social life. The women may have difficulty to complete or maintain their preeminent roles as usual, such as wife role or work role, as well as to learn the transition role (a sick role). In this study, the researcher particularly describes the wife role, the work role, and the sick role of patients with cervical cancer receiving radiation.

Wife Role

Marriage is a social institution wherein two individuals live together (Subbamma, 1985: 77). Historically, a married Thai woman was confined to the house and was a silent, honest, honorable, serviceable, and the passive partner of a man. The present situation surrounding women, however, has changed. Women play an important role in household management, especially concerning economic matters. They often serve as the family's treasurer and financial manager. Both husband and wife also undertake mutual decisions concerning marital/family problems, but the woman is the key decision-maker. Both sexes mutually decide on matters pertaining to family social activities as well as the education of their children. Women also meet the affective need of their spouse in a sexual role (Pu-ngamtong, M., 1991: 96-100;

Sujumnong, P., 1983: 142-143; Suphab, S., 1980: 86-93; Yoddumnern-Attig, B., 1992: 32).

The middle-aged adult is in transition. The marital role is freed from the obligation of parenthood and becomes more flexible and compassionate. Taken together, these changes often lead to what has been called the "prime of life", a description that fits the majority of middle-aged men and women who report their highest levels of life satisfaction in these years. This picture darkens, however, when they look at the numerous complaints about the so-called mid-life crisis. Many women are concerned about alterations of their body. For example, menopause may affect her capability for sexual stimulation. Among married couples in the middle years, two contrasting tendencies have been noted in research studies. It is possible in some middle-aged marriages for both increased separation and increased togetherness to occur at once (Orther, 1981: 409- 416).

Work Role

Traditionally, most Thai women, whether rural or urban and of whatever social class, have the domestic responsibility to serve their husbands, rear their child, and take care of household tasks (Soonthorndhada, A. In Yoddumnern-Attig, B., et al., Eds., 1992: 65). In this work (household management), it is hard to separate women's economic activity from their unpaid contribution. When one considers the family, one must also take into account the question of household responsibilities. Whether household work can be considered to have an economic value is quite a controversial issue. The time spent on cooking, cleaning, and taking care of children is a private production, not a social production, and is not a production of goods to be sold or

exchanged; however, it produces something of value (Gothom, A., 1992: 72). Thus, nowadays, many women remain satisfied with their traditional roles in marriage and prefer their homemaking responsibilities (Orthner, 1981:182).

Since great changes in economic structure and social development have occurred in Thai society, the role of women has changed from what it was in the past. Two main factors which have supported these changes in women' s roles are the revolutionary changes in the economy and the opportunity to have further education to be able to expand to work outside and become economically valuable as well as to be more independent. Thus, today, the number of women entering work outside the home are strongly increasing because the work can supply income for the family, provide a social continuity to daily life, link the person with others, can be a means of self-expression, and can also help to define feelings of self-worth (Orthner, 1981: 183; Xuto, 1992: 77).

Work is an instrumental activity that individuals use as justification for their continued existence. The persons also behave to reach a quality or standard of work related to social expectations by involving (1) good management: planning, controlling, decision, and evaluation of the outcome, (2) responsible work for accomplishing goals within the appointed time, and (3) effective participation with others (Nakvatchara, V., 1992: 83-84, 169-170).

During the course of cervical cancer, women are necessarily treated by radiation therapy. They have to change many roles by diminishing or stopping some current duties because of the numerous side effects of radiation and daily trips to receive treatment which may affect on their physio-psycho-social health (Steginga &

Dunn, 1997: 1403). As a consequence, the patients may not be able to perform their present roles as usual, such as the wife role and work role.

As to the wife role, extensive findings report that patients undergoing cancer treatments are not able to effectively perform their roles, particularly their role in the sexual relationship with their partner. Many patients are concerned about femininity, experience significant change in sexual functioning, avoid sexual intimacy, and experience diminished sexual desire or a total absence (Burke, 1996: 239-242; Jirojwong, S., et al., 1994: 399; Seibel, et al., 1980 cited by Callahan, et al., In Korapp & Berkowitz, Eds., 1993: 473; Steginga & Dunn, 1997: 1405). The changes in expressed intimate relationships and sexual patterns may lead to spouse conflicts or separation (Catanzaro, 1990: 68; Schover, et al., In DeVita, et al., Eds., 1997: 2857).

The continuity of treatment and side effects of radiation may impact on the work role of the women with cervical cancer. For example, some women have to close their store, or temporarily stop working while they are receiving the treatment (Cholsuk, V., 1997: 53). Similarly, Mellette (1985, cited by Berry, 1992: 42) found that one of the barriers encountered by patients during treatment was the environment of the work place. Some women had conflicts with co-workers, weakened in work and decreased growing in work (Hughson, In Moossa et al., Eds., 1991: 1821). Labor workers who experienced fatigue from radiation reported the most symptoms and the poorest level of functioning (Graydon, 1994: 621). Friends or employers usually did not assign jobs to patients because they were concerned that the patients might be unable to complete them. In some cases, patients received sympathy from others by being relieved from their regular work or having others to help (Loveys, 1990: 62).

Moreover, it has also been reported that 19 to 38% of the patients had reduced interactions with friends or family members, going outside the home, and daily household activities (Jirojwong, S., et al., 1994: 399; Kawsasri, A., 1998: 69).

Sick Role

During periods of illness and cancer treatment, the affected individual's roles must change by moving from daily responsibilities to behaviors considered appropriate to their changing health status. The individual who fully recovers returns to prior role behaviors; however, when there is only partial recovery or residual pathology, the individual has to modify or adapt prior roles to accommodate both social expectations and the illness (Lewis & Lubkin, In Lubkin, Ed., 1995: 75).

Society assigns specific illness-related expectations to the ill person. These expectations form what is known as the sick role. Parson described the sick role as consisting of four aspects: accepting to be dependent on other, being relieved of social responsibilities, being obliged to want and seek to become well, and cooperating with technically competent professionals (Parson, 1951 cited by Lewis & Lubkin, In Lubkin, Ed., 1995: 74-76; Parson, 1967 cited by Haigh, 1993: 21-22).

The sick role theory outlined by Parson has been accused by it critics of focusing predominantly upon the needs and obligations of the acutely ill, and is not seen as appropriate to patients suffering from chronic disorders, particularly those for whom getting well is not a viable option. It also assumes that all individuals have equal access to health services. Despite 25 years having elapsed since Parson first developed sick role theory, the conception that there is a socially defined role for the sick person is still alive and well documented (Mile, 1991 cited by Haigh, 1993: 22). It

is not inappropriate to contend that Parson's concept of the sick role is still the socially accepted norm within Western society.

Transition into the sick role, sudden or gradual, is not easy. Such movement, which includes loss of some current roles during the acquisition of new roles, requires the person to incorporate new knowledge, alter behavior, and change the definition of the self in the social context (Meleis, 1975: 265). Chapman (1980: 127-134) noted that the patient's responsibilities are composed of cooperation with therapeutic modality to accomplish goals, participation in self-care behaviors, practicing a treatment regimen or following guidance, and acceptance of health team professional.

For the above reasons, the cervical cancer patients receiving radiation therapy are expected by health care providers and society to perform role behaviors as follows: (Kawsasri, A., 1998: 28-29; Thepmongkol, P., 1985: 55-61)

(1) Learning about illness and treatment plans. Patients must learn to know about disease, treatment plan, and self-care practices during receiving radiation from professional providers. Alternatively, they may learn from talking with the similar cancer patients or observing and reading books, journals, and other media to adjust their life patterns associated with treatment plans (Lewis & Lubkin, In Lubkin, Ed., 1995: 74-76).

(2) Cooperating with treatment plans. Before receiving radiation, the patients should be evaluated by the physician on detailed history, physical examination, and special laboratory procedures for preparation of proper treatment and reduction of side effects. For example, patients should not remove the pelvic skin markings that are important in identifying the field center and edges of treatment area. If these marks do

come off, they should be reapplied by the radiation oncologist or the radiation technologist. Patients should not redraw the marks themselves. In addition, a typical schedule for patients to receive a total tumor dose of 4,000-5,000 cGy may require the patients to come to the radiotherapy department 5 days a week for a total of 4-6 weeks. They should wear clothes that are easy to take off and put on. During each radiated time of approximately 5-10 minutes, the patients should be lying still in the appropriate treatment position. Patients should visit the radiation oncologist once a week for physical assessment and evaluation of the response to treatment. If they have problems or abnormal symptoms they should come to the hospital before the appointment.

(3) Performing behaviors associated with treatment. As outpatients at the radiation center, the patients have to care for themselves at home by following professional advice. The following topics and behaviors are recommended by many experts (Bushkin, In Holland, et al., Eds., 1993: 1040-1041; Dunne-Daly, 1994: 236-256; Hollon, In Moossa, et al., Eds., 1991:1784-1786; Kraiphibul, P. & Thanachai, M., In Lenasmita, V. & Srisupundit, S., Eds., 1999: 303-307; Leelakul, V. & Auemongkol, N. In Linasmita,V. & Srisupundit, S., Eds., 1999: 741-742; Thepmongkol, P., 1985: 55-62; Yasko, 1982: 646).

Skin care. During radiation therapy, patients should avoid irritating treated skin. When they wash, do not use soap directly on the outlined areas. If patients shower, they should quickly wet and rinse the skin within the areas and not rub to dry. They should not apply any powders, creams, perfumes, deodorants, body oils, ointments, lotions, or home remedies in the treatment areas while they are being

treated or for several weeks afterward unless approved by the radiation oncologist. Clothing should be loose and nonrestrictive. They should not wear tight clothing over the irradiated area and avoid putting anything that is very hot or very cold, such as heating pads or ice packs, on their treated skin. All skin reactions or changes need to be reported to nurses and physicians.

Food. The patient should take soft diets and low residual diets to prevent nausea and vomiting and increase supplemental food such as fruit juices or soymilk. In addition, they should alter eating habits to maximize protein and calories as well as taking small, frequent meals and balancing rest and exercise. They should keep away from milk, alcohol, coffee, spices, fresh fruit and vegetables, high fiber foods and gas producing food. To minimize diarrhea, a low residual and lactose-free diet is advised. If they experience diarrhea, they should increase fluid intake, and mineral water is recommended. Anti-diarrheal medications according to the physician's prescription may be required to better control the symptoms.

Drinking Water. The patients should drink at least 6-8 glasses of fluid per day to help relieve discomfort of urination. They should avoid holding urination when the bladder is nearly full or having a sensation to void in order to prevent urine stagnation which can result in urinary tract infection. If infection or hematuria exists, patients should report abnormal symptoms to the radiation oncologist.

Rest and Exercise. The patients can help themselves during radiation therapy by not trying to work /exercise too much. They should be told to not do everything as usual. If the patients feel tired, they should limit their activities and use their leisure time in a restful way. Patients should take a rest for 1-2 hours during the day to

decrease fatigue. They should also have appropriate types of exercise for 10-15 minutes per day which can not only decrease fatigue but also prevent complications. For example, hip and legs exercise can prevent irradiation complications in the pelvic area.

Sexual organ. They should gently clean the perineal area with mild soap and water, then slap lightly or pat, but not rub the skin. If the patients have leukorrhea, they should use water to clean the genitalia. It is not necessary to use a vaginal douche. Apart from perineal care, women are also told not to have intercourse starting from the initial radiation to 4-6 weeks after completion of radiation therapy. Due to irradiation, the patients may have inflammation of the cervical epithelium which increases the risk of infection, therefore careful perineal and vaginal care are crucial.

In conclusion, middle-aged women have multiple roles in a complex society. These women perform each role to accomplish certain goals related to personal and social expectations by learning from social cues and norms. In transition to being the patients with cervical cancer receiving radiation, simultaneously, they must change their roles by reducing or stopping their current roles. They must learn how to integrate this new, sick role into their life. Patients who have adaptive role behaviors usually show social integrity whereas patients who have ineffective role behaviors may have problems in their role functioning.

Factors Influencing Role Adaptation of Cervical Cancer Patients Receiving Radiation Therapy

According to the RAM, a person is a bio-psycho-social being so that each person's behavior is viewed in relation to four adaptive modes (Roy & Andrews, 1991:

17-18). Behavior in the physiological mode may have an effect on or act as a stimulus for one or all of the other modes. For role function mode, Roy (1991: 351-352) described four major stimuli which are viewed as necessary within the social structure to allow a person to develop role behavior. The four major stimuli are consumer, reward, access to facilities, and cooperation. In addition, there are other stimuli that may affect role behaviors such as physical condition, self-concept, role model, and social norm.

The above statements indicate that physical and psychosocial changes of the person may affect their role performance. In this study, thus, four factors were identified to investigate their relationships with role adaptation. These include the severity of side effects, self-esteem, social support, and education. These factors were examined as significant factors that might influence role adaptation in cervical cancer patients receiving radiation therapy.

The severity of side effects of radiation therapy

As with other cancer treatments, there are risks for patients who are receiving radiation therapy. The brief high dose of radiation that destroys cancer cells also can damage normal neighboring cells. When this occurs, the patients have side effects in the locally irradiated area and/or general systemic effects. (Bushkin, In Holland, et al., Eds., 1993: 1039; Kraiphibul, P. & Thanachai, M. In Linasmita,V. & Srisupundit, S., 1999: 283; Strohl, 1988: 429- 434).

The onset, duration, and severity of side effects vary from patient to patient and mostly depend on factors of the treatment and factors of the patient. Treatment factors are volume irradiated, total radiation time, and energy of radiation dose rate.

Patient factors are general conditions, radiosensitivity of normal tissues in treatment area, condition of area to be treated, and other concurrent therapeutics, such as surgery and chemotherapy (Hollon, In Moossa, et al., Eds., 1991: 1784; Woodruff, 1996: 325-326). The side effects are usually classified acute and chronic. The acute side effects of radiotherapy occur within days or weeks of treatment and are due to inflammation, edema and cell death. The delayed or chronic side effects of radiotherapy appear on months or years after treatment and are predominantly caused by fibrosis, ischemia, stenosis, obstruction, or perforation.

(1) Locally irradiated area

Radiation is a local treatment delivered to those structures located within the target volume. Most physical side effects of radiation therapy are confined to those tissues and organs within the path of the reaction beam.

Skin. The skin may appear to be reddened or tanned. Reddening of skin color (erythema) is caused by dermal capillary dilatation. The erythema may cause varying degrees of itching sensations over the area. A reaction can usually be seen within 7 days of the onset of the treatment. A tanning reaction is caused by increased production of pigment. Dry desquamation, which is lack the skin, is caused by the accumulation of dead skin cells. At 5,500 cGy, in cases where the basal cells of skin are also destroyed, the dermal level is exposed which results in the leakage of serous fluids, called moist desquamations. Then, there will be a risk of infection, especially, vulnerable areas, such as the perineum and groin (Bushkin, In Holland, et al., Eds., 1993: 1040; Dunne-Daly, 1994: 240; Hollon, In Moossa, et al., Eds., 1991: 1784).

Small bowel, colon and rectum. Irradiation may produce acute radiation enteritis with nausea, vomiting, anorexia, colicky abdominal pain, diarrhea, and hemorrhage. King, et al. (1985: 59) reported that eighty-six percent of patients have abdominal cramping, mild to moderate diarrhea in the form of watery or mucous or bloody stool in the third week of radiation. These symptoms, such as obstruction or fistula of small intestine, proctosigmoiditis, rectal bleeding, fistula or ulcerations may occur within 6 months to 1 year after completed treatment (Sutton, In Hope-Stone, Ed., 1986: 203-206, 221-222).

Bladder. Irradiation of the bladder will produce cystitis with frequent uncomfortable urination, nocturia, urgency, dysuria, and hematuria. In the first 4-6 weeks after treatment, an acute inflammatory response with irritative symptoms or hematuria may develop. Moreover, chronic cystitis related to contracture and fibrosis of the bladder, ureteral stricture or vesicovaginal fistula may occur

Reproductive organs. Any dose of radiation above 600-1,000 cGy will produce ovarian failure. The loss of ovaries may also, for many women, equate to premature aging and diminish femininity and sexual attractiveness (Burke, 1996: 240). The patients may stop menstruating and may have other symptoms of menopausal symptoms, such as hot flashes, amenorrhea, dyspareunia, loss of libido, and irritability. Changes in fertility are particularly problematic for young women receiving radiation therapy to the pelvis. With brachytherapy, it was found that up to 70% of patients are at risk of atrophic vaginitis predisposing to infection, vaginal dryness, adhesion or stenosis (Bristow & Karlon, In Scott, et al., Eds., 1999: 828).

(2) General systemic effects (Radiation sickness)

Radiation sickness or syndrome. Radiation syndrome may be defined as a condition that sometimes occurs in patients who have received therapeutic doses of radiation. The manifestations of radiation syndrome are:

Fatigue. Fatigue is a common occurrence in persons receiving radiation therapy. Degree of fatigue can vary among patients. Most patients begin to feel tired after a few weeks of radiation therapy. Feelings of weakness will go away gradually after the treatment is finished.

Bone marrow suppression The white blood cells, red blood cells, and platelets are decreased due to bone marrow suppression in the treated area,. Patients will be at risk for infection, anemia, and bleeding.

Alteration of nutrition. New patients may have an element of anxiety, which enhances the potential for radiation-induced nausea. Around 52-54 % of the patients present with increased nausea during the fifth and last week of treatment (King, et al., 1985: 97). Moreover, some of them indicate a loss of appetite, change in taste, and aversion to certain foods.

Sleep disturbance. This symptom is related to radiation sickness and correlated with anxiety, depression, nocturia, or menopausal symptoms. It leads to increased fatigue and mood changes (Sheely, 1996: 109).

Due to the various side effects of radiation, Shingleton (1990, cited by Shingleton & Orr-Jr., 1995: 242) summarized physical changes in cervical cancer patients receiving radiation in terms of their frequency of occurrence in the following order: diarrhea, fistula, sexual dysfunction, urinary infection or urination disorder,

menopausal symptoms, fatigue, nausea, vomiting, dehydration, fever, and leg edema. These problems lead patients to experience difficulty or disruption in maintaining functional performance.

Severity of side effects and role adaptation

Based on numerous studies, the severity of side effects of cancer treatments is related to the functional activities, quality of life, and adaptation in various groups of patients. For instance, the studies of Oberst and others (1991: 72), Graydon (1994: 621), and Irvine, et al.(1994: 367-368) revealed that symptoms of distress and fatigue were important factors contributing to self-care deficit of role performance in cancer patients during chemotherapy or radiation. Similarly, in the study of Ruankon, A. (1997: 68) and Pongthavornkamol, K. (2000:101), patients with cervical cancer receiving radiation who had more complications of radiation also had lower quality of life and more disruptions of function than those who had fewer complications. Also, Kawsasri, A. (1998: 73) found that perception of radiation reactions could explain and accounted for 6.24 % of the variance in sick role adaptation of head and neck patients receiving radiation ($p < .001$).

To summarize, the severity of side effects is one important factor in role adaptation that may impact on patients' daily activities and relation with others. The greater the severity of side effects, the less effective the role adaptation.

Self-Esteem

Many researchers have long recognized self-esteem as an essential element of mental and physical health, a measure for quality of life, a central concern influencing

behavior, and it is meaningfully related to individual satisfaction and effective functioning (Meisenhelder, 1985: 127; Miller, 1992: 410, Taft, 1985: 77).

Self-esteem has been defined in similar terms by many. According to Coopersmith (1967: 7), self-esteem is an individual's self-evaluation which expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy. Similarly, Rosenberg (1979: 30) views self esteem as a positive or negative attitude towards oneself based on evaluation of self-characteristics and includes feelings of self-satisfaction and self-acceptance. Simply speaking, self-esteem is an individual's self perception of his/her worth that can be assessed through feeling and attitude (Driever In Roy, Ed., 1984: 394)

Self-esteem develops primarily from the perceptions that individual receive of the value others place on him/her. Basic self-esteem begins in infancy and young childhood and is formed in significant family and peer relationships, and it remains relatively unchanged throughout life. Functional self-esteem develops later in life through an ongoing self-evaluation of competence and social expectation by interactions with others. The self-appraisals vary from day to day and may rise above or fall below basic level dependent on diverse situations (Crouch & Straub, 1983 cited by Muhlenkam & Sayles, 1986: 334; Eillis & Nowlis, 1994: 720; Norris & Kunes-Connell, 1985: 747). Self-esteem, although dependent on various conditions, can be understood in terms of the relationship of a person's self-concept to the ideal self. The ideal self consists of the desires, goals, values, and standards of behavior that the person considers ideal and strives to attain. The ideal self initiates in early childhood and

develops throughout life. In general, a person, whose self-concept comes close to matching the ideal self, has a high level of self-esteem. In contrast, when self-concept varies widely from the ideal self, a low level of self-esteem results (Potter & Perry, 1995: 374). For instance, if a person who accomplishes a task or negotiates an interpersonal relationship successfully, their sense of self-esteem is enhanced. On the other hand, if a person is faced with changes, and limitation have been imposed on role performance through physical loss or alteration in function, their sense of self-esteem may decrease.

Persons who have high self-esteem appear to have a positive attitude toward further development, confident interpersonal communication, competency in seeking and dealing with the environment, active participation, management skill vis-a-vis conflict and stressful events, and potentially successful role performances. Persons with low self-esteem perceive the environment as negative and threatening and usually experience with depression, helplessness, powerlessness, isolation, dependency, masked hostility, lessened association between task performance and satisfaction, sensitivity to criticism, and poor general health (Miller, 1992: 399; Robson, 1988: 10-11; Roy, 1984: 395).

Hence, self-esteem is described as a kind of energy. If it is high, people feel they can handle anything (Miller, 1992: 398). Conversely, when self -esteem is low, everything requires more effort to deal with (Davis, 1984 cited by Wei, 1998: 27).

Patients with cervical cancer become increasingly self-conscious as their bodies undergo change associated with radiation. They lose important aspects of self, including symbols of femininity (infertility and menopause from ovarian failure),

disruption of their usual role involving problems of sexual dysfunction and conflict of marital relationship, inability in nurture behaviors of child bearing, parenting, and advancement in their career. (Douglass, 1997: 1529; Oberst, et al., 1991: 72; Schover, et al., In DeVita, et al., Eds., 1997: 2857-2858; Zacharias, et al., 1994; 1703-1704). These multiple assaults may produce in some patients feelings of failure in interpersonal relationships, no self-competence, worthlessness (Miller, 1992: 398), and low-self esteem (McMullin, 1992: 852). As a result, they may withdraw from activities, become prejudiced against others, use escape behaviors (Potter & Perry, 1995: 377), poorly adjust to her treatment (Carpenter, 1996: 172), and lessen of motivation to function in appropriate roles in social task (Tulman & Fawcett, 1990: 97).

Self-esteem and role adaptation

The literature suggests that self-esteem is associated with positive health behaviors and adaptation in various groups of persons. For example, self-esteem was significantly positively correlated with self-care behaviors in healthy adults (Muhlenkamp & Sayles, 1986: 336) or self-care ability in osteoarthritic elderly group (Sasatranuruk, S.,1995: 51), chronic obstructive pulmonary disease patients (Uckanit, W., 1991: 39), and loss of extremity patients (Vichitvatee, S., 1991: 91). Moreover, self-esteem was also positively correlated with role adaptation in coronary heart disease patients (Yoswattana, R., 1992: 60), and accounted for 27% of the variance in role adaptation of head and neck cancer patient receiving radiation (Kawsasri, A., 1998: 71). In particular, self-esteem was positively correlated with family role adaptation in non-underlying hypertensive males (27-55 years) (Tingmai, N., 1998: 56,58,60).

In summary, self-esteem represents an individual's feelings about all aspects of the self. The level of self-esteem indicates the extent to which an individual perceives him or herself to be capable, successful, and worthy. High self-esteem can serve as an indicator of positive well-being, mental health, and quality of life as well as positive adjustment or adaptation to stressful events. In contrast, low self-esteem can be an indicator that an individual is suffering from poor mental health and quality of life, and adapting poorly to his/ her difficult experience. The above empirical findings provide the principle that patients who have high self-esteem would perform effective role adaptations.

Social support

Since the 1970s, increasingly, various theorists have focused on social support as a major physical and psychosocial variable in health (Dimond & Jones, 1983: 241; Uphold, 1991: 441). The concept of social support also has been extensively defined in different ways by psychologists and sociologists.

Cobb (1976: 300) conceptualized social support as provisional information which convinces persons to believe they are loved, esteemed, and a member of a network of mutual obligations. Kahn (1979: 85) proposed that social support is mainly a functional assistance and the characteristics of reciprocity. Social support consists of interpersonal transactions that include one or more of the following: the expression of positive affect of one person toward another, the affirmation of another's behaviors or express views, and the giving of symbolic or material aid to another. House (1981, cited by Tiden & Weinert, 1987: 614) proposed that social support is an interpersonal relationship that reflects four types of support: emotional support (giving care, love,

and empathy), informational support (giving information that can be used for coping problems), instrumental support (helping persons directly by doing something), and appraisal support (feedback of information related to self-evaluation).

Brandt and Weinert (1981: 277) used five of the six categorizes of social support based on Weiss's model (Weiss, 1974: 23). Social support is conceptualized as relational provisions pertaining to a specific type of relationship for attachment/ intimacy that refers to the sense of security and place provided by dyadic relations of an intimate nature. Social integration refers to the sharing of concerns, information and ideas among the social participants. Opportunity for nurturance refers to responsibility for the well-being of another; therefore, individuals have a sense of being needed. Reassurance of worth signifies an individual competence in a social role that is provided by work relationships and certain family relationships. And the obtaining of guidance is the support during stressful situations when the individual seeks emotional support, informational, and material help from a trustworthy and authoritative figure.

In summary, social support is defined as the psychosocial and instrumental aids that an individual perceived he/she receives from others or a social network. When a person receiving such provisions has positive support from others, these provisions may increase self-esteem, self-confidence and a sense of well-being. Social support has the character of reciprocity and mutual relationships in which giving and taking are always taking place.

Regarding the concept of the interdependence mode of the RAM (Roy & Andrews, 1991: 386-392), Roy describes that this mode includes contributing and receptive behavior. Contributing behavior represents a person's ability to love, respect

and value others whereas receptive behavior represents the reception of love, respect, and values. The view of interdependence mode in the RAM is also considered as reciprocal and is in accordance with the concept of social support. (Gasemgitvatana, S., 1993: 19)

The beneficial effects of social support on health are well documented. Social support has been associated with physical health, psychological well-being, and social functioning (Cobb, 1976: 300, Pender, 1996: 259). The exact action by which social support facilitates health is not yet known. The possible mechanisms of social support focus on three hypotheses:(Cohen & Wills, 1985: 310-313; House, 1981 cited by Northouse, 1988: 91; Tiden & Weinert, 1987: 614). The first hypothesis is explained by the biological process model in which increased support is presumed to result in suppression of neuroendocrine and hemodynamic responses and increasing immune competence. Secondly, the stress-buffering model presumes that social support may facilitate the coping efforts of the individual or lessen the degree of reactance of the individual to the stressor. Thirdly, the main-effect model describes social support in terms of providing services or information regarding the benefits of behaviors that positively influence health and well-being, and by social integration to increase feelings of self-esteem, self-identity, and control over one's environment.

Factors contributing to social support

It is generally agreed that social support function to buffer or protect individuals from effects of various kinds of stressful event. Alternately, it should be noted that a network structure that may be effective in one condition may not be effective in all conditions. Therefore, it is significant to specify as accurately as

possible the factors that may determine the kind of social support most suitable under various situations. The major factors are the nature of the situation, the time when support is provided, the resources of the individual, the intimacy character of the relationship, and transaction and recipient' s satisfaction with the support (Pender, 1996: 257; Tiden & Weinert, 1987: 614-615; Weiss 1976, cited by Dimond & Jones, 1983: 238-241; Wortman, 1984: 2342- 2344).

As noted earlier, since situational distress may be manifested in various ways, the kind of social support required in each situation is also likely to be different. Weiss (1976 cited by Dimond & Jones, 1983: 239-241) also suggested that emotional support seems most useful during crisis or times of uncertainty and anxiety, while information and orientation are helpful supportive techniques during transition states or the time when the individual needs the information to manage treatment. Instrumental support seems most appropriate in incomplete situation or during recovery. Moreover, various kinds of support resources available to a person are suggested. For example, a spouse or close friends could provide opportunities for attachment; the work group may provide a sense of belonging, competence, and usefulness; family and friends are potentially strong resources for assistance and a sense of security; and professional health care are useful for obtaining guidance. Thus, careful assessment of the existing factors of social support will help to determine the appropriate kinds of interventions that may be necessary.

Social support and role adaptation

There is abundant evidence presented that radiation is a stressful period of life when the patients may experience physical and psychosocial changes. Change in life

patterns may include disruption of routine and changes in social relationships due to the side effects of treatment and daily trips of treatment (Hinds & Moyer, 1997: 371). Fears and concerns may include anxiety about specific treatment effects and survival. Moreover, the patients concern about femininity may experience significant changes in sexual functioning. The spouse relationship may be affected by changes in role enactment, and patients may be unable to maintain employment and are at a high risk of social isolation (Tiden & Weinert, 1987: 614-616). Thus, these patients receiving radiation also need social support from significant others or their social network to facilitate adjustment for coping with difficulties and to provide patients with a feeling of greater security (Hinds & Moyer, 1997: 376), and morale to struggle with cancer (Steginga & Dunn, 1997: 1403).

Even though the relationship between social support and role adaptation in cancer patients has not been tested directly, there are many studies of social support and adaptation, quality of life, and self-care behavior in cancer patients. In general, findings strongly suggest a positive relationship between social support and those variables in cancer patients despite conceptual and measurement differences. Most indicators used to measure adaptation, quality of life, and self-care behavior are parallel with role behaviors of the role function mode within the RAM (1991) that was used in this study.

Adaptation and quality of life have been used as outcome measures in the studies examining the role of social support. Mishel and Braden (1987: 43-57) revealed that gynecological cancer patients who received social support were more adaptive than those who did not receive social support. Changpaung, V. (1991: 80, 82)

found that spouse support explained only 6.3% of the variance in adaptation in mastectomy patients. Similarly, 9.63% the variance in adaptation was explained by family support in head and neck cancer patients receiving radiation (Khlueinak, U., 1997: 58). In a broader measure of social support, it has been found that social support is one of the most important factors explaining role adaptation in various groups of patients. Social support accounted for more of the variance (19%) in adaptation in mastectomy patients receiving adjuvant chemotherapy (Kongchum, N., 1996: 44) and 17.80 % of the variance in role adaptation in permanent colostomy women (Sompoo, J., 1997: 65). Quality of life is often used to determine the effect of social support as found that social support can explain 24.22% of the variance in quality of life of mastectomy patients receiving adjuvant chemotherapy (Ritudom, B., 1993: 66). Hanucharurnkul, S., (1988: 105), examined functions of social support on self-care practices in her study. She found that social support was moderately positively associated with self-care in cervical cancer patients receiving radiation.

It can be concluded that social support may influence role adaptation of cervical cancer patients receiving radiation therapy. Alterations in physio-psycho-social functioning during the course of treatment lead these patients to seek social support from significant others and/or social network so as to confront and cope with many stressors on a daily basis. As a result, they would be more confident and capable in maintaining their life as well as balancing role performance.

Education

Education is one of the factors concerned with personal behaviors. Education allows human beings to have full growth of intelligence and knowledge (Subbamma,

1985: 27), which results in better perception of information about health and illness. It also allows people to decide to carry out health behavior appropriately (Pender, 1987: 161-162). Whetstone (1986: 967) stated that a person with a high educational level would perceive and understand to learn and seek resource availability to carry out health behavior better than a person with a low educational level. Jalowiec stated that the ability to learn from experience is a function of education (Jalowiec, 1981: 14). Being better-educated enables one to recognize associations among factors more readily, which facilitates transference of knowledge and utilization of previously learned and successful behavior. Accordingly, poorly educated persons are less able to use the feedback that they receive to prevent recurrence of difficulties. They may be limited in resolving potential problems before they grow to distressing proportion, thereby leading to reduced coping capacity (Jenkin, 1978 cited by Jalowiec, 1981: 96). Thus, education is a useful resource for a person to understand the disease and treatment. Similarly, Chanpaung, V. (1991: 80) reported that education was positively related to adaptation in mastectomy patients. Also, Tongtanunam, Y. (1998: 69) found that education was the significant predictor of sick role adaptation in mastectomy patients receiving chemotherapy and accounted for about 16.20% of the variance in role adaptation.

Summary of Literature Review

Cervical cancer women have multiple roles during the course of radiation therapy. The disease and its treatment affect work, wife, and sick roles considered as secondary roles described by Banton (Banton, 1965 cited by Roy & Andrews, 1991: 349). In particular, the effects of radiation are described here. As a beneficial curative

or palliative treatment, Radiation may produce uncomfortable side effects, change self-esteem, and disruption in the usual role activities of cervical cancer patients. These may result in a substantial need for social support from others in order for the patients to function effectively in daily life, particularly in role functioning. It is noteworthy that, so as to maintain role functioning, these women should have effective role performance in all roles mentioned above (work, wife, and sick roles). This, however, may not easily take place as there are several stimuli influencing role performance of the patients. The physiological stimuli (severity of side effects), psychological stimuli (self-esteem), social stimuli (social support), and personal factors (e.g., education) have been found to affect role function (role adaptation) in a number of studies.

Although the literature shows the effect of severity of side effects, self-esteem, social support, and education on various outcome measures and populations, there is no such research studying the role adaptation of cervical cancer patients in particular. Therefore, this study was aimed at examining the influences of these factors on the role adaptation of cervical cancer patients receiving radiation, using the Roy Adaptation Model as the conceptual framework.

CHAPTER III

MATERIALS AND METHODS

This descriptive study was conducted to describe role adaptation, and to ascertain the predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patients receiving radiation therapy.

Subjects and Settings

Subjects

The subjects were patients with cervical cancer receiving radiation therapy who recruited from the outpatient radiotherapy department of six hospitals in Bangkok: Ramathibodi Hospital, Siriraj Hospital, Chulalongkorn Hospital, Rajavithi Hospital, Pramongkutklao Hospital, and Vajira Hospital. These hospitals were chosen as the sites for conducting this research because they serve as the major tertiary care centers for radiotherapy in Bangkok. Thus, they tend to serve populations from a broad geographical region. Data were collected in a five-month period from February to June 2000. Purposive sampling was used. The inclusion criteria were woman who:

(1) were married and lived with their spouse,

(2) had no prior treatment with radiation or chemotherapy,

(3) had been receiving radiation (3,000 cGy), at least for a 3- week period,

(4) were able to speak and understand Thai,

(5) agreed to participate in this study.

A sample size was calculated using Throndike's equation to reach an adequate power for regression analysis (Throndike, 1978 cited by Prescott, 1987: 130):

$$N = 50 + (10 \times \text{independent variables})$$

In this study, there were four independent variables: severity of side effects, self-esteem, social support, and education. Therefore, the sample size was 90.

However, based on the inclusion criteria, there were 90 subjects who were eligible for this study. Four of them were excluded because they received additional nursing intervention, namely a positive thinking and hope programs from another researcher which may affect their role adaptation. The remaining 86 subjects were included in the study.

Settings

The characters of settings provided to the subjects are summarily described below:

(1) The service times are both during office hours and extra hours from Monday to Friday. Most settings have a television, magazines, and/ or drinking water tank to serve the patients during the waiting period.

(2) At the beginning and during treatment, the radiation oncologists and nurses advise patients individually or ingroup discussions about the proposed treatment, possible side effects, and how they should deal with the side effects at home. In addition, the patients obtained information from various sources including the media: booklets, pamphlets, and videotapes showing self-care practices during receiving RT.

(3) Throughout treatments, the radiation oncologists would regularly check patients on the effects of the treatment and the assessment of reaction at least once a week.

(4) Social workers are available at all settings to facilitate patients' financial problems.

Instruments

The instruments used for data collection were composed of 5 parts as follows (see Appendix A):

1. Demographic and Clinical Data Form. The demographic and clinical data form was developed by the researcher. It included two parts. Part one assessed demographic data related to age, educational level, occupation, family income, and type of medical payment. Part two assessed clinical data including stage of cancer, pathology, dose of radiation, and days of radiation. These data were obtained from interviews and medical records.

2. Severity of Side Effects Questionnaire. The severity of side effects questionnaire was developed by the researcher which based on Acute Toxicity Criteria of The Radiation Therapy Oncology Group (Cox, et al., 1995: 1341-1346), and regarding complications of RT. Only the frequently acute complications associated with the major problems of these patients were selected. Thus, the questionnaire had 10 items covering skin reaction, food intake, nausea, vomiting, diarrhea, dysuria, frequent urination, fatigue, and emotional alteration. There were four descriptions of severity of side effects ranging from no/normal symptom = 1 to severe/abnormal

symptom = 4. Total score ranged from 10 to 40. The lower the scores, the lesser the severity of side effects. The higher the scores, the greater the severity of side effects.

Validity and Reliability

The severity of side effects questionnaire developed by the researcher was content validated by 4 experts: two radiation oncologists, one professional nurse and one nurse instructor with expertise in gynecological oncology. From the suggestions of the experts, the researcher adjusted the statements and items to be clear and appropriate for the group of patients. For the main study of eighty-six subjects, the alpha Cronbach's coefficient of the severity of side effects was .73.

3. Self-Esteem Questionnaire. The researcher used the Rosenberg Self-Esteem (RSE) Scale for measuring patients' self-esteem. The RSE scale was constructed and developed by Rosenberg (1979). It was translated and modified into Thai by Srimoragot, S. (1993). It contains 10 items: half are positive-score items and the other half are negative-score items. The scores of negative items were reversed. Each item was indicated on a 4-point Likert-type scale from strongly disagree to strongly agree. Srimoragot, S. (1993) modified the explanation of the scale to: never =1, sometimes = 2, often = 3, and all the time = 4. The RSE scale can yield a score from 10 to 40, with the higher scores indicating the higher self-esteem.

After pilot testing, it was found that the description of scale was not understood by the subjects. The researcher, then, used the description of scale of the original RSE scale developed by Rosenberg (1979). In other words, the description of the scale used in the actual study was strongly disagree= 1, disagree= 2, agree= 3, and strongly agree= 4.

Validity and Reliability

The RSE scale was originally developed for use with high school students but has been used with a variety of groups. Evidence of construct validity of this instrument has been shown by examining its conformity to theoretical predictions, with the multitrait-multimethod framework (Meisenhelder, 1986: 9). Srimoragot, P. (1993: 71) and Soomlek, S. (1995: 45) used the translated RSE scale with Thai people. The RSE scale, Thai version, was content validated by experts in psychology.

Test-retest reliability was reported at .85, and Cronbach's alpha of internal consistency reliability ranged from .84 - .87 when used with ordinary people (Rosenberg, 1979 cited by Mercer & Ferketich, 1988: 26-39). In cancer patients receiving treatments, the RSE scale shows a reliability of al Cronbach's alpha ranging from .73 to .82 (Gasemgitvatana, S., et al., 1996: 64; Hanprasitkum, K., 1992: 37; Kawsasri, A., 1998: 47; Rasameeloung-on, J., 1992: 47). Srimoragot, P. (1993: 71) and Chatrkaw, K. (1995: 37); in particular, used the RSE scale to study cervical cancer patients undergoing RT. The reliability of Cronbach's alpha has been adequately presented (.89 -.90). In this present study of eighty-six subjects, the internal consistency of the RSE scale was reliably adequate (Cronbach's alpha coefficients = .86).

4. Social Support Questionnaire. The Personal Resource Questionnaire 85 (PRQ 85)-Part II was used to measure the adequacy of the individual's perceived level of social support. This instrument was continuously developed and revised by Brandt and Weinert (1981) based on Weiss' s model of relation function (1974). They used

five of the six categories described by Weiss (1974), including intimacy, social integration, opportunity for nurturance, reassurance of worth, and assistance.

The PRQ 85- Part II consists of 25 items, on a 7-point-Likert scale ranging from strongly disagree =1 to strongly agree =7. Total scores ranged from 25-175.

Validity and Reliability

The PRQ85 part II was further revised in 1985 (Brandt & Weinert, 1985). The revision of the PRQ - Part II (1981) involved some minor word changes, and rewording of the five nurturance items. With these revisions, the PRQ-Part II (1981) was relabeled the PRQ 85- Part II and the usefulness of the tool with individuals of varying ages was expanded (Weinert, 1988 cited by Yarcheski, et al., 1992: 333).

Construct validity was reported by Weinert and Tilden (1990: 213-214), the PRQ 85-Part II and the Cost and Reciprocity Index (CRI), in relation to each other as well as to other theoretically relevant variables in two samples, one consisting of 333 adults and the other 99 adults. Relative to convergent validity, statistically significant positive correlations were found between the PRQ 85-Part II and the support subscale of the CRI in both samples. Convergent validity was also demonstrated by appreciable correlation found between the PRQ 85-Part II and two measures of family well-being in the sample of 333 adults. Discriminant validity was provided by moderate inverse correlations found between the PRQ85-Part II and negative mood states, in the sample of 99 adults. Lastly, in the sample of 333 adults, there was an inverse correlation between the PRQ 85-Part II and the conflict subscale of the CRI; the correlation between these two variables was negative in the sample of 99 adults.

Weinert (1987: 276) reported the reliability of three studies, such as Muhlenkamp (1985) reporting an internal consistency (Cronbach's alpha coefficient) of .87 when used in a study of 132 older persons living in trailer park or mobile home setting. Catanzaro (1986) studied 100 middle-aged adults which produced a total scale Cronbach' alpha of .90. And Weinert (1987) studied 132 middle-aged men and women, where the Cronbach's alpha for the PRQ 85-Part II was .89.

In Thailand, Hongtrakul, C. (1989: 31) translated the PRQ 85-Part II from English to Thai. Cronbach's alpha coefficient estimated in 100 hypertensive patients was high (.90). Moreover, this instrument was widely used, modified, and tested for its reliability in Thai patients with chronic illness across all ages. The Cronbach's alpha coefficients were reported .77- .91 (Benjakul, S., 1995: 43; Gasemgitvatana, S., 1993: 49; Saewun, C., 1993: 29). These results indicate that the PRQ-85 Part II has a strong reliability.

In this study, the researcher used Soomlek's questionnaire (1995) which was modified from the PRQ 85-Part II. Four out of 25 items of the original questionnaire were deleted because of redundancy as suggested by 6 experts (Soomlek, S., 1995: 44). Thus, the social support questionnaire used in this present study consists of 21 items on a 5 point-Likert scale including not true at all = 1, A little true = 2, moderately true = 3, fully true = 4, and most fully true = 5. Negative items were reversibly scored. The total scores ranged from 21-105. The Soomlek's questionnaire was applied in a study of 205 first time mothers and 313 pregnant female adolescents, where the reliability of Cronbach's alpha coefficients of two studies was .90 (Serisathien,Y., 2000: 83;

Soomlek, S., 1995: 44). For the present study of eighty- six subjects, the Cronbach's alpha coefficient of the PRQ 85- Part II(Soomlek's questionnaire) was .86.

5.Role Adaptation Questionnaire. The original role adaptation questionnaire was developed by Ounprasertpong, L.(1997) for HIV positive and AIDS patients based on role function mode of the Roy Adaptation Model. The researcher modified this tool to be more specific to cervical cancer patients receiving RT. This questionnaire was used for assessing patients' ability to perform role behaviors. Statements are composed of instrumental and expressive behaviors including adaptive and ineffective responses. The questionnaire emphasizes three subroles of the secondary role derived from the Roy Adaptation Model: wife role, work role, and sick role.

The Role Adaptation Questionnaire was on a 5-point-Likert scale itemized as follows: never perform =1, perform a little = 2, moderately perform =3, fully perform = 4, and most fully perform =5. It contains 28 items including 20 positive items and 8 negative items. The score of negative items were reversed. Total score ranged from 28-140.

Determination of the level of role adaptation

Due to the primary use of this tool, there is no evidence of the cut off points in the literature. Besides, it is difficult to give a precise description to determine what score ranges indicate adaptive or ineffective role adaptation. Thus, a sample mean score was proposed to be an appropriate score for use in this study to classify subjects into three levels, namely, rather poor, moderate, and rather good.

The level of role adaptation was determined by calculating the sum score of individual mean score and then, dividing the sum score into three categories, using a proportional method as follows.

Rather poor role adaptation = below one third of the sum score of the individual mean score(28 - 65.33).

Moderate role adaptation = between one third and two thirds of the sum score of the individual mean scores (65.34-102.66).

Rather good role adaptation = above two thirds of the sum score of the individual mean scores (102.67-140).

According to the RAM, a person's response behaviors are either adaptive or ineffective (Roy & Andrews, 1991). Therefore, the researcher assumed a rather good role adaptation to be potential for adaptive role behaviors which nurse should take into consideration for increasing positive adaptation. On the contrary, a result of a moderate or rather poor adaptation indicated that the patients possibly adapted ineffectively. Nurses, therefore, should be aware and plan interventions to prevent ineffective role behaviors.

Validity and reliability

The role adaptation questionnaire developed by the researcher was content validated by 5 experts: two radiation oncologists, one professional nurse and one nurse instructor with expertise in gynecological oncology, and a nurse instructor who specializes in the Roy Adaptation Model. Based on experts' comments, the questionnaire was then modified appropriately. For this study, the tool was used with

eighty-six subjects, and it was found that the reliability of the Cronbach's alpha coefficient was .80.

Pilot study

A pilot study was conducted with ten subjects at Siriraj Hospital and Rajavithi Hospital, for assessing the applicability and reliability of the instruments. The ten subjects who met criteria and agreed to participate completed the questionnaires in the following order: (1) the Demographic and Clinical Data Form, (2) the Severity of Side Effects Questionnaire, (3) the Rosenberg Self-Esteem Scale, (4) the Personal Resource Questionnaire 85- Part II, and (5) the Role Adaptation Questionnaire.

The results from the pilot study showed that the Cronbach's alpha coefficients of the Severity of Side Effects, the RSE Scale, the PRQ 85- Part II, and the Role Adaptation Questionnaire were .75, .71, .88, and .87, respectively.

Protection of Human Subjects

The human rights of the subjects were respected in this study (see Appendix B). Eligible subjects were individually approached to participate in the study. The study objectives, the data collection processes, expected research outcomes, subject rights, the type of questionnaires, length of time for completing the questionnaires, and the right to refuse to participate in the study were explained. The subjects agreed to participate were assured that the data would be kept confidential and reported as group data.

Data Collection

Steps and methods of data collection were included:

1. Preparation. The researcher surveyed the settings associated with service times, treatment regimen, policy organization, and surroundings for determining available area and schedule time for data collection.

2. Data collection.

2.1The investigator contacted the director of six hospitals and the head of radiation therapy departments, respectively, by using a formal letter from the Faculty of Graduate Studies to explain the objectives and procedures of the study and ask for their cooperation.

2.2 The schedule for collecting data were set as below:

The first and the third week of each month

Monday and Tuesday at 8.00 a.m.- 4.00 p.m. - Siriraj Hospital

Wednesday and Thursday at 8.00 a.m.-12.00 a.m. - Rajavithi Hospital

Friday at 6.00 a.m.- 8.00 a.m. - Vajira Hospital

The second and the forth week of each month

Monday and Tuesday at 8.00 a.m.- 12.00 a.m. - Ramathibodi Hospital

Wednesday at 8.00 a.m.- 12.00 a.m. - Chulalongkorn Hospital

Thursday at 9.00 a.m.-12.00 a.m. - Pramongkutklao Hospital

2.3 All eligible subjects who met the criteria were approached and the protection of human subject's protocol was explained as previously described.

2.4 The subjects, who volunteered to participate, read and completed the questionnaires by themselves in the following order: (1) the Demographic and Clinical

Data Form, (2) the Severity of Side Effects Questionnaire, (3) the Rosenberg Self-Esteem Scale, (4) the Personal Resource Questionnaire (PRQ-85 part II), and (5) the Role Adaptation Questionnaire. During this procedure, the investigator provided more information and clarification if needed. The researcher read the questionnaires verbatim to any participants experiencing difficulty in reading. Reading the questionnaires by the researcher was done to ninety percent of the subjects.

Data Analysis

The Statistical Package for Social Sciences for Windows Program (SPSS/ FW) version 9.0 was used for analysis.

1. Demographic data were analyzed by using descriptive statistics: frequencies, percentages.

2. Role adaptation was analyzed by descriptive statistics: rank, means, and standard deviations.

3. The severity of side effects, self-esteem, social support, and education were analyzed by descriptive statistics: ranges, means, standard deviations, and skewness.

4. The predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patient receiving radiation therapy were analyzed by using stepwise multiple regression analysis.

CHAPTER IV

RESULTS

This descriptive research was conducted to describe role adaptation of cervical cancer patients receiving radiation and to ascertain whether role adaptation could be predicted by selected factors including severity of side effects, self-esteem, social support, and education. The findings are presented in 5 parts with tables and descriptions.

Part I Demographic and clinical data of cervical cancer patients receiving radiation therapy.

Part II Role adaptation of cervical cancer patients receiving radiation therapy

Part III The severity of side effects, self-esteem, social support, and education.

Part IV The correlation matrix of the studied variables.

Part V The predictors of role adaptation of cervical cancer patients receiving radiation therapy.

Part I Demographic and clinical data of cervical cancer patients receiving RT

Demographic characteristics of the sample

The demographic characteristics of the sample are presented in Table 1. Their age ranged from 25 to 65 years (mean = 45.90 S.D. = 8.61). The majority of subjects (70.93 %) were the middle aged group 36-55 years. The largest group of the subjects had primary education (65.11 %), whereas 6.98% had no formal education. Around 51.16 % of subjects worked as housewives and the rest of them worked as employees, business owners, and government officers. The family income widely ranged from 2,000 to 90,000 baht. About 36.05 % of subjects had family income less than 5,000 baht while the rest of them had continuously distributed income from 5,001 - 90,000 baht. Nearly forty-seven percent of families had an income higher than expenses and 33.72% had an income equal to expenses. Most of them (70.93 %) reimbursed their medical expenses from health insurance/social insurance, social service, and the Thai government.

Table 1. Demographic characteristics of sample (n = 86)

Characteristics of Sample	Frequency	Percent
Age (years)		
25-35	10	11.63
36-45	32	37.21
46-55	29	33.72
56-65	15	17.44

Mean = 49.50, S.D. = 8.61, min = 25 , max = 65

Table 1. Demographic characteristics of sample (cont'd)

Characteristics of Sample	Frequency	Percent
Education		
No education	6	6.98
Primary education	56	65.11
Secondary education	13	15.12
Vocation and Graduate	11	12.79
Occupation		
Housewife	44	51.16
Agriculturist	1	1.16
Employee	18	20.94
Business owner	16	18.60
Government officer	7	8.14
Total family income/month (baht)		
2,000- 5,000	31	36.05
5,001-10,000	16	18.60
10,001-15,000	12	13.95
15,001-20,000	11	12.79
20,001 - 90,000	16	18.61
Family Economic Status		
Income higher than expenses	40	46.51
Income equal to expenses	29	33.72
Income lower than expenses	17	19.77
Medical Expense		
self paid	25	29.07
social insurance/health insurance	17	19.77
self paid and social service	21	24.42
social service	4	4.65
government insurance	19	22.09

Clinical data related to demographic characteristics of subjects

The majority of subjects were recruited from Siriraj Hospital (30.23%), Rajavithi Hospital (23.26 %), and Ramathibodi Hospital (20.93 %), respectively. Nearly 60% of the subjects were diagnosed with stage II cancer. Squamous cell carcinoma was the predominant type of pathology (77.91%). Seventy percent of the subjects received doses of radiation ranging from 3,001 to 4000 cGy, and 67.44 % underwent 16-20 days of radiation. The details are shown in Table 2.

Table 2. Clinical data related demographic characteristics of sample (n= 86)

Variables	Frequency	Percent
Hospital		
Siriraj	26	30.23
Rajavithi	20	23.26
Ramathibodi	18	20.93
Vajira	9	10.47
Chulalongkorn	8	9.30
Pramongkutklao	5	5.81
Stage		
Stage I	9	10.47
Stage II	51	59.30
Stage III	26	30.23
Pathology		
Squamous cell carcinoma	67	77.91
Adenocarcinoma	16	18.60
Other	3	3.49

Table 2. Clinical data related demographic characteristics of sample(cont'd)

Variables	Frequency	Percent
Doses of radiation (cGy)		
3,001-4,000	60	69.77
4,001-5,000	24	27.90
5,001-5600	2	2.33
Days of radiation		
16-20	58	67.44
21-25	26	30.23
26-28	2	2.33

Part II Role Adaptation of Cervical Cancer Patients Receiving RT

Based on the range of scores set up for the interpretation in chapter 3, the mean scores of role adaptation (role set score) are listed by each item from highest mean score to lowest in Table 3. The mean scores of role adaptation were 109.52 (S.D. = 11.77, min = 82, max = 132). It can be interpreted that the subjects of this study had levels of "Rather Good Role Adaptation".

Table 3. Means, standard deviations, and rank of role adaptation of cervical cancer patients receiving Radiation (n= 86)

Role Adaptation	Mean	S.D.	Rank
Regularly receiving radiation as the physician prescribed	4.95	.26	1
Desiring to replace radiation with other alternative treatments	4.90	.38	2
Appropriately caring for radiated skin	4.83	.51	3
Taking preserved, spicy, or strong tasting foods	4.67	.69	4
Being discouraged and desiring to discontinue the treatment	4.67	.79	5
Drinking adequate water	4.55	.90	6
Satisfied with my compliance with treatment regimens	4.50	.72	7
Being irritated by fighting with husband	4.31	1.09	8
Wishing to a love and care for my husband.	4.19	.94	9
Choosing healthy diet	4.15	.86	10
Regularly taking good perineal care	4.15	.87	11
Sleeping adequately	4.01	1.1	12
Talking and listening to husband	4.00	.89	13
Being anxious but do not apparently express	3.85	1.31	14
Observing abnormal symptoms by myself	3.77	1.03	15
Working intentionally	3.76	1.05	16
Being inert at work	3.73	.95	17
Consulting physicians/nurses concerning health problems	3.67	1.23	18
Being proud of work.	3.66	.95	19
Exchanging experiences/ problems with other similar patients	3.57	1.15	20

Table 3. Means, standard deviations, and rank of role adaptation of cervical cancer patients receiving RT (cont'd)

Role Adaptation	Mean	S.D.	Rank
Being bored with the trip to the hospital daily	3.57	1.32	21
Being worried about insufficient family care	3.53	1.32	22
Seeking information concerning self-care practices	3.50	1.33	23
Taking care of family expense	3.48	1.83	24
Providing time and being responsible for work	3.30	.90	25
Improving work	3.16	1.02	26
Helping friends who have problems	2.86	1.18	27
Exercising 10-15 minute a day	2.23	1.41	28
Min = 82 , max = 132 total	**109.52**	**11.77**	

Part III The severity of side effects, self-esteem, social support, and education of cervical cancer patients receiving radiation

As indicated in Table 4, the severity of side effects had a mean score of 19.02 (S.D.= 4.53, skewness = .37). It indicated that the subjects had a trend towards a low severity of side effects. By contrast, self-esteem had a mean score of 34.30 (S.D. = 4.46, skewness = -1.13) and social support had a mean score of 84.85 (S.D. = 11.81, skewness = - .45), so it indicated that the subjects potentially have high self-esteem and perceived high social support. Education, showed a mean of 6.06 (S.D = 4.46, skewness = 1.16), so it indicated that the subjects had a trend towards a low formal education.

Table 4 Ranges, means, standard deviations, and skewness of the severity of side effects, self-esteem, social support, and education (n= 86)

Variables	Range		Mean	S.D.	Skewness
	Possible Range	Actual Range			
Severity of side effects	10-40	10- 34	19.02	4.53	.37·
Self-Esteem	10-40	18-40	34.30	4.46	-1.13
Social support	21-105	61-105	84.85	11.81	-.45
Education (year)	≥ 0	0-16	6.06	4.46	1.16

Part IV The correlation matrix of the studied variables

The correlations among predictor variables and role adaptation were computed by using Pearson's product moment correlation. The correlation matrix among the studied variables is presented in Table 5. The results revealed that the role adaptation was significantly and negatively correlated with the severity of side effects ($r = -.43$, $p < .001$), but positively correlated with self-esteem, and social support ($r = .52$, $p < .001$; $r = .68$, $p < .001$) respectively. However, there was no significant relationship between role adaptation and education ($r = .15$, $p > .05$). In addition, there were significantly low to moderate relationships among predictors. Severity of side effects was significantly and negatively correlated with self-esteem and social support ($r = -.28$, $p < .01$; $r = -.33$, $p < .01$). Social support was significantly and positively correlated with self-esteem and education ($r = .48$, $p < .001$; $r = .22$, $p < .05$), respectively.

Table 5 The correlation matrix of the studied variables (n = 86)

Variables	1	2	3	4	5
1.Severity of side effects	1.00				
2. Self-esteem	-.28**	1.00			
3. Social support	-.33**	.48***	1.00		
4. Education	-.01	-.09	.22*	1.00	
5. Role adaptation	-.43***	.52***	.68***	.15	1.00

*** p <.001, ** p < .01, * p < .05

Part V The predictors of role adaptation of cervical cancer patients receiving radiation therapy

As shown in Table 6, stepwise multiple regression was used to analyze the predictive power of severity of side effects, self-esteem, social support, and role adaptation.

Assumptions of regression analysis were examined which involved considerations of residual scatterplots (Appendix C). The residual scatterplots indicated that the assumptions of regression analysis were met. All variables had linear correlations. Multicollinearity, diagnosed by having correlations among independent variables greater than .65, was not found. All independent variables had low to moderate correlations with one another (r = - .33 to .48). A Durbin-Watson value near 2 (= 2.19) indicated that the regression error had no autocorrelation (Sujirarat, D., 1998: 117).

Social support, which had the highest correlation with role adaptation, was first selected in the regression equation. Social support accounted for 46.4 % of the variance in role adaptation (F change $_{1, 84}$ = 72.66, $p < .001$). It can explain that if the social support changes by 1 unit, the role adaptation will change in the same way by .51 unit ($\beta = .51$, $t = 5.89$, $p < .001$). Next, self-esteem was selected and accounted for an additional 4.9 % of the variance in role adaptation (F change$_{1, 83}$ = 8.39, $p < .01$). It can explain that if the self-esteem changes by 1 unit, the role adaptation will change in the same way by .22 unit ($\beta = .22$, $t = 2.58$, $p < .05$). Severity of side effects was lastly selected into the analysis and accounted for an additional 3.5% of the variance in role adaptation (F change$_{1, 82}$ = 6.30, $p < .05$). It can explain that if the severity of side effects changes by 1 unit, the role adaptation will change in the opposite way by .20 unit ($\beta = -.20$, $t = -2.51$, $p < .05$). The findings indicated that the combination of social support, self-esteem, and severity of side effects significantly accounted for 54.8% of the variance of role adaptation of cervical cancer patients receiving radiation therapy (overall F $_{3, 82}$ = 33.11, $p < .001$). Education did not significantly account for the variance in role adaptation. Therefore, the result of hypothesis testing was partially supportive.

Table 6 Stepwise multiple regression of role adaptation of cervical cancer patients receiving radiation therapy (n = 86)

Predictors	RSQ	RSQ change	F change	β	t
Social support	.464	.464	72.66***	.51	5.89***
Self-Esteem	.513	.049	8.39**	.22	2.58*
Severity of side effects	.548	.035	6.30*	-.20	-2.51*

(overall $F_{3, 82} = 33.11$, $p < .001$)

*** $p < .001$ ** $p < .01$ * $p < .05$

CHAPTER V

DISCUSSION

The discussion of the results is presented in the following order: characteristics of sample, role adaptation of cervical cancer patients receiving radiation therapy, and results of testing the hypothesis.

Characteristics of Sample

The age of cervical cancer patients ranged from 25 to 65 with the mean age 45.90 years. The majority of subjects (70.93%) were middle-aged women (36-55 years). Most of the subjects (65.11 %) had completed formal primary education. Approximately half of the subjects were housewives and half worked outside the home. About thirty six percent of subjects had family income of less than 5,000 baht per month; the remainder had family income ranging from 5,001 to 90,000 baht. Nearly 47% of families had an income that exceeded their expenses. Most of the subjects (70.93%) were able to reimburse government or private insurance companies for their medical expenses. The majority of the subjects (77.91%) was diagnosed with squamous cell carcinoma of the cervix and approximately and 59 % were at stage II of the disease. Nearly 70 % of the subjects received doses of radiation ranging from 3,001-4,000 cGy for 16 to 20 days.

This sample was comparable in age, education level, type and stage of cancer, and dose and days of radiation studies done by Jirojwong, S.,et al., (1994: 399), Pittayapan, P., (1999: 70-73), Ruankon, A., (1997: 50-52), Sukkasame, S.,(1990:

53),and Teparux, S., (1992: 40-45). In contrast to these studies, however, subjects in the current study were all married and living with their spouse during the study period. The level of family income was moderate to high. These differences are most likely a result of the inclusion criteria for sample selection in this study.

Role Adaptation of Cervical Cancer Patients Receiving Radiation Therapy

The mean score on role adaptation (role set) was 109.52 which suggested that cervical cancer patients receiving radiation had levels of "Rather Good Role Adaptation".

The overall role adaptation was viewed as the combination of adaptation to three subroles including wife, work, and sick roles. However, when considering the ranking of mean scores by each individual item, it was apparent that the seven highest mean scores were in the sick role adaptation (Table 3). This can be explained by the social mechanisms within the role function mode of the RAM (Roy & Robert, 1981: 264). Roy described the person as having social mechanisms for articulating their role sets and reducing their role strain based on Merton (1957) and Goode (1960)'s conceptualization of social mechanism related to role. For instance, the person evaluates the relative importance of various positions. The person manipulates the role set by delegation, elimination of role relationship, compartmentalization, extension and barrier against intrusion. The person sets and carries out the terms of role relationships. Also, there is mutual social support among role occupants' status. It could be reflected that the women with cervical cancer receiving radiation may appraise and set the sick role as the significant priority in setting behavior priorities. Patients may have attempted

to integrate the sick role (new role) into their life, while they had many current roles within role set (i.e., work and wife roles). When their integration processes were challenged, compensatory processes were activated. The women formulated their effective role transition in order to meet the goal of adaptation (i.e.maintain their health and survival) by increasing their adaptation level through cognator processes. They simultaneously delegated their usual tasks to family members or co-workers in order to comply with radiation therapy schedules. Nevertheless, they tended to maintain system balance between roles of being sick, wife and work.

The findings of this study support Soompoo and Tongtanunam's studies (Sompoo, J., 1996: 72; Tongtanunam, Y., 1998: 91) of role adaptation of cancer patients receiving cancer treatments. In general, patients receiving cancer treatments perform an effective role adaptation or have a good sick role adaptation. These findings, however, may change over time during the course of treatment. This suggests that different research designs influence results of research studies. As reported in two studies conducted by Pittayapan, P. (1999: 87) and Ruankon, A. (1997: 65-68), the results showed that the outcomes of role function and quality of life of cervical cancer patients in the third and the fifth week of radiation were significantly lower than those outcomes prior to radiation. These studies used the longitudinal design that allowed changes to be collected over time. Therefore, it is not surprising that the findings of these previous studies are not congruent with this present cross-sectional study. Additionally, the different characteristics of the sample across studies including types of radioisotope implantation, duration of implantation, and concurrent treatments that may produce various side effects may make a difference.

Based on their sick role during radiation, the patients should exercise 10 -15 minutes a day. The result showed that sixty-three percent of the patients never perform or perform a little, therefore, the mean score of this item was lowest (mean = 2.23). It is possible that the patients might believe that household activities were already good exercise. Besides, being fatigued as a result of the side effects of the treatment and daily transportation diminished the desirability of exercise. They usually took a nap during the day to reserve their energy. Graydon (1995: 27) also reported that patients who underwent cancer treatments were often suggested to limit their activity and get plenty of rest. In this study, nearly 50% of patients indicated that they were reluctant to perform the exercise because of various reasons. For instance, they were unsure if exercise might be risky for their health. In addition, they rarely received advice from health professionals in this regard. Even though some nurses might do so, the patients still considered exercise as inappropriate for them. Accordingly, performing exercise was reported to be the greatest self-care deficit in cervical cancer patients undergoing radiation (Teparux, S., 1992: 62).

Obviously, additional findings in this study relate to sexual issues. Eight patients addressed sexual and marital conflict. Specifically, they mentioned the inability to have sexual relation with their partner. Some patients said that they could no longer have sex. Unfortunately, they reluctantly talked about or reported these sexual issues to the physicians or nurses because of shyness and the taboo surrounding the topic in Thai culture. Thus, the issues of exercise and sexual relationships may add to the important problems where patients tend to have an ineffective role adaptation. Nurses, therefore, should be aware and plan intervention to prevent ineffective role behaviors.

Hypothesis: Severity of Side Effects, Self-Esteem, Social Support, and Education Can Predict the Role Adaptation of Cervical Cancer Patients Receiving Radiation Therapy

Stepwise multiple regression was used to analyze the predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patients receiving radiation therapy. The findings indicated that the combination of social support, self-esteem, and severity of side effects significantly accounted for 54.8% of the variance of role adaptation of cervical cancer patients receiving radiation therapy.

Social support was firstly selected to enter in the regression analysis and accounted for 46.4 % of the variance in role adaptation. A standardized beta weight of .51 indicated that there was a positive relationship between social support and role adaptation. Among predictors, social support was the strongest variable influencing role adaptation. It might be that the patients appraised that they received social support from available resources such as a spouse or closed friends in several ways including intimate relationships and attachment, and instrumental support. Small social groups (i.e., a group of similar patients, neighbors) were potential sources of companionship and services. The work group may provide a sense of belonging, competence, and usefulness for them as well. Additionally, professional guidance is a useful resource.

Taken together, it is not surprising that the subjects included in this study may have adequate and compassionate social support that consequently may (1) give them a sense of self-esteem and personal efficacy, (2) enhance cognitive processing required

for effective decision making and problem solving in stressful situations, and (3) reduce negative moods. As a result, social support would enhance cooperation in engaging in effective role performance, and consequently, role adaptation (Cohen & Wills, 1985: 310-313; Dimond & Jones, 1983: 240; Pender, 1996: 259; Tiden& Weinert 1987: 614; Uphold, In Creasia & Barbara, 1991: 448). These findings are similar to the results of previous studies of cancer patients receiving treatments (Hanucharurnkul, S., 1989: 26; Khlueinak, U., 1997: 65; Kongchum, N., 1996: 54; Ritudom, B., 1993: 66; Sompoo, J., 1996: 70).

The significant positive relationship between social support and role adaptation supports the conception within the RAM (Roy & Andrews, 1991). Roy's conceptualization of interdependency and two major stimuli influencing role function, i.e.,"access to facilities" and "cooperation or collaboration" was viewed as social support in this study. Thus, the findings support the proposition of the RAM which stated that there are interrelationships among adaptive modes. Specifically, social support, as a factor representing the interdependence mode, which helps modify role behaviors in the role function mode, influences role adaptation in this particular group of patients.

Self-esteem was the second predictor influencing role adaptation. Self-esteem was secondly selected to enter in the regression analysis and accounted for an additional 4.9 % of the variance in role adaptation. The positive standardized beta weight (.22) indicated that there was a positive relationship between self-esteem and role adaptation. It can be explained self-esteem is an essential factor influencing behaviors leading to personal effective functions. High self-esteem empowers the

patients to be active participants in care, helps the patients develop confidence in interpersonal communication, and enhances the potential for successful role performance. Thus, patients with high self-esteem feel that they are worth the time and effort needed to maintain and improve health and eagerly take responsibility to meet self-care needs. Conversely, the individual with low self-esteem may be unable to make self-care decisions and assume responsibility for care outcomes (Miller, 1992: 398-399). Obviously, during radiation, around 50% of samples were receiving their wage from actual employment. And nearly half of the workers (22 cases) reported that their relationship with friends or co-workers was as usual. The work settings and the support that they received in the work place or social environment possibly produced a positive self-esteem and value in these patients (Catanzaro, 1990: 69; Meisenhelder, 1986: 8,12). In accordance with Uckanit, W. (1991: 39), Vichitvatee, S. (1991: 81), and Yoswattana, R.(1992: 60), self-esteem was significantly and positively correlated with self-care behavior and role adaptation in patients with chronic diseases. It explained and accounted for 27.87 % of the variance of the sick role adaptation in head and neck cancer patients receiving radiation (Kawsasri, A., 1998: 71).

Severity of side effects was lastly selected to enter in the regression equation and accounted for 3.5 % of the variance in role adaptation with a standardized beta weight of - .20 which indicated that there was a negative relationship between the severity of side effects and role adaptation. It may be explained that the patients may have greater or lesser symptom distress depending on the perception of severity of side effects. Andrews (1991: 354) said that physical and/or emotional well-being affect the individual's ability to fulfill the role. In this study, all subjects were informed about the

disease, possible side effects, and how to deal with the side effects. Moreover, they had obtained information related to self-care practices from several sources. They also had developed strategies such as making appropriate plans for their routine activities, seeking information from similar cancer patients, or asking the physician to treat the side effects that would decrease the impact on their activities. By contrast, the patients who were experiencing many side effects and perceived the side effects as severe were more likely to experience emotional disturbance and disruption in their function. These findings are in accordance with previous studies of Oberst and others (1991:72) and Irvine and others (1994: 367-368). These two studies found that symptom distress and fatigue were important factors contributing to self-care deficit of role performance in cancer patients during chemotherapy or radiation. Similar to the study of Ruankon, A. (1997: 68) and Pongthavornkamol, K. (2000: 101), the cervical cancer patients receiving radiation who had greater complications of radiation had lower quality of life and more disruptions of function than those who had lesser complications. Also Kawsasri, A. (1998: 61) found that perception of radiation reactions could explain and accounted for 6.24 % of the variance in sick role adaptation of head and neck patients receiving radiation.

Education was the only one predictor that was not significantly correlated with role adaptation ($r = .15$). Possible explanations might be that a high proportion of the sample had a low formal education and received a high degree of support services. Another possible reason could be that most subjects in this present study were relatively homogenous with respect to education. Around 72 % of the patients had

lower formal education (none to primary education) whereas only 12.79 % of the patients had vocational or undergraduate education.

With respect to receiving social support services, patients who had difficulty in reading still received information by listening to the instructions verbatim from their children or other family members. Moreover, the patients most likely received indirect information by talking to similar cancer patients, or learning through many other sources (e.g., television, radio, books, journals, internet document). Receiving adequate information and understanding regarding their illness and treatments is helpful and may motivate them to express adaptive behaviors. One study has shown that patients who are informed about radiotherapy procedures, possible side effects, and therapeutic effectiveness do not experience disappointment, fear, and anger (King, et al., 1985: 55-61). These findings are similar to Muhlenkamp and Sayle's study (1986: 334-338), and Kaveevichai's study (Kaveevichai, J., 1993: 50) which reported education not correlated with positive health behaviors and adaptation in healthy adults and in mastectomy patients receiving chemotherapy. Education had no correlation with quality of life in a study of cervical cancer patients receiving radiation (Jaikaew, K., 1994: 52), and adaptation in head and neck patient receiving radiation (Khlueinak, U., 1997: 62). However, the studies by Changphuang,V.(1991: 80) and Tongtanuman,Y.(1998:69) found that education was correlated with adaptation or sick role adaptation in mastectomy patients receiving chemotherapy.

The results of this study support propositions advanced by the RAM. Roy (1991: 6-18) views the person as an adaptive system and an open system who experiences numerous stimuli, internally and externally. For this study, the focal

stimulus was the external alteration produced by radiation therapy. The stimulus is acted upon by the coping mechanisms through cognator and regulator subsystems. The effects of the cognator and regulator activities are observed in the four modes of adaptation. In this study, the physiological, self-concept, and interdependence modes were deducted from empirical indicators that were severity of side effects, self-esteem, and social support, respectively. The behavioral responses of these three modes may act as a pool effect on the forth mode, role function mode which reflects role adaptation. The combined effect of the three predictors on role adaptation supports this premise. Conversely, formal education was not predictive of role adaptation in this study. From these results, the researcher developed greater awareness of other influencing stimuli including soical learning, soical perception, and cognator processes that patients may recognize and learn by way of informal education from available social resources for competently performing their role behaviors (Roy, 1981: 264-266).

In conclusion, the combination of social support, self-esteem, severity of side effects accounted for 54.8% of the variance in role adaptation of cervical cancer patients receiving radiation. The remaining 45.2 % other influencing factors were not covered in this study and need further investigation. Overall, the research findings were congruent with the RAM and contributed to the advancement of nursing knowledge.

CHAPTER VI

CONCLUSIONS

Conclusions

This descriptive study aimed to describe role adaptation and to ascertain the predictive power of severity of side effects, self-esteem, social support, and education on role adaptation of cervical cancer patients receiving radiation therapy. Roy Adaptation Model (Roy & Andrews, 1991) was used as a conceptual framework of the study. A convenience sample for this study included eighty-six cervical cancer patients receiving radiation therapy recruited from the outpatient radiotherapy unit of six hospitals in Bangkok. Data were collected during February to June 2000. The inclusion criteria for the sample were woman who (1) were married and lived with their spouse, (2) had no prior treatment of radiation or chemotherapy prior to participation in this study, (3) had been receiving radiation (3,000 cGy) at least for a 3-week period, (4) were able to understand, and speak Thai, and (5) agreed to participate in this study.

There were 5 questionnaires used in this study as follows:

(1) Demographic and Clinical Data form

(2) Severity of Side Effects Questionnaire

(3) Rosenberg Self-Esteem Scale, Thai version (Srimoragot, 1993)

(4) Personal Resource Questionnaire (PRQ 85-Part II), Thai version (Soomlek, 1995)

(5) Role Adaptation Questionnaire.

The above questionnaires were tested and content validated by 5 experts. The reliabilities of all instruments were in acceptable ranges (alpha Cronbach's coefficients ranged from .71-. 88) with the pilot study samples (N = 10) and the main study samples (N =86).

The results of the study are concluded as follows:

(1) Patients with cervical cancer receiving radiation had levels of rather good role adaptation.

(2) The stepwise multiple regression analysis revealed that the combination of social support, self-esteem, and severity of side effects accounted for 54.8% of the variance in role adaptation of cervical cancer patients receiving radiation. Education did not significantly account for the variance in role adaptation. Therefore, the result of hypothesis testing was partially supported.

Based on the findings and discussion, this study was in accordance with the role function mode within the Roy Adaptation Model. Roy (1991) stated that access to facilities and cooperation are major stimuli for developing personal role behaviors. Physical being and self-concept may also affect individuals' engagement in role performance. In addition, the individuals have social mechanisms for articulating and reducing role strain of such a role set. The results of this study, thus, contribute to nursing knowledge in terms of supporting one of the major nursing theories, namely the Roy Adaptation Model

Limitations of This Study

(1) The treatment regimen, policy organization, provision of services, and surroundings can vary among radiotherapy centers in the six hospitals. Therefore, the individuals' role adaptation may vary according to where patients receive radiation therapy.

(2) The generalization of the results from this study is limited by the use of convenience samples.

(3) The Severity of Side Effects Questionnaire and the Role Adaptation Questionnaire were primarily constructed by the researcher. Although the questionnaires were adequately reliable, psychometric testing is necessary for future study.

(4) Because of the cross-sectional design, the results demonstrate only the relationships of studied variables at one particular point in time, and day-to-day changes of role adaptation cannot be discerned.

Recommendations

The findings of this study provide several important implications for the nursing profession including nursing practice, nursing education, and nursing research.

Implications for Nursing Practice

The demonstration of a rather good role adaptation of the cervical cancer patients receiving radiation therapy and additional findings indicate that nurses should be concerned with the patients' role functioning during the course of radiotherapy. The important nurses' roles in this situation are to enhance effective adaptation and to prevent ineffective adaptation. In doing so, factors influencing role adaptation should

be assessed followed by specific nursing interventions based on the assessment. The results of this study apparently signify the influences of social support, self-esteem, and severity of side effects; therefore, nurses should consider the importance of these factors and keep them in mind when caring for these patients.

As the first leading factor influencing role adaptation, social support should be assessed and facilitated. The essential element is the assessment of social support in terms of resource availability (e.g., social networks, financial or economic status, instrumental help), psychological conditions (e.g., sense of love and belonging, self worth), interpersonal relationships (e.g., spouse, family members, friends), and social activities. Interventions may include recognizing, contacting, and inviting significant others (i.e., spouse, children or relatives) to participate in assisting role adaptation of the patient during the course of radiation therapy. Nurses should facilitate formal or informal group support during treatment sessions as well as provide substantial information necessary for enhancing positive adaptation.

Self- esteem, another important influencing factor on role adaptation, was emphasized in this study. Nurses should begin with an assessment of self- esteem to determine the level of the perception of self. Enhancing positive self- esteem is valuable. Nurses, therefore, should identify interventions to promote self- esteem. Family and sexual counseling should be provided to cervical cancer patients receiving radiation therapy who still had active sexual relationships prior to radiotherapy.

Although the severity of side effects was shown to be less predictive on role adaptation in this study, controlling the side effects is widely accepted to be necessary and important because it enables the patient to be emotionally comfortable and be able

to maintain daily activities. Nurses should regularly assess signs and symptoms indicating the side effects of radiation and periodically assess patient's knowledge regarding self-care practices to overcome such side effects and provide specific information as needed.

Implications for Nursing Education

Nursing views a person as a bio-psycho-social being. This study has demonstrated the interrelationships of such aspects within the person that cannot be separated from one another. However, a complete understanding of the person cannot be achieved in one study. This study particularly addressed the "social aspect" of cervical cancer patients receiving radiotherapy. The results indicated the need for emphasizing the importance of this social aspect of the person in nursing education. Specifically, role adaptation and its contributing factors should be acknowledged and addressed for nurses who have taken care of cervical cancer patients receiving radiotherapy. One of the topics of an in–service education or continuing education should be related to role adaptation, and may result in an increase in nurse's awareness of the significance of this social aspect of the patients, consequently improving the quality of nursing care.

Implications for Nursing Research

Based on the limitations and the findings of this present study, several recommendations for future research are presented.

1. An intervention study using action research techniques or experimental research design is recommended. The interventions developed for research investigations may include:

1.1 Active participation of significant others (i.e., family members, spouse) for developing potential role adaptation of the cervical cancer patients receiving radiotherapy.

1.2 An empowerment program for enhancing self-esteem.

1.3 Minimizing side effects of the radiotherapy program (e.g., fatigue, and symptom distress).

2. Future studies with various age groups and populations (i.e., chronically ill patients) should be conducted in order to increase the generalization of the research findings.

3. Since the findings indicate that there was approximately 45.2% of the variance in role adaptation left unexplained, the potential factors influencing role adaptation, such as peer and family relationships, hardiness, or self-efficacy are worth investigating and may contribute to a better understanding of role adaptation.

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APPENDIX

APPENDIX A

Instruments

วัน.....เดือน.....พ.ศ..... NO. [ ]

ตอนที่ 1 แบบสอบถามข้อมูลส่วนบุคคล

โปรดเติมคำในช่องว่าง และ ทำ✓ ลงในช่อง❑ ที่ตรงกับความเป็นจริงของท่าน

1. อายุ ..... ปี V1 [ ]

2.ระดับการศึกษา V2 [ ]

❑ ไม่ได้เรียนหนังสือ ❑ ประถมศึกษา ระบุ.....ปี

❑ มัธยมศึกษา ระบุ.....ปี ❑ อนุปริญญา ระบุ.....ปี

❑ ปริญญาตรี ระบุ ..... ปี ❑ สูงกว่าปริญญาตรี ระบุ.....ปี

3.อาชีพ V3 [ ]

❑ แม่บ้าน ❑ เกษตรกร

❑ รับจ้าง ระบุ..... ❑ ค้าขาย/ธุรกิจส่วนตัว ระบุ.....

❑ รับราชการ/รัฐวิสาหกิจ ระบุ.....

4. รายได้เฉลี่ยของครอบครัวต่อเดือน .....บาท V4 [ ]

❑ พอใช้เหลือเก็บ ❑ พอใช้ไม่เหลือเก็บ ❑ ไม่พอใช้

5.การจ่ายค่ารักษาพยาบาล V5[ ]

❑ จ่ายเองทั้งหมด ❑ บัตรประกันสังคม/บัตรสุขภาพ

❑ จ่ายเองและสังคมสงเคราะห์บางส่วน ❑ สังคมสงเคราะห์

❑ เบิกค่ารักษาได้ทั้งหมด

ข้อมูลด้านสุขภาพของผู้ป่วย (สำหรับผู้วิจัยกรอก)

1. โรงพยาบาล..... V6 [ ]

2. ระยะของโรค..... V7 [ ]

3. ชนิดของโรค..... V8 [ ]

4. ปริมาณรังสีที่ได้รับ..... V9 [ ]

5. สัปดาห์ที่ได้รับรังสีรักษา..... V10[ ]

ตอนที่ 2 แบบสอบถามความรุนแรงของอาการข้างเคียง

โปรดอ่านข้อความต่อไปนี้และทำเครื่องหมาย✓ลงในช่อง❑ หน้าข้อความที่ตรงกับอาการของท่านมากที่สุดในช่วงสัปดาห์ที่ผ่านมา

1. การเปลี่ยนแปลงของผิวหนังบริเวณที่ฉายรังสี V11[ ]

❑ ไม่มี
❑ มีผื่นแดงเล็กน้อย หรือแห้ง ลอกตกสะเก็ด
❑ มีผื่นแดงปานกลางหรือเริ่มเปียกแฉะ
❑ ผิวเปียกแฉะ

2. การรับประทานอาหาร V12[ ]

❑ ปกติ
❑ ได้น้อยกว่าปกติ
❑ ได้น้อยมาก
❑ รับประทานอาหารไม่ได้เลย

8. การนอนหลับ V18[ ]

❑ ปกติ
❑ นอนไม่ค่อยหลับ เป็นบางครั้ง
❑ มีปัญหาการนอนหลับ
❑ มีปัญหาการนอนหลับอย่างมาก

9. อาการอ่อนเพลีย V19[ ]

❑ ไม่มี
❑ มีบ้างเล็กน้อย
❑ มีปานกลาง
❑ มีมาก ไม่มีกำลังวังชา

10. การเปลี่ยนแปลงของอารมณ์ เช่น ความกังวล หงุดหงิด โมโหง่าย V20[ ]

❑ ไม่มี
❑ มีบ้างเล็กน้อย
❑ มีปานกลาง
❑ มีรุนแรงจนรบกวนการทำงานประจำ

ตอนที่ 3 แบบสอบถามความรู้สึกมีคุณค่าในตนเอง

คำชี้แจง โปรดอ่านข้อความแต่ละข้อ และทำเครื่องหมาย ✓ ลงในช่องตารางที่ตรงตามความรู้สึกของท่านมากที่สุดในช่วงที่ได้รับรังสีรักษามาจนถึงวันนี้ ซึ่งคำตอบที่ได้จะไม่มีการถูกหรือผิดแต่อย่างใด การเลือกตอบจะมีเกณฑ์ดังนี้

ไม่เห็นด้วยอย่างยิ่ง หมายถึง ท่านไม่เห็นด้วยอย่างยิ่งกับข้อความนี้
ไม่เห็นด้วย หมายถึง ท่านไม่เห็นด้วยกับข้อความนี้
เห็นด้วย หมายถึง ท่านเห็นด้วยกับข้อความนี้
เห็นด้วยอย่างยิ่ง หมายถึง ท่านเห็นด้วยอย่างยิ่งกับข้อความนี้

ตัวอย่าง

ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เห็นด้วย	เห็นด้วยอย่างยิ่ง
0. ฉันรู้สึกว่าตนเป็นผู้พ่ายแพ้	✓			

หมายถึง ท่านไม่เห็นด้วยกับข้อความนี้ หมายความว่า ฉันไม่เคยรู้สึกว่าตนเป็นผู้พ่ายแพ้

ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เห็นด้วย	เห็นด้วยอย่างยิ่ง	สำหรับผู้วิจัย
1. ฉันรู้สึกว่าฉันมีคุณค่าเท่าเทียมคนอื่น ๆ					V21[ ]
2. ฉันรู้สึกว่าตัวฉันยังมีสิ่งที่ดีอยู่หลายอย่าง					V22[ ]
3. ฉันรู้สึกว่าตัวเองมีแนวโน้มที่จะเป็นคนล้มเหลว					V23[ ]
.....					
.....					
8. ฉันอยากที่จะยอมรับนับถือตนเองให้มากกว่านี้					V28[ ]
9.หลายครั้งที่ฉันรู้สึกว่าเป็นคนที่ไร้ประโยชน์					V29[ ]
10. หลายครั้งที่ฉันรู้สึกว่าไม่มีอะไรดีเลยในตัวเอง					V30[ ]

ตอนที่ 4 แบบสอบถามแหล่งประโยชน์ส่วนบุคคล

คำชี้แจง แบบสอบถามชุดนี้เป็นข้อความที่เกี่ยวกับการติดต่อกับผู้อื่น และการช่วยเหลือที่ท่านคิดว่าท่านได้รับจากผู้อื่นในช่วงที่ท่านได้รับรังสีรักษา กรุณาอ่านข้อความทีละข้อและทำเครื่องหมาย ✓ ลงในช่องเลือกที่ตรงกับลักษณะของท่าน แต่ละข้อไม่มีคำตอบใดถูกหรือผิด โดยมีคำตอบให้เลือกดังนี้

ไม่เป็นความจริงเลย แสดงว่า ข้อความนั้น ไม่เป็นความจริงเลย
เป็นจริงบ้างเล็กน้อย แสดงว่า ข้อความนั้น เป็นจริงบ้างเล็กน้อย
เป็นจริงปานกลาง แสดงว่า ข้อความนั้น เป็นจริงปานกลาง
เป็นจริงมาก แสดงว่า ข้อความนั้น เป็นจริงมาก
เป็นจริงมากที่สุด แสดงว่า ข้อความนั้น เป็นจริงมากที่สุด

ตัวอย่าง

ข้อความ	ไม่เป็นความจริงเลย	เป็นจริงบ้างเล็กน้อย	เป็นจริงปานกลาง	เป็นจริงมาก	เป็นจริงมากที่สุด
0. หลายคนบอกว่า ฉันเป็นคนที่น่าคบหาสมาคมด้วย					✓

หมายถึง " หลายคนบอกว่า ฉันเป็นคนที่น่าคบหาสมาคมด้วย" ข้อความนี้เป็นจริงมากที่สุด

ตอนที่ 4 แบบสอบถามแหล่งประโยชน์ส่วนบุคคล (ต่อ)

โปรดทำเครื่องหมาย ✓ เพียงเครื่องหมายเดียวเท่านั้น ในแต่ละข้อ

ข้อความ	ไม่เป็นความจริงเลย	เป็นจริงบ้างเล็กน้อย	เป็นจริงปานกลาง	เป็นจริงมาก	เป็นจริงมากที่สุด	สำหรับผู้วิจัย
1. ฉันมีคนใกล้ชิดที่ทำให้รู้สึกอบอุ่นและปลอดภัย						V31[ ]
2. ฉันรู้สึกว่าตนเองมีความสำคัญกับคนรอบข้าง						V32[ ]
3. คนส่วนมากบอกว่าฉันทำบางสิ่งบางอย่างได้ดี						V33[ ]
4. ฉันไม่สามารถพึ่งพาญาติพี่น้องและเพื่อนฝูงได้เวลามีปัญหา						V34[ ]
.....						
.....						
.....						
20. ฉันมีความรู้สึกว่าฉันยังเป็นที่ต้องการของผู้อื่น						V50[ ]
21. ถ้าฉันไม่สบายใจหรือวิตกกังวลจะมีคนมาคอยดูแลฉันหรือให้คำแนะนำฉันว่า ฉันควรทำอย่างไร						V51[ ]

ตอนที่ 5 แบบสอบถามผลลัพธ์การปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษา

คำชี้แจง โดยอ่านข้อความ แล้วทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับการกระทำหรือความรู้สึกของท่านมากที่สุดในช่วงที่ท่านได้รับรังสีรักษามาจนถึงวันนี้ ในแต่ละข้อไม่มีคำตอบผิดหรือถูก กรุณาเลือกคำตอบเพียงคำเดียว การเลือกตอบจะมีเกณฑ์ ดังนี้

มากที่สุด หมายถึง ข้อความนั้นตรงกับการกระทำหรือความรู้สึกของท่านมากที่สุดหรือถูกต้องเท่ากับ 100 เปอร์เซนต์

มาก หมายถึง ข้อความนั้นตรงกับการกระทำหรือความรู้สึกของท่านมากหรือถูกต้องประมาณ 75 เปอร์เซนต์

ปานกลาง หมายถึง ข้อความนั้นตรงกับการกระทำหรือความรู้สึกของท่านเพียงบางส่วน หรือถูกต้องประมาณ 50 เปอร์เซนต์

เล็กน้อย หมายถึง ข้อความนั้นตรงกับการกระทำหรือความรู้สึกของท่านเพียงเล็กน้อยหรือถูกต้องประมาณ 25 เปอร์เซนต์

ไม่เลย หมายถึง ข้อความนั้นไม่ตรงกับการกระทำหรือความรู้สึกของท่านเลยหรือเท่ากับ 0 เปอร์เซนต์

ตัวอย่าง

ข้อความ	ไม่เลย (0 %)	เล็กน้อย (25%)	ปานกลาง (50%)	มาก (75%)	มากที่สุด (100 %)
0. ฉันรู้สึกพอใจในงานที่ทำอยู่				✓	

หมายถึง ฉันรู้สึกพอใจในงานที่ทำอยู่มาก

ตอนที่ 5 แบบสอบถามผลลัพธ์การปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกที่ได้รับรังสีรักษา

โปรดทำเครื่องหมาย ✓ เพียงเครื่องหมายเดียวเท่านั้น ในแต่ละข้อ

ข้อความ	ไม่เลย (0 %)	เล็ก น้อย (25%)	ปานกลาง (50%)	มาก (75%)	มากที่สุด (100 %)	สำหรับผู้วิจัย
1. ฉันรู้สึกภูมิใจในงานที่ทำ						V52[ ]
2. ฉันมีเวลาให้กับงานที่รับผิดชอบได้อย่างเต็มที่						V53 [ ]
7. ฉันมีโอกาสได้พูดคุยและรับฟังเรื่องราวต่าง ๆ ของสามี						V58[ ]
27.ฉันรู้สึกหมดกำลังใจจนไม่อยากมารับรังสีรักษา						V68[ ]
28.ฉันคิดอยากที่จะไปรักษาด้วยวิธีอื่น ๆ แทนรังสีรักษา						V69[ ]

Appendix B

Consent to participate in Research Study
คำชี้แจงและพิทักษ์สิทธิของผู้ป่วยในการเข้าร่วมการวิจัย

เรื่อง ขอความร่วมมือในการตอบแบบสอบถาม

เรียน คุณ.....

ดิฉัน นางสาวลัพณา กิจรุ่งโรจน์ นักศึกษาพยาบาลปริญญาโท ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล กำลังทำการศึกษาวิจัย เรื่อง ความรุนแรงของอาการข้างเคียง ความรู้สึกมีคุณค่าในตนเอง แรงสนับสนุนทางสังคมและการปรับตัวด้านบทบาทหน้าที่ของผู้ป่วยมะเร็งปากมดลูกขณะได้รับรังสีรักษา เพื่อนำความรู้ที่ได้ไปใช้เป็นแนวทางในการพยาบาลกลุ่มผู้ป่วยสตรีได้อย่างเหมาะสมต่อไป

หากคุณ.....เข้าร่วมในการวิจัยครั้งนี้ ดิฉันขอให้คุณช่วยกรุณาตอบแบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามความรุนแรงของอาการข้างเคียง แบบสอบถามความรู้สึกมีคุณค่าในตนเอง แบบสอบถามแหล่งประโยชน์ส่วนบุคคลและแบบสอบถามพฤติกรรมการปรับตัวด้านบทบาทหน้าที่ ซึ่งจะใช้เวลาในการตอบประมาณ 20-30 นาที ข้อมูลทั้งหมดที่คุณตอบจะถูกเก็บความลับและนำมาเพื่อใช้เป็นแนวทางในการศึกษาครั้งนี้เท่านั้น โดยที่ท่านและครอบครัวจะไม่ได้รับผลเสียใด ๆ จากการตอบแบบสอบถามครั้งนี้ หากคุณมีข้อสงสัยประการใดเกี่ยวกับการวิจัยครั้งนี้ ดิฉันยินดีจะตอบให้คุณเข้าใจและไม่ว่าคุณจะเข้าร่วมในการวิจัยครั้งนี้หรือไม่ก็ตามคุณจะยังคงได้รับการรักษาพยาบาลจากเจ้าหน้าที่ของโรงพยาบาลตามปกติ คุณมีสิทธิ์ที่จะตอบรับหรือปฏิเสธการเข้าร่วมวิจัยครั้งนี้ และถึงแม้คุณยินยอมเข้าร่วมการวิจัยแล้วคุณก็ยังมีสิทธิที่จะขอยกเลิกการเข้าร่วมวิจัยครั้งนี้ได้ตลอดเวลาที่คุณต้องการ โดยไม่มีผลต่อการรักษาที่คุณจะได้รับ

.....

ข้าพเจ้าได้รับทราบรายละเอียดของการวิจัยดังที่ได้อธิบายไว้ข้างต้น มีความเข้าใจและสมัครใจเข้าร่วมในการวิจัยครั้งนี้ด้วยความเต็มใจ

.....ลายมือชื่อผู้เข้าร่วมวิจัย วัน.....เดือน.....พ.ศ.....

.....ลายมือชื่อผู้วิจัย วัน.....เดือน.....พ.ศ.....

.....ลายมือพยาน วัน.....เดือน.....พ.ศ.....

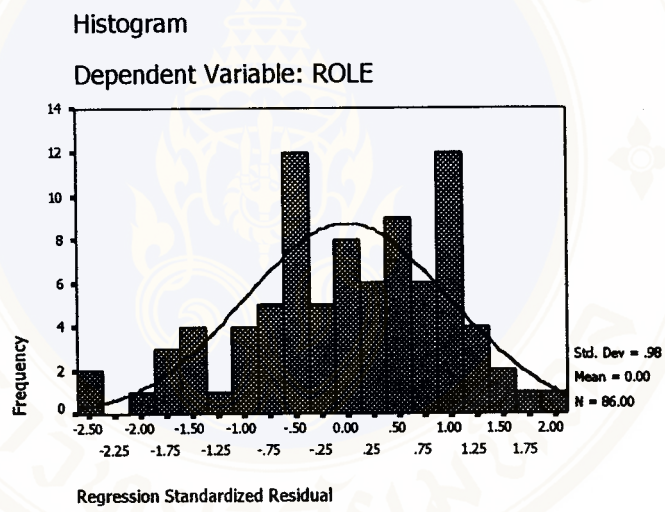
APPENDIX C

TEST OF RESIDUAL

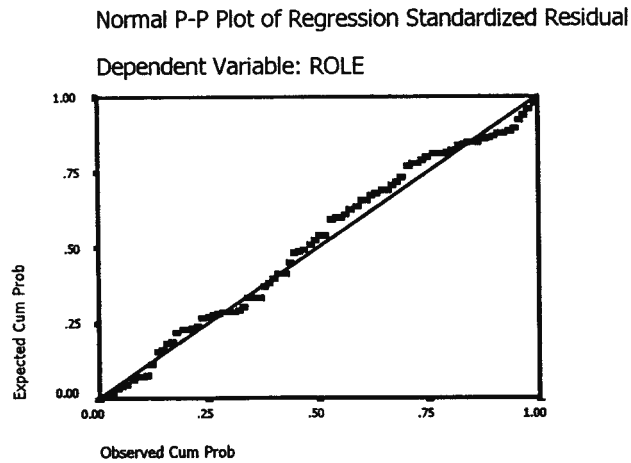
Independent variables were severity of side effects, self-esteem, social support, and education. Dependent variable was role adaptation.

1. Normality

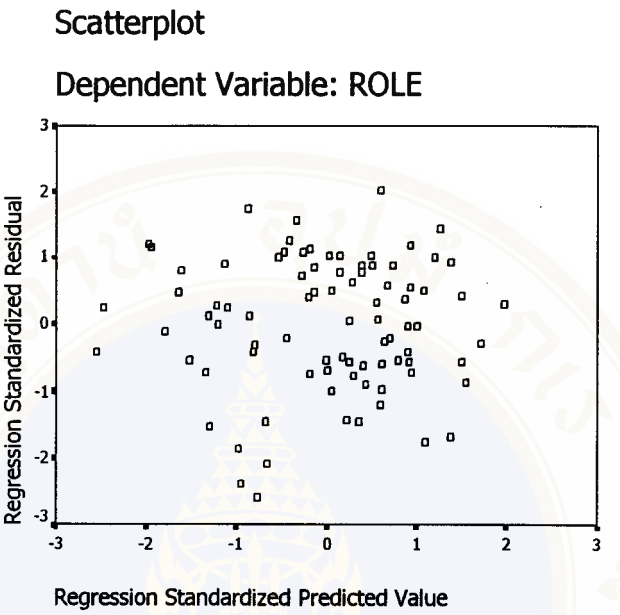
1.1 Histogram



1.2 Normal probability plot



2. Homoscedasticity



3. Autocorrelation

Dubin-Watson = 2.19

4. Collinearlity Statistic Tolerance

Social support = .73

Self-esteem = .76

Severity of side effects = .87

Exclude Variables

Education = .90

APPENDIX D

VALIDITY AND RELIABILITY OF INSTRUMENTS

Variables	Instruments	Items	Validity	Reliability (Cronbach's alpha)	
				Pilot study (N = 10)	Main study (N =86)
1. Severity of side effects	Severity of Side Effects Questionnaire developed by the researcher	10	content	.75	.73
2.Self-esteem	Rosenberg Self-Esteem Scale, Thai version, (Srimoragot, 1993)	10	Construct, etc.	.71	.86
3. Social support	Personal Resource Questionnaire 85 - Part II,Thai version, (Soomlek, 1995)	21	Construct, etc.	.88	.86
4. Role adaptation	Role Adaptation Questionnaire developed by the researcher	28	content	.87	.80

APPENDIX E

LIST OF EXPERTS CONSULTED ON VALIDATION OF THE INSTRUMENT

The content validity of questionnaires were determined by five consulting experts included

1. Professor Paungtong Kraiphibul
   Division of Radiotherapy and Nuclear Medicine,
   Department of Radiology, Faculty of Medicine,
   Ramathibodi Hospital, Mahidol University.
2. Lieutenant- colonel.Thiti Swangsilpa
   Division of Radiotherapy, Department of Radiology,
   Phamongkutklao Hospital.
3. Assistant Professor Praonuch Tulyatorn
   Department of Gynecological and Obstetrical Nursing
   Faculty of Nursing, Mahidol University.
4. Assistant Professor Dr. Ladaval Ounprasertpong
   Department of Nursing, Faculty of Medicine,
   Ramathibodi Hospital, Mahidol University.
5. Miss. Nanta Kiatgungwalgri
   Siriraj Hospital, Mahidol University

BIOGRAPHY

NAME	Miss Luppana Kitrungrote
DATE OF BIRTH	12 December 1963
PLACE OF BIRTH	Songkhla, Thailand
INSTITUITIONS ATTENDED	Prince of Songkla University, 1982-1985 Bachelor of Science (Nursing and Midwifery) Mahidol University, 1998-2000 Master of Nursing (Adult Nursing)
GRADUATE STUDY FUNDED	University Development Committee (UDC)
POSITION & OFFICE	1987-1995, Songklanakarind Hospital Faculty of Medicine, Prince of Songkla University. Position: Nurse 5 1995-Present, Department of Surgical Nursing, Faculty of Nursing Prince of Songkla University. Position: Instructor 7