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A STUDY OF SENSE OF COHERENCE, PERCEIVED BENEFITS OF ACTION IN HEALTH-PROMOTING BEHAVIORS AND HEALTH-PROMOTING BEHAVIORS ON COLORECTAL CANCER PATIENTS

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Colorectal cancer is one of the chronic diseases which affects the biophychosocial aspects of the patients. The motivation of health promotion in colorectal cancer patients for improving well-being is of utmost importance. This research is aimed at describing health-promoting behaviors of colorectal cancer patients and to predict sense of coherence, perceived benefits of action in health- promoting behaviors and personal factors related to health-promoting behaviors of colorectal cancer patients. A descriptive design and purposive sampling was used to recruit 120 colorectal cancer patients who received colorectal cancer diagnosis attending colorectal clinics, surgery clinics and medicine (chemotherapy) clinics of the outpatient department at the National Cancer Institute, Chulalongkorn Hospital and Siriraj Hospital. Data were collected through interview. The instruments used in this study were a demographic data form, the health-promoting behaviors questionnaire, the perceived benefits of action in health-promoting behaviors questionnaire and sense of coherence questionnaire. Data were analyzed in terms of percentage, mean, standard deviation, Pearson's Correlation coefficient and predictive discrimination by the stepwise multiple regression analysis.

The results of this study showed that the overall health- promoting behaviors of colorectal cancer patients had a good level ($\overline{X}$=3.12, S.D.=0.39), the overall perceived benefits of action in health- promoting behaviors had a good level ($\overline{X}$= 3.11, S.D.=0.38) and the overall sense of coherence had a high level (118 scores). Considering each aspect, health-promoting behaviors on spiritual growth was at an excellent level ($\overline{X}$=3.44,S.D.=0.37); stress manage, nutrition, interpersonal relations and health responsibility was at a good level ($\overline{X}$ =3.21, S.D.=0.53; $\overline{X}$=3.20, S.D.=0.39; $\overline{X}$=3.10, S.D.=0.79; $\overline{X}$=2.88, S.D.=0.58, respectively). However, health- promoting behaviors on physical activities was at a fair level ($\overline{X}$ =2.21, S.D.=0.89). Further study indicates that health- promoting behaviors had positive correlation with a sense of coherence and perceived benefits of action in health- promoting behaviors at a statistically significant level of .001(r = .514 and .437, respectively). Meanwhile, the stepwise multiple regression revealed that sense of coherence and perceived benefits of action in health- promoting behaviors are able to predict 52.30 percent of variances of health- promoting behaviors of colorectal cancer patients.

It is recommended that the motivation of health promotion for colorectal cancer patients should be properly planned health promotion intervention based on these factors, especially encouraging physical activities. This will enhance the patients perceived benefits of action in health-promoting behaviors and contribute to a higher level of sense of coherence. These strategies will motivate the patients to possess better health-promoting behaviors for a healthy lifestyle.

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นาฎยา สุธีรวุฒิ : การศึกษาความเข้มแข็งในการมองโลก การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพและพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนัก (A STUDY OF SENSE OF COHERENCE, PERCEIVED BENEFITS OF ACTION IN HEALTH-PROMOTION BEHAVIORS AND HEALTH-PROMOTING BEHAVIORS ON COLORECTAL CANCER PATIENTS). คณะกรรมการควบคุมวิทยานิพนธ์ : สายพิณ เกษมกิจวัฒนา,พย.ด., กรองได อุณหสูต, กศ.ด. , ทัศนา บุญทอง, กศ.ด. 78 หน้า

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มะเร็งลำไส้ใหญ่และทวารหนักเป็นโรคเรื้อรังที่ก่อให้เกิดผลกระทบต่อบุคคลทั้งด้านร่างกายและจิตใจ อารมณ์ และสังคม การส่งเสริมผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนักให้มีการปฏิบัติพฤติกรรมส่งเสริมสุขภาพที่เหมาะสมเพื่อยกระดับความเป็นอยู่ดีของชีวิตจึงเป็นสิ่งสำคัญ การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความเข้มแข็งในการมองโลก การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพ และพฤติกรรม ส่งเสริมสุขภาพของผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนัก กลุ่มตัวอย่างเป็นผู้ป่วยผู้ใหญ่รับรู้ว่าตนเองเป็นมะเร็งลำไส้ใหญ่และทวารหนัก จำนวน 120 รายที่มาติดตามการรักษาที่แผนกผู้ป่วยนอก ห้องตรวจศัลยกรรมและอายุรกรรม-เคมีบำบัด คลีนิคลำไส้ใหญ่และทวารหนัก สถาบันมะเร็งแห่งชาติ โรงพยาบาลจุฬาลงกรณ์ และโรงพยาบาลศิริราช เก็บรวบรวมข้อมูลโดยการสัมภาษณ์ เครื่องมือที่ใช้ในการวิจัยได้แก่ แบบสัมภาษณ์ข้อมูลส่วนบุคคล แบบสัมภาษณ์การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพและแบบสัมภาษณ์ความเข้มแข็งในการมองโลก วิเคราะห์ข้อมูลโดยการหาค่าร้อยละค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน ค่าสัมประสิทธิ์สหสัมพันธ์พหุคูณ และหาอำนาจการทำนายโดยการวิเคราะห์ถดถอยพหุคูณแบบขั้นตอน

ผลการวิจัยพบว่าคะแนนเฉลี่ยพฤติกรรมส่งเสริมสุขภาพโดยรวมอยู่ในระดับค่อนข้างดี ($\overline{X}$ = 3.12, S.D. = 0.39) เมื่อพิจารณารายด้านพบว่าคะแนนเฉลี่ยพฤติกรรมส่งเสริมสุขภาพด้านการพัฒนาจิตวิญญาณอยู่ในระดับดี ($\overline{X}$ = 3.44, S.D. = 0.37) การจัดการกับความเครียด ด้านโภชนาการความสัมพันธ์ระหว่างบุคคล ความรับผิดชอบต่อภาวะสุขภาพอยู่ในระดับค่อนข้างดี ($\overline{X}$ = 3.21, S.D. = 0.53 ; $\overline{X}$ = 3.20, S.D. = 0.39 ; $\overline{X}$ = 3.10, S.D. = 0.79 ; $\overline{X}$ = 2.88, S.D. = 0.58 ตามลำดับ) คะแนนเฉลี่ยความเข้มแข็งในการมองโลกอยู่ในระดับปานกลางเท่ากับ 118 คะแนนเฉลี่ยการรับรู้ประโยชน์อยู่ในระดับค่อนข้างดี ($\overline{X}$ = 3.11, S.D. = 0.38) เมื่อวิเคราะห์ถดถอยพหุคูณแบบขั้นตอน พบว่าการรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพและความเข้มแข็งในการมองโลกสามารถทำนายพฤิตกรรมส่งเสริมสุขภาพของผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนักได้ร้อยละ 52.30 ผลการวิจัยครั้งนี้ผู้วิจัยมีข้อเสนอแนะว่าพยาบาลผู้ดูแลผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนักควรส่งเสริมให้ผู้ป่วยมีการรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพและความเข้มแข็งในการมองโลกเพื่อก่อให้เกิดแรงจูงใจให้ผู้ป่วยปฏิบัติพฤติกรรมส่งเสริมสุขภาพที่ดีตลอดไป

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CONTENTS

	Page
ACKNOWLEDGEMENT	iii
ABSTRACT (English)	iv
ABSTRACT (Thai)	v
LIST OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER	
I INTRODUCTION	
Background and Significance of the Study	1
Conceptual Framework	5
Research Questions	10
Purposes of the Study	10
Hypotheses	11
Scope of the Study	11
Definition of Terms	11
Expected Outcomes and Benefits	12
II LITERATURE REVIEW	
Colorectal Cancer	13
Health-Promoting Behaviors	18
Factors Influencing to Health-Promoting Behaviors	28
- Perceived Benefits of Action in Health- Promoting Behaviors	28
- Sense of Coherence	28
- Personal Factors	31
Summary Literature Review	34

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CONTENTS (continued)

	Page
CHAPTER	
III METHODOLOGY	
Research Design	35
Population and Sampling	35
Instrumentation	35
Validity and Reliability of the Instruments	38
Data Collection	38
Protection of Human Subjects	38
Data Analysis	38
IV RESULTS	40
V DISCUSSION	48
VI CONCLUSION	
Summary of the Study	54
Implications and Recommendations	55
BIBLIOGRAPHY	57
APPENDIX	65
A List of Experts	66
B Consent Form	67
C Instruments	69
D Quantity of Fiber	75
BIOGRAPHY	78

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CHAPTER I

INTRODUCTION

Background and significance of the study

Cancer is one of the major public health problems worldwide. The incidence is generally increasing. WHO has reported that in Thailand, the annual cancer incidence was 180-200 per 100,000 population; 10.3 million cancer cases in 1996 and by the year 2020, it will reach to 14.7 million. An estimated 9 million new cancer cases are diagnosed every year and cancer will kill 11 million people annually worldwide; more than 7 million of these in the developing world (IRAC/WHO, 1997). Cancer ranked third in causes of death, after heart disease and accidents (Bureau of Public Health Statistics, Ministry of Public Health, 1999). According to the study of 10 leading causes of death per 100,000 population, the mortality rate of cancer ranked eighth in 1966, second in 1987, second or third in the next year later and the year 1998, it ranked third with 48.9 per 100,000. Early cancer patients were only 20%, and the rest 80%; advanced cancer patients (Leelanantakij, 1994:118) and the overall 5-year survival for colorectal cancer was 30.5% - 34.2% (Deerasmee,et al., 1999:13).

Cancer has tremendously threatened and suffered on the patients. Although advances in medical treatment of cancer, the overall survival is poor, may be due to delay in diagnosis and treatment. Most of cancer patients are advanced stage and have treated by palliative care (Jiravong, 1997:1). These clues lead to poor quality of life and potential life loss. Additionally, the study of Year Potential Life Loss in Thai population found that the expenditure from cancer increased to three hundred thousand DALY (Samuthrak, 1998:17).

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Colorectal cancer is one of 10 leading cancers in Thailand. It most frequently occurs over 50 years old, however in cases of colorectal cancer patients younger than 30 years old, the prognosis is usually poor (Kanjanapitakl, 1995:97). There is little difference incidence between the genders (Klinvimol, 1996:24). Most cases of colorectal cancer are diagnosed as advanced stage. Whereas those in the United States are Duke's A or B because of American Cancer Society recommendations : prevention and early detection ; decrease the percentage of calories derived from animal fat and red meat, increase overall fiber intakes, and population screening program has strong advocates (Steele, 1993; Forman, 1994:36).

As has been suggested from the epidemiological studies, the major factors associated with the development of colorectal cancer are dietary and environmental factors; high in calories, protein, animal fat, total and saturated fat, and red meat (Sirichotrat, 1999:6). According to the study of the risk factors for colorectal cancer in Thai people found that the risk factors were associated with history of colectomy, adenomas, familial polyposis syndrome, chronic ulcerative colitis, chronic hemorrhoid, chronic constipation, ruptured anal abscess, character of stool, food habits in butter, bacon, chicken, coffemate and slide pork, cancer family syndrome, and sedentary jobs (Soontornut,1989:71).Therefore, the factors related with colorectal cancer are multifactorial, complex development, genetics, environmental, high consumption of high fat and high cholesterol diets (Vorapipat,1995:143) or even the nature therapy concept reported that cancer results from the process of natural killer cells to destroy toxins for several years which convincing in habits in the western diet, fast foods, averaged water, alcohol soft drinks, beer, and living in pollution areas (Petrakas,1998:17). Besides, the Cheevajit concept indicated that cancer is a multistep process driven by the accumulation of mutations in genes which results from toxin and free radicals Intaracamhang, 1998:32).

According to the research study by 16 leading scientists of the World Cancer Research Fund and American Cancer Research Institute suggested that the following health behaviors; appropriate nutrition, regular physical activity and consistent body weight can prevent cancer for 40% (Tanamit, 1997:33). In addition, an estimated of 400 gram/day of vegetables and fruits consumption, decreasing meat intakes, no

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smoking, no alcohol consumption, and regular physical activity possibly decrease colorectal cancer risk for 66-75% (Choonsavaskul, 1997:52). As note above, colorectal cancer has consistently been associated with individual health behaviors such as nutrition, urination, evacuation, physical activity, rest, residents and environment, and prevention of the risk factors (Hincheeranan, 1997:55). Including recurrence prevention, person routinely performs appropriate health behavior.

Performances in appropriate health behavior are the major factor to promote healthy. Pender (1996) defined health-promoting behaviors as activities directed toward increasing the level of well being and actualizing the health of individuals or group. There are six dimension of health-promoting behaviors as, 1) health responsibility, 2) physical activity, 3) nutrition, 4) interpersonal relations, 5) spiritual growth, and 6) stress management. Thus, the appropriate health-promoting behaviors on colorectal cancer patients are: **1) health responsibility**: receiving regular physical examination, routine health screening over a defined age, seeking information about health problems from health care professionals as guideline to perform healthy lifestyle. **2) regular physical activity**: physical activity is known to have favorable effects on strength, flexibility, healthy status and maintenance or increasing effective mechanisms overall systems of human body. In addition, there are several studies reported the evidence that regular physical activity decreases colon cancer risk, **3) nutrition**: appropriate nutrition, eating a balanced diet; decreasing the daily consumption of total fat less than 30%; increasing overall fiber intakes and some micronutrients as, cereals, roots and tubers, fresh vegetables and fruits, calcium, selenium and vitamin D; prevention of dietary carcinogens e.g., diets or various meat and compounds for preservation by frying, roasting with high flame and high temperature such as boiling brown gravy, bacon/smoke ham, especially fried or heavily browned meats, no alcohol soft drinks, beer and no smoking(Friedenrich,et.al.,1994:66-68;Hill,1997;219; Lubin,et.al.,1997:76;Vorapipat,1995:143;Choonsavaskul,1998:52) **4) interpersonal relations**: lead to information about healthy lifestyle, being helpful for management difficulties, disabilities and health problems ; emotional supports which are able to cope with stress and anxiety ; be powerful hopes for promoting health care by himself, **5) spiritual growth**: individuals who have strong confidence in the performances that

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effect healthy and mental well being such as, aim life, mercy, sincerity, peace, satisfaction in life, religiousness, lead to be powerful and hopeful to take care for health problems or illness and treatment effects **6) stress management**: using relaxation technique to cope stress and anxiety. Therefore, colorectal cancer patients have to perform the following health-promoting behaviors as a part of their daily life, as health-promoting lifestyle and they will be healthier that toward well-being.

As a result, the motivation of health-promoting behaviors in colorectal cancer patients is so significant. Pender (1996) indicated that the major factor, behavior-specific cognition and affect: perceived benefits of action in health-promoting behaviors, can directly affect health-promoting behaviors. Due to perceived benefits of action in health-promoting behaviors is an importance factor influenced on health-promoting behaviors, is defined as the individual's plan engagement in a particular behavior often hinges on the anticipated benefits or outcomes that will occur. As such, patients who thought that health promotion is useful for healthy physical and mental well being, will consider to perform health-promoting behaviors and live well with normal or good life.

Furthermore, concerning health status, illness and maintenance health are importance and acceptance of illness can lead to hope and willing for health care and also providing care his own health. According to the salutogenic model of health, Antonovsky (1987) noted that the patients with a strong sense of coherence intellectually understand the occurrence of illness is causal from the etiology, pathogenesis stress or risk factors, and have manageability. The sense of coherence is related to maintenance health and well-being. Research findings reveal that sense of coherence is the predicting variable to health-promoting behaviors in adulthood (Reynoid&Alonzo,1998).Due to the study of Lundman & Norberg (1993), NIIDM patents with stronger sense of coherence are able to cope with disease than those with weak sense of coherence. Forsberg,et al.(1996), one year-follow up gastric and colorectal cancer patients was significantly positively correlated with well-being. As note above, sense of coherence is individual characteristic that effects on maintenance health as a sufficient motivation for health-promoting behaviors.

Thus, it is importance for nurses to take the role of health promotion on

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colorectal patients with health-promoting behaviors. As such, nurses take care, suggest, motivate on determinants to health behavior change or accept the performances influencing health status in order to improve their health behaviors so that they may be cured, healthier, or otherwise live well with the disease or good life (Hanucharoenkul, 1994). To be eligible in the health promotion intervention, nurses are obliged to understand other factors such as age, gender, education, marital status, income, and duration of illness also influence to health-promoting behaviors. Realizing of the factors influencing health-promoting behaviors as demographic characteristics, perceived benefits of action in health-promoting behaviors, and sense of coherence will increase nursing knowledge which is useful for health-promotion intervention. Since the mentioned factors have never been intensively conducted on colorectal cancer patients. Therefore, the researcher studied to identify clearly on the related factors and health-promoting behaviors in colorectal cancer patients in order to use the attained results as an information in planning health promotion intervention, acknowledging, consulting, and suggesting for appropriate health behaviors in colorectal cancer patients.

Conceptual Framework

This study was conducted on the basis of Pender's HPM (1996), consisted of three core concepts as shown in figure 1

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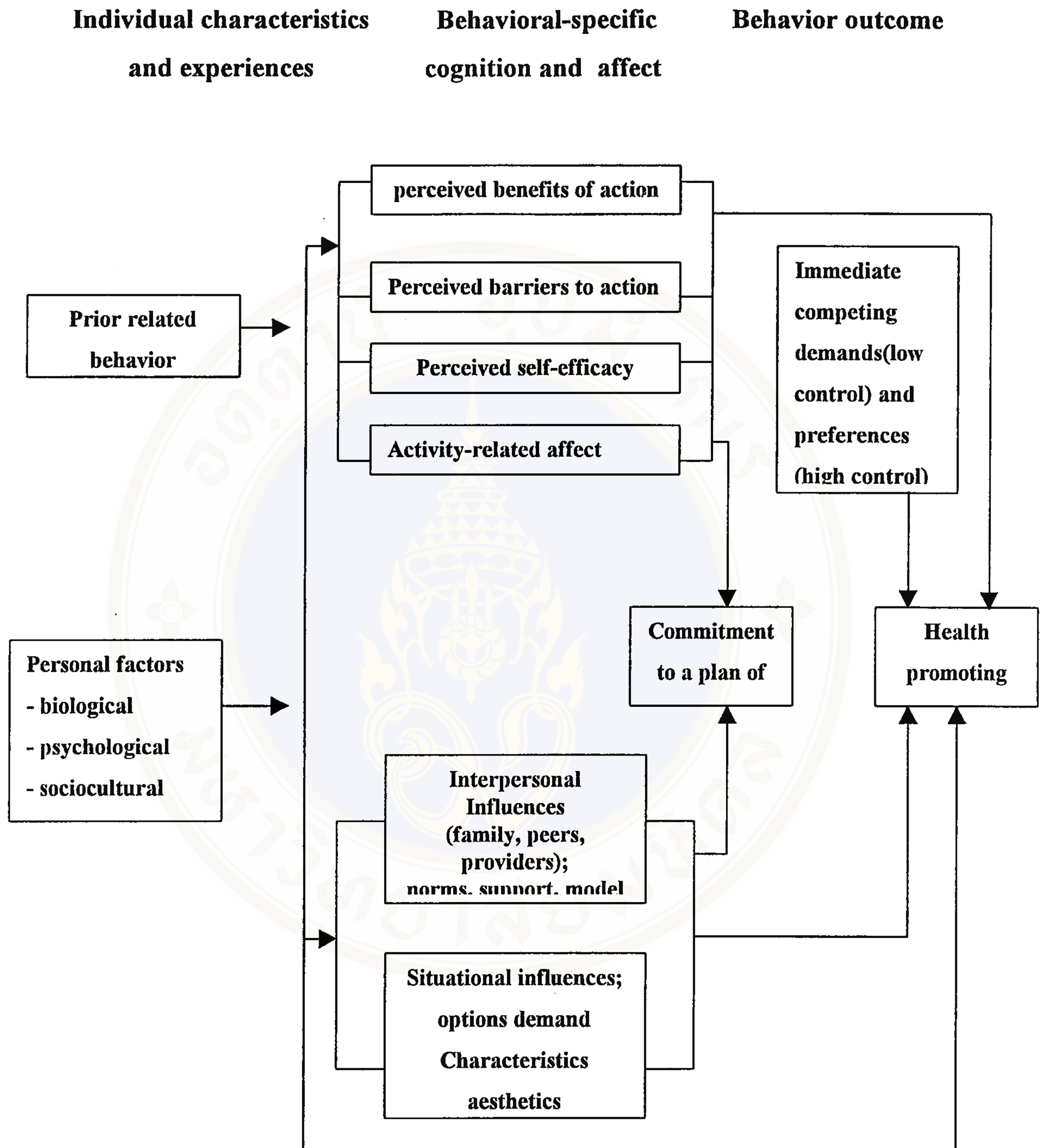

Figure 1 Health Promotion Model (Pender,1996:67)

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Pender defined health promotion as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual or group, including activities in which a positive approach to living that leads individuals toward their highest potential for well-being (Pender,1982,1987). Pender (1996) revised HPM as activities that improve quality of life, positive lifestyle, and achieve high-level well being.

Pender first developed the health promotion model in 1982, revised in 1987 and 1996, include three core concepts as follows:

1. Individual characteristics and experiences, each person has unique Personal characteristics and experiences that affect health behaviors, consist of

1.1 Prior related behavior, the frequency of the same or a similar behavior in the past leads to habit formation in the behavior automatically, and hardly change the behavior in which health problems. Therefore, prior related behavior direct influence on current health-promoting behaviors and indirect influence on current health-promoting behaviors through perceptions of self-efficacy, benefits of action, barriers, activity-related affect, interpersonal influences and situation influences.

1.2 Personal factors, the relevant personal factors predict the target behavior, consist of,

1.2.1 Personal biologic factors include variables such as age, gender, body mass index, puberty status, menopause status, aerobic capacity, strength, agility, or balance.

1.2.2 Personal psychologic factors include variables such as self esteem, self-motivation, personal competence, perceived health status, and definition of health. Personal sociocultural factors include variables such as race, ethnicity, acculturation, education, and socioeconomic status.

2. Behavior-specific cognitions and affect, this category of variables within the HPM is considered to be a major motivational significance. Furthermore, these variables constitute a critical core for health-promotion intervention, consist of

2.1 Perceived benefits of action, one's plan to engage in a particular behavior often hinges on the anticipated benefits or outcomes that will occur. The

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anticipated benefits of action are mental representations of the reinforcing consequences of a behavior. According to expectancy-value theory, the motivational importance of anticipated benefits is based on personal or vicarious experience of outcomes from prior direct experience with the behavior or observational learning from other engaging in the behavior. Beliefs in benefits or positive outcome expectations have generally been shown to be a necessary although not sufficient condition for engagement in a specific health behavior. Benefits of action may be intrinsic or extrinsic. Examples of intrinsic benefits include increased alertness and decreased feelings of fatigue. Extrinsic benefits can include monetary rewards or social interactions.

2.2 Perceived barriers, the perceptions anticipate barriers that affect intentions to engage in a particular behavior and the actual execution of health-promoting behaviors, barriers may be imagined or real, such as, the unavailability, inconvenience, expense, difficulty, etc.

2.3 Perceived self-efficacy, is the judgment of personal capability to organize and execute a particular course of action required to attain designated type of performance (Bandura,1977:74). Self-efficacy motivates health-promoting behaviors directly by efficacy expectations and indirectly by affecting perceived barriers and commitment or persistence in pursuing a plan of action.

2.4 Activity-related affect is the subjective feeling states occur prior to, during, and following, based on the stimulus properties of the behavior itself. These effective responses may be mild, moderate, or strong and cognitively labeled, stored in memory, and associated with subsequent thoughts of the behavior.

2.5 Interpersonal influences, are cognition concerning the behaviors, beliefs or attitudes of others, may or may not correspond with reality. Primary sources of interpersonal influence on health-promoting behaviors are families, peers, and health-care providers, include norms (expectations of significant others), social support (instrumental and emotional encouragement), and modeling (vicarious learning through observing others engaged in a particular behavior).

2.6 Situational influences, personal perceptions and cognition of any situation or context can facilitate or impede behavior, include perceptions options

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available, demand characteristics, and aesthetic features of the environment in which a given behavior is purposed to take place. Generally, Individuals are drawn to and perform more competently in situations or environmental contexts in which they feel compatible rather than incompatible, related than alienated, safe and reassured rather than unsafe and threatened. Environments that are fascinating and interesting are also desirable contexts for the performance of health- promoting behaviors.

3. Behavioral outcome, commitment to a plan of action initiates a behavioral event. This commitment will propel the individual into and through the behavior unless a competing demand that the individual cannot avoid or a competing preference that the individual does not resist intervenes.

3.1 Commitment to a plan of action, implies the underlying cognitive processes : commitment to carry out a specific action at a given time and place and with specified person, irrespective of competing preferences, identification of definitive strategies for eliciting, caring out, and reinforcing the behavior.

3.2 Immediate competing demands and preferences , refer to alternative behaviors that intrude into consciousness as possible courses of action immediately prior to the intended occurrence of a planned health-promoting behaviors because of environmental contingencies such as work or family care responsibilities. Immediate competing demands and preferences directly affect the probability of occurrence of health behavior as well as moderate the effects of commitment.

3.3 Health-promoting behavior, is the action outcome in the HPM, is ultimately directed toward attaining positive health outcomes for the client and particularly when integrated into a healthy lifestyle that pervades all aspects of living, result in a positive health experience throughout the life span.

Based on HPM's Pender, personal factor, perceived benefits of action in health-promoting behaviors, sense of coherence effect on health-promoting behaviors as shown in figure 2

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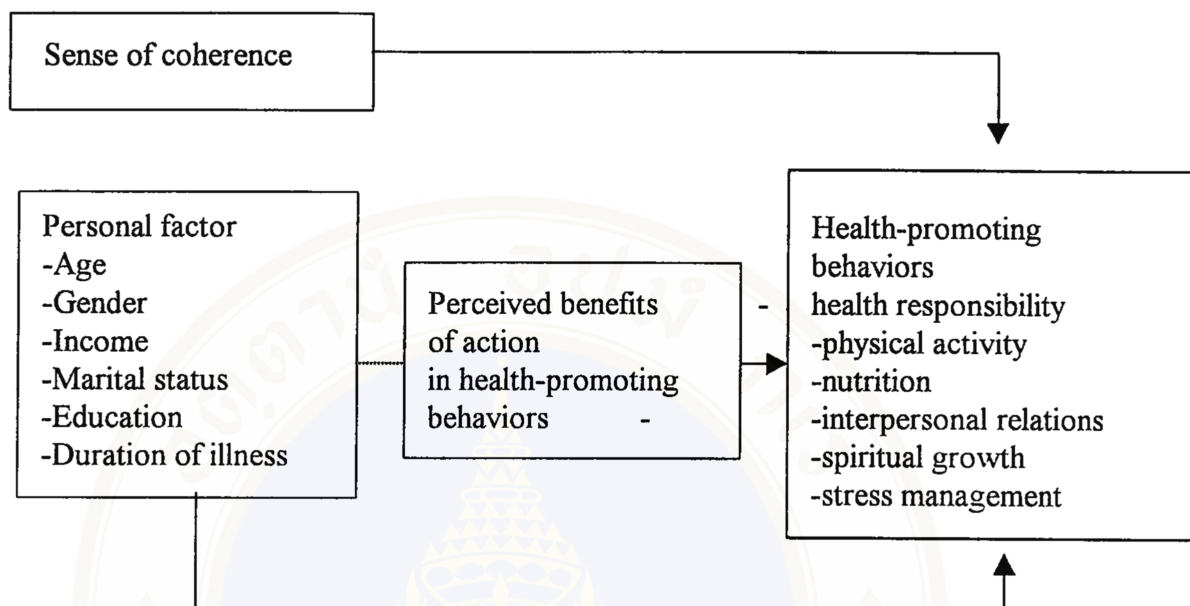

Figure 2 conceptual framework of this study

Research Questions

1. What are the health-promoting behaviors of colorectal cancer patients?
2. What are the factors correlated to health-promoting behaviors of colorectal cancer patients?
3. What are the factors influencing health-promoting behaviors of colorectal cancer patients?

Purpose of the study

1. To study health-promoting behaviors of colorectal cancer patients

2. To study relationship among sense of coherence, perceived benefits of action in health-promoting behaviors, health-promoting behaviors of colorectal cancer patients.

3. To study the prediction of sense of coherence, perceived benefits of action in health-promoting behaviors, health-promoting behaviors of colorectal cancer patients.

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Hypotheses

1. Sense of coherence have a positive relationship with health-promoting behaviors of colorectal cancer patients.

2. Perceived benefits of action in health-promoting behaviors have a positive relationship with health-promoting behaviors of colorectal cancer patients.

3. Age, gender, income, marital status, education, and duration of Illness are correlated to health-promoting behaviors of colorectal cancer patients.

4. Age, gender, income, marital status, education, and duration of Illness, sense of coherence, and perceived benefits of action in health-promoting behaviors can predict health-promoting behaviors of colorectal cancer patients.

Scope of the study

The study was conducted on 120 colorectal cancer patients who confirmed with histological studies and perceived colorectal cancer diagnosis. They were obtained from OPD of colorectal, surgery, tumor clinics at Siriraj Hospital, King Chulalongkorn Memorial Hospital, and National Cancer Institute during September, 1999 to February, 2000.

Expected Outcomes and Benefits

1. The results of this study indicate specific data or information related to health-promoting behaviors of colorectal cancer patients. The baseline of information will be helpful for nurses and other health care professionals in planning appropriate and effective health promotion intervention to engage health behavior of colorectal cancer patients.

2. As a guideline to study health-promoting behaviors of colorectal cancer patients in other related research studies.

Definition of Terms

1. Health-promoting behaviors indicated the performances that colorectal cancer patients perform in daily living to improve health care or be healthier, were measured by health-promoting behaviors questionnaire which was modified by the

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researcher from HPLP- II 's Wallker , et.al.,(1996) and health-promoting behaviors questionnaire's Tongdonbom (1998), consisted of

1.1 Health responsibility indicated the performances about observation on abnormal alternation, follow-up, health care screening ,seeking information for health care and health promotion.

1.2 Physical activity indicated the performances about exercises, consistent exercises, and rest.

1.3 Nutrition indicated appropriate nutrition, eating a balanced diet, increasing fiber intake, fresh vegetables and fruits, and prevention of carcinogen diets of colorectal cancer.

1.4 Interpersonal relations indicated the performances about good relationships among other persons that lead to useful supports.

1.5 Spiritual growth indicated the performances about hopefulness, satisfaction of life, and acceptance of their status.

1.6 Stress management indicated the performances about relaxation, ability to cope with stress or anxiety.

2. Perceived benefits of action in health-promoting behaviors indicated perception of benefits of health promotion that could encourage health-promoting behaviors, were measured by perceived benefits of action in health-promoting behaviors which was developed by the researcher from the basis of HPM's Pender (1996).

3. Sense of coherence indicated colorectal cancer patients had a strong confidence or intellectually understood that the occurrence of illness was causal from the etiology, pathogenesis stress or risk factors, and had manageability, and have been lived well with normal or good life, which was measured by SOC questionnaire's Antonovsky (1987) that was translated in Thai by Hanucharoenkul (1989).

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CHAPTER II

LITERATURE REVIEW

This research aims to study sense of coherence, perceived benefits of action in health-promoting behaviors and health-promoting behaviors on colorectal cancer patients. A number of literature sources and related topics of the study have been reviewed on the following topics:

1. Colorectal cancer
2. Health-promoting behaviors of colorectal cancer patients
3. Perceived benefits of action in health-promoting behaviors
4. Sense of coherence influencing health-promoting behaviors of colorectal cancer patients
5. Personal factors influencing health-promoting behaviors of colorectal cancer patients

Colorectal cancer

Most colorectal cancer are adenocarcinomas, develop from adenomas or adenomatous polyps in the colonic mucosa which grow to focally dysplastic cells or villous adenomas being most likely to progress to cancer. Colorectal cancer affects men and women almost equally. It most frequently occurs over 45 years old (Klinvimol, 1996). There was a report of case 18 - years old with colon cancer at Vajira Hospital (Jindasub, 1997). Colon cancer is commoner in the right side (Kanjanapitak, 1995). The epidemiological evidence, colorectal cancer risk appears to be direct related with dietary factors and environment. Population studies on immigrant groups suggested that environmental factors play a major role in the etiology of the disease. There is a change in colon cancer risk in the Japanese having migrated to the USA, the incidence rates approaching or surpassing those in whites in the same

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population. In addition to, colorectal cancer risk increases in occupation which contacts organic solvents and abrasive.

Etiology and risk factors of colorectal cancer (Jindasub, 1997)

1. Polyp-cancer sequence.

2. Inflammatory bowel diseases. Ulcerative colitis with long- standing over 10 years or occurring in childhood, produce a high risk of colorectal cancer up to 11 times.

3. Genetics. There are two genetics syndromes that markedly increase colon cancer risk. Familial adenomatous polyposis (FAP) is characterized by development of multiple colonic adenomas from few polyps to several thousand, is almost 100% risk of colon adenocarcinomas. The other form is hereditary non – polyposis colorectal cancer (HNPCC).

4. Fat. High fat diets, increased meat consumption, particularly unsaturated fat appear to be associated with a high colorectal cancer risk. Olive oil or fish oil reduce the risk.

5. Fiber. High fiber intakes reduce colorectal cancer risk by diluting fecal carcinogens and reducing colonic transit time and the explosure of the mucosa to the potential carcinogens.

6. Calcium. Calcium may protect against colorectal cancer. Calcium moves the binding of bile acids and fatty acids to form inert soaps, and direct effect on the cell cycles resulting in reduced proliferation and increased terminal differentiation of the colonic epithelial cells.

7. Micronutrients and chemical inhibitors, e.g. plant phenol, betacarotene, vitamin E, dithiothiones, flavones, thioethers, carotenoids and selenium which are mainly present in fruits and vegetables. They are protective against with colorectal cancer. Selenium (trace element) is the chemical inhibitor, low selenium increases colorectal cancer risk and high selenium reduces the risk.

8. Alcohol drinks. Daily alcohol drinks, especially beer, have two times the increased risk of colon cancer than non drinks.

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9. Radiation therapy. Post radiation therapy in pelvic cancer is a risk of colorectal cancer. Onset of malignancy changes in 15 years.

10. Ureteric implantation. Patients with ureterosigmoidectomy, produce a high risk of colon cancer up to 500 times. Onset of malignancy changes in 5-14 years.

11.Cholecystectomy. Post cholecystectomy is associated with a higher rate of the right sided colon cancer. Cholecystectomy increases the colonic concentration of secondary bile acids, bile acids are converted to their secondary forms by intestinal bacteria, secondary bile acids are tumor promoters.

12. Diverticulitis disease. Patients with adenomas of diverticulitis disease have three times the increased risk of colon cancer.

13. Physical activity. There is strong evidence that physical activity protects against the development of colon cancer.

Symptoms depend upon the location of tumor including metastasis and complications which are insidious onset of chronic symptoms(75%) , acute intestinal obstruction (18%) and perforation with peritonitis (6.8%).

Symptoms or clinical presentation are rectal bleeding, occult or fresh blood, change in bowel habits, abdominal pain or cramping, a palpable abdominal mass that most frequently occurs from gut obstruction, rectal pain which refers to sciatic nerve or sacral nerve, tenesmus with a feeling of incomplete rectal evacuation that occurs in rectal cancer, boring pelvic pain that occurs in peritoneal metastasis, mucous discharge, unexplained weight loss, anemia, nausia or vomiting, weakness.

Mode of spread are 1) local routes, spread circularly within bowel wall, peritoneal metastasis, 2) lymphatic routes, paracolic gland, lymphatic channel, 3) hematogenous routes, iliac and caval veins, portal vein, Baston' plexus spine, liver metastasis and lung metastasis, 4) Implantation, suture line around colostomy, incision line, anastomotic intraperitoneal. The most common site of distance metastasis is liver (75%), followed by lung(15%), bone or brain (5%).

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Staging of colorectal cancer

	Dukes	Astler- Collert
Tumor (T)		
0= None evident		
is = In situ, limited to mucosa	A	A
1 = Invasion of submucosa	A	A
2 = Invasion of muscularis propria	A	B1
3 = Invasion of subserosa or noperitonealized pericolic fat	B	B2
4 = Invasion of contiguous structures	B	B2
Lymph nodes (N)		
0 = None evident		
1 = 1 – 3 pericolic nodes	C	C1
2 = 4 or more pericolic nodes	C	C1
3 = any nodes along named vessel	C	C2
Metastasis (M)		
0 = None evident		
1 = evidence of Distant metastasis	D	D

Investigation

1. PR examination; a palpable mass in lower rectum or sigmoid colon.

2. Sigmoidoscopic or colonoscopic examination and testing for histologic types of colorectal malignancy.

3. Barium enema.

4. Measurement of tumor markers: CEA (carcinoembryonic antigen) and CA 19-9 (monoclonal antibody defined antigen).

6. Other clinical presentation ; anemia , weight loss , or palpable mass , bowel obstruction or peritonitis.

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Complications

1. Bowel obstruction. colorectal cancer is the leading cause of colon obstruction. It most frequently occurs in adult patients (60 %) which are the left – sided tumors. The mortality rates and recurrence increase in patients with the right – sided colon cancer.

2. Bowel obstruction , acute perforation with peritonitis, abscess and fistula.

3. Active bleeding.

4. Septicemia , especially in cases of occult colonic malignancy and endocarditis with Streptococcal Bolvis.

Treatment

1. Surgery , has been the first choice treatment for early stage of colorectal cancer with adequate margins, regional lymphadenectomy, and restoration of the GI tract in continuity. The bowel resection depends on local tumor growth as shown:

Site – specific surgical approaches in colorectal cancer (Sun Redfield, et al.,1991:195)

Tumor location	Procedure
Caecum , Asscending Colon	Right hemicolectomy with anastomosis.
Hepatic Flexure	Extended right hemicolectomy with anastomosis.
Transverse Colon	Resection of all colon proximasl to the descending colon. A more limited transverse colectomy may also be done.
Splenic Flexure	As with transverse colon lesion , an extensive resection of all proximal colon generally is preferred. Care is taken to avoid an unneccessary splenectomy care adversely affect survival.
Descending Colon	A left hemicolectomy with high ligature of the inferior mesenteric artery and vein.
Sigmoid Colon	Wide sigmoid resection.
Rectum - upper third	Anterior or low anterior resection. Bowel continuity is restorable.
- middle third	Abdominal perineal resection with permanent colostomy or spincter – saving resection.
- lower third	Abdominal perineal resection with permanent colostomy.

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2. Radiation therapy is often the primary modality for cases in which surgery poses an unsuitable risk or is refused by using radiation to a high dose (6000 rad. in six weeks), reduces the tumor size for 50 – 75 % . Radiation therapy may also be employed palliatively to relieve pain , obstruction and hemorrhage.

3. Chemotherapy , is used for patients with advanced stage or resectable tumors who are at risk for recurrence. The combination chemotherapy regimens of colorectal cancer are,

Regimen 1. Five -fluorouracil + leucovorin for four days every four weeks; then two weeks rest , then repeat same regimen continuous one year.

Regimen 2. Five - fluorouracil + leucovorin for five days ; then three weeks rest ; then repeat same regimen continuous one year.

Regimen 3. Chemo – radiotherapy.

Health promoting behaviors of colorectal cancer patients

Health promoting behaviors are the activities which individual or groups perform to health maintenance, health protection and prevention of the risk factors (Kar, 1981,1) or the activities that individual initiates to maintain / increase the level of well being, e.g. rest, regular exercise, good nutritional behaviors and recreation (Palank, 1991: 816).

Kemm & Close defined health promoting behaviors as the activities which aim to prevent illness and be healthier, e.g. selecting good health behaviors , avoidance of some hazards to human life, environmental safety, health protection and disease screening (Tannahill, 1985 cited in Kemm & close, 1995:26-28).

Pender(1996: 34) stated that health promoting behaviors as the activities directed toward increasing the level of well being and self- actualization of a given individual or groups.

Conclusion: health promoting behaviors of colorectal cancer patients are the activities or lifestyles of colorectal cancer patients that promote healthy status, health care to delay the severity of the disease / recurrence prevention or decrease the risk factors of the disease which result in the patients have good health and happy lives

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(maximum health) of individual, family and community. The pattern of health promoting behaviors are, (Pender, 1996)

1. Health responsibility
2. Exercise and physical activity
3. Nutrition
4. Interpersonal relations
5. Spiritual growth
6. Stress management

Health promoting behaviors of colorectal cancer patients according to Pender's Health Promotion Model are as follows,

1. Health responsibility as self care, learning health education, having healthy lifestyles, observation of abnormal signs, annually check up, close follow up, seeking health care and consulting about health problems from health care professionals.

2. Exercise and physical activity are the practical pattern of regular exercise. The colorectal cancer patients should exercise at least three times weekly, 20 minutes for each. Type of exercises includes daily physical activities, e.g. walk up the stairs instead of using elevator, doing household work, etc. The colorectal cancer patients should have regular exercise appropriate to their health conditions at least three times weekly and 20 minutes or more each (Pender,1996:186).

Exercises promote healthy status, relaxation both mental health and muscle. According to Professor Herbert Deris' experimental study of Southern California University, the result showed that exercises even only 15 minutes can relax muscle better than sedatives. The study of Dr. William P. Morgan, psychologist of Arizona University, the result showed that exercises decrease anxiety. Professor Tom Cureton of Illinoils University sent the 2500 questionnaires to ones who had regular exercise , the result showed that exercises increase muscle strength and decrease stress. There was a theory described the effect of exercises to mental health; norepinephine hormone which is released to nerve , it makes one's alertness after exercise. Blood test showed higher norepinephine level in the happy person, lower level in the depress. Endorphine is the mediator, morphine like effect, which is released

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after persistent exercise, e.g. jogging in 20 minutes. Endorphine has analgesic effect, causes calm / comfort and happy. Exercises increase cardiac output and blood supply to tissue and brain which lead to be alert and joyful. Besides, doing exercise, one have to schedule and control mind, when we can exercise as the schedule, make self esteem (Banchun, 1985 : 4-18). The effect of exercises strengthen the cardiac muscle, decreases heart rate, increases stroke volumes and blood supply to tissues (Pumjun , 1982 : 215), decreases peristalsis rate (normally takes 12-24 hours). Moreover, the effect of exercises increase HDL cholesterol level which lead to decrease calories of body weight and increase glucose tolerance.

However, one have to select the type of exercises appropriate to health conditions and capabilities, not to energize and should relax steps after exercises as follows (Prapasanon, 1985 : 77).

1. Warm up, takes 5-10 minutes that aims to have effective breathing, control breathing slower and deeper, more relax while exercise and extend shoulder muscle , thorax and body, e.g. jogging then start running or other activities.

2. The real exercises are sports / athletes. Appropriate exercises increase cardiac output, lung volume and capacities, and muscle strength tolerance. The increased heart rate depends on one's age that calculate by detract one's age from 220, is equal to maximum heart rate in one minute and appropriate heart rate during exercise is 70 % of maximum heart rate. These exercises are quick walking, jogging, swimming, riding bicycles, throwing ball in 15-40 minutes.

3. post-exercise relaxation, leads to adaptation of the body, one should have light exercise as warm up.

Principle of exercises for health :

1. Exercise every parts of the body, e.g. physical exercises, athletes and aerobic exercises.

2. Type of exercises and athletes, should be appropriate to health conditions or age group, e.g. working age : retaining, aging : retarding, as follows,

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Age	Objectives	Type	Exercises	Notice
17-35 years	Maximum efficacy	- need more skill - use energized strength	high level exercise	full strength age group
36-55 years	- health maintenance - relaxation - rehabilitation - can exercise office	- decrease speed - on enjoying - continuously exercises	- swimming - riding bicycles - physical exercises - jogging	- beware of joint diseases - health care in nutrition, body weight, addicts, mental health, rest
Over 56 years	Cure, rehabilitation	light / continuously exercise	- swimming - walking - riding bicycles - physical exercises - Peton	- annually check-up - self care

3. Contraindications for exercises are fever, convalescent stage, early post operative stage, immediate after meal, high temperature, sickness (nausea, dizziness, light headache, dim, short breathing, chest pain, dull pain).

4. Control light or high level of exercises by using heart rate or pulse rate as indicator ; 70 % of heart rate and maximum heart rate calculation. For Thais, use "170" instead of "220" by let one going on exercise until heart rate or pulse rate is 170 per minute, then detract with age as, in case of 58 year old ; 70 % of heart rate is 170-58 = 112 per minute.

3. Nutrition is the individual's dietary habits which have balanced diet and good nutrition, increase quantity of fibers ; whole grains, vegetables and fruits include avoid consuming foods that are the increased risk of colorectal cancer recurrence.

Good nutrition can protect against cancer. Cancer is one of the generative diseases, due to consume imbalance diets, excess free radicals (Banchob, 1999) and can protect against degenerative diseases by changing dietary habits to functional foods which have the following characteristics,

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1. non toxic agents to human life, e.g. chemicals, insecticide, growth hormone, antibiotics in fish or other pets because these chemicals must be detoxified by liver and released free radicals which destroyed cell cycles

2. foods enriched with vitamins and minerals, take roles of antioxidant or super antioxidant.

3. anticancerous diets, are dietary with increase immune which protect against cancer, e.g. vegetables : phytonutrients.

So functional food is natural food with low fat, adequate protein, complex carbohydrate and non salty.

Nutritional behaviors in reducing the risk or recurrence of colorectal cancer.

1. Decreasing intake of fat diets, 30% or less of daily calories intake should be from saturated – fat and unsaturated – fat equally.

2. Increasing intake of dietary fiber, e.g. whole grains, vegetables and fresh fruits. They are rich of vitamins and minerals which result in balanced nutrition (Pender, 1996:212). Vitamins and minerals take role of more effective digestive system, excretory system and mechanism of metabolism throughout human body, decreasing cholesterol levels in the plasma. The important role of fiber is high intake of dietary fiber reduces the risk of colorectal cancer. Low intake of dietary fiber changes the action of fecal bacterial enzyme; reduces binding of bile acids, increases colonic transit time to carcinogens, reduces fecal weight and mass including frequency of fecal excretion. Scientist noted that low fiber diets may predispose to such microfloral activity resulting in higher levels of generated carcinogens. The protective effect of high fiber is reducing colonic transit time and the mutagenic activity.

The term" dietary fiber " means consumable components of vegetables and fruits that are indigestable by the digestive system of human body. The classification is into the insoluble, e.g. lignin, cellulose, hemicellulose and into soluble, e.g. pectin, plant gums and mucillages which are present in fruits and vegetables.

Cellulose, consist of carbohydrates which are the principle components of cell wall and structure of plants. For human body, celluloses are residual diets which prevent constipation by increasing fecal bulk or fecal content. Celluloses are mainly

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present in vegetables and fruits, e.g. plant barks, branches, leaves, especially in nuts, wheat bran and wheat germs.

Hemicelluloses are similar to celluloses which prevent constipation.

Pectin is the kind of carbohydrates with jelly like characteristics. Pectin are present in bananas, oranges, grapes, potatoes, carrots, apples and strawberries. There is strong evidence that pectin protect the formation of gall stones.

Gums and mucillages are used in food products as ingredients (sauces, cookies, etc.) that manufactured by industries. Other gums, gum from oats are useful for human, and the so- called ‘ karayagum’.

Ligin is the portion of plant barks which increasing with age, non- carbohydrate dietary fiber. Its components is phenol propane with tolerance to acids, alkaline, and high temperature. Lignin takes role of reducing intestine free radicals and is mainly in whole grains, oats, bran, seeds, berries, strawberries, bean sprouts, cabbages, tomatoes, etc.

Daily intake of dietary fiber should be 30 – 35 grams.

Sources of dietary fiber : bran is rich of many kinds of dietary fiber , cellulose, hemicellulose, and pectin. Wheat bran or corn bran prevent constipation. Corn bran decreases LDL cholesterol, triglycerides

Anticancerous diet, American Committee on Nutrition and Cancer suggested that brassica or cruciferous vegetables contain anticancerous substances, beta-carotene and vitamin C such as broccoli, Chinese Kali, Chinese cabbage, brussels sprout, cabbage, cauliflower, carrot, raddish or Chinese raddish, celery, and spinach by eating these vegetables more than once or twice a week.

3. Increasing intake of calcium and vitamin D3, intake of calcium 1500 mg. per day for female and 1800 mg. per day for male reduce colorectal cancer risk. Calcium moves the binding of the fatty acids and free bile acids to form insoluble calcium soaps and is excreted. By taking of calcium with 1,25-dihydroxy vitamin D3 400 IU or 10 microgram per day which reduces the risk of osteoporosis, hypertension and hyperlipidemia.

4.Avoidance of the consumption of cooked foods at high temperature with

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high flame or high surface temperature can generate mutagens such as polycyclic aromatic hydrocarbons(PAHs), heterocyclic amines(HCAs) and dicarbonyl compounds. Fat with these methods of food preparation generate PAHs.Amino acids, proteins and peptides cooked at high temperature e.g. steaming, boiling, stewing, frying , roasting, grilling, broiling and barbecuing generate (HCA s). Carbohydrates cooked at high temperature with high flame or under fermentation generate dicarbonyl compounds. So the methods of food preparation with intense heat over a direct flame and fat dropping on the hot fire contain mutagens. Even more fatty foods, prolong toasting, grilling, broiling or barbecuing ; the more PAHs and HCAs are present. Baking hams at temperature up to 370 celcius degree contain PAH s 43 ppb, which are benzo (a) pyrene 2.6 ppb. While non fat hams or no fat dropping with the same method contain PAHs 2.8 ppb. and no benzo (a) pyrene. Proteins, frying with a pan or wok at temperature at 200 – 300 c degree increase mutagens up to 5 times while frying at 100 c degree , mutagens are not present. Mutagenic activity occurs rapidly in the first 6 minutes of frying at 200 c degree , even continuous frying 10 – 25 minutes, no more mutagens. Mutagens are present equally in the meat and its gravy for 40 % and 10 % in the fumes. Eating salt dried fries meats 150 grams per day contain HCAs 4 microgram or 50 nanogram per Kilogram body weight but when using the product of meats as gravy have up onefold to mutagens. For human carcinogenesis : mutagens , resulting in DNA – Adducts which are the initiation of carcinogenic activity with the predisposing factors (gene mutation), grow to oncotic cells and progress to be malignant.

However who are healthy, can destroy toxins. For prevention and decreasing the risk factors from cooked foods consumption are as follows:

1. Decrease heavily cooked foods with these methods of preparation , high temperatures and high flame, high surfaces temperature, a burned meat or carbohydrate surface, fat dropping on hot surfaces e.g. smoked, baking, frying, toasting , grilling , roasting and barbecuing.

2. Avoid cooked food with direct flame, should wrap with aluminum foil.

3. If microwave is available , should warm meats or cooked meats for 1-3 minutes, pour out the remaining liquid because it contains *creatinine* that causes HCA.

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4. Disuse the remaining liquid from meat frying to cook gravy because it contains mutagens equally to fried meat.

5. Mix soybean in meats before frying with high temperature, decrease HCA.

6. Consuming vegetables and fruits or fresh vegetables/fruits juice e.g. cabbage, broccoli , green pepper, eggplant, apple ,pineapple, ginger and mint leaf contain the agents in which decrease mutagens from cooked foods with high temperature. Vegetables and fruits are non – nutrient compounds : blocking or suppressing agents that protect against with cancer. Blocking agents are aromatic isothiocyanates, flavones, tannins, organosulfides by inhibit carcinogenic activity on target sites. Suppressing agents are inositol, hexaphosphate, aromatic isothiocyanates by inhibit neoplastic process, not progress to be malignant. For some agents are able to be blocking and suppressing agents.

4. Interpersonal relations are the personal interaction behaviors to have good relationship , both give and receive that provide comfort, assistance, of being accepted, love and value , consulting and solving problems resulting in successful coping and promote satisfying and effective living or healthy lifestyle. Good relationship makes contact easily and enjoy being involved with other people, provides appropriate support such as advice, willing , mental or financial support that make self esteem, be proud, relax, coping, appropriate adaptation which result in health promoting behaviors performance (Pender, 1996 : 255-259). Family (the natural support system) support has more influence in health maintenance, give mental support, concern illness and health information resulting in motivate health promoting behaviors performance. So colorectal cancer patients should have interaction with family members or others ; friends, peers, companions and health professionals in order to receive health information/education or advice for health promoting behaviors performances.

5. Spiritual growth is the behavior that individuals believes in the results of effective living , achievement of life goals , love , peace , life satisfaction , self care and helping for other people as the ability to develop spiritual to its fullest potential including the ability to articulate one s life goals, eager to perform activity in life satisfaction, belief, learn how to experience love, peace, hope , forgive and belief in a

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life after death (Pender, 1996 : 132), death is the total non-functioning of the physical body.

Feeling of lost after received colorectal diagnosis abundant suffer on the patients if they don't accept or adapt for the disease which lead to distress, pain , sorrow, physical and mental sufferings, hopeless, threaten ,fear , confuse, low self esteem because of less ability in taking roles of themselves. So the CRC patients must to perform health promoting behaviors in order to health maintenance and recurrence prevention resulting in mental health, acceptance of up-date situations, positive thinking, flexible to vary situations and are able to accept the nature of life by religions support : a common set of beliefs about the purpose of life, tradition of worship to enhancing the spiritual dimension of health. According to right understanding about the teachings or the Buddha Doctrine " The fourth Noble Truth", showing that man can attain enlightment by his own effort by following a way of light called " the Middle Way or The Noble Eightfold Path " that leads to the cessation of pain; right views, right intention, right speech, right action, right livelihood, right effort, right mindfulness and right concentration ". The Buddhist life and world view or different realities / all realities of our daily life can be summed up in three characteristics, they are; anicca: transitoriness or impermanency, dukka: pain or sufferings, and annata: non-self. These three characteristics have permeated the thought of all Buddhists. To have a right view, is to perceive the nature of life; it is changeable as human life span ; birth , aging, illness and death . Nobody can avoid sufferings. Thus , everybody should ready for life events. Through knowing all realities as they are. Right understanding or wisdom is the most beneficial in life that one should apply the teachings in one's life as best as one can

6. **Stress management** , the personal behaviors in reducing or fighting stress by having appropriate psychological expression e.g. positive thinking , humor , forgive , patience , relaxation , recreations , exercise , changing environment , daily living and taking care of family members. Stoppard (1988::58) suggested that healthy person has effective stress-coping by being alert to the stressors or

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life events and using relaxation technique. Modes of intervention for stress management consist of :

1. Changing environment / living , time management , good nutrition , no smoking or drinking alcohol , exercise , already existing cause of stress and tension , effective coping with stress throughout the life span , good relationship , relaxation and rest.

2. Change the appropriate and self acceptance e.g. positive thinking , good idea , lawfulness , cognitive coping.

3. Learn and develop in stress-coping or stress management by various methods such as relaxation technique mediation , praying , breathing training , biofeedback , autogenic training.

Besides using relaxation technique , meditation : aims at producing a state of perfect mental health , equilibrium , tranquility , cleansing the mind of impurities / disturbances and cultivating such qualities as concentration , awareness , intelligence , will , energy , confidence , leading to the attainment of wisdom which sees the nature of things as they are. The strategies of relaxation are : (Suksrewong, 1998 : 133 – 193)

1. General technique , do as one's desire with appropriate time such as exercise , listen to radio , reading , music , etc.

2. Practice for relaxation , is the specific technique / practice in aspect such as progressive muscle relaxation, imaginary , visualization , self – hypnosis , breathing – training , autogenic training , biofeedback , massage , aromatherapy.

3. Practice for producing a state of perfect mental health ; meditation , yoga , chi – kong , ti – keg , etc.

As mentioned, six dimension of health – promoting behaviors performances on colorectal cancer patients are so significant , resulting in health maintenance and living well with the disease. Thus, nurses motivate on patients having health – promoting behaviors in order to recurrence prevention and be healthier. Furthermore , there are influencing factors which the researcher studied on

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perceived benefits of action in health – promoting behaviors, sense of coherence, demographic characteristics , which are :

Perceived benefits of action in health – promoting behaviors

Anticipated benefits of action are mental representations of the reinforcing consequences of a behavior. The motivational importance of anticipated benefits is based on personal or post experience in increasing the concerning of possible benefits or positive outcome expectations. Thus , perceived benefits may impact differently on the initiation of behaviors versus the consistent performances of behaviors. (Palank , 1991 : 821) Such as perceived benefits of appropriate nutrition , balanced diet , decrease the daily fiber intakes as cereals , roots and tubers , fresh vegetables and fruits (the brassica or cruciferous vegetable , broccoli , carrot , etc.) avoidance of cooked foods at high temperature with high flame or high surface temperature. There are several studies found that perceived benefits of action in health – promoting behaviors had a significantly positive correlation with health – promoting behaviors. Nirattataradorn (1996: 89) found that perceived benefits of action in health – promoting behaviors had a positive correlation with health – promoting behaviors in adolescent pregnant woman at a statistically significant level of .001 (r = .413) Junchanakij (1998:91) found that perceived benefits of action in health – promoting behaviors had a positive correlation with health – promoting behaviors in COPD patients at a statistically significant level of .001 (r = .484). Intaranukulkij (1993: 73) found a positive relationship with health behaviors in peptic ulcer patients. Pongpoka (1991: 57) found a positive correlation with health behaviors in prevention of viral B hepatitis at a statistically significant level of .001 (r = .367)

Sense of coherence (SOC)

Sense of coherence is the core concept of the salutogenic model of health's Aron Antonovsky . Israeli medical – sociologist. The sense of coherence

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is a very major determinant of maintaining one's position on the health case / disease continuum and of movement toward the health end. Health status depends upon the stressors , reinforcing from environment and ability to against with stress. Individuals should respond to the stressors in maintenance health , using generalized resistant resources and other supports. Sense of coherence is the important support , the individual characteristics in appropriate solving problems and stress manageability.

Antonovsky concluded from the studies , observation , data analysis by interviewing 51 case of injury refugees , found that the healthy refugees perceived were aware of life events / the world as predictable , comprehensible, reasonable , having manageable supports , challenges , which was valuable or meaningful to management.

Antonovsky focused on sense of coherence is a global orientation that expresses the extent to which one has a pervasive , enduring though dynamic feelings of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured , predictable and explicable , the resources are available to one to meet the demands posed by these stimuli and these demands are challenges , worthy of investment and engagement. Sense of coherence consists of three core components :

1. Comprehensibility is indeed the well – defined , explicit core of the original definition. It refers to the extent to which one perceives the stimuli that confront one , deriving from the internal and external environments, as making cognitive sense , as information that is ordered , consistent , structured , and clear . The person high on the sense of comprehensibility expects that stimuli he or she will encounter in the future will be predictable or , at the very least , when they do come as surprises , that they will be orderable and explicable . It is important to note that nothing is implied about the desirability of stimuli . Death, war ,and failure can occur, but such a person can make sense of them .

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2. Manageability and as the extent to which one perceives that resources are at one 's disposal which are adequate to meet the demands posed by the stimuli that bombard one. " At one's own control or to posed" may refer to resources under one's own control or to resources controlled by legitimate others-one's spouse, friends and colleagues, God, history, the party leader, a physician-whom one feel one can count on, whom one trusts. To the extent that one has a high sense of manageability, one will not feel victimized by events or feel that lift threat one unfairly. Untoward things do happen in life, but when they do occur, one will be able to cope and not grieve endlessly.

3. Meaningfulness as a participant in the processes shaping one's destiny as well as one's daily experience. The meaningfulness refers to the extent to which one feels that life makes sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are " welcome" rather than burdens that one would much rather do without. The unhappy experiences are imposed on such a person, he or she will willingly take up the challenge, will be determined to seek meaning in it, and will do his or her best to overcome it with dignity.

Personal factors influencing health – promoting behaviors of colorectal cancer patients

Age. Orem (1985:225) said that age is an indicator of maturity and experience that makes people response differently to the situation. It has been found that age has a relationship with the level of development and experience that also affects people show their endurance, understand the problems, give the reason and decide how to perform the behaviors. Several studies found that age has an effect on health behaviors, others found it did not, Pender (1996: 68) said that age influences cognition and predicts health behaviors. Different ages have also been reported to influence health- promoting behaviors where the higher the age, the higher tendency is to practice more consistent patterns of behaviors (Palank, 1991: 822). Yarchiski & Mahon (1989: 89) suggested that younger people usually are stronger and hence they

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often do not care much about their health Kaekoungwan (1995: 893) said that older people tended to have decreasing ability and became more depend on others. According to Barker & Less (1996: 92), higher age also influenced food choices. But there is the conflict from the results of the studies Incomp (1995: 73) found that there is no relationship between age and health-promoting behaviors in the elderly with coronary heart disrease on this matter. Pavili (1992:98) found that age had no relationship with self care of post cardiac valvular replacement patients. Palank (1991: 823) concluded that age could predict health-promoting behaviors.

Gender can identify social differentials. The effect is that the women generally feel that their ablity is less than that of the men and hence must depend on the men as well as having more limitations on their activities than the men (Hantor & Piclett, 1984: 44). Most studies on the relationship of gender and health behaviors in adults reported that there is a tendency for women to engage in more health promotional activities than men (Hubbard & Muhlenkamp, 1984: 266). Visutrikul (1997: 81) found that men have a higher risk to increase coronary heart disease than women. Thus, it can be seen that gender-specific has influence on difference in behaviors. In addition, Suwanaroop (1999: 151) found that gender did not make significant contribution to the explanation of health promoting lifestyles.

Martial Status having spouses gives an individual a sense of security in emotion, strength, and companionship and as well as having someone to take care of them, it can encourage health- promoting behaviors in nutrition. Relationships with spouses provide a model for lifestyle change, controls and constraints on behaviors (i.e. peers may support healthy or unhealthy eating behaviors). Since spouse ties are not necessarily all beneficial, a negative dimension to social relationships should also be considered.

Education is vital for development of knowledge, skills and attitudes toward self care (Orem, 1985: 175). Education is the way to understand knowledge information learn about disease and treatment and using skills for solving problems. Thus individuals tend to be able to practice health correctly (Orem, 1985: 120) Those with high education have more opportunity to search for the useful things which are

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supportive to perform health-promoting behaviors. While those with loser education well have the limitation in learning and searching for the knowledge and experience of good health behaviors or solving the problems about the cause of the disease and medical treatment (Pender, 1992 : 161-162). Years of formal education do not emerge as a significant predictor variable. Several studies found education level was correlated with health promoting behaviors at a statistically significant level (Yamjanchai ,1996:45; Panthong, 1997: 36, Pasunum, 1986:76) In contrast, some studies found that education had no correlation with health promotion behaviors such as in the elderly with hypertension and COPD patients (Sumpunya, O., 1996: 102; Krurt, S., 1996: Kor)

Occupation can be both an encouraging factor as well as a barrier to health promoting behaviors. People who work will have income and hence are able to acquire things that are useful in healthy behaviors. On the other hand, certain occupation can create emotional stress to the patients as they do not have time to take care of their diet due to time constraints (Hanujarernkul, 1993:137). Palank (1991: 822) concluded that non professional also demonstrated a higher level of promoting behavior. Thitisuk, H. (1998: 71) found that occupation had negative correlation with health behavior in women with hypertension; however, in the study of Sumpunyu (1996: 103) it was found that different occupation makes no difference in health promoting behaviors in the elderly with hypertension.

Income is a demographic factor which indicates socioeconomic status which is associated with health promoting behaviors, because income is the factor that influence support of the basic needs of a person as well as helping the person to have well being (Oren, 1985: 175). Moreover, those people on low income may have a diet that is high in fat and sugar and consume more manufactured food, but they generally get better nutritional value for their money than those on high income (Barker & Lees, 1991: 422). According to the study of Meekusol (1999: 75), it was found that family income could predict the food consumption behavior of adolescents in Bangkok .

Duration of Illness is factor that has effects on self adaptation and learning in life. Prolongation of illness helps a person in being able to adapt and have self-

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efficiency and have quality of life (Kottket, 1982: 62), the colorectal cancer patients will be threatened both physically and mentally. When the person gets sick, he or she has to search for health service in order to save their life and to health maintenance. The duration of illness is an experience of the person particular to his or her disease. It affects the opinion in response to the illness and the learning of health-promoting behaviors performance according to the doctor's recommendations. The duration of the treatment will help the patients to learn how to cope with the problem. Also, it helps the patient to have good self adjustment, self confidence for self care and the ability to cope with stress and its correct relief (Bell, 1994: 137 cited in Chantapet, 1993: 53). The study of Limpanavas(1988) studied the hemiparalysis patients and the neck and brain cancer patients, it was found that the duration of the treatment had a statistically significant positive relationship with self care. Yimvilai (1981) studied patients with asthma found a relationship between the duration of illness and self care but it was non statistically significant. In addition, the patients will receive treatment and knowledge for good practice; hence, the patients would behave in a more healthy way. According to Chalardsuntornwatee (1996: 72) it was found that duration of illness is correlated with self-care behaviors in MI patients. On the contrary, Pavilai, (1992: 100) found that duration of illness had no correlation with self-care behavior in valvular heart surgery patients.

Summary literature review

The related literature reviewing, it was found that the colorectal cancer patients have physical, mental, emotional and social changes. These make the patients to understand, concern, accept and perform appropriate health-promoting behaviors resulting in living well with normal life or good quality of life. In addition, they have perceived benefits of action in health-promoting behaviors, nevertheless having sense of coherence, will be owner components to motivate health promoting behaviors performances continuously. For personal factors such as age, gender, education, marital status, income and duration of illness found that they were direct/indirect affect to health-promoting behaviors performances of colorectal cancer patients. Since

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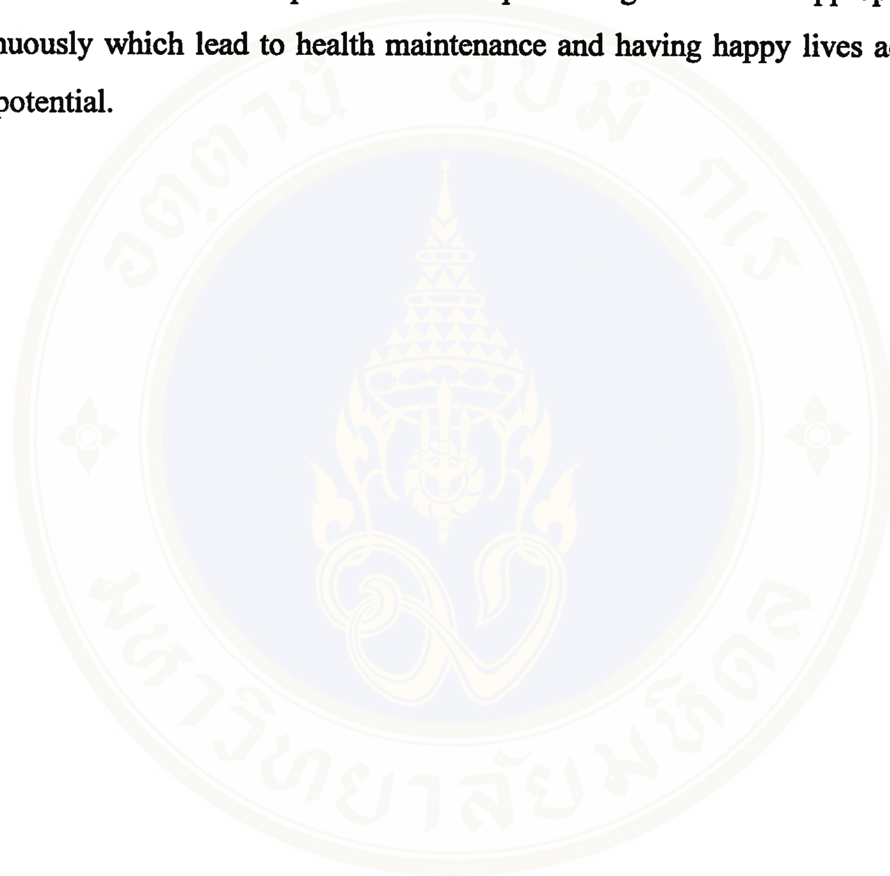
the mentioned factors have never been intensively conducted on colorectal cancer patients. Therefore, the researcher interested to study the factors influencing health promoting behaviors performances of colorectal cancer patients and using the results as a guideline in planning health promotion intervention to increase the perceived benefits of action in health-promoting behaviors and sense of coherence. These can create the motivation to perform health-promoting behaviors appropriately and continuously which lead to health maintenance and having happy lives according to their potential.



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CHAPTER III
METHODOLOGY

Research Design

A descriptive research design was used to study sense of coherence, perceived benefits of action in health-promoting behaviors and health-promoting behaviors on colorectal cancer patients.

Population and Sample

The population of this study consisted of 120 adult patients who had been medically diagnosed as colorectal cancer, proved by histologic studies, and received colorectal cancer diagnosis and followed up at the outpatient department of colorectal, surgery and tumor clinics at Siriraj Hospital, Chulalongkorn Hospital and National Cancer Institute by purposive sampling technique. The inclusion criterias were: a) aged 15 - 70 years; b) no acute stage or severe complications; and c) willingness to participate in the study and able to communicate in Thai.

The sample size was calculated by using the formula: $n > 10 (k + 2)$; where n = the number of the sample, k = the total number of variables (Biddle & Martin, 1987). In this study, there were 9 variables,i.e., age, gender, education, marital status, income, number of months since perception of colorectal cancer diagnosis, sense of coherence, perceived benefits of action in health-promoting behaviors and health-promoting behaviors. Hence, $n > 10 (9 + 2) = 110$, the sample size should be at least 110. In this study, 120 colorectal cancer patients were recruited.

Instrumentation

1. The demographic questionnaire, included age, gender, education, marital status, income, number of months since perception of colorectal cancer diagnosis.

2. The health-promoting behaviors questionnaire, was applied by the researcher from Health-Promoting Life Style profile-II (HPLP-II) (Walker, et.al., 1996) which based on Pender's health promotion model and the health-promoting

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behaviors questionnaire in peptic ulcer patients(Suvakon Tongdonbom, 1998). It consisted of six dimensions of question items, totally 34 items.

1. Health responsibility	6 items, number	1 – 6
2. Physical activity	2 items, number	7 – 8
3. Nutrition	9 items, number	9 – 17
4. Interpersonal relations	5 items, number	18 – 22
5. Spiritual growth	7 items, number	23 – 29
6. Stress management	5 items, number	30 - 34

The scores items were ranged on the continuum with values from 1 to 4. The positive items were number 1-8, 10, 12, 13, 15, 16, 18-34 and were scored 4, 3, 2, 1, respectively. On the other hand , the negative items; 9, 11, 14, 17; were scored the opposite way. The answers were organized into 4 levels as follows,

Routinely practice is defined as the patient performs this behavior everyday.

Frequently practice is defined as the patient performs this behavior 4-6 days/week.

Rarely practice is defined as the patient performs this behavior 1-3 days/week.

Never practice is defined as the patient never performs this behavior.

The score means are interpreted into 4 levels as follows,

1.00 – 1.75	:	Poor
1.76 – 2.55	:	Fair
2.56 – 327	:	Good
3.28 – 4.00	:	Excellent

Possible total scores ranged from 34 –136. Higher scores indicate more health-promoting behaviors.

3. The perceived benefits of action in health-promoting behaviors questionnaire, was developed by the researcher which based on Pender's HPM(1996). It consisted of 17 positive items.

The answers were organized into 4 levels as,

Extremely agree is defined as the patient extremely agrees with this behavior.

Average agree is defined as the patient average agrees with this behavior.

Little agree is defined as the patient little agrees with this behavior.

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Disagree is defined as the patient does not agree with this behavior.

Possible total scores ranged from 17 –68. Higher scores indicate more perceived benefits of action in health-promoting behaviors.

4. The sense of coherence questionnaire, was developed by Antonovsky in 1987 and translated into Thai by Hanucharoekul in 1989. It consisted of 29 items, was formatted in 7- point Likert scale. The positive items were number 2, 3, 7, 8, 10, 13, 14, 16, 18, 20, 22, 23, 26, 27, 29. The negative items were number 1, 4, 5, 6, 9, 11, 12, 15, 17, 19, 21, 24, 25, 28. Possible total scores ranged from 29-203.

The sense of coherence questionnaire, Antonovsky verified the content validity by 4 experts. It was used in 26 studies on Israels, Americans, Canadians, etc., and the total Cronbach's alpha coefficients were between .85 -.97. Hanucharoenkul, et.al., (1989) studied on 30 subjects(staff nurses)and 230 subjects(educator nurses, head nurses and supervisor nurses), the Cronbach's alpha coefficients were .85 and .90. Suthaveresan(1992)used the sense of coherence questionnaire translated by Hanucharoenkul for measuring burn out in 146 critical care nurses, the Cronbach's alpha coefficient was .90. Klinhom (1997) studied on 90 family caregivers with schizophrenia, the Cronbach's alpha coefficient was .94. Sucamvang (1997) adapted this instrument by using 7-point rating scale and studied on 150 osteoarthitis elderly, the Cronbach's alpha coefficient was .90.Chevapoonphon(1998)studied on 200 family caregivers of advanced cancer patients, the Cronbach's alpha coefficient was .83.

In this study, the researcher used the sense of coherence questionnaire translated by Hanucharoenkul and adapted the answers into 5- rating scale as,

Extremely agree is defined as the patient extremely agrees with this performance.

Average agree is defined as the patient average agrees with this performance.

Little agree is defined as the patient little agrees with this performance.

Average disagree is defined as the patient average disagrees with this performance.

Extremely disagree is defined as the patient extremely disagree with this performance.

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Possible total scores ranged from 29 – 145. Higher scores indicate stronger sense of coherence.

29 – 68	scores mean sense of coherence is low.
69- 108	scores mean sense of coherence is moderate.
Over 108	scores mean sense of coherence is high.

Validity and Reliability of the instruments

Content validity of this study had been approved by a nursing professor specialist in health-promotion model, a nursing professor specialist in surgical oncology, an oncologist nurse specialist in surgery, and a surgeon specialist in gastroenterology.

After being revised the questionnaires according to the validators' recommendation. The instruments were tested within 20 colorectal cancer patients. After that reliability was tested. The Cronbach's alpha coefficients for health-promoting behaviors, perceived benefits of action in health-promoting behaviors and sense of coherence were .92, .93, .89, respectively.

Data Collection

The research proposal was submitted and approved by the Faculty of Nursing, Mahidol University. The recommendation of the Dean of the Faculty of Graduate Studies, Mahidol University was sent to the Directors and the Nurse Directors of Siriraj Hospital, King Chulalongkorn Memorial Hospital and National Cancer Institute. Data were collected on the following processes :

1. The researcher contacted the director of three hospitals by using formal letters from the Faculty of Graduate Studies to explain the purpose and procedures of the study, and asked for their collaboration, as the time frame:

King Chulalongkorn Memorial Hospital	-colorectal clinic	Monday	8.00-12.00
National Cancer Institute	- tumor clinic	Tuesday	7.30-12.00
Siriraj Hospital	-surgery clinic	Wednesday	8.00-12.00
	-tumor clinic	Thursday	8.00-12.00
King Chulalongkorn Memorial Hospital	-tumor clinic	Monday	8.00-12.00

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2. The researcher selected eligible subjects. Firstly, the patients with hospital diagnosis of colorectal cancer who confirmed with histologic studies and perceived diagnosis, were sought from OPD card and screened for eligible subjects according to the inclusion criteria. All eligible subjects were approached and before the data had been collected, the researcher explained the purpose of the study, the data collection processes and protection of human subjects.

3. The subjects who volunteered to participate in this study were interviewed by the researcher with questionnaires as follows: the demographic data, the health-promoting behaviors, the perceived benefits of action in health- promoting behaviors and the sense of coherence, respectively. The interview process was conducted at a suitable and convenient place.

Protection of Human Subjects

Before the interview, the participants were informed of the purposes of the study and their right to participate or not. the participants were also about the duration of the interviewing process and their freedom to discontinue participation at any time. The collecting data was treated as confidential and presented as a group data.

Data Analysis

Data were analyzed by using SPSS / PC, as follows:

1. Demographic data were reported by using descriptive statistics; frequency distribution and percentage.

2. Health-promoting behaviors were reported by mean and standard deviation in each item, subscale and all.

3. Perceived benefits of action in health- promoting behaviors and sense of coherence were reported by mean and standard deviation.

4. The correlation between all variables ; age, gender, marital status, education, income, duration of illness, sense of coherence, perceived benefits of action in health- promoting behaviors, and health- promoting behaviors were analyzed by Pearson's correlation.

5. Find out the predictor variables by using the stepwise multiple regression analysis.

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CHAPTER IV

RESULTS

A descriptive research was used in this study. The purpose was to study sense of coherence, perceived benefits of action in health-promoting behaviors and health-promoting behaviors on colorectal cancer patients. The subjects were 120 patients come to follow up at the out patient department of surgery clinics, tumor clinics and colorectal clinic of Siriraj Hospital, king Chulalongkorn Memorial Hospital and National Cancer Institute. The results were presented in 4 parts as follows,

1. Demographic characteristics.
2. The details of health-promoting behaviors on colorectal cancer patients.
3. The relationship among the predictor variables and health promoting behaviors on colorectal cancer patients.
4. The prediction of age, gender, education, income, marital status, duration of illness, sense of coherence, perceived benefits of action in health-promoting behaviors to health-promoting behaviors on colorectal cancer patients.

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Part 1 Demographic characteristics

Table 1 Demographic data (N = 120)

Characteristics		Number	Percentage
Gender	male	63	52.50
	Female	57	47.50
Age (yrs.)	20-29	1	0.80
	30-39	9	7.50
	40-49	19	15.80
	50-59	25	20.80
	60-70	66	55
Marital Status	married	100	83.30
	Single	7	5.80
	Widow	9	7.50
	Divorced, separated	4	3.30
Education	no formal education	18	15
	Primary	71	59.20
	Secondary	14	11.70
	Certificate, diploma	9	7.50
	Bachelor degree	8	6.70
Religion	Christ	1	0.83
	Islam	2	1.68
	Buddhism	117	97.50
Occupation			
No occupation		64	53.30
	stay at home without work	39	60.90
	doing house works	25	39.10
Occupation		56	46.70
	Government officer	4	7.10
	Commerce	23	41.10
	Employee	20	35.70
	Agriculture	9	16.10

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Table 1 Demographic data (N = 120) (cont.)

Characteristics		Number	Percentage
Income	< 6000	73	60.80
	6001-12000	34	28.30
	12001-18000	10	8.30
	> 18000	3	2.50
Economic status	inadequate with debt	35	29.20
	adequate without saving	76	63.30
	adequate with saving	9	7.30
cost responsibility	totally reimbursed	37	30.80
	totally self paid	28	23.30
	social welfare	55	45.80
History of cancer,	no	109	91
	Yes (specify)	11	9
	Billiary tract/younger brother	1	9.09
	Breast/mother	1	9.09
	Cervix/aunt	1	9.09
	Colorectal/elder brother (1), Mother (2) son (1), uncle (1)	5	45.60
	Esophagus, mother	1	9.09
	Lymphoma /elder sister	1	9.09
	Uterus/mother	1	9.09
Duration of illness (months)			
	1-3	57	47.50
	4-6	15	12.50
	7-9	4	3.40
	10-12	5	4.10
	>13	39	32.50

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Table 1 Demographic characteristics(n = 120) (cont.)

Characteristics			Number	Percentage
Cancer sites, caecum			4	3.30
	Ascending colon		7	5.80
	Hepatic flexure		1	0.80
	Transverse colon		3	2.50
	Splenic flexure		4	3.30
	Descending colon		5	1.50
	Sigmoid colon		25	20.80
	Rectosigmoid colon		19	15.80
	Rectum		52	43.30
Histologic Studies				
	Well differentiated adenocarcinoma		36	63.33
	Moderately differentiated adenocarcinoma		38	31.67
	Poorly differentiated adenocarcinoma		5	4.17
	Mucin producing		1	0.83
Stage	Dukes'	A	0	0
		B	39	32.50
		C_1	37	30.80
		C_2	21	17.50
		D	23	19.20

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Table 1 shows that 52.50 % of the subjects were male. More than half of the subjects were aged 60-70 years (55 %). Most subjects were married (83.30 %) and had finished primary level (59.20 %). Most subjects were Buddhism (97.50 %). More than half of the subjects had no occupation (53.30 %) and were stay at home without work (60.90 %). The occupation were commerce (41.10 %). The most of the subjects had income lower than 6000 Bath per month. For economic status, most of the subjects (60.80 %) had adequate income without saving (63.30 %). More than half of the subjects received social welfare for cost responsibility (45.80%). The subjects had no cancer history (91%). The subjects with colorectal cancer history of family members were presented in 45.60%. The duration of illness which lower than 3 months was 47.50%. The most of the subjects (43.30%) had been medically diagnosed as rectal cancer. The subjects with confirmed histologic studies were well differentiated adenocarcinoma (63.33%). The subjects were in the stage of Dukes' B (32.50%).

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Part 2 Health promoting behaviors of CRC patients

Table 2 Mean, standard deviation, and mean interpretation of health promoting behaviors of colorectal cancer patients in each aspect and over all.

Health- promoting behaviors	$\bar{X}$	S.D.	Interpretation
Health promoting behaviors in each aspect			
- Health responsibility	3.02	0.57	Good
- Physical activity	2.21	0.89	Fair
- Nutrition	3.20	0.39	Good
- Interpersonal relations	3.04	0.43	Good
- Spiritual growth	3.44	0.37	Excellent
- Stress management	3.21	0.53	Good
Over all health promoting behaviors	3.12	0.38	Good

Table 2 shows the mean of the overall health-promoting behaviors score was at a good level. Considering in each aspect, almost the mean of health-promoting behaviors scores were at good levels except the mean of physical activity score was at a fair level and the mean of spiritual growth score was at an excellent level.

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Part 3 The relationship among the predictors and health promoting behaviors on colorectal cancer patients

Table 3 Correlation coefficient among the predictors and between predictors and criteria showed in correlation matrix

Variables	1	2	3	4	5	6	7	8	9
1. Age	-								
2. Gender	.000	-							
3. Education	-.292***	-.259	-						
4. Income	-.127	.004	.475***	-					
5. Marital status	.101	.232*	-.147	-.097	-				
6. Duration of illness	.092	-.011	-.043	.093	.007	-			
7. Sense of coherence	-.070	-.165	.232*	.190*	.050	-.124	-		
8. Perceived benefits of action	-.053	-.081	.437***	.211	-.126	.063	.484***	-	
9. Health promoting behaviors	-.003	-.056	.272**	.190*	-.095	.061	.514***	.694***	-

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

Table 3 shows that education, income, sense of coherence and perceived benefits of action had positive relationship with health promoting behaviors at a statistically significant level ($r = .272$, $p < .01$; $r = .190$ $p < .05$; $r = .514$ $p < .001$; $r = .694$ $p < .001$; respectively). Moreover, it was found that positive relationship among predictors such as education and sense of coherence with perceived benefits of action at a statistically significant level ($r = .437$ $p < .001$; $r = .484$ $p < .001$; respectively), education and income with sense of coherence at a statistically significant level ($r = .232$ $p < .05$; $r = .190$ $p < .05$).

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Part 4 The prediction of age, gender, education, income, marital status, duration of illness, sense of coherence, perceived benefits of action in health promoting behaviors to health promoting behaviors on colorectal cancer patients.

Table 4 Multiple correlation coefficients between predictors and health promoting behaviors on colorectal cancer patients by stepwise multiple regression analysis

Steps	Variables	Multiple R	R^2	F	b	SE	Beta	t
1	Perceived benefits of action	.694	.481	109.447	1.401	.134	.694	10.462^{***}
2	Perceived benefits of action							
	Sense of coherence	.723	.523	10.258	.245	.077	.234	3.203^{**}
Constant (a) = 29.751 SE = 7.374 ; Overall F = 64.143								

$^{**}p < .01$ $^{***}p < .001$

Table 4 shows that in step 1 of the stepwise multiple regression analysis, the first selected predictor to the equation was perceived benefits of action in health promoting behaviors due to its great of correlation with health-promoting behaviors to which a predictive coefficient of .481, that is perceived benefits of action could predict health promoting behaviors of 48.10% at a statistically significant level of .001.

In step 2, the predictor selected to the equation was sense of coherence. It was found that increased the predictive coefficient to .523 which can predict health promoting behaviors up to 52.30% at a statistically significant level of .01. However, when adding other predictors in further steps of the analysis, it was found that the predictive coefficient differ insignificantly. The analysis is then terminated in step 2.

From the stepwise multiple regression analysis, it was found that the predictors could predict health promoting behaviors at a statistically significant were perceived benefits of action and sense of coherence. These both predictors could jointly explain the variation of health promoting behaviors of 52.30% at a statistically significant level of .01

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CHAPTER V

DISCUSSION

This was a descriptive study to study sense of coherence, perceived benefits of action in health - promoting behaviors, personal factors which were age, gender, education, income, marital status, duration of illness and health - promoting behaviors of colorectal cancer patients. The results of the study were discussed according to the objectives and hypotheses as follows:

The health - promoting behaviors of colorectal cancer patients

The study found that the overall health - promoting behaviors of colorectal cancer patients was at a good level with a mean of 3.12 and S.D. of 0.79. The reason may be that the subjects were adults and lived with family members. Families or care givers can support the patients physically and emotionally. Pender (1996:69) stated that the family provided the best supports to the patients to feel worthy and to encourage positive behaviors. When considering each aspect of health promoting behaviors, it was found that spiritual growth was at an excellent level, stress management, nutrition, interpersonal relations and heath responsibility were at good levels and physical activities was at a fair level. The aspects of health promoting behaviors of colorectal cancer patients are discussed as follows:

Spiritual growth, with a mean of 3.44 and S.D. of 0.37, the score of this behavior was excellent. The reason may be that most of the subjects were elderly (55%) and respected Buddhism (97.50%). The elderly interest in seeking peace, learning to accept the truth of life and prepare to devote to the others. In addition to the belief in Buddhism emphasizes the truth or nature of life is changeable, prepare to meet the death by practice meditation or make up the mind in peace which the elderly should perform, so the score of this behavior was excellent. The result of

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the study agreed with Incomp, 1997: 65-66) who found that the elderly with coronary heart disease had this behavior at an excellent level.

Stress management, with a mean of 3.21 and S.D. of 0.53. The reason may be that most of the subjects had no occupation, homework performances, lived in extended families and were married (83.30%) resulting in supports and help from family members and relatives which lead to family happiness; could help them manage or solve the problems and reduce sufferings. Including family support is the best support to patients to feel being loved, care, worthy and make self esteem. These clues will bring the patients to have the self confidence to cope with sufferings or problems and manage stress successfully, so the score of this behavior was good.

Nutrition, with a mean of 3.20 and S.D. of 0.39, the score of this behavior was at a good level. The reason may be that most of the subjects getting advice how to improve nutrition and having good nutritional behavior; all subjects who followed up at the hospital received advice from health care professionals. When considering each item of health promoting behaviors in nutrition, it was found that the subjects routinely practiced in quitting smoking; no alcohol drinks, tea, coffee; and getting complete five essential elements diets. The result of the study agreed with Incomp, (1997:65-66) who found that the elderly with coronary heart disease had this behavior at a good level, Hantrakul and Sakmani (1997:32) who found that the elderly had appropriate nutritional pattern, and Vilailert (1993:52) who found that the elderly had good health behavior in nutrition.

However, it was found that one part of the subjects had inappropriate health-promoting behaviors in nutrition such as cooked foods with high flame and high temperature because they got used to like those foods, still smoking due to anxiety and could not quit. They drank alcohol due to socialization with friends 2-3 day/week. Some people may have few drinks at home. The reason why the subjects had inappropriate health-promoting behaviors in nutrition if getting nutritional management that they didn't have knowledge and misunderstand the nutritional system . There is no information seriously about foods that are the risk of colorectal cancer. They lacked of supports from expertise people to give advice. Their illness

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and anxiety also one factor that kept them away from doing so. Some people lacked information and basic knowledge about prevention of the disease. Some lacked of research about how to prevent the illness for improvement their health. According to Jalowice and Power (Jalowic and Power, 1981:10-15), high education will make a person understand the importance to bring knowledge and experience for benefit of good health. They seemed to solve the problems better than low educated people.

Interpersonal relations, with a mean of 3.04 and S.D. of 0.43, the score of this behavior was at a good level. The subjects always received love and warm welcome from closed friends, family members; there are many advice from family members. Most of colorectal cancer patients developed the interpersonal relations. Most of them lived with their closed relatives while being at the hospital for check up /follow up. They felt well and were proud of themselves to be accepted in their family. This feeling helped them solve the problems better.According to Kompayak and Naranong (1989:18) found that social support had positive relationship with health status and health behavior, Sakbanditsakul (1998:65) found that social support had positive relationship with health - promoting behaviors of female workers in the factory at Saraburi province.

However, some of the subjects did not have good interpersonal relations, they just reasoned that they had no time, need to rest because of so tried, weak, fatigue, some had side effect from cancer treatment. If the colorectal cancer patients receive family support, the health care professionals will also help the patients to continue to receive family support / other supports or getting good interpersonal relations in order to continuously perform health-promoting behaviors.

Health responsibility, with a mean of 3.02 and S.D. of 0.57, the score of this behavior was at a good level. The reason may be that the subjects were the elderly , concerning to take care of their health, seeking for health information about diseases, treatments, prognosis and curing and how to perform correctly. They close followed up the medical advice because they believed that it relieves the illness and the illness could be treated and cured if they can get early treatment and taking care of health. For example, asking the doctor what they can eat and cannot eat . The subjects

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followed exactly their doctor's order and appointment and adjusted to the side effect of chemotherapy and radiotherapy, according to Hankittikul (1996:151), who found that the advice from health care professionals had positive relationship with health-promoting behaviors on the elderly.

Physical activity, with a mean of 2.21 and S.D. of 0.89, the score of this behavior was at a fair level, this was the least score among all factors. It is the fact that the subjects did not exercise at least 3 times a week with a mean of 2.21 and S.D. of 0.89 and they reasoned it out that they had to cook by themselves, sitting up and walking around the house, could be enough for them. They should rest and did simple activities like, singing and visiting other friend, temples and relatives. Moreover, They also had drug side effect like nausea, vomiting, weak, fatigue and being discomfort. They believed that they had to rest , so the score of this behavior was fair.

The relationship among sense of coherence, perceived benefits of action in health-promoting behaviors, personal factors and health-promoting behaviors of colorectal cancer.

Sense of coherence

This study is shown that the strong sense of coherence had a positive relation ship with health promoting behavior of colorectal cancer patients ($p<.001, r = 0.514$) which supporting the hypothesis. It meant that the colorectal cancer patients had strong sense of coherence and performed appropriately with health-promoting behaviors. According to the concept of Antonovsky (1982) who said that the important factor to be in maintenance health and well- being. When the colorectal cancer patients has strong sense of coherence and know the cause of the disease , being cured or healthier. The patients had to be treated for a long period of time. They had to take good care of their health they must learn how to relieve anxiety, fears, sadness, and pain. The patients who had strong sense of coherence will feel good confidence that they can fight and force with the disease. There is hopeful to be cured. This necessary for the patients to take care their health status , solve the

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problems correctly by getting health -promoting behaviors. The strong sense of coherence will induce the patients to perform routinely health -promoting behaviors as healthy lifestyle.

Perceived benefits of action in health - promoting behaviors

It is showed that with perceived benefits of action showed a positive relationship with health promoting behaviors of colorectal cancer patients(r = .694, P< .001). The positive relationship means that colorectal cancer patients who had high perceived benefits tend to have good health promoting behaviors . And those who had low perceived benefits tend to have poor health promoting behaviors . Pender (1996 : 65) explained that in deciding what is best for one's health , he or she would have to learn the benefits of the behavior in order to behave accordingly . Palank (1991 : 84) also found that perceived benefits of action showed a positive relationship with health – promoting behaviors of coronary heart disease patients. Thongpila (1999:71) and Janchanakij (1998 : 91) who found that perceived benefits of action showed positive relationship with health promoting behaviors.

Income

Income showed relationship with health promoting behaviors of colorectal cancer patients at a statistically significant level(r = .190, p<.05) but it could not predict health promoting behaviors of colorectal cancer patients. This may be because income had an internal relationship with other variables such as education (r = .475, p<.001).

With a relationship at a statistically significant level of 0.05, it means that high income earners will have good health promoting behaviors where as low income earner will have poor behaviors. Accordingly Orem (1985: 175) stated that income could influence the basic needs of each person so will improve his or her living standards. The study showed that most of the patients (76%) had sufficient income either through their own earnings , supports from their relatives and receiving social welfare. Incomp (1998:74) found that income showed a relationship with health promoting behaviors of the elderly with coronary heart disease patients at a statistically significant level of 0.01. However, this study was not in line with the study by Suwannaroop.(1999:121) which found that income showed a relationship

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with health promoting behaviors in senior citizens at a non statistically significant level of 0.05.

Education

Education showed a relationship with health promoting behaviors of colorectal cancer patients at a statistically significant level of 0.01 (r = .272) but it could not predict the health promoting behaviors. This may result from education had an internal relationship with other variables such as income, sense of coherence and perceived benefits of action in health promoting behaviors.

With a positive relationship at a statistically significant level of 0.01, it means that colorectal cancer patients who had higher level of education tended to have good health promoting behaviors. In other hand, who had low education tended to have poor health promoting behaviors. Accordingly Orem (1985: 120) said that education is the source of intellectual, which enables understanding of news and facts about the method for cure and lead to good and correct behaviors. Pender (1982: 161-162) said that the higher education, the more opportunity to learn experience as well as better job and higher income. This leads to more opportunity to obtain things that can accommodate health promoting behaviors. This study was in line with the studies undertaken by Incomp(1997:72) which found that education had a positive relationship with health promoting behaviors at a statistically significant.

In conclusion, by using the stepwise multiple regression, variables which could explain the changes in health promoting behaviors of colorectal cancer patients were perceived benefits of action and sense of coherence up to 52.30 % at a statistically significant level of .04 (Table 4). This is in line with Pender's framework which stated that perceived benefits of action had influences over the health promoting behaviors while personal data only had partial effects. The other changes of 47 % which cannot be explained under this study may be caused by other factors which have influence over the health promoting behaviors but were not included in this study such as perceived self efficacy, activity – related affect, interpersonal influences, situational influences, and commitment of action.

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CHAPTER VI

CONCLUSION

Summary of the study

This was a descriptive study which studied health-promoting behaviors of colorectal cancer patients and the power to predict the behaviors among gender, age, marital status, education, income, duration of illness, perceived benefits of action in health-promoting behaviors and sense of coherence. The sample population used in this study was colorectal cancer patients who had been treated at the outpatient department and colorectal clinics at Chulalongkorn Hospital, National Cancer institute and Siriraj Hospital during 1 September 1999 to 28 February 2000 and comprised of 120 patients The instruments were demographic data questionnaire, health-promoting behaviors questionnaire, perceived benefits of action in health-promoting behaviors questionnaire, sense of coherence questionnaire which had been validated by experts. Also the reliability of the questionnaire was calculated using the Cronbach Alpha Coefficient formula. Reliability were 0.92, 0.93 and 0.89 for the questionnaire on health-promoting behaviors, the questionnaire on perceived benefits of action in health-promoting behaviors, and the questionnaire on sense of coherence, respectively. The complied data was then analyzed through computer program SPSS./ PC.

The findings of the study are as follows:

1. Most of the colorectal cancer patients were male, aged between 61 to 70 years old, being Buddhism, married, completed primary school, did not work, earned less than 6,000 Bath per month, had sufficient income without saving, could get reimbursement or paid their medical costs through social welfare. In addition, lived with their families, had caregivers at home and had been diagnosed for 1 to 3 months Physicians were the most common source of health information and most colorectal cancer concern about benefits of action in health-promoting behaviors.

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2. It was found that the colorectal cancer patients had the overall health-promoting behaviors score of 3.12, S.D. = 0.39 at a good level. Spiritual growth was at an excellent level. Stress management, nutrition, interpersonal relations and health responsibility were at good levels. For physical activity was a fair level.

3. Perceived benefits of action in health-promoting behaviors and sense of coherence can jointly predict health-promoting behaviors of colorectal cancer patients of up to 52% at a statistically significant level of 0.001.

Implications and Recommendation

Suggestion application for nursing practice

It was found in this study that most colorectal cancer patients had overall health-promoting behaviors at a nearly good level. Hence the patients should be encourage to increase the behaviors to the level of good or very good. The behavior which was considered nearly poor, was physical activity. The researcher would like to make the following suggestions to encourage health-promoting behaviors as follows: Nurses should be realize the sense of coherence and perceived benefits of action in health-promoting behaviors of colorectal cancer patients by assessing the behaviors that they think will be benefits to health-promoting behaviors in the patients in order to work with the patients to in creases such benefits.

1. There should be an assessment on health-promoting behaviors of colorectal cancer patients so that the data can be used to plan health- promotion intervention and educate the colorectal cancer patients according.

2. Nurses should produce booklets which provide knowledge about health-promoting behaviors in order to helping the patients to perform appropriate health-promoting behaviors.

3. There should be a cancer club / fellow at the hospital where on the physicians' appointment day, patients are free to ask any questions to physicians or nurses as well as share experiences among the patients, in consultation with health care professionals.

4. Hospital should have a nurse educator or consultant at OPD.

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Suggestion for education

Students who undertake a study of colorectal cancer patients should be emphasize learning the ways that can prevent colorectal cancer as well as caring for patients through health-promoting behaviors.

Suggestion for further studies

1. There should be a study program that encourage health-promoting behaviors specially for colorectal cancer patients in which Pender' s theory can be referred to.

2. There should be a study on other variables that have influences on health-promoting behaviors in colorectal cancer patients such as perceived self efficacy, factors for health service system, health pattern of living, situational influences factors and interpersonal influences factors which suggest appropriate health-promoting behaviors.

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APPENDIX

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APPENDIX A

List of Experts

There are four experts who validated the content of the demographic data record, the health-promoting behaviors questionnaire, the perceived benefits of action in health-promoting behaviors questionnaire and the sense of coherence questionnaire for colorectal cancer patients. They are:

1. Assoc. Prof. Phongsri Srimorakot

   Department of Surgical Nursing,

   Faculty of Nursing, Mahidol University

2. Dr. Nantavan Suvannaroop

   Department of Public Health Nursing,

   Faculty of Nursing, Mahidol University

3. Ms. Sadudee Rojanapirom

   Unit manager of 72 / 7 Male Surgical Building, Division of Nursing,

   Department of Surgery Services, Siriraj Hospital

4. Assist. Tanyadej Nimmanvuttiipong, M.D.

   Division of Gastrointestinal Surgery,

   Department of Surgery Services, Siriraj Hospital

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APPENDIX B

Inform consent sheet

My name is Nattaya Suteerawut, a graduate-nursing student at the Faculty of Nursing, Mahidol University. I am interested in studying health-promoting behaviors of colorectal cancer patients, factors influencing health-promoting behaviors; personal factors, perceived benefits of action in health-promoting behaviors, sense of coherence. You are a person whom I believe that are able to participate in this study and if you volunteer to participate in this study, you will be asked to complete four questionnaires composed of the demographic data questionnaire, the health-promoting behaviors questionnaire, the perceived benefits of action in health-promoting behaviors questionnaire and the sense of coherence questionnaire which will take about 30 minutes.

You are free to withdraw at any time. Your care at this hospital will not be Influenced by your decision to either participate or not participate in this study. You may not directly gain any benefits from this study, but the result from this study will improve the quality of nursing care.

Your personal information will be kept confidential. If you have any questions now or at any time during the study, please feel free to ask or discuss them with me. If you agree to participate, please sign this form. Thanks for your cooperation.

Nattaya Suteerawut

Investigator

The inform has been explained and I am willing to participate in this study.

Signature ....

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THAI TRANSLATION FORM

Inform consent sheet

แบบฟอร์มการยินยอมและพิทักษ์สิทธิของผู้วิจัย

ดิฉันนางสาวนาฏยา สุธีรวุฒิ นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังศึกษาเกี่ยวกับพฤติกรรมการดูแลสุขภาพของผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนัก และปัจจัยที่เกี่ยวข้อง โดยมีวัตถุประสงค์เพื่อเป็นแนวทางในการส่งเสริมสุขภาพของผู้ป่วยมะเร็งลำไส้ใหญ่และทวารหนักให้ดียิ่งขึ้น ท่านเป็นผู้หนึ่งที่จะช่วยให้ข้อมูลที่เป็นประโยชน์ ดังนั้นดิฉันขอรบกวนเวลาในการตอบคำถามเกี่ยวกับการดูแลสุขภาพในระหว่างที่ป่วยด้วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก แบบสอบถามประกอบด้วยข้อมูลส่วนบุคคล พฤติกรรมส่งเสริมสุขภาพ การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริม สุขภาพและความเข้มแข็งในการมองโลก ซึ่งจะใช้เวลาประมาณ 30 นาที ท่านมีสิทธิที่จะปฏิเสธหรือยกเลิกการเข้าร่วมการวิจัยได้ตลอดเวลา โดยไม่มีผลกระทบต่อการดูแลรักษาที่ท่านได้รับแต่อย่างใด ผลการศึกษาครั้งนี้จะนำผลมาใช้ในการปรับปรุงการพยาบาลผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนักให้มีคุณภาพดียิ่งขึ้น

ข้อมูลที่ได้รับจากท่านดิฉันจะเก็บเป็นความลับและนำมาใช้ในการศึกษาครั้งนี้เท่านั้น หากท่านมีข้อสงสัยประการใดๆในระหว่างสัมภาษณ์ ท่านมีสิทธ์ที่จะซักถามดิฉันได้ ขณะสัมภาษณ์ท่านมีสิทธิที่จะตอบรับหรือปฏิเสธการสัมภาษณ์ได้ตลอดเวลา โดยไม่มีผลกระทบต่อการดูแลและรักษาที่ท่านได้รับแต่อย่างใด ท่านจะยังคงได้รับการดูแลรักษาจากเจ้าหน้าที่โรงพยาบาลเป็นอย่างดี ถ้าท่านตกลงที่จะเข้าร่วมการศึกษา กรุณาลงชื่อในแบบฟอร์มนี้ ขอขอบพระคุณที่ท่านกรุณาสละเวลาให้สัมภาษณ์ในครั้งนี้

นาฏยา สุธีรวุฒิ
ผู้ดำเนินงานวิจัย

สำหรับผู้เข้าร่วมงานวิจัย

ดิฉันกระผม ได้รับการอธิบายข้อมูลเกี่ยวกับการศึกษาครั้งนี้เรียบร้อยแล้ว และมีความยินดีที่จะให้ความร่วมมือในการศึกษาครั้งนี้

ลงชื่อ..

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APPENDIX C

- Demographic data questionnaire
- Health-promoting behaviors questionnaire
- Perceived benefits of action in health-promoting behaviors questionnaire
- Sense of coherence questionnaire

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APPENDIX C

Research Instruments

เลขที่แบบสัมภาษณ์..................

โรงพยาบาล...........................

วันที่.................................

" แบบสัมภาษณ์ความเข้มแข็งในการมองโลก การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพและพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก"

คำชี้แจง

แบบวัดนี้มีวัตถุประสงค์เพื่อศึกษาความเข้มแข็งในการมองโลก การรับรู้ประโยชน์ของการมีพฤติกรรมส่งเสริมสุขภาพ และพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก โดยแบ่งเป็น 4 ส่วน ดังนี้

ส่วนที่ 1 ข้อมูลส่วนบุคคลของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

ส่วนที่ 2 แบบวัดพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

ส่วนที่ 3 แบบวัดการรับรู้ประโยชน์ของการส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

ส่วนที่ 4 แบบวัดความเข้มแข็งในการมองโลกของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

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ส่วนที่ 1 ข้อมูลส่วนบุคคล

1. เพศ [ ] ชาย [ ] หญิง
2. อายุ.............ปี ศาสนา..............
3. สถานภาพสมรส [ ] โสด [ ] คู่ [ ] หม้าย [ ] หย่า / แยกกันอยู่
4. ระดับการศึกษา...............................
5. อาชีพ..
6. ท่านมีรายได้ประมาณ............บาท / เดือน รายได้นั้นได้รับจาก.............
7. ความเพียงพอของรายได้ [ ] เพียงพอ [ ] มีเงินออม [ ] มีหนี้สิน
8. วิธีจ่ายค่ารักษาพยาบาล

   [ ] เบิกต้นสังกัด [ ] สังคมสงเคราะห์

   [ ] จ่ายค่ารักษาพยาบาลเอง [ ] ประกันสังคม / บัตรประกันสุขภาพ
9. บุคคลในครอบครัวของท่านเจ็บป่วยเป็นโรคมะเร็งหรือไม่

   [ ] ไม่มี [ ] มี (ระบุ)................ชนิดของโรคมะเร็ง........................
10. ระยะเวลาเจ็บป่วย.............. เดือน

ข้อมูลสุขภาพ

CANCER SITES
[ ] CAECUM
[ ] ASCENDING COLON
[ ] HEPATIC FLEXURE
[ ] TRANSVERSE COLON
[ ] SPLENIC FLEXURE
[ ] DESCENDING COLON
[ ] SIGMOID COLON
[ ] RECTOSIGMOID COLON
[ ] RECTUM

HISTOLOGIC STUDIES
[ ] WELL DIFFERENTIATED ADENOCARCINOMA
[ ] MODERATTELY DIFFERENTIATED ADENOCARCINOMA
[ ] POORLY DIFFERENTIAED ADENOCARCINOMA
[ ] MUCIN PRODUCING

STAGE
[ ] DUKES' A [ ] DUKES' B [ ] DUKES' C1 [ ] DUKES' C2 [ ] DUKES' D

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ส่วนที่ 2 แบบวัดพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

คำชี้แจง แบบวัดนี้มีวัตถุประสงค์เพื่อต้องการทราบการดูแลสุขภาพของท่าน ในระหว่างเจ็บป่วยด้วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก ขอให้ท่านอ่านข้อความแต่ละข้อทางด้านซ้ายมือแล้วพิจารณาว่าท่านได้ทำตามข้อความนั้นมากน้อยเพียงไร จากนั้นทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับสิ่งที่ท่านทำ

ปฏิบัติสม่ำเสมอ	หมายถึง	ผู้ตอบมีพฤติกรรมหรือปฏิบัติกิจกรรมในเรื่องนั้น ๆ สม่ำเสมอ หรือทุกวันหรือทุกครั้ง
ปฏิบัติบ่อยครั้ง	หมายถึง	ผู้ตอบมีพฤติกรรมหรือปฏิบัติกิจกรรมในเรื่องนั้น ๆ บ่อยครั้ง หรือเป็นส่วนมาก
ปฏิบัตินาน ๆ ครั้ง	หมายถึง	ผู้ตอบมีพฤติกรรมหรือปฏิบัติกิจกรรมในเรื่องนั้น ๆ นาน ๆ ครั้งหรือบางครั้งหรือบางวัน
ไม่ปฏิบัติเลย	หมายถึง	ผู้ตอบไม่มีพฤติกรรมหรือไม่ปฏิบัติกิจกรรมในเรื่องนั้น ๆ เลย

แบบวัดพฤติกรรมส่งเสริมสุขภาพผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

ข้อความ	ปฏิบัติ สม่ำเสมอ	ปฏิบัติ บ่อยครั้ง	ปฏิบัติ นาน ๆ ครั้ง	ไม่ปฏิบัติ เลย
1. ท่านอ่านข่าวสาร ฟังวิทยุ ดูโทรทัศน์ที่เกี่ยวกับโรคที่ท่านเป็นอยู่				
2. ท่านสังเกตอาการ.........				
3. ท่านเล่าอาการ.........				
4. ท่านปรึกษา.........				
5. ท่านมารับ.........				
6. ท่านรับ.........				
....				
34. ท่านยอมรับ.........				

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ส่วนที่ 3 แบบวัดการรับรู้ประโยชน์ของการส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

คำชี้แจง แบบวัดนี้มีวัตถุประสงค์เพื่อต้องการทราบความคิดเห็นของท่านที่มีต่อการดูแลสุขภาพของท่านเอง ขอให้ท่านอ่านข้อความแต่ละข้อทางด้านซ้ายมือ แล้วพิจารณาว่าท่านเห็นด้วยกับข้อความนั้นมากน้อยเพียงไร จากนั้นทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความคิดเห็นของท่าน

เห็นด้วยอย่างยิ่ง หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านมากที่สุด

เห็นด้วยค่อนข้างมาก หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านเป็นส่วนมาก

เห็นด้วยน้อย หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นหรือความจริงที่เกิดขึ้นกับผู้ตอบเพียงเล็กน้อย

ไม่เห็นด้วย หมายถึง ข้อความในประโยคนั้นไม่ตรงกับความคิดเห็นของท่าน

แบบวัดการรับรู้ประโยชน์ของการปฏิบัติพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคมะเร็งลำไส้ใหญ่และทวารหนัก

ข้อความ	เห็นด้วยอย่างยิ่ง	เห็นด้วยค่อนข้างมาก	เห็นด้วยน้อย	ไม่เห็นด้วย
1. การติดตามข่าวสารข้อมูลเกี่ยวกับโรคที่ท่านเป็นอยู่จะทำให้ท่านดูแลสุขภาพของตนเองได้ดีขึ้น				
2 ท่านเห็นประโยชน์.........				
3. การหลีกเลี่ยงอาหาร..........				
....				
17. ท่านเห็นด้วย..................				

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ส่วนที่ 4 แบบวัดความเข้มแข็งในการมองโลก

คำชี้แจง แบบวัดนี้มีวัตถุประสงค์เพื่อต้องการทราบความคิดเห็นของท่านเกี่ยวกับการมองชีวิตในแง่มุมต่างๆ ขอให้ท่านอ่านแต่ละข้อความทางด้านซ้ายมือ แล้งพิจารณาว่าท่านเห็นด้วยกับข้อความนั้นมากน้อยเพียงไร จากนั้นทำเครื่องหมาย ✓ ช่องที่ตรงกับความคิดเห็นของท่าน

เห็นด้วยอย่างยิ่ง หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านมากที่สุด

เห็นด้วยค่อนข้างมาก หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านมาก

ไม่แน่ใจ หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านเพียงครึ่งหนึ่ง

ค่อนข้างไม่เห็นด้วย หมายถึง ข้อความในประโยคนั้นตรงกับความคิดเห็นของท่านเพียงเล็กน้อย

ไม่เห็นด้วยอย่างยิ่ง หมายถึง ข้อความในประโยคนั้นไม่ตรงกับความคิดเห็นของท่าน

ข้อความ	เห็นด้วยอย่างยิ่ง	เห็นด้วยค่อนข้างมาก	ไม่แน่ใจ	ค่อนข้างไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1. เมื่อท่านพูดคุยกับคนอื่น ท่านมีความรู้สึกว่าคนอื่นไม่เข้าใจท่าน					
2. เมื่อท่านต้องการ..................					
3. นอกเหนือจาก....................					
29. ท่านรู้สึกว่า ท่านสามารถควบคุมสถานการณ์ต่างๆในชีวิตได้					

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APPENDIX D

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Quantity of fiber in vegetables and fruits (gram / 100 grams)

Vegetables	Fiber
Chinese cabbage	1.80
Cabbage	1.60
Chinese chive	3.90
Young corn	2.20
Chinese kale	3.20
Celery	2.70
Cauliflower	2.20
Shallot	2.70
Cucumber	1.30
Mung bean sprout and other sprouts	2.20
Long bean	3.80
Winged bean	2.90
Sugar pea	3.30
Broccoli	2.90
Angled gourd	1.00
Watercress	4.50
Water minosa	5.30
Water spinach	3.80
Chines while cabbage	1.60
Lettuce	1.80
Coriander	3.00
Caspicum	9.90
Chilli spur peper	5.50
Sweet peper	3.20
Waxgourd	1.70
Tomato	1.70
Chinese better gourd	2.80
Asparagus	2.80

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Vegetables	Fiber
Onion	1.60
Chinese radish / radish	1.70
Auricularia mushroom	7.90
Garlic	4.70
Banana (Nam-va) (ripe)	2.50
Holy basil	4.30
Thai copper pod	8.22
Cha-plu leaves	6.90
Cha-om	3.90
Ivy gourd	2.22
Bottle gourd	1.70
Hairy basil	3.50
Pumpkin	1.80
Plate brush egg-plant	13.60
Snake egg-plant	2.30
Mango (green)	2.70
Papaya (green)	2.60
Papaya (ripe)	1.30
Neem tree	11.60
Pineapple	1.20
Sweet basil	3.90
Hog plum	11.50
Sapodella	8.10
Indian mulbery	4.00
Guava	3.70
Durian (Cha-ne)	4.10
Indian penny wort	1.60
Groundnut	2.00
Mung bean or green gram	1.00
Soybean	4.80

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BIOGRAPHY

NAME	Ms. Nattaya Suteerawut
DATE OF BIRTH	29 April 1965
PLACE OF BIRTH	Trang, Thailand
INSTITUTIONS ATTENDED	Nakonratchasima Boromarajonani College of Nursing, 1984-1988 Bachelor of Nursing. Mahidol University, 1997-2001 Master of Nursing Science
POSITION & OFFICES	1988-Present, Department of Surgery, Male-Surgical Ward, Nopparatrajathanee Hospital Position: Registered Nurse

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