แบบจำลองเชิงสาเหตุของคุณภาพชีวิตในผู้ติดเชื้อเอช ไอ วี

นางฐิติอาภา ตั้งค้าวานิช

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาพยาบาลศาสตรดุษฎีบัณฑิต
สาขาวิชาพยาบาลศาสตร์
คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2549

CAUSAL MODEL OF QUALITY OF LIFE
IN PERSONS LIVING WITH HIV/AIDS

Mrs.Thitiarpha Tangkawanich

A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy Program in Nursing Science
Faculty of Nursing
Chulalongkorn University
Academic year 2006

Thesis Title	CAUSAL MODEL OF QUALITY OF LIFE IN PERSONS LIVING WITH HIV/AIDS
By	Thitiarpha Tangkawanich
Filed of study	Nursing Science
Thesis Advisor	Associate Professor Jintana Yunibhand (Ph.D., RN.)
Thesis Co-advisor	Associate Professor Sureeporn Thanasilp (DNS., RN.)
Thesis Co-advisor	Professor Joan K. Magilvy (Ph.D., RN., FAAN.)

Accepted by the Faculty of Nursing, Chulalongkorn University in Partial Fulfillment of the Requirements for the Doctoral Degree

Yupin Aungsuroch ……………Dean of the Faculty of Nursing

(Associate Professor Pol. Capt. Yupin Aungsuroch, Ph.D., RN.)

THESIS COMMITTEE

Somchit Hanucharurnkul ……………Chairman

(Professor Somchit Hanucharurnkul, Ph.D., RN.)

……………Thesis Advisor

(Associate Professor Jintana Yunibhand, Ph.D., RN.)

……………Thesis Co-advisor

(Associate Professor Sureeporn Thanasilp, DNS., RN.)

Joan K. Magilvy ……………Thesis Co-advisor

(Professor Joan K. Magilvy, Ph.D., RN., FAAN.)

Nonglak Wiratchai ……………Member

(Professor Nonglak Wiratchai, Ph.D.)

Yupin Aungsuroch ……………Member

(Associate Professor Yupin Aungsuroch, Ph.D., RN.)

ฐิติอาภา ตั้งค้าวานิช: แบบจำลองเชิงสาเหตุของคุณภาพชีวิตในผู้ติดเชื้อเอช ไอ วี (CAUSAL MODEL OF QUALITY OF LIFE IN PERSONS LIVING WITH HIV/AIDS)
อ. ที่ปรึกษา : รศ.ดร. จินตนา ยูนิพันธุ์, อ.ที่ปรึกษาร่วม : รศ. ดร. สุรีพร ธนศิลป์ อ.ที่ปรึกษาร่วม : ศ. ดร. โจน เค แมคกิลวี่ 160 หน้า

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อทดสอบความสัมพันธ์เชิงสาเหตุระหว่างอายุ ระยะโรค การได้รับยาต้านไวรัส แรงสนับสนุนทางสังคม ประสบการณ์อาการ กลวิธีการดูแลตนเอง และคุณภาพชีวิต โดยใช้กรอบแนวคิดจากโมเดลการจัดการกับอาการของดอดส์และคณะ (Dodd et al. 2001) กลุ่มตัวอย่างคือผู้ติดเชื้อเอช ไอ วี ที่อาศัยในจังหวัดเชียงราย จำนวน 422 คน เครื่องมือที่ใช้ในการวิจัยได้แก่ บันทึกข้อมูลส่วนบุคคล แบบวัดการรับรู้แรงสนับสนุนทางสังคม แบบสอบถามประสบการณ์อาการ แบบสอบถามกลวิธีการดูแลตนเอง และแบบสอบถามคุณภาพชีวิต วิเคราะห์ข้อมูลโดยใช้โปรแกรม SPSS และโปรแกรม LISREL

ผลการทดสอบโมเดล พบว่าแบบจำลองเชิงโครงสร้างมีความสอดคล้องกับข้อมูลเชิงประจักษ์ ประสบการณ์อาการ มีอิทธิพลโดยตรงทางลบต่อคุณภาพชีวิต ($\beta = -0.74$, $p < 0.05$) และกลวิธีการดูแลตนเอง มีอิทธิพลโดยตรงทางบวกต่อคุณภาพชีวิต ($\beta = 0.62$, $p < 0.05$) ส่วน อายุ แรงสนับสนุนทางสังคมและการได้รับยาต้านไวรัส มีอิทธิพลโดยตรงทางบวกต่อคุณภาพชีวิต ($\beta = 0.66$, $p < 0.05$, $\beta = 1.50$, $p < 0.05$, $\beta = 0.80$, $p < 0.05$) ตามลำดับ การได้รับยาต้านไวรัส มีอิทธิพลโดยตรงทางบวกต่อกลวิธีการดูแลตนเอง ($\beta = 0.15$, $p < 0.05$) นอกจากนี้พบว่า แรงสนับสนุนทางสังคมและ การได้รับยาต้านไวรัส มีอิทธิพลโดยอ้อมต่อคุณภาพชีวิตโดยผ่านกลวิธีการดูแลตนเอง และโมเดลสามารถอธิบายความแปรปรวนของคุณภาพชีวิตได้ร้อยละ 56

ผลการศึกษาครั้งนี้แสดงให้เห็นว่าแรงสนับสนุนทางสังคม และ การได้รับยาต้านไวรัส เป็นปัจจัยสำคัญต่อคุณภาพชีวิตในผู้ติดเชื้อ เอช ไอ วี ผลการวิจัยเป็นแนวทางในการกำหนดนโยบายและการพัฒนาแนวปฏิบัติ เพื่อส่งเสริมให้ผู้ติดเชื้อ เอช ไอ วี มีคุณภาพชีวิตที่ดียิ่งขึ้นต่อไป

ภาควิชา........พยาบาลศาสตร์............ลายมือชื่อนิสิต..
ปีการศึกษา....2549.............................ลายมือชื่ออาจารย์ที่ปรึกษา..........................
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม ....สุรีพร ธนศิลป์....
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม ....Joan K. Magilvy....

#4577974636: NURSING SCIENCE
KEY WORD: QUALITY OF LIFE/ SYMPTOM EXPERIENCE/ SELF- CARE STRATEGIES/ HIV/AIDS

THITIARPHA TANGKAWANICH: CASUAL MODEL OF QUALITY OF LIFE IN PERSONS LIVING WITH HIV/AIDS.
THESIS ADVISOR: ASSOC. PROF. JINTANA YUNIBHAND,
THESIS COADVISOR :ASSOC. PROF. SUREEPORN THANASILP,
THESIS COADVISOR :PROF. JOAN K. MAGILVY, 160 pp.

The purpose of this study was to examine the causal relationship between age, stage of disease, antiretroviral treatment, social support, symptom experience, self-care strategies and quality of life base on symptom management model (Dodd et al. 2001). The subjects were 422 persons living with HIV/AIDS in Chiangrai province. A set of questionnaires were used, composed of personal data form, the Personal Resource Questionnaires 85 (PRQ 85), Symptom Experience Questionnaire, Self-Care Strategies Questionnaire, and Quality of Life Questionnaire. Data were analyzed by using SPSS and LISREL.

The goodness of fit indices indicated that the model fit with the data. The results revealed that symptom experience had a significant negative direct effect on quality of life (β = - 0.74, $p < 0.05$) and self-care strategies had a significant positive direct effect on quality of life (β = 0.62, $p < 0.05$). Age, social support and antiretroviral treatment had a significant positive direct effect on quality of life ($\beta = 0.66, p < 0.05, \beta = 1.50, p < 0.05, \beta = 0.80, p < 0.05$), respectively. Antiretroviral treatment had a significant positive direct effect on self care strategies ($\beta = 0.15$, $p < 0.05$). Moreover, social support and antiretroviral treatment had indirect effect on quality of life via self-care strategies. The model accounts for a 56% of variance on quality of life.

The finding indicated that social support and antiretroviral treatment were the significant factors of quality of life. The results in this study suggested for policy makers and develop intervention to enhance quality of life in persons living with HIV/AIDS in the future.

Field of study...Nursing Science.... Student's signature...Thitiarpha Tangkawanich
Academic year....2006.............. Advisor's signature.........................
Co-advisor's signature.........................
Co-advisor's signature...Joan K. Magilvy

ACKNOWLEDGEMENT

I would like to express my sincere gratitude and deep appreciation to my dissertation committee for their continued support until completing this study. Assoc. Prof. Jintana Yunibhand, the major advisor, has given me her knowledge and challenged me to grow as a researcher. Assoc. Prof. Sureeporn Thanasilp and Prof. Joan K. Magilvy, my co-advisors have provided their guidance in building the conceptual framework for this study and provided valuable suggestions which helped me more understand. Prof. Mary Blegen, my mentor, who advice and suggested my dissertation while I studied at school of Nursing, Colorado University Health Science Center.

My gratefulness goes to all experts who gave their helpful suggestions, Prof. Somchit Hanucharurnkul, and Assoc. Prof. Prakong Intrarasombat who always support; provide kind, encouragement and advice the helpful information. Asst. Prof Pikul Nanthachaiphan provided the quality of life instrument and examined the content validity of the instruments, and Dr. Patcharee Khuntipong who examined my instruments. Prof William Bill Holzemer, Prof. Clarann Weinert, Dr. Somjai Puttapitukol, who kindly granted me permission for using their instruments in this study.

My appreciation also goes to Assoc. Prof. Yupin Angsuroch, who advised the valuable comments. Prof. Nonglak Wiratchai, my external committee, shared valuable in statistics and provided suggestion the helped strengthen the study. I am also thankful Dr. Christopher Lloyd Conley and Mrs. Thongtip Poonlab for editing and editorial advice. Dr. Noraluk Ua-kit helped me for giving the LISREL program and Dr. Prakorn Prachanban who advice me regarding LISREL too.

I am grateful to the persons living with HIV/AIDS in this study who willing gave their time to complete the questionnaires.

My special thanks go to at Naresuan University, support me fulltime for study, my colleagues, especially Prof. Pranom Othaganont, Dean of Nursing for her concern and support, and the Thai Health Promotion Foundation for research funding.

My sincere thank go to my entire doctoral classmate for their sharing experience, friendship, and assistant.

My heart is fulfilling with encouragement from my family: my mother, my brother, and my husband. They put their effort cheerfully me to complete my dissertation.

TABLE OF CONTENTS

Page

Chapter 1 **Introduction**

Chapter II **Review of literature**

Chapter III **Research methodology**

Chapter IV **Results**

Chapter V **Discussion**

TABLES

CHAPTER I

INTRODUCTION

Background and significance of the study

Assessing the quality of life (QOL) is important because it is an outcome of treatment in health care (Kevin et al. 1999) and the impact of disease (Hogan, 1997). Nurses use quality of life as an indicator to manage nursing care and in the treatment for persons living with HIV/AIDS, many of whom now expect to live with their disease for many years (Wu, 2000). Persons living with HIV/AIDS are concerned not only about the duration of their survival but also about their quality of life (Leplege et al. 1997). Therefore, promoting quality of life in persons living with HIV/AIDS is important for the health care team that wishes to implement effective care.

HIV disease is a chronic problem which cannot be cured and has a direct effect on one's health. The progression of the disease is uncertain and it has unpredicted signs and symptoms that can appear without warning (Kemppainen et al. 2003). Persons living with HIV/AIDS may progress to all stages of the disease. Moreover, they are vulnerable to multiple health problems and many live in poverty that will further decrease their quality of life (Sukati et al. 2005).

Today, the health care team has improved treatment and tries to enhance quality of life for persons living with HIV/AIDS by offering counseling, knowledge about HIV disease and self-help groups. Persons living with HIV/AIDS commonly receive antiretroviral drugs. The purpose of these medications is to delay the disease progression, extend the survival rate and expand the life expectancy by suppressing viral load, and maintaining an optimal state of health and quality of life (Holzemer, 1999; Hudson, Kirksey, & Holzemer, 2004). Moreover, The Ninth Economic and Social Development Plan of the Thai government for 2002 through 2006 supported persons living with HIV/AIDS in using complementary and alternative medicine (CAM) such as meditation, massage and acupuncture to enhance their quality of life. Persons living with HIV/AIDS used one or more CAM such as nutrition, exercise, mind and body control, and herbs combined with antiretroviral drugs (Tantisak et al. 1999; Sugimoto et al. 2005). Jantaramano et al. (2003) found that persons living with HIV/AIDS had a higher quality of life after practicing meditation in all dimensions: physical, psychological, social relationship, global health, and an improved living environment. Despite these advances, quality of life of persons living with HIV/AIDS is still rated at low to moderate levels in the dimensions of psychosocial functioning, physical functioning, role functioning activity and energy. (Jantaramano, 2003; Krutkaew, 1997; Lubeck et al. 1993; Molassiotis et al. 2001; Nantachaipan, 1996; Noimeanwai, 1993; Piyakul, 1999; Tangjaroen & Tepnamwong, 1994; Viswanathan, Anderson, & Thomas, 2005). As the result of this finding, interventions such as meditation, self-help group, and counseling cannot solve their problems completely.

Moreover, the quality of life of persons living with HIV/AIDS was lower than with other chronic diseases: epilepsy, prostate cancer, diabetes, and hypertension (Hays et al. 2000; Viswanathan, Anderson, & Thomas, 2005).

Quality of life is viewed as a unidimensional and a multidimensional concept (Padilla & Grant, 1985). Persons perceive quality of life differently depending on their values and beliefs (Zhan, 1992). Quality of life was defined as a subjective perception, appraised directly by persons with symptomatic HIV/AIDS, of physical, psychological, social and sexual well-being in day to day activities (Sarna, Servellen, Padilla & Brecht, 1999).

In the physical dimension, the human immunodeficiency virus destroys the immune system of persons living with HIV/AIDS. The symptoms of the disease may be occurring in their bodies. Decreased quality of life was associated with poorer physical functioning (O’ Connor et al. 2001). Physical symptoms such as fatigue, shortness of breath, fever, headache, nausea, vomiting and diarrhea affected quality of life (Cunningham et al. 1998; Noimeanwai, 1993; Servellen et al. 1998; Vogl et al. 1999; Voss, 2005). Fatigue in persons living with HIV/AIDS may also be related to the loss of energy, which makes it difficult to function; they can work for a few hours (Lubeck & Fries, 1992). Diarrhea affected deterioration in social activities, energy, functional performance, a person’s overall perception of health status and a person’s overall quality of life (Douaihy & Singh, 2001: Henry, Holzemer, Weaver, & Stotts, 1999; Watson, Samore, & Wanke, 1996). Antiretroviral drugs affect physical functioning, such as peripheral wasting, abdominal weight gain, increased triglyceride and cholesterol levels (Corless, Nicholas, McGibbon & Wilson, 2004).

The psychological dimension was influence their quality of life (Sowell et al. 1997). Persons living with HIV/AIDS feel stress, fear, depression, anxiety regarded to the illness, the progression of the disease, and concerns about financial problems and their family. These are associated with diminished quality of life (Hedge & Sherr, 1995; Morrison et al. 2002; Phillips & Morrow, 1998; Sanrakan, 1997; Sarna et al. 1999; Vogl et al. 1999).

Regarding the social dimension, persons living with HIV/AIDS are confronted with prejudice, stigmatization, social discrimination and unemployment (Heckmen, 2003). Their families showed disgust at their disease, they reproached and separated their eating utensils from the person. They separated the clothing of persons living with HIV/AIDS from that of other family members (Polngarm, Tawichasri, & Patumanond, 2004). Kemppainen (2001) found that inadequate social support predicted depression in persons living with HIV/AIDS, which was a strong predictor of decreased quality of life.

Regarding the spiritual dimension, persons living with HIV/AIDS feel hopelessness that associated with a diminished quality of life (Swindells et al. 1999). Many of them fear death and fear the future (Kemppainen et al. 2003). Some feel so overwhelmed with depression that they consider or attempt suicide (Catz et al. 2002; Rojar et al. 2003). Vitsarutrat, Tantiwipatsakul and Tunyawinichkul (1999) found that HIV infection was the leading cause of suicide in Chiang Mai province.

Chiangrai, a province located in Northern Thailand near the Lao and Myanmar borders and in close proximity to Yunnan, China, has experienced a large influx of immigrants which has brought about a higher HIV rate. Health care is provided by one central hospital, sixteen community hospitals and two-hundred and two community health centers. From 1998 until 2005, there were 26,584 persons living with HIV/AIDS and 13,416 died of the disease in the province (Public Health of Chiangrai, 2005). The health care team has initiated many activities to provide care for persons living with HIV/AIDS, both in the hospital and in the community. The activities of caring included counseling and testing services, methadone clinic, anti - retroviral (ARV) therapy clinics, combined drug therapies, nutritional support, tuberculosis prophylaxis, isoniazid hydrochloride, home-health care, prevention of mother-to-child transmission, and treatment of opportunistic infections for persons living with HIV/AIDS (Hollertz, 2001). However, persons living with HIV/AIDS have a long term impact and an increased chance of opportunistic infections such as tuberculosis. In Chiangrai, new tuberculosis incidence rates per 100,000 people were 50 in 1990 but increased to 63 in 1997, 117 in 1998 and 140 in 1999 which decreased the quality of life (TB/HIV Research Project, 2000).

Quality of life in persons living with HIV/AIDS in Thailand is still moderate level (Jantaramano, 2003; Piyakul, 1999). Persons living with HIV/AID in Northern Thailand had moderate score on overall quality of life dimension, pain dimension, physical functioning dimension, health perception dimension, role functioning dimension, mental health dimension, high score on activities of daily living dimension, and low score on social functioning dimension (Piyakul, 1999). Quality of life in persons living with HIV/AIDS was decreased because of their symptom experience such as fatigue; neuropathy (Piyakul, 1999). Some persons living with HIV/AIDS were dispirited because they were got rid off from their job, negligent from the community. They were neglected from their family (Polngarm, Tawichasri & Patumanond, 2004). Thus, they felt depress, anxiety, distress. These problems affected directly to quality of life in persons living with HIV/AIDS.

Existing knowledge helped to understand quality of life in persons living with HIV/AIDS. Most of the studies focused on the level of the quality of life, factors with correlated and predicted on the quality of life. There are many factors affecting directly to the quality of life in persons living with HIV/AIDS such as social support and self-care strategies (Chai-aree, 1990; Dantas, Motzer & Ciol, 2002; Gielen et al. 2001). However, these factors did not predict the quality of life well (Gielen et al.

2001; Piyakul, 1999; Wanthong, 2002) because some factors have an indirect effect on the quality of life through mediator. Few researches studies regarding indirect effect on the quality of life through mediator. Moreover, results of intervention programs to enhance the quality of life among persons living with HIV/AIDS found an increased quality of life in some dimensions (Al-Hussaini et al. 2001; Jantaramano et al. 2003; Thanasilp, 2001). Symptoms were happened occasionally in persons living with HIV/AIDS, although variety treatments including antiretroviral treatment were offered to them**.** Many researches found that quality of life in persons living with HIV/AIDS was still in moderate level**.** Therefore, knowledge related to quality of life in persons living with HIV/AIDS is still unclear. We cannot determine direct effects and indirect effects on quality of life. The body of knowledge of quality of life in persons living with HIV/AIDS is limited. Thus, the researcher developed the causal model to understand the direct and indirect effects of predictor factor on quality of life. The model illustrated the direct effect of the predictor: age, stage of disease, antiretroviral treatment, social support, symptom experience, and self care strategies on quality of life and indirect effect on quality of life via self care strategies in persons living with HIV/AIDS. Based on literature review, the symptom management conceptual model was selected as the framework in this study. It is expected that the finding of this study would be provide the foundation for a guideline for nursing care so as to enhance the quality of life in persons living with HIV/AIDS in Thailand

Conceptual Framework

The symptom management model was used as the conceptual framework in this study. This model suggests that person has the ability to manage a person's symptoms. It was developed by the Symptom Management faculty group of the University of California, San Francisco (Larson et al. 1994). The symptom management model promotes the person in understanding about the illness from symptoms of the disease including his/her experience of those symptoms.

The symptom management model is composed of three dimensions; symptom experience, symptom management strategies, and symptom outcomes. The dimensions of the symptom management model have conceptualized relationships to one another (Dodd et al. 2001) (Figure 1).

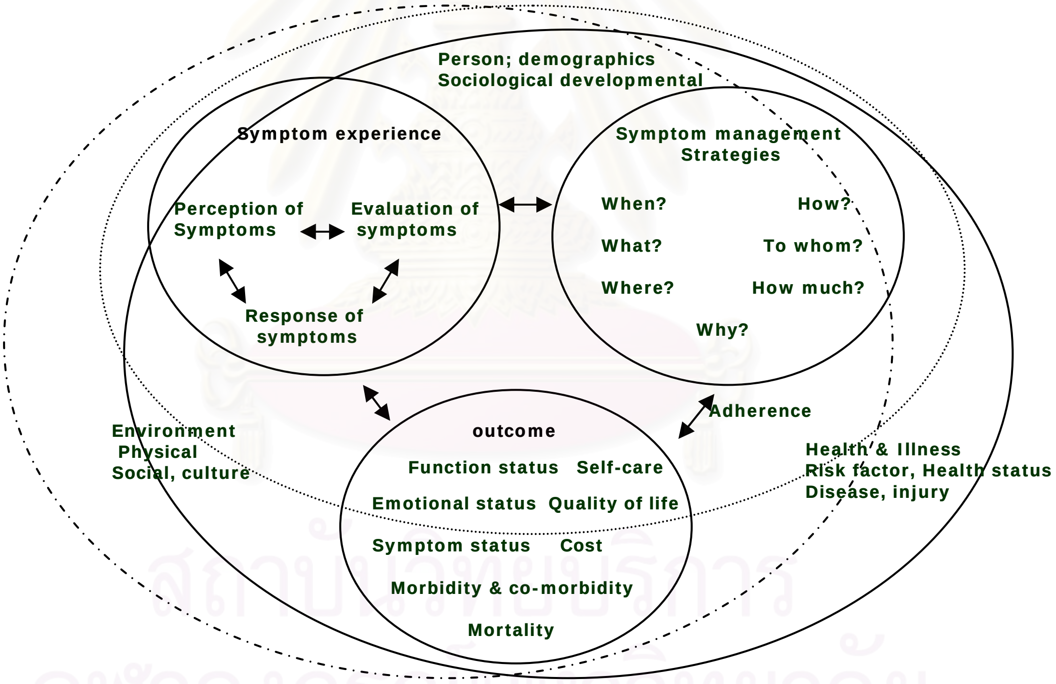


Figure 1 Symptom management Conceptual Model (Dodd et al. 2001).

In the model, the symptom experience is dynamic. It involves the interaction of the persons' perception of the symptoms, the evaluation of the meaning of the symptoms and the response to symptoms. The perception of symptoms for persons living with HIV/AIDS refers to noticing a change in the way they usually feel or behave or their perception of an abnormal physical, emotional and cognitive state. They evaluate their symptoms by making judgments about the severity, cause, and effects of symptoms on their lives. Their response to symptoms can be the distress that they feel from the symptom including physiological, psychological, sociocultural and behavioral distress.

Persons living with HIV/AIDS experience multiple symptoms. There are differences in quality of life in persons living with HIV/AIDS who both live with and without symptoms (Henry, Holzemer, Weaver & Stotts, 1999). Persons living with HIV/AIDS perceived that their experiences deviated from their normal, healthy state of being (Finlayson, Moyer & Sonnad, 2004). Persons living with HIV/AIDS have the ability to manage their health problems, prevent progression of the HIV disease, treat specific symptoms for decreasing side effects from treatments, and have a prolonged life expectancy and improved quality of life.

Symptom management is the activities or behaviors that persons living with HIV/AIDS use to relieve their symptoms. The goal of symptom management is to avert or delay a negative outcome through self-care strategies to improve the quality of life (Dodd et al. 2001). Symptom management aims to decrease the frequency, intensity and distress of symptoms with the ultimate goal of improving quality of life (Hughes, 2004). The management begins with assessment of the symptoms experience from the person’s perspective. If they perceive the symptoms seriously, they go to the hospital immediately when the symptoms occur. If they perceive the symptoms are not serious, they use other strategies to manage their symptoms such as wait and see or self-care.

Self-care strategies are important for persons living with HIV/AIDS to manage symptoms and the complex treatment regimen experienced as the disease progresses (Holzemer et al. 2001). Persons living with HIV/AIDS used self-care strategies to manage their symptoms and maintain their maximum level of quality of life (Henry, Holzemer, Weaver & Stotts, 1999). It has also been shown that women with HIV/AIDS who used self-care strategies reported better physical, mental health and better overall quality of life (Gielen et al. 2001).

Quality of life is an outcome of symptom management as well as of symptom experience (Dodd et al. 2001). Quality of life in persons living with HIV/AIDS is variable. If a symptom is a minor problem for them, or the symptom is of short duration, the quality of life may be unaffected. However, when a symptom is extremely problematic or prolonged, quality of life becomes a major concern (Larson et al. 1994).

Furthermore, the Symptom Management Model is modified by individual outcomes. The three domains of nursing are; the person, such as age or education that influence outcomes; the health and illness, such as the stage of disease or treatment that influence the symptom experiences; and the environment, such as social support or values that influence symptom management strategies. These three dimensions of the symptom management model affect each individual (Dodd et al. 2001).

The first factor that influences the symptom management conceptual model is the person’s age. Persons living with HIV/AIDS can be found in all age groups (Ministry of Public Health, 2004). The developmental stage in persons is affected by each symptom experience (Dodd et al. 2001). Persons living with HIV/AIDS used different methods for self-care strategies depending on the effects on their quality of life. Elderly persons living with HIV/AIDS have a lower quality of life (Campsmith, Nakashima, & Davidson, 2003; Gielen et al. 2000; Noimeanwai, 1993; Pochanapan, 1995; Sarna et al.1999). Elderly persons living with HIV/AIDS, who have low immune function, get opportunistic infections. Symptoms of the opportunistic infection also affect their quality of life. Likewise, Nokes et al. (2000) found that the quality of life of elder persons living with HIV/AIDS was low and mortality rates were high.

The second factor that influences symptom management conceptual model is the health and illnesses representing risk factors such as stage of disease and treatment. Symptoms of persons living with HIV/AIDS are different depending on the stage of the disease. Asymptomatic persons with HIV reported a better quality of life than symptomatic persons with HIV and AIDS (Leanderking et al. 1997; Lubeck & Fries, 1997; Noimeanwai, 1993; Nunes et al. 1995). Numerous studies in persons living with HIV/AIDS found that the quality of life is related with the severity of the illness or the stage of disease (Campsmith, Nakashima, & Davidson, 2003; Globe, Hays, & Cunningham, 1999; Molassiotis et al. 2001; Nuamah et al. 1999; Piyakul, 1999). Wachtel et al. (1992) found that persons living with HIV/AIDS who were infected with Pneumocystis Carinii pneumonia had a lower quality of life than persons living with HIV/AIDS who were uninfected.

The antiretroviral treatment is developed to prolong the survival of persons living with HIV/AIDS (Wu, 2000). It is an effective method to keep the viral load down, restore parts of the immune system, and to prevent opportunistic infections

(Hackman, 2003). It has a direct effect to slow progression of the virus thereby reducing the symptom. Antiretroviral treatment (HAART) predicted quality of life among persons living with HIV/AIDS (Liu et al. 2006). Nevertheless, persons living with HIV/AIDS who received the antiretroviral drug often reported that side effects of the drug decreased their quality of life (Bastardo & Kimberlin, 2000; Cederfjall et al. 2001; Ciccolo, Jowers & Bartholomew, 2004) and impaired social functioning (Douaihy & Singh, 2001).

The third factor that influences the Symptom Management Model is the environment that is represented by the social support. Persons living with HIV/AIDS did not want to disclose their diagnosis to their families (Thanasilp, 2001). They feel a social stigma, discrimination, a fear of death (Piyakul, 1999), and they were a burden on their families. Because of this, their social support was limited and they were often abandoned or left to die at the hospital (Polngarm et al. 2004). Limited social support can significantly diminish the quality of life (Webb & Norton, 2004). In addition, many studies have found social support to be positively correlated with the quality of life (Bastardo & Kimberlin, 2000; Chai-aree, 1990; Clingerman, 2004; Gielen et al. 2001; Noimeanwai, 1993; Nunes et al. 1995; Piyakul, 1999; Pochanapan, Satayawiwat, & Thongcharoen, 1995; Vichitvatee, 1991; Yang et al. 2003). Dantas, Motzer and Ciol, (2002) found that social support explained 64% of the variance of the quality of life. Thus, family members who are supportive and understanding can promote a better quality of life.

The Symptom Management Model (Figure 1) is a conceptual model. A conceptual model cannot be tested directly because its concepts and propositions are not empirically measurable. More concrete and specific concepts and propositions have to be derived from the conceptual model. Those more concrete concepts must have hypotheses that must be operationally defined and empirically testable and must be derived from propositions of the theory. It is necessary to test the direction and strength of relationships between concepts. Each of the concepts is linked to empirical indicators, which provide a method to measure the variables (Fawcett, 2000). An explicit conceptual-theoretical-empirical structure for the Symptom Management Model was developed to test the propositions for the quality of life (Figure 2).

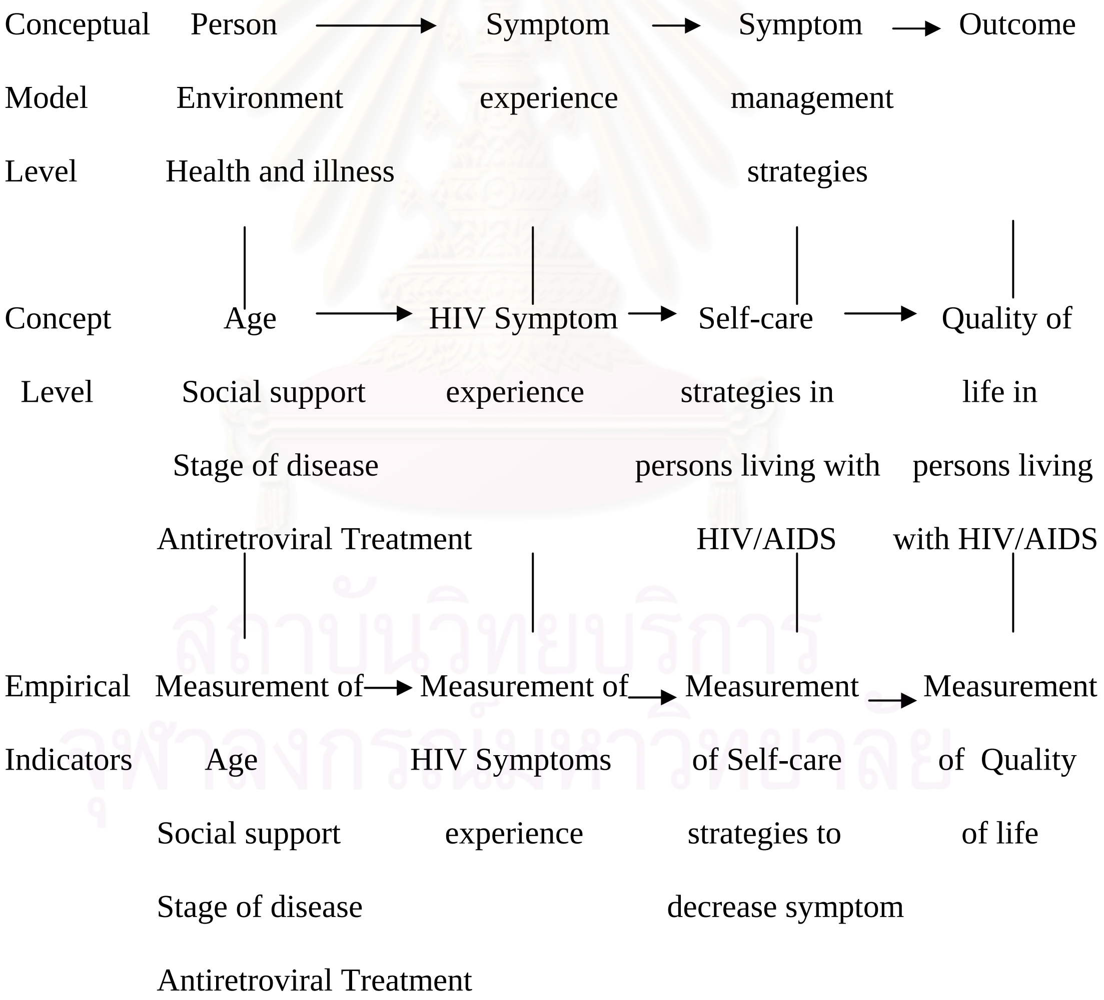


Figure 2. Hierarchy of Theoretical Deduction (Fawcett, 2000).

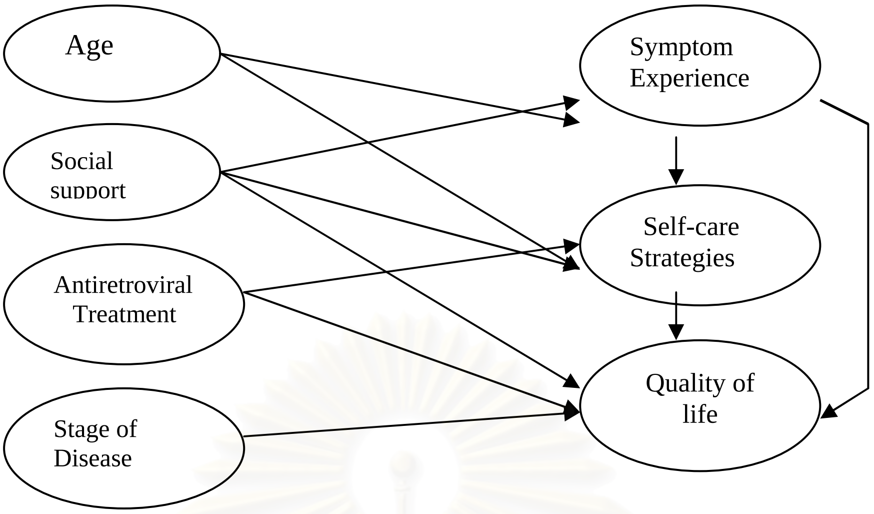


Figure 3 The Hypothesized Model of Quality of Life

From the causal model of quality of life, age is one characteristics of the person in the nursing domain in the symptom management conceptual model and is presumed to have a direct and an indirect effect on the quality of life through self care strategies. Social support is the environment which influences symptom management. Thus, social support should have a direct effect on the quality of life and an indirect effect on the quality of life through symptom experience and self-care strategies. The stage of disease and antiretroviral treatments are in the domain of health and illness in the symptom management conceptual model. Antiretroviral treatment has a direct effect on the quality of life and an indirect effect on the quality of life through self care strategies. The stage of disease has a direct on the quality of life. Symptom experience has a direct effect on the quality of life and an indirect effect on the quality of life through self-care strategies. Lastly, self-care strategies have a direct effect on the quality of life. Moreover, the arrow would reverse in the symptom management conceptual model.

Because a large number of factors influence the quality of life, the researcher selected age, stage of disease, antiretroviral treatment, social support, symptom experience and self-care strategies from the literature as factors that best correspond to symptom management and explain and predict the quality of life. The Symptom management models and the empirical literature concerning the quality of life were used as a guide. The symptom management conceptual model is the model that emphasizes a person's ability to manage their symptoms to enhance the quality of life. Knowledge of a causal model of the quality of life would be useful to control and maintain persons living with HIV/AIDS' symptoms and can be guide to develop a nursing care plan for promoting the well-being of persons living with HIV/AIDS.

Research question

1. Do ages, antiretroviral treatment, social support and symptom experience predict quality of life directly and indirectly via self-care strategies?
2. Do stage of disease and self care strategies predict quality of life directly?

Hypothesis and rationale

Symptom experience is a dynamic process, involving interaction of the perception of the symptom, evaluation the symptom and response to symptom (Dodd et al. 2001). Symptom experience may occur in persons living with HIV/AIDS whether or not they engage in self-care. Persons living with HIV/AIDS may suffer from a variety of symptoms. Uncontrolled symptoms have been shown to lower quality of life (Sukati et al. 2005). Therefore, symptom experience has negative direct effect on quality of life.

Persons living with HIV/AIDS use various strategies such as exercise, meditation, and herbal remedies to decrease symptoms in order to improve their quality of life (Nicholas et al. 2003). From literature, there was a significant positive correlation between self care strategies and quality of life in persons living with heart disease (Chai-aree, 1990). Therefore, self care strategies have positive direct effect on quality of life.

Stage of disease represents the health and illness in symptom management model. It influenced the symptom experience (Dodd et al. 2001). Symptoms vary according to the stage of disease. Several studies shown that persons living with HIV/AIDS who control their symptoms can improve quality of life. Besides, stage of disease had been strongly correlation with quality of life (Leanderking et al. 1997; Lubeck & Fries 1992; 1997; Molassiotis et al. 2001; Piyakul, 1999). Therefore, stage of disease has a negative direct effect on quality of life.

Age represents the individual variables in symptom management model. It also influences the quality of life (Dodd et al. 2001). Literatures found that age could predict either positive direct effect or negative direct effect on quality of life (Nokes et al. 2000; Gielen et al. 2000; Liu et al. 2006). Age predicted quality of life both direction. In addition, Vichitvatee (1991) and Prasatkettikan (2001) found that age was related to self care strategies. Therefore, age has direct effect on quality of life and self care strategies.

Social support was the environment that represents the social and culture in symptom management model. Many studied found that social support could predict quality of life (Piyakul, 1999; Yang et al. 2003). Literatures supported that social support related with symptom experience and self care strategies (Pakdewong, 2006;

Prasatketikan, 2001). Therefore, social support has positive direct effect on quality of life and indirect effect on quality of life through symptoms experience and self-care strategies.

Treatment represents of the health and illness in symptom management model influences the symptom experience, symptom management and symptom outcome (Dodd et al. 2001). From the literature, antiretroviral treatment could be increased quality of life in persons who living with HIV/AIDS reported.Therefore, antiretroviral treatment has positive direct effect on quality of life and indirect effect on quality of life through self care strategies. .

Hypotheses are made in four statements as follows

1. Age, social support, antiretroviral treatment and symptom experience have a positive direct effect on self care strategies and also social support has a negative direct effect on symptom experience.

2. Age, social support, and antiretroviral treatment have a positive direct effect on quality of life and also stage of disease has a negative direct effect on quality of life.

3. Age, social supports, antiretroviral treatment, and symptom experience have an indirect effect on quality of life via self care strategies.

4. Symptom experience has a negative direct effect on quality of life and self-care strategies have a positive direct effect on quality of life.

Objective of the study

The purpose of this study is to develop the causal model to explain quality of life in persons living with HIV/AIDS and to examine the causal relationships between age, antiretroviral treatment, stage of disease, social support, symptom experience, self-care strategies and quality of life in persons living with HIV/AIDS.

Scope of the study

The study is a cross-sectional study designed to develop and test the causal model of the quality of life in Thai persons living with HIV/AIDS who lived in Chiang rai province, in Northern of Thailand.

Definition

Quality of Life is defined as the perception of satisfaction and happiness in a patient’s life. The questionnaire was created by Nantachaipan (1996) with the Thai cultural context. It consisted of five dimensions. They are the physical well-being, the psychological well-being, social interaction, self attitude and life satisfaction. The dimensions are defined as follow:

1. Physical well being refers to the perception of happiness that is involved in aspects of eating, recreation and sleeping, activity, voiding and elimination, and functional ability.

2. Psychological well being refers to the person’s feeling about their illness or their life since they were infected with HIV.

3. Social interaction refers to the perception of satisfaction in social functions and roles, the relationship with other in society and social support.

4. Self Attitude refers to the perception or feeling about themselves that that were self worth, their abilities and their body image.

5. Life satisfaction refers to the feeling of pleasure in a person’s life.

The questionnaire is measured by a linear analogue scale that was 100 millimeters long with values ranging from 0 -100 points for each item. Higher scores mean that quality of life was higher.

Self-care strategies refer to the activities that the person living with HIV/AIDS uses with intention to decrease the six symptoms: depression, anxiety, fatigue, nausea, diarrhea, and neuropathy. It was measured by the Self-care Strategies Questionnaire that has been modified from Holzemer, et al. (2004). The categories of self-care strategies were ways to manage and relieve the six symptoms. Each category has subcategories and each item was rated in the self-care strategies with a score given that indicated non practice of this strategy (score = 0) or practice of this strategy (score = 1). Then, if the person practices the strategy, the instrument asks: the strategies had decreased the symptom, very well (score = 10) to not al all (score = 1).

Symptom experience is composed of three items. The first refers to the perception of symptoms defined that persons living with HIV/AIDS perceive a change in the bio-psychosocial functioning or cognition. Literature shows that six common symptoms impacted the quality of life; anxiety, depression, diarrhea, fatigue, nausea and neuropathy. If this symptom occurred, how often did this symptom occur in last week? The frequency rating scales was: one day/ week (score = 1) to everyday (scores = 7) that symptom occurred. The second refers to the person living with HIV/AIDS evaluates the symptoms by rating the severity of the symptoms. The ratings were lowest (score = 1) to highest (score = 10) of those symptoms. The third is the response to the symptoms or the distress that persons living with HIV/AIDS feel both physically and psychologically when suffering from the symptom occurrence. The distress of symptoms is rated by low (score = 1) to high (score = 10). High scores indicate severity of symptoms.

Social support refers to perceived specific supportive behaviors including intimacy, social integration, nurturance, worth, and assistance. Intimacy refers to the perception about attachment. Social integration refers to the perception of being integrated part of group. Nurturance refers to the perception of fulfill, meaning. Worth refers to the perception or feeling about an individual’s competence in role accomplishment. Assistance refers to the perception of help about the information, materials. It is measured by a Personal Resource Questionnaire; PRQ85- Part 2 (Weinert & Brandit, 1987). The PRQ has 25 items with a Likert scale ranging from strongly agree (5) to strongly disagree (1). Higher scores mean higher social support.

Stage of disease refers to the level of the HIV disease divided into an asymptomatic level, a symptomatic level, and AIDS level in persons living with HIV/AIDS. It was measured by CD4 level in census or progression of disease. The item in the questionnaire was scored on a three point scale, asymptomatic (score = 1) to AIDS level (score = 3).

Antiretroviral treatment refers to persons living with HIV/AIDS using antiretroviral drugs. The item in the questionnaire was scored on a two-point scale, non use of an antiretroviral drug (score = 0) and use of a drug (score = 1).

Age refers to the chronological age in years of persons living with HIV/AIDS, the period of time between birth and succeeding time periods. Chronological age is measured in years.

Person living with HIV/AIDS refers to a person who is infected with Human Immunodeficiency Virus having been diagnosed by a physician.

Symptom management refers to way in which the persons living with HIV/AIDS are managing their symptoms by themselves. Family members and healthcare team advise and facilitate them with their symptom management.

Expectated outcomes and benefits

1. The causal model of quality of life will be helpful for promoting quality of life in persons living with HIV/AIDS.

2. This model provides a guideline for nurse to implement intervention programs and administer effective care.

3. Results of the testing of the Symptom Management Model is tested will inform the improvement of nursing practice and supply foundational data that may guide the future development of policies toward enhanced quality of life for this population.

CHAPTER II

LITERATURE REVIEW

Based on the symptom management model**,** this study focuses on the relationship among the selected variables in nursing domain including age, stage of disease, antiretroviral treatment, and social support, symptom experience, symptom management including self-care strategies, symptom outcome including quality of life. This literature review chapter is divided into subsections related to 1) overview of the symptom management model, 2) concept of quality of life, 3) quality of life and HIV/AIDS disease, 4) relationship between factors in the model and quality of life.

The symptom management model

The symptom management model promotes understanding about disease symptoms and management of problems from the symptoms. Symptoms are experienced deviation from an individual’s perception of his or her normal, healthy state of being, yet not necessarily an indicator of illness. A symptom can emerge from sensitivity to certain combinations of biological, social and environment processes and vary in magnitude, severity, persistence and character. (Finlayson, Moyer & Sonnad, 2004)

Persons living with HIV/AIDS perceive changing symptoms in their bodies. Physical symptoms are defined as a perception, feeling or even belief about the state of our body. Psychophysical symptoms are primarily associated with mental health. Persons living with HIV/AIDS assess symptom experience from their perspective and evaluate the symptoms severity. Persons respond to a symptom by a change in physiological parameters such as heart rate palpitations and display psychological changes such as depression, and anxiety. After symptoms occur, persons use many strategies to take care of themselves. Self care strategies may be targeted at one or more components of a patient’s symptom experience to achieve one or more desired outcomes especially a high degree of quality of life.

According to the literature review, six common symptoms may occur in those living with HIV/AIDS. Holzemer et al. (2004) concludes all signs in those symptoms as follows: 1). Anxiety referring to such as a person’s worry, thought and tensions, including experience regarding shaking, tight muscles, dizziness, headache, breathing difficulty, fast heartbeat, irritability, or restlessness. 2). Depression referring to depress, sadness, including weight loss, weight gain, and sleeping problems, 3). Diarrhea, referring to person evacuate loose or watery stool more than three times per day, 4). Fatigue referring a persons’ feelings of tiredness or weariness, exhaustion or loss of concentration, 5). Nausea referring to a persons’ feeling of upset stomach, retching, heaving, urges to vomit, 6). Neuropathy referring to a persons’ feeling of pain, tingling, burning or numbness in his/her hands, arms, feet or legs.

Persons living with HIV/AIDS perceive the symptoms occurring in their body. Many studies found that symptoms were correlated with and could predicted quality of life (Kemppainen, 2001; Sousa et al. 1999; Sousa & Williamson, 2003). The presence of symptoms was the strongest indicator of diminished quality of life scores (Wachtel et al. 1992). Lorenz et al. (2001), in congruence with Lubeck and Fries (1992) found that higher symptom scores were related to lower quality of life. Henry, Holzemer, Weaver and Stotts (1999) and Lubeck et al. (1993) found that chronic diarrhea can be debilitating and result in decreased quality of life. Fatigue was the most common symptom in persons living with HIV/AIDS, resulting in reduced energy, difficulty with daily activities and frequent pain ((Noimeanwai, 1993; Sarna et al.1999; Servellen et al. 1998; Watradul, 1994). Moreover, quality of life decreased in persons living with HIV/AIDS who had increased physical symptoms (Mast et al. 2004). Symptoms of disease predicted physical functioning, psychological distress, role functioning and quality of life (Chen et al. 2004; Hackman et al. 1997; Hudson, Kirksey & Holzemer, 2004; Sousa et al. 1999; Vogl et al. 1999).

Persons living with HIV/AIDS use many self care strategies to deal with physical symptoms and psychological distress from the HIV disease. Self care strategies for management of anxiety and fear are doing some activities and seeking for distractions such as watching television, physical exercise; seeking advice from supportive family or friends; using complementary therapies such as praying, meditation; taking medication to relieve anxiety and fear; using positive self-talk; using substance such as cigarettes, alcohol; and using avoidance behaviors (Kemppainen et al. 2003). In addition Nicholas et al. (2002) found that self-care strategies in persons living with HIV/AIDS who had peripheral neuropathy were medication, exercise, complementary therapies and rest. Likewise, Tantisak et al. (1999) found that 81% of persons living with HIV/AIDS in Thailand used alternative and complementary therapies such as nutrition, exercise, meditation, and herbs. The Ninth Economic and Social Development Plan, 2002 – 2006 of Thailand (Ministry of Public Health, 2002) supported self-care strategies in persons by using alternative and complementary therapies to increase quality of life. Many researchers reported that the effects of these therapies were increased mental health and enhanced quality of life (Al-Hussaimi et al. 2001; Bedard et al. 2003; Carson et al. 2003, 2004;

Jantarayano, 2003; Reibel et al. 2001). From these articles, persons living with HIV/AIDS manage their symptoms by applying self care strategies such as changing diet, eating vitamins, using complementary and alternative therapies (Bates et al. 1996; Chou, 2004; Gore-Felton et al. 2003; Greene et al. 1999; Kirksey et al. 2002; Lamlieng et al. 1997; MacIntyre & Holzemer, 1997; Mulkins et al. 2002; Namjantra, 2001; Nokes et al. 1995; Pintobtang, 2002; Wiwanitkit, 2003).

Quality of life is an outcome that emerges from symptom management strategies. The goal of symptom management is to avert or delay a negative outcome through self-care strategies to improve quality of life (Dodd et al. 2001).

Concept of quality of life

Quality of life is an important concept that is used across many disciplines such as economics, social science, health promotion, and medical care. It is a broad, dynamic concept and is influenced by all of the dimensions of life. Quality of life is conceptualized as either a unidimensional or a multidimensional concept. In the part, many researchers measure only one dimension, such as physical function, economic concern, or environment. It shows that quality of life is a unidimension. Spilker (1996) demonstrated that quality of life was the multidimentional by assessing it through three interrelated levels of a pyramid: 1) person’s overall assessment of well being acts at the top of the pyramid, 2) the middle section contains the broad domains such as physical, psychological, social, and spiritual domains 3) many components of each domain are the base of the pyramid. The variation of domains in quality of life illustrates that it is multidimentional. Therefore, its definition is various and ambiguous (Meeberg, 1993). It is difficult to define and measure quality of life, because perceptions of the quality of life are influenced by culture, ethics, religions, and values (Zhan, 1992), personal experience and opinion influence (Murdaugh, 1998). Besides, quality of life is viewed as a subjective phenomenon that is rated best by the individual (Padilla & Grant, 1985). Therefore, quality of life is widely defined by several persons. Burckhardt (1985) defines quality of life as perception that life's quality is good, that life is satisfying, that the individual has physical and material well-being, good relations with other persons, and the ability to participate in society, community, and civic activities, and that the individual has personal development, fulfillment, and recreation. Ferrans and Power (1985) defines quality of life as an individual's perception of well-being and their satisfaction or dissatisfaction with the dimensions of life. Zhan (1992) defines quality of life as the degree to which a person's life experiences are satisfying, a multi-dimensional concept that cannot be completely measured by either a subjective or objective approach. This is similar to, Sarna et al. (1999) who defines quality of life as a subjective perception, appraised directly by the persons with symptomatic HIV/AIDS, of physical, psycho-social and sexual well being in day-to-day activities. This is also consistent with Packa (1998) who defines quality of life in terms of well-being. The World Health Organization (1995) defines quality of life as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, standards, expectations and concerns.

Quality of life has a variety of terms equating quality of life with such attributes as life satisfaction, well-being, happiness, value of life, meaning of life and functional status (Zhan, 1992; Meeberg, 1993; Hass, 1999).

Types of Quality of Life

There are two main encompassing types of quality of life (Spilker, 1996).

1. Health-related quality of life (HRQOL) is related to an individual's health. This type of quality of life includes the physical, psychological, social, and spiritual domain. The physical domain refers to perceived and observed bodily function or disruption such as headache, diarrhea. Psychological function includes both positive and negative effects such as depression, satisfaction. The social domain refers to the ability to perform activities related to a role function in society.

2. Non health-related quality of life (NHRQOL) consists of the domains of personal-internal (values and beliefs, desire and goal, personality attributes, coping strategies, spiritual status), personal-social (social network, family structure, social groups, financial status, vocational status), external-natural environment (air, water, weather, geographic characteristics) and external societal environment (cultural institutions and opportunities, religious institutions, school, medical facilities and services).

A variety of dimensions of the quality of life concepts are included in many studies. Ferrans and Power (1992) delineate four dimensions of quality of life including health and functioning, socioeconomic, psychological/spiritual, and family. Similarly, Zhan (1982) identifies quality of life into four dimensions including life satisfaction, self-concept, health functioning, and socioeconomic factors. Padilla and Grant (1985) delineate five dimensions of quality of life including physical well-being, social concerns, body image concerns, psychological well being, and diagnosis/ treatment response. Ferrans (1990) propose five broad categories of quality of life in relation to its conceptual issue. These categories focus on the patient's (a) ability to live a normal life, (b) happiness/satisfaction, (c) achievement of personal goals, (d) ability to lead a socially "useful" life, and (e) physical and/or mental capabilities (actual or potential).

Ragadale et al. (1992) explains that existing instruments for measuring quality of life are not appropriate for persons living with HIV/AIDS. First, HIV disease will not be cured by a simple procedure or a short course of medical therapy. Second, the risk factors in HIV disease include homosexuality; bisexuality and intravenous drug use, which differ from other chronic diseases. For example, in coronary artery disease risk factors include diet or exercise. Third, persons living with HIV/AIDS feel stigmatization. Therefore the instruments should be specific for them.

There are currently several instruments for assessing quality of life (Robinson, 2004; Webb & Norton, 2004). Researchers select the most appropriate instrument depending upon the research proposal and the particular population. The instruments include AIDS Health Assessment Questionnaire (AIDS-HAQ) (Lubeck & Fries, 1997), HIV-PARSE survey instrument (Cunningham et al, 1997), the adaptation of the Medical Outcomes Questionnaire (MOS-HIV) (Mcdonnell et al. 2000), the HIV/AIDS-Targeted Quality of Life instrument (HAT-QOL) (Demmer, 2001). Most of the instruments have been developed and tested initially in a single culture from western countries. Therefore, the World Health Organization developed cross-cultural instrument, WHOQOL-100, for persons living with HIV/AIDS. This instrument covers 25 facets of quality of life organized into 6 domains: physical, psychological, independence, social, environmental and spirituality (WHOQOL-HIV Group, 2003). Mahunnirunkul et al. (1997) compared the properties of WHOQOL-100 (World Health Organization Quality of Life-100 items) and WHOQOL-BREF (World Health

Organization Quality of Life- 26 items) in healthy persons. They found that the reliability of the WHOQOL-100 and WHOQOL-BREF were 0.89 and 0.84, respectively. However, they did not repeat construct validity and discriminant validity.

Tadapark (2003) developed a Thai version of the quality of life instrument for HIV– infected persons from MOS-HIV. This included 10 dimensions of physical functioning, role functioning, social functioning, emotional well-being, energy/fatigue, cognitive functioning, pain, general health, health distress and overall quality of life. She found that the reliability of all dimensions except role functioning were above 0.50. The scaling success of convergent validity exceeded 80%, except role functioning (0%), emotional well-being (60%), cognitive functioning (75%). The scaling success of discrimimant validity ranged from 85-100%. Nantachaipan (1996) developed a quality of life instrument to use with persons living with HIV/AIDS at home in the northern part of Thailand. The reliability of quality of life questionnaire was 0.78- 0.90.

Quality of Life and HIV/AIDS

AIDS is caused by the human immunodeficiency virus, which attacks a specific type of white blood cells known as T-lymphocytes. It is measured in the blood as the CD4 count, which is a marker on the T cells. The primary effects of HIV infection are two fold. One is a progressive deterioration of immune system function, which leads to increased susceptibility to infection caused by viruses, bacteria, fungi, protozoa, and also to certain malignancies. The other is progressive deterioration of the nervous system, mental deterioration, seizures and sensory and motor change (Casey House Hospice, 2001). After a person has been infected with HIV, it takes 2-

12 weeks for the immune system to develop antibodies, which can be detected in the bloodstream. This is called the window period during which the antibodies are not able to destroy the virus and there are no signs or symptoms of disease. An antibody test will be negative although the virus is present; this is known as a false negative result (Jackson, 1992).

Progression from HIV infection to AIDS (Castro et al. 1992) is characterized as the following

1. Category A: Asymptomatic HIV is defined when a CD4 cells counts greater than 500 cell/mm^3. There are no symptoms of the disease or there are one or more conditions such as persistent generalized lymphadenopathy, or acute retroviral syndrome. Acute retroviral syndrome includes any symptom of acute mononucleosis, for example, fever, skin rash, headache, and chronic diarrhea.

2. Category B: Symptomatic HIV is defined when a CD4 cell count is between 200 – 499 cell/mm^3. This does not include the condition listed in clinical category C and meets a least one of the following criteria;

2.1 The conditions attributed to HIV infection indicate defects in cell-mediated immunity.

2.2 The conditions are considered by physicians to have a clinical course or to require management that is complicated by HIV infection, namely: oral candidiasis, bacillary angiomatosis, vaginal candidiasis, cervical carsinoma, persistent fever or diarrhea for more than 1 month, oral hairy leukoplakia, peripheral neuropathy, pelvic inflammatory disease, listeriosis, idiopathic thrombocytopenia purpura, and recurrent herpes zoster

3. Category C: Full Blown AIDS is defined when CD4 cell count is less than 200 cell/mm^3. The symptoms include the clinical condition listed in the AIDS surveillance case definition, namely: disseminated or extrapulmonary cryptococcosis such as central nervous system, candidiasis of bronchi, trachea, lung or esophagus, disseminated or extrapulmonary histoplasmosis, disseminated or extrapulmonary coccidioidomycosis, chronic intestinal cryptosporidiosis more than 1 month, chronic intestinal isosporiasis more than 1 month, pneumocystic carinii pneumonia, toxoplasmosis of the brain, HIV encephalopathy, HIV wasting syndrome, cytomegalovirus retinitis with loss of vision, herpes simplex with chronic ulcer or bronchitis, pneumonitis, esophagitis, recurrent salmonella septicemia, prigressive multifocal leukoencephalopathy, mycobacterium tuberculosis, disseminated or extrapulmonary mycobacterium, recurrent pneumonia, Kaposi’s sarcoma, burkitt’s lympoma or primary lymphoma of the brain, and invasive cervical carcinoma. Once a category C condition has occurred, the person will remain in category C.

During the infection, if persons living with HIV/AIDS perceive and accept the diagnosis, they could manage the vulnerability by performing self-care actions to promote health in daily life activities to delay disease progression. Their quality of life may remain normal. Meanwhile, if they perceive the disease as harmful, depression and fear may result. The progression of the disease becomes worse rapidly. Persons living with HIV/AIDS may be infected by opportunistic infection such as tuberculosis, oral candidiasis, cytomegalovirus, pneumocystis carinii pneumonia, cryptococcosis, which affect all dimensions of their quality of life such as physical, mental, and social dimension. Nowadays, researchers find that quality of life of persons living with HIV/AIDS is in moderate levels (Nantachaipan, 1996; Krutkaew, 1997; Piyakul, 1999; Molassiotis et al. 2001; Watee, 2002; and Jantaramano, 2003).

Factors related to quality of life; Quality of life is affected by many factors as outline in the following discussion**.**

Age and quality of life

Age is related to developmental stage in persons to influence the response to the symptom experience (Dodd et al. 2001). Moreover, age is related to past experience, and each person has different experiences. An individual's experience leads him/her to select the self-care strategies to solve the problem. Personal maturation and organic, psychic, and intellectual functioning vary with the period of the human development cycle. Age is related to one's being able to self manage in the situation at varying degrees of understanding and judgment. Increased age has been found to enhance quality of life (Sithimongkol, 1998). However, Vichitvatee (1991) found that age had been negatively correlated with quality of life in the amputee population, which is congruent with Campsmith, Nakashima & Davidson, 2003; Gielen et al. (2000); Noimeanwai (1993); Pochanapan, (1995); Sarna et al. (1999); Wachtel et al. (1992), who studied persons living with HIV/AIDS. Elderly persons living with HIV/AIDS who had low immunity experienced more opportunistic infections. Likewise, Nokes et al. (2000) found that quality of life of older persons living with HIV/AIDS was low and mortality rates were high.

Stage of disease and quality of life

The stage of HIV disease is divided into 3 categories; Asymptomatic, Symptomatic, and AIDS. The stage of the disease had been strongly correlated with quality of life (Leanderking et al. 1997; Lubeck & Fries, 1992; 1997; Molassiotis et al. 2001; Piyakul, 1999). Persons living with HIV/AIDS who have more symptoms and complications represent the severe stage of the disease. It means the degree of limitation in the persons' ability to perform usual roles and activities that affect quality of life. There was a negative relationship between severity of the disease and physical well-being in persons living with cancer (Padilla & Grant, 1985). Ragsdale and Morrow (1990) found that many symptoms were related to lower quality of life in persons living with HIV/AIDS, which is in congruence with Lorenz et al. (2001). Besides, Watson, Samore, and Wanke, (1996) found that chronic diarrhea was strongly associated with decreasing quality of life**.** Sousa et al. (1999) found that the symptom status was the best predictor of quality of life in persons living with HIV/AIDS, which is in congruence with Hudson, Kirksey, and Holzemer, (2004). In addition, quality of life scores for women living with HIV were correlated with increasing numbers of physical symptoms (Mast, 2004). Quality of life decreases as the severity of HIV/AIDS symptoms increase (Tsai, Hsiung & Holzemer, 2003). It was illustrated that the symptoms represent severity of the disease. Nuamah et al. (1999) found that severity of symptoms or the stage of the disease had the strongest association with biopsychosocial response in health related quality of life.

Antiretroviral Treatment and quality of life

Antiretroviral treatment is one of the treatments for persons living with HIV/AIDS. Persons living with the HIV disease are growing older and living longer due to the emergence of highly active antiretroviral therapy (HAART), which has prolonged survival for HIV-infected individuals who are now living well into their 50s, 60s and 70s (Stoff et al. 2004). Taking an antiretroviral drug is an effective method to keep the viral load down, restore parts of the immune system, and prevent opportunistic infections (Hackman, 2003). Campsmith, Nakashima and Davidson (2003) found that persons living with HIV who took antiretroviral drug were associated with lower quality of life scores than persons not taking the drug. Dedkaew (2001) studied persons living with HIV and he found that antiretroviral drugs declined viral load after one month and four month treatments and the prevalent side effects of the drug is diarrhea. Moreover, persons living with HIV/AIDS who received the antiretroviral drugs reported that side effects of drugs decreased their quality of life (Bastardo & Kimberlin, 2000; Cederfjall et al. 2001) and decreased physical functioning (Gill et al. 2002). They experienced many symptoms such as pain, decreased energy, diarrhea, insomnia, and neuropathy after using the drugs for four months (Dedkaew, 2001). Besides, Douaihy and Singh (2001) found that taking antiretroviral therapy was important for predicting quality of life.

Social support and quality of life

Social support has been described in various ways. Early studies of social support focused on the structural aspects of the concepts such as marital status or social network size: later, it emphasized the role of social relationship or the functional content of relationship such as the feeling of love, support a confidence

(Han, Kim & Weinert, 2002). Tilden and Weinert (1987) defined social support as the psychosocial and tangible aid provided by the social network and received by a person. House (1981, cited in Weinert & Tilden, 1990) suggested that social support consists of four components: emotional support referring to trust, caring, linking and intimacy; appraisal support referring to feedback that affirms one's self-worth, information, support of useful advice, and information that helps one to solve problems; and instrumental support of tangible goods and service such as loans of money or reciprocal help between neighbors. According to Weinert and Brandt (1987), social support is composed of five dimensions: provision of attachment and intimacy, opportunity for nurture behavior, social integration (being an integrate part or group), reassurance of worth, and the availability of emotional, informational, and maternal help.

Persons living with HIV/AIDS who had one or several persons giving support could rely on them for help and advice to solve the problems. Lubeck et al. (1993) found that persons living with HIV/AIDS who decreased in their ability to work had social contact and energy levels, needed assistance support at home. Nevertheless, family support was limited in persons living with HIV/AIDS because they did not want to disclose their diagnosis (HIV disease) to their family that affected quality of life, they lacked of the supporting from their family (Thanasilp, 2001). Furthermore, social support had been positively correlated with quality of life (Noimeanwai, 1993; Piyakul, 1999; Bastardo & Kimberlin, 2000; Nunes et al. 1995; Gielen et al. 2001; Yang et al. 2003). Besides, it has shown strong potential to influence quality of life (Burckhardt, 1985; Chai-aree, 1990; Pochanapan, 1995; Gielen et al. 2001; Yang et al. 2003).

Symptom experience and quality of life

Symptoms are experienced deviation from an individual's perception of his or her normal, healthy state of being, yet not necessarily an indicator of illness. A symptom can emerge from sensitivity to certain combinations of biological, social and environment processes and vary in magnitude, severity, persistence and character. (Finlayson, Moyer & Sonnad, 2004). The presence of symptoms is an important determinant of quality of life (Kemppainen, 2001). Persons living with HIV/AIDS perceive the symptoms by noticing change in their physical and emotional status. Signs and symptoms of physical and psychological discomfort occur. For physical dimension, persons living with HIV/AIDS perceived prevalent symptoms of depression (83%), muscle ache (84%), weakness (80%) and painful joints (71%) (Hudson, Kirksey, & Holzemer, 2004). Most of them reported the common symptoms in HIV infection such as fever, night sweats, myalgia, anorexia, nausea/vomitting, diarrhea, and weight loss (Cunningham et al. 1998; Tsai, Hsiung & Holzemer, 2003; Webb & Norton, 2004). Signs and symptoms of HIV disease are uncertain and unpredictable in every aspect of their lives (Phillips & Morrow, 1998). These emotional states can occur with varying degrees of severity at any time in HIV infection. For the psychological dimension, persons living with HIV/AIDS feel depression, anxiety, stress, fear, and low self – esteem in their life (Antoni et al. 1991; Hedge & Sherr, 1995; Sankan, 1997; Morrison et al. 2002; Khumngeon, 1999). The numbers of symptoms are highly associated with poorer quality of life in these people (Vogl et al. 1999). Hudson, Kirksey, and Holzemer (2004) found that symptoms could predict role functioning dimension. Cunningham et al. (1998) studied persons with symptomatic HIV; the study showed that quality of life scores were significantly lower in persons with symptoms than those without symptoms. In addition, the symptoms such as night sweat, exhausion, myalgia, and anorexia were strongly related to almost all dimensions of quality of life.

Thai persons living with HIV/AIDS have experienced decreasing quality of life, and researchers have recently reported a moderate level of quality of life in several studies (Jantaramano, 2003; Krutkaew, 1997; Piyakul, 1999). A greater number of symptoms have been related to the lower quality of life in both the physical and psychological dimensions (Sugimoto et al. 2005). Thai persons living with HIV/AIDS reported that they experienced anxiety related to chronic illness; emotional strain and sleeplessness due to social rejection, loss of job and income and suffering due to pain, fatigue, and lack of caregivers. They experienced nausea, vomiting, fatigue, loss of appetite, night sweat, exhaustion, weight loss, and pain. Fatigue was the worst symptom in these people. Some of them reported that they feared death (Piyakul, 1999). Vitsarutrat, Tantiwipatsakul and Tunyawinichkul (1999) found that HIV infection was a leading cause of suicide. Moreover, Polngarm et al (2004) found that 25% of their HIV/AIDS samples were abandoned by their families at the hospital and all of them died.

Self-care strategies and quality of life

Self-care strategies are defined as many methods and different strategies used by persons with intention to evaluate symptoms, restore health, prevent disease, and promote their health. A self-care strategy is determined by a person’s decision-making ability, knowledge of available resources and capacity to use those resources (Kemppainen et al. 2003). Self care strategies in persons living with HIV/AIDS refer to self-care behavior that they perform for their symptom management (Henry, Holzemer, Weaver & Stotts, 1999). Symptoms occur during the illness process and the persons perceive and take action in response to their illness. Those who are engaged in self care strategies are more likely to seek treatment in a timely manner and greatly enhance their quality of life (Stearns et al. 2000).

Ragadale et al. (1992) suggested that self care strategies in persons living with HIV/AIDS be used to deal with their problems to enhance quality of life. There are six types of management style as: First, the loner; those who rejected and avoided social interaction. They often spend much time in the morning and afternoon sleeping and reading. Second, the activist; they perceived HIV disease as a social or political phenomenon, not simply a personal affliction. Their qualities of life improve when they work in a group. Third, the victim; they managed survival through posture dependence. The victim allowed others to define what AIDS means and to control quality of life issues. Fourth, the timekeeper; they managed life by waiting for things to happen. Time is used as the central organizing factor in life. Their activities were organized from a time base. Fifth, the mystic; they managed their life by definition as an otherwise unfortunate situation spiritually rather than medically. The mystic spend much of their free time reading scripture, seeking visits from religious confessors, or praying. The last, the medic; they managed their life by depending overwhelmingly on medical meaning for interpreting AIDS and related events. This study showed that quality of life of an individual differed in meaning and how self care was managed. Perception and satisfaction of the individual in managing life style can improve the quality of life.

Self care strategies of pregnant women who are living with HIV were avoidance of toxic substance, choosing the proper food, vitamins avoiding taboo food, special care of the mouth, tongue and skin, spiritual coping, exercise, and condom use with husband to promote health (Panuwatsuk, 1998). Likewise, Nicholas et al. (2003) found that persons living with HIV used massage, acupuncture, herbs, vitamins which might contribute to their quality of life. There was a positively significant correlation between self care strategies and quality of life (Chai-aree, 1990). Moreover, persons living with HIV who had social support and self care strategies, such as taking diet and vitamins, adequate sleep and exercise reported that they had better physical, mental health and overall quality of life. It can be concluded that social support and self care strategies are strongly associated with quality of life. Besides, education, social support and self care strategies explained 22% of the variance in quality of life (Gielen et al. 2001). Furthermore, Chou et al. (2004) suggested that self-care strategies were different in each person depending on symptoms experience; for example, medication and diet change were the self care strategies used for diarrhea. From previous research, persons living with HIV/AIDS used different method such as mind and body control, nutrition, exercise, and herbs combined with antiretroviral drugs (Swanson et al. 2000; Tantisak et al.1999; Pintoptang, 2002). Therefore, appropriate self care strategies can improve their quality of life of persons living with HIV/AIDS

.

Relationships between variables: age, social support, antiretroviral treatment, symptom experience and self care strategies

Age and self care strategies

Age is related to past experience, and each person has different experience. An individual’s experience leads them to select the self-care strategies to solve the problem. Elderly persons who were infected by HIV had low immunity. They felt discouraged and fatigue, which affect their power for using self care strategies. There was a negative relationship between age and self-care strategies in persons living with HIV/AIDS (Vichitvatee, 1991) and in healthy elderly (Prasatketikan, 2001), which means that at an older age the self care strategies will decrease.

Social support and self care strategies

Social support is important for individuals not only in assisting individuals to maintain, promote health, and prevent infection. Social support can help persons living with HIV/AIDS to solve problems such as to decrease anxiety, and to increase self care strategies. Persons living with HIV/AIDS who did not receive social support; often felt lonely, discouraged and had decreased self-care. There was a positive relationship between social support and self-care strategies (Vichitvatee, 1991; Wongsabut, 1997; Prasatketikan, 2001).

Antiretroviral treatment and self care strategies

Antiretroviral treatment is the methods to manage the HIV disease. It decreases viral load and increases the immune system in persons living with HIV/AIDS. Chou et al. (2004) showed that taking medical treatment including antiretroviral related to self care strategies.

Symptom experience and self care strategies

Self care strategies are those activities initiated or maintained by persons living with HIV/AIDS to control the symptom experience. Those, who perceived more symptoms became weaker and felt that their lives were, threaten. They used various strategies to decrease symptoms and improve their ability to function optimally. Chou e al. (2004) found that self care strategies were related to symptoms such as; medication and changing diet were used for diarrhea, daily though and activities was used frequency for depression, exercise was used for fatigue.

Social support and symptom experience

The response to symptom experience of persons living with HIV/AIDS depends on interpretation and perception under their social and cultural, belief, or value (Dodd et al. 2001). Social support, their family provided and facilitated persons living with HIV/AIDS to solve their symptoms. Psychological symptoms were reduced by psychosocial support from their family support in persons living with HIV/AIDS (Lubeck & Fries, 1992). Yang et al. (2003) found that physical symptom experience related to social support. Therefore, social support affects the symptom experience in persons living with HIV/AIDS.

Based on the symptom management model, the researcher selected such variables as age, social support, antiretroviral treatment, stage of disease, symptoms experience, and self-care strategies that are associated with quality of life to determine the model.

CHAPTER III

METHODOLOGY

A cross – sectional designed was use to examine the causal relationship among age, social support, antiretroviral treatment, stage of disease, symptom experience, self- care strategies, and quality of life in persons living with HIV/AIDS

Population and Sample size

The population in this study included persons who are infected with human immune deficiency virus in all stage of disease living in Chiangrai province in northern Thailand. This site was selected because this province has a high rate of HIV infection, especially in age group which was more than twenty years and the rate of occurrence of opportunistic infection was high (TB/HIV Research Project, 2000). The inclusion criteria for eligibility to be recruited into this study were:

1. Persons who have accepted that they are infected with HIV disease
2. More than twenty years old
3. No cognitive impairment
4. Race Thai, Thai language literacy
5. Willingness to participate in this study

Sample size

In fact, the doctors do not diagnose the persons living with AIDS in terms of AIDS, itself. They diagnosed the persons living with AIDS in terms of the existence of opportunistic infection. Therefore, the exact number of persons living with

HIV/AIDS remains unknown. Then, the formula used to calculate the number of sample size (Daniel, 2005) was:

$$n = \frac{Z^2\alpha\sigma^2}{d^2}$$

Where, n = Sample size

$Z^2\alpha$ = the standard estimate under normal curve at $\alpha = .05$

$\alpha/2 = .025$, $Z = 1.96$

σ^2 = Variance of quality of life from the study of Nantachaipan's (1996) in persons living with HIV/AIDS = 38.08^2.

d^2 = Error allowed for estimating quality of life = $0.1 \times \sigma$,

$0.1 \times 38.08 = 3.808^2$

Calculation as formula; that is

$$n = \frac{(1.96)^2 \times (38.08)^2}{(3.808)^2}$$

$$= 384.001$$

From calculating by formula (Daniel, 2005), the minimum sample size of this study is 384 persons. Hair, Anderson, Thatham and Black (1998) suggested missing data as a common problem in multivariate analysis. The researcher should estimate a sample size to be plus 10 % of desired size (Dillman, 2000 cited in Ua-kit, 2004). Therefore, the total sample size will be 422 persons.

Sampling Method

1. Public Health Ministry hospitals are divided into three groups; central hospitals, general hospitals and community hospitals. These hospitals differ in number

of beds. There are three types of the hospitals in Chiangrai province. The central hospital is Chiangrai prachanukroh hospital (759 beds). General hospitals are Phan hospital (120 beds), Somdetpayuparat chiangkhong hospital, Mae chan hospital, and Mae sai hospital (90 beds), Wiangpapao hospital, Thoeng hospital and Chiangsaen hospital (60 beds). Community hospitals (30 beds) are Mae suai hospital, Mae lao hospital, Prayamengrai hospital, Wiangkan hospital, Mae fah luang hospital, Padad hospital, Somdet prayannasungworn hospital, Khuntan hospital and Wiangchiangrung hospital. All hospitals adhere to central standards from the public health ministry for caring persons who were infected with HIV/AIDS.

2. Three hospitals were randomly selected from general hospitals and four hospitals were randomly selected from community hospital by a simple lottery method without replacement. Moreover, the researcher included Chiangrai prachanukroh hospital also because this hospital is the only one central hospital and many persons living with HIV/AIDS seek treatment here (Figure 4).

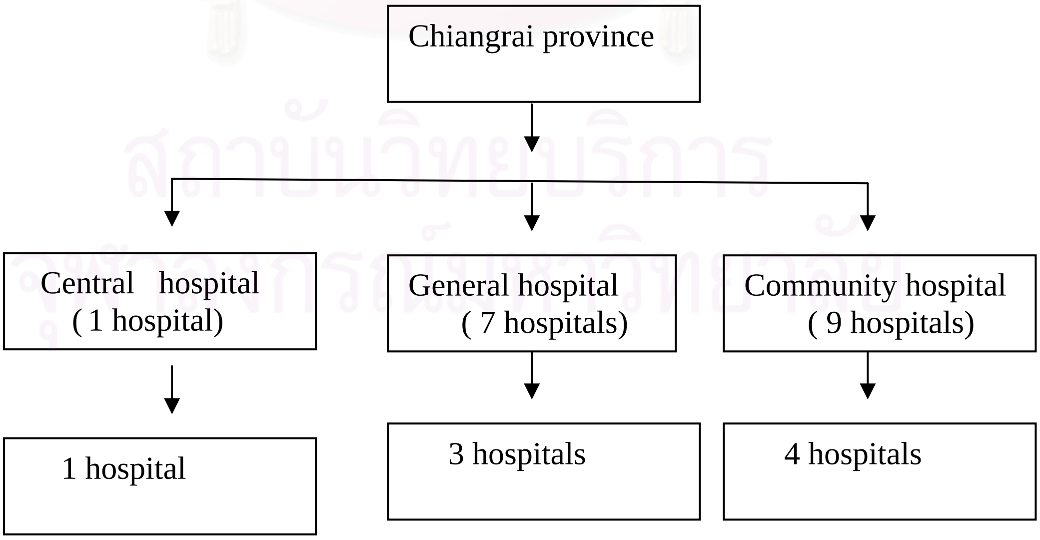


Figure 4 Random sampling of the samples

3. The researcher calculated the expected sample from each type hospital by calculating proportions of the population (Table 1).

Type of hospital	Number of beds	Number of hospitals	Hospital selected	Number of persons living with HIV/AIDS Except Chiang saen hospital (Public Health Chiangrai Province, 2005)	Number of subjects
Central	759	1	1	6,143	103
General	60-120	6	3	11,645	195
Community	30	9	4	7,384	124
Total		16	8	25,172	422

Table 1 Number of subjects from calculating proportion

4. The subjects were simple randomly sampled from the outpatient departments of the eight hospitals. These subjects represented the persons living with HIV/AIDS in Chiangrai province

Instruments

The instruments in this study included:

1. The Personal Data Form composed of age, antiretroviral treatment, stage of disease, sex, education, incomes.

2. Social support, the instrument used was the Personal Resource Questionnaire 85 (PRQ85) part 2 for measuring social support. This instrument was developed by Brandt and Weinert (1981) from a model of relational functions (Weiss, 1969). Dr. Weinert permitted the researcher to use this instrument. It was translated

into Thai language with the back translation method by Chuwatanaprakorn (1997, cited in Puttapitukpol, 2001). The PRQ85 was a self-report consists of two parts. PRQ, Part 1, consists of ten life situation that strongly reflect the western cultures and context were out of the scope in this study. Therefore, it was not used in this study. The PRQ, part 2 assessed the adequacy of the individual's perceived level of social support. It included five dimensions: intimacy, social integration, nurturance, worth, and assistance. The instrument has 25 items with Likert scale ranging from strongly agree (7) to strongly disagree (1). In this study, the researcher used Puttapitukpol (2001) version, a modified the PRQ 85 part 2, rating 5 point Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree) in positive statement and from 5 to 1 in negative statement. The total scores ranged from 25 to 125. Higher scores indicated high social support.

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

Rather low social support = below one third of the sum scores of the individual mean scores (25 – 58.33).

Moderate social support = between one third and two thirds of the sum scores of the individual mean scores (58.34 – 91.66).

Rather high social support= above two thirds of the sum scores of the individual mean scores (91.67 – 125).

Validity

In this study, exploratory factor analysis indicated that the PRQ 85 did not exhibit the three factors structure identified by Weinert (1987), but five factors were extracted and rotated as originally hypothesized (Brandt & Weinert 1981). Five factors accounted for 46.34 % of the variance and were identified as intimacy, social integration, nurturant, worth and assistance.

Reliability

Weinert and Brandt (1987) studied in 100 universities to evaluate test-retest reliability and internal consistency. They found that test – retest reliability of the PRQ part 2 was 0.72. Cronbach's alpha for part 2 was 0.88. Cronbach's alpha for each subscale in time one and two were 0.82 and 0.83 for intimacy, 0.80 and 0.83 for social integration, 0.83 and 0.88 for nurturance, 0.70 and 0.78 for self-worth, and 0.79 and 0.79 for assistance. Gasemgitvata (1993) studied chronically ill patients: the internal consistency was 0.91, for subscales; 0.74 for intimacy, 0.67 for social integration, 0.82 for nurturant, 0.73 for worth and 0.83 for assistance. Puttapitukpol (2001) studied pregnant adolescents found the internal consistency was 0.85. Pakdewong (2006) studied social support in 267 HIV positive mothers: the internal consistency was 0.88. In a pilot study, assessing the reliability of this instrument in 31 subjects at Chiang saen Hospital that was removed from the lottery used to determine sample hospitals, the internal consistency was 0.81. This means that the PRQ part 2 had good internal consistency. In this study for the sample 422 persons living with HIV/AIDS, the internal consistency was 0.84 for total scale and ranged from .41 to .75 for subscales; 0.75 for intimacy, 0.72 for social Integration, 0.65 for nurturant, 0.63 for worth and 0.41 for assistance.

3. Symptom experience: an instrument was developed from the review of literature identifying which symptoms impacted and predicted quality of life. These symptoms were the same as symptoms studied by Holzemer et al. (2004) who permitted the researcher to use their instrument regarding to 6 cluster symptoms in HIV disease: fatigue, nausea, diarrhea, neuropathy, anxiety, and depression. The translation was validated by the back translation method. The English version was translated into Thai language by a researcher. The Thai version was back translated into English language by Tongtip Poollap (Chalermprakiat Center of Translation and interpretation, Faculty of Art, Chulalongkorn University, 2005) who had the ability to use both the Thai and English language. The back translation version was compared with the original version. The discrepancies between the two translations were identified and the procedure was repeated until problems were solved. To assure the validity of the translated version, content validity was checked by the experts.

The symptom experience instrument is composed of three dimensions: first, persons living with HIV/AIDS reported their perceptions of the manifestations of symptoms. The item in the questionnaire was scored on two-point score, no symptom (score = 0) and symptom occurred (score = 1). Second, the persons living with HIV/AIDS evaluated the symptoms by rating severity of symptoms: very low (score = 1) to extremely high symptoms (score = 10). Third, the response to the symptom could be the distress that persons living with HIV/AIDS feel physical and psychological suffering from the symptom occurrence. The distress of symptoms was rated very low (score = 1) to extremely high symptoms (score = 10).

Validity

The content validity of the symptoms experience was assessed by 4 experts; one doctor regarding to HIV disease, three nurses regarding to theoretical nursing and practice for checking content completely.

Reliability

In pilot study, the researcher studied 31 persons living with HIV/AIDS and found that the internal consistency reliability of symptoms experience questionnaire; fatigue, nausea, diarrhea, depression, neuropathy, and anxiety was 0.91, 0.88, 0.88, 0.91, 0.90, and 0.84 respectively. In this studied, the internal consistency reliability of each symptom was range from 0.88 to 0.93; 0.88 for fatigue, 0.92 for nausea, 0.93 for diarrhea, 0.92 for depression, 0.93 for neuropathy, and 0.92 for anxiety.

4. Self-care strategies: the researcher translated the symptom management and self-care strategies to relieve symptoms questionnaire developed by Holzemer, et al (2004) to Thai language and then used the back translation method by Tongtip Poollap (Chalermprakiat Center of Translation and interpretation, Faculty of Art, Chulalongkorn University, 2005). The questionnaire consisted of 18 - 22 items for each symptom; 20 items for fatigue, 20 items for nausea, 18 items for diarrhea, 19 items for depression, 18 items for neuropathy and 22 items for anxiety. Some items were the same item in each symptom. Many items of this questionnaire were the same question for each symptom. After the reliability of this instrument was tested, the research found that some subjects had one symptom and some subjects had more than one symptom. The subjects who had more than one symptom used the same self care strategies to decrease symptoms likes the subjects who had one symptom. Then, the researcher adjusted all the items in each questionnaire to one questionnaire by

grouping the same item to one question. It composed of 58 items: activities 28 items, exercise 2 items, complementary medicine 4 items, food suggested to eat 9 items, food suggested to avoid 3 items, medications 3 items, supplement/vitamin 4 items, being prepared 2 items, changing eating pattern 3 items and the instrument was assessed by the experts again.

This questionnaire was rated by non practice (score = 0), practice (score = 1). If "practice" how often do you do this: Daily (score = 7), to one day/week (score = 1), and each strategies could be released symptom: score started with 1 to 10 (score 1 = not well to score 10 = very well). The researcher used the self care strategies part of self care strategies released symptom for calculating. Total score were 580 and divided by 5.8 for total score equal 100. Higher score indicated that self care strategies were effective for releasing symptom.

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

Low self care strategies = below one third of the sum scores of the individual mean scores (0– 33.33).

Moderate self care strategies = between one third and two thirds of the sum scores of the individual mean scores (33.34 – 66.66).

High self care strategies = above two thirds of the sum scores of the individual mean scores (66.67 – 100).

Validity

In this study, the content validity was assessed by 4 experts, 1 doctor who is an expert in study of HIV disease, 2 experts in symptom management, and 1 expert in adult nursing for checking content completely.

Reliability,

The researcher pilot tested the questionnaire 31 subjects and found that the internal consistency was 0.79 and in this study, the reliability of this questionnaire was 0.77.

5. Quality of life: the questionnaire was created by Nantachaipan (1996). It was developed for measure the quality of life in persons living with HIV/AIDS who lived at home. It was composed of 24 items with five dimensions. The dimensions included: physical/ general well-being (5 items), social interaction (5 items), self attitude (5 items), emotional/psychological well-being (4 items), and life satisfaction (5 items). A linear analog scale was 100 millimeter long with values from 0-100 points for each item. Total scores were divided by 24. Total scores were 100 and back score in reverse items. Score 0 indicated the poorest quality of life and 100 indicated the best quality of life.

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

Low quality of life = below one fifth of the sum scores of the individual mean scores (0-20).

Rather low quality of life = between one fifth and two fifths of the sum scores of the individual mean scores (21-40).

Moderate quality of life = between two fifths and three fifths of the sum scores of the individual mean scores (41-60).

Rather high quality of life = between three fifths and four fifths of the sum scores of the individual mean scores (61-80).

High quality of life = above four fifths of the sum scores of the individual mean scores (81-100).

Validity

After Nantachaipan (1996) developed this instrument, the content validity of the quality of life questionnaire was assessed by the 10 experts; one doctoral expert in HIV disease, 4 nurses who were expert regarding theoretical and practice in nursing, and five persons living with HIV/AIDS. However, this instrument did not test construct validity.

Reliability

Nantachaipan (1996) studied 30 persons living with HIV/AIDS and found that the internal consistency reliability of quality of life questionnaire was 0. 92 and by test – retest reliability method, the reliability was between 0.78 – 0.90. Thanasilp (2001) modified the quality of life questionnaire and conducted research with persons with Pneumocystis Carinii Pneumonia. The dimensions included social interaction 4 items, physical/ general well-being 6 items, emotional/psychological well-being 4 items, self-attitude 5 items, and life satisfaction 5 items. The internal consistency reliability of emotional/psychological well-being, physical/ general well-being, social interaction, self-attitude and life satisfaction were 0.83, 0.85, 0.82, 0.84, and 0.89, respectively.

In a pilot study, the researcher tested the reliability of this instrument with 31 subjects; the internal consistency reliability was 0.87. This finding means that the quality of life questionnaire had good internal consistency. In this study, the internal consistency reliability was 0.85 for total scale and ranged from .48 to .84 for subscales; 0.48 for self attitude, 0.65 for social integration, 0.74 for physical well being, 0.76 for emotional well being, and 0.84 for life satisfaction.

Data collection

1. The letter asking for permission to collect the data from the Faculty of Nursing, Chulalongkorn University was sent to the directors of eight hospitals.

2. After approval was granted from the Ethical Review Committee for research Involving Human Subjects and/or Use of Animal in Research, Health Science Group of Faculties, Colleges and Institutes, Chulalongkorn University, and the Ethical Review Committee for research biomedicine Group, Chiangrai prachanukroh hospital, the researcher made an appointment to meet the doctor and head nurses of each outpatient department in the hospital to introduce herself and informed them about the objectives, process of the study and asked for cooperation. In each hospital, there was a group ‘Volunteer of persons living with HIV/AIDS’ that advised and facilitated for persons living with HIV/AIDS’ to meets the doctor and nurses at the hospital.

3. The researcher introduced herself, initiated a relationship with persons living with HIV/AIDS, and clearly explained about the objectives, process of the study and the right to participate in the study.

4. The subjects who agreed to participate in this study were asked to sign the informed consent.

5. The researcher retrieved personal data from census and filled in relevant part of the personal data form.

6. The subjects were requested to complete the questionnaires: Social support, Symptom experience, Self-care strategies, and Quality of life. These questionnaires took about 30 – 45 minutes to complete.

7. The researcher examined for the completeness of questionnaire and if incompletely returned the form to the subject to obtain remaining information.

Data analysis

The data were analyzed using descriptive statistics and reliability with the Statistical Package for the Social Science Program (SPSS). The Structural equation model analysis was used the Linear Structural Model Relationship program version 8.53 (LISREL). The data analysis procedures were described in the following discussion.

1. Data screening used descriptive statistic including frequencies, means, and standard deviation.

2. The reliability of all instruments was tested by Cronbach's Alpha Coefficient.

3. The relationship among variables was tested by Pearson Product Moment Correlation.

4. The measurement models were tested for construct validity by confirmatory factor analysis (CFA)

5. Multivariate analysis for structural equation model and LISREL (Linear Structure Relationship) were used to estimate the parameters of the hypothesized causal model for the variables. The full model was tested for Godness-of-fit index. The Chi-square (χ^2), the Goodness of fit index (GFI), the adjusted Goodness of fit index (AGFI), and the Root Man Square Error of Approximation (RMSEA) were used as indicators of Godness-of-fit index.

6. If there was inadequate fit of data, the model was adjusted under the modification index and theoretical meaning until the model fitted with the data.

7. The researcher stipulated the significant level in this study at 0.05.

Protection of Human Subjects

The subjects were informed about the purpose of the study and their right to refuse participation. If the subjects decided to participate, during the participation, subjects could ask doubtful questions or refused to answer some questions. The subjects could withdraw from the study at any time without penalty and the care of their health and their relationship with the health care team would not be affected. If the subjects felt uncomfortable during answer questionnaires, the researcher would: 1). stopped interviews in advance and psychological support, 2). consulted psychologist to assess psychological consequence and counseling, 3). consulted psychiatrist for appropriate intervention and treatment. Name and address of the subjects would be kept as a secret. Their names were not addressed in the data; a code number was used to ensure confidentiality. All study data would be collected and stored in a secure place and not shared with any other person without their permission. There was no harm to the subjects in this study. The subjects would take approximate 30 - 45 minutes for completing the questionnaires. There was neither cost nor any payment to participants in the study. Researcher would be available for all subjects 24 hours when they needed to ask any questions about the study, contacted by mobile phone: 01-8878707.

CHAPTER IV

RESULTS

The results of this study are presented in this chapter. The results include characteristics of the subjects, descriptive variables of the study, the preliminary analysis, the confirmatory factor analysis of the measurement model, and the structure equation modeling (SEM).

A total of 471 persons living with HIV/AIDS participated in this study. After subjects completed their questionnaires, all data were checked for completeness. Eighteen persons living with HIV/AIDS were excluded because they had no sign or symptoms in the week in which they completed the questionnaires. Two subjects were withdrawn while they answered their questionnaire because of weakness. The extreme missing data cases and outlier cases were excluded from further data analysis. The number of subjects used in the study for data analysis was 422 cases. From the central hospital (Chiangrai prachanukroh hospital) 25 % of the subjects were recruited; 38.6 % were from general hospitals (Mae chan hospital, Thoeng hospital and Mae sai hospital); and 46.2 % were from community hospitals (Mae suai hospital, Mae lao hospital, Somdet prayannasungworn hospital, and Wiangchiangrung hospital).

Demographics characteristic of subjects

Nearly half of the subjects (44.5 %) were male and 55.5% were female. More than half of the subjects (56.6%) ranged in age between 31- 40 years and 2% of the subjects were more than 60 years. Most of the subjects (71.3 %) graduated from elementary education and 18.5 % graduated high school while 0.2% had completed a bachelor degree and 5.5% had not studied with a mean years of education = 2.06 (SD = 1.1). Nearly all of the subjects (90 %) lived with their family; father, mother and husband or wife.

Approximately half of the subjects (54.3 %) had monthly earning of 1,000 – 5,000 baht, while 22.3 % had monthly earning below 1,000 baht and 18.5% of subjects reported no monthly income. More than half of the subjects (62.6%) were not paid for antiretroviral drugs and treatment but 0.7% paid out of pocket. Only 2.8 % of the subjects could reimburse while 3.3% of the subjects paid by social security for antiretroviral drugs. The subjects smoked cigarettes approximate 14.9 % and 19.4 % drank alcohol. Four subjects were blindness but they could have activity daily living regularly.

Nearly half of the subjects (46%) were stage 2 which ranged of cd4 between 201 cell/mm^3 - 499 cell/mm^3. Two-third of the subjects (36%) were stage 1 which cd4 more than 500 cell/mm^3 and 18 % of the subjects were stage 3 which number of cd4 was less than 200 cell/mm^3. The majority (82.5 %) of the subjects received antiretroviral drugs. Few subjects (6.1 %) reported taking any herbs (Pueraria condolleigrah). The demographic characteristics of the subjects were summarized in table 2.

Table 2 Demographic of the subjects

Characteristics	Frequency	Percentage
Sex		
Male	188	44.5
Female	234	55.5
Age (years)		
21 – 31	76	18
31 – 40	239	56.6
41 – 50	96	22.8
51 – 60	9	2.1
> 61	2	0.5
Level of education		
None	23	5.5
Elementary school (1st - 6th grade)	301	71.1
High school (9th – 12th grade)	79	18.7
Diploma	1	0.2
Bachelors degree or above	18	4.3
Family income/month (Baht)		
None	78	18.5
Below 1,000	94	22.3
1,001 – 5,000	231	54.7
> 5,001	19	4.5
The adequate of income		
Inadequate	384	90.99
Barely adequate	35	8.29
Adequate	3	0.71
Stage of disease		
Stage 1 (cd4 over 500)	76	18
Stage 2 (cd4 201 – 499)	194	46
Stage 3 (cd4 below 200)	152	36
Used antiretroviral drugs		
No	74	17.5
Yes	348	82.5
Payment for treatment		
Free (no pay)	264	62.6
30 Baht	129	30.6
Reimburse	12	2.8
Social security	14	3.3
Out of pocket	3	0.7
Used substance		
Smoking cigarettes	61	14.5
Drinking alcohol	81	19.1

Descriptive statistics of the variables

The majority (84.8 %) of the subjects had fatigue followed by anxiety (72.7%), neuropathy (68.0%), and depression (67.2%). Nearly thirty percent of subjects (29.4%) had six symptoms and only 12.3% of the subjects had one symptom. The most frequently experienced symptoms are shown in table 3.

Table 3 Descriptive Statistic of Symptom experience (n = 422)

Symptoms	Frequency	Percentage
Fatigue	358	84.8
Nausea/vomiting	237	56.1
Diarrhea	167	39.5
Depression	284	67.2
Neuropathy	287	68.0
Anxiety	307	72.7
Only 1 symptom	53	12.6
2 symptoms	71	16.8
3 symptoms	59	14.0
4 symptoms	51	12.1
5 symptoms	64	15.2
6 symptoms	124	29.4

Fatigue was the common symptom in this study. Nearly fifty percent (49.06%) of the subjects who had one symptom were fatigue, followed by neuropathy (24.53%). The majority of the subjects (23.94 %) who had two symptom experiences were fatigue and neuropathy followed by fatigue and anxiety (19.72 %). More than twenty percent of the subjects (25.42 %) who had three symptoms were fatigue, depression and anxiety the same as fatigue, neuropathy, and anxiety, followed by fatigue, nausea, and anxiety (10.17 %). More than forty percent of the subjects (39.22 %) who had four symptom experiences were fatigue, depression, neuropathy, and anxiety while 21.57 % of the subjects who had four symptom experiences were fatigue, nausea, depression, and anxiety. Approximate sixty percent of the subjects were (60.94 %) were fatigue, nausea, depression, neuropathy and anxiety. The most frequently separating experienced symptoms are shown in table 4.

Table 4 Descriptive statistic of separating symptom experiences (N = 422)

Symptom	Number	Percent
One symptom (N = 53)		
Fatigue	26	49.06
Nausea	1	1.89
Diarrhea	1	1.89
Depression	6	11.32
Neuropathy	13	24.53
Anxiety	6	11.32
Two symptoms (N = 71)		
Fatigue, Nausea	6	8.45
Fatigue, Diarrhea	1	1.41
Fatigue, Depression	9	12.68
Fatigue, Neuropathy	17	23.94
Fatigue, Anxiety	14	19.72
Nausea, Depression	1	1.41
Nausea, Neuropathy	2	2.82
Nausea, Anxiety	2	2.82
Diarrhea, Depression	1	1.41
Depression, Neuropathy	3	4.23
Depression, Anxiety	10	14.08
Neuropathy, Anxiety	5	7.04
Three symptoms (N = 59)		
Fatigue, Nausea, Diarrhea	1	1.69
Fatigue, Nausea, Depression	1	1.69
Fatigue, Nausea, Neuropathy	4	6.78
Fatigue, Nausea, Anxiety	6	10.17
Fatigue, Depression, Neuropathy	6	10.17
Fatigue, Depression, Anxiety	15	25.42
Fatigue, Neuropathy, Anxiety	15	25.42

Table 4 Descriptive statistic of separating symptom experiences (continue)

Symptom	Number	Percent
Nausea, Diarrhea, Depression	1	1.69
Nausea, Depression, Anxiety	2	3.39
Nausea, Neuropathy, Anxiety	2	3.39
Diarrhea, Depression, Neuropathy	1	1.69
Diarrhea, Depression, Anxiety	4	6.78
Depression, Neuropathy, Anxiety	1	1.69
Four symptoms (N = 51)		
Fatigue, Nausea, Diarrhea, Depression	3	5.88
Fatigue, Nausea, Diarrhea, Anxiety	2	3.92
Fatigue, Nausea, Depression, Neuropathy	4	7.84
Fatigue, Nausea, Depression, Anxiety	11	21.57
Fatigue, Nausea, Neuropathy, Anxiety	7	13.73
Fatigue, Diarrhea, Depression, Anxiety	1	1.96
Fatigue, Diarrhea, Neuropathy, Anxiety	2	3.92
Fatigue, Depression, Neuropathy, Anxiety	20	39.22
Diarrhea, Depression, Neuropathy, Anxiety	1	1.96
Five symptoms (N = 64)		
Fatigue, Nausea, Diarrhea, Depression, Neuropathy	8	12.50
Fatigue, Nausea, Diarrhea, Depression, Anxiety	4	6.25
Fatigue, Nausea, Diarrhea, Neuropathy, Anxiety	5	7.81
Fatigue, Nausea, Depression, Neuropathy, Anxiety	39	60.94
Fatigue, Diarrhea, Depression, Neuropathy, Anxiety	7	10.94
Nausea, Diarrhea, Depression, Neuropathy, Anxiety	1	1.56

Most of the subjects (62.8%) perceived social support in high level while no subjects (0%) perceived social support in low level. The majority of the subjects (63.75%) had self care strategies for decreased symptom in moderate level and more than one third of the subjects (35.54%) had self care strategies for decreased symptom in low level. More than half of the subjects (54.97%) perceived quality of life in rather high level and only 0.5% of the subjects perceived quality of life in rather low level. No subjects (0%) perceived quality of life in low level (See Table 5).

Table 5 Ranged of scores, Percent, Level of variables (N = 422)

Variables	Ranged of scores	N	Percent	Level
Social support	25 - 58.33	0	0	-
	58.34 - 91.66	157	37.2	moderate
	91.67 - 125	265	62.8	high
Self care strategies	0 - 33.33	150	35.54	low
	33.34 - 66.66	269	63.75	moderate
	66.67 - 100	3	0.71	high
Quality of life	0 - 20	0	0	low
	21 - 40	2	0.50	rather low
	41 - 60	84	19.90	moderate
	61 - 80	232	54.97	rather high
	81 - 100	104	24.63	high

The variables examined in this study included: age, stage of disease, antiretroviral drugs treatment, social support, symptom experience, self-care strategies and quality of life. The subjects' age ranged from 21 to 71 years. The mean age of subjects was 36.56 years (SD= 6.56). Mean score of CD4 was 303.22 cell/mm^3 (SD = 217.56) with range of cd4 from 2 cell/mm^{3}to 1521 cell/mm^3.

The mean total score on the social support scale was 3.76 (SD=0.40). Social support of the subjects was in high level. For mean scores of subscales were follow; intimacy ($\overline{X}$ = 3.82, SD = 0.52), social integration ($\overline{X}$ = 3.57, SD = 0.53), nurturant ($\overline{X}$ = 3.68, SD = 0.52), worth ($\overline{X}$ = 3.88, SD = 0.53), and assistance ($\overline{X}$ = 3.87, SD = 0.47).

For symptom experience, the mean total score was 1.89 (SD = 1.58). In subscale of symptom experience, mean score of diarrhea was the lowest ($\overline{X}$ = 0.84 SD = 1.49) and mean score of fatigue was the high ($\overline{X}$ = 2.62, SD = 2.39) followed by neuropathy ($\overline{X}$ = 2.24, SD = 2.73).

Mean scores of self-care strategies was 37.66 (SD = 11.32). The subjects used vary self care strategies to decrease the symptom. Most of the subject used self care strategies by eating rice ($\overline{X}$ = 8.81, SD = 2.41), followed by taking medicine ($\overline{X}$ = 8.64, SD = 2.78), and drinking water ($\overline{X}$ = 8.13, SD = 3.03) (See appendix I)

The mean total score of quality of life was 70.89 (SD = 12.19). Most of subjects perceived rather high of quality of life. For mean scores of subscales were follow; life satisfaction ($\overline{X}$ = 19.71, SD = 3.65), physical well being ($\overline{X}$ = 14.93, SD = 3.60), emotional well being ($\overline{X}$ = 14.94, SD = 5.09), social interaction ($\overline{X}$ = 11.55, SD = 2.88), and attitude ($\overline{X}$ = 9.74, SD = 2.28). (See Table 6)

Table 6 Descriptive Statistic of variables

Variables	Possible Range	Actual Range	Mean	S.D.	Skewness	Kurtosis
Age	-	21-71	36.56	6.56	0.00	-0.01
Stage of disease	-	-	2.18	0.71	-0.22	-1.06
Antiretroviral treatment	-	-	0.82	0.38	-1.71	0.94
Social support	1-5	2.44-5	3.76	0.40	-0.05	0.61
Intimacy	1-5	2-5	3.82	0.52	0.01	-0.03
Social integration	1-5	2-5	3.57	0.53	-0.01	-0.05
Nurturant	1-5	2-5	3.68	0.52	-0.00	-0.03
Worth	1-5	2-5	3.88	0.53	-0.03	-0.07
Assistance	1-5	2-5	3.87	0.47	-0.02	0.07
Symptoms experience	1-10	1-8.5	1.89	1.58	1.35	1.72
Fatigue	1-10	1-10	2.62	2.39	0.17	-0.45
Nausea	1-10	1-10	1.44	2.00	0.60	-0.56
Diarrhea	1-10	1-10	0.84	1.49	0.99	-0.11
Depression	1-10	1-10	2.00	2.40	0.40	-0.66
Neuropathy	1-10	1-10	2.24	2.73	0.38	-0.71
Anxiety	1-10	1-10	2.15	2.35	0.32	-0.62
Self care strategies	0-100	8-86	37.66	11.32	-0.00	-0.02
Quality of life	0-100	34.58-99.58	70.89	12.19	-0.01	-0.36
Life satisfaction	0-25	4.58-25	19.71	3.65	-0.05	-0.19
Physical well being	0-25	2.5-25	14.93	3.60	-0.05	-0.19
Emotional well being	0-21	2.92-20.83	14.94	5.09	-0.02	-0.12
Social interaction	0-16	2.08-16.67	11.55	2.88	-0.04	-0.16
Self attitude	0-13	2.08-12.50	9.74	2.28	-0.20	-0.49

Preliminary Analysis: Assumption Testing

Assumptions underlying multivariate for structure equation modeling were tested to ensure that the assumptions were not violated and the results of this study were not distorted. Three assumptions were tested. There were normality, linearity, and multicollinearity.

Normality

Normality of variables is assessed by either statistics or graphical methods. Two components of normality are skewness and kurtosis. By using PRELIS program, the multivariate normality was tested in all variables. The skweness values of all variables in this study ranged from -0.01 to -1.71, and the kurtosis values ranged from -0.01 to 1.72. The skewness and kurtosis values indicated that the data distribution was within range of normality.

For graphical method, normal probability plot and detrended normal probability plot were used; the result showed that the data distributed normality.

Linearity

SEM examines only linear relationships among variables. Linearity is important for Pearson's correlation. The linearity relationships among paired of measured variables was assessed through a bivariate scatter plots by using PRELIS program. The scatter plots between all independent variables and dependent variable showed no evidence of nonlinearity between pairs of variables.

Multicollinearity

There are three indicators use to assess multicollinearity. (1) Correlation coefficients between variables above 0.6 means two independents variables are highly related. (2) Tolerance less than 0.1 and variance inflation factor (VIF) high (more than 10) mean the variables indicate a multicollinearity problem. (3) Condition indexes above 30 and variance proportions greater than .90 may show evidence of multicollinearity (Nonglak, 1999; Hair et al., 1998).

In this study data indicated no evidence of multicollinearity. The correlation coefficients for all independent variables ranged from 0.01 to 0.63 (Appendix J) which means no extreme value correlations were present. All tolerance values were more than 0.1 and all VIF values were not more than 10. The tolerance and VIF values indicated no evidence of multicollinearity. There were five indicators that had high condition indices that ranged from 31.52 to 47.96, but overall condition indices were under the threshold values of 30 and all variance proportions value were under 0.9 (Appendix J**).** Condition indices and variance proportions were not occurred multicollinearity problem.

The evaluation of assumptions; normality, linearity and multicollinearity in this study did not violate the criteria of Structural Equation Modeling (SEM).

Structural Equation Modeling Analysis

Four exogenous latent variables and three endogenous latent variables were identified in the model tested in this study. The exogenous latent variables were age, stage of disease, antiretroviral drugs treatment, and social support. Three endogenous latent variables were symptom experience, self care strategies, and quality of life. Confirmatory factor analysis was used to verify the theoretical constructs of the measurement model of the latent variables before the causal model was tested.

Confirmatory factor analysis procedure composed of two methods; overall fit and measurement model fit. Overall fit was identified by Chi-square (χ^2), Goodness-of-fit index (GFI), Adjusted goodness of fit index (AGFI), and Root mean square error of approximation (RMSEA). Large Chi-square (χ^2) value corresponds to bad fit and small Chi-square (χ^2) value corresponds to good fit. The .05 significance and nonsignificant chi-square are recommended as the minimum accepted. The χ^2/df ratio should fit within the recommended level of 1.00 to 2.00 that mean a good fit. Goodness-of-fit index (GFI) compared the squared residuals from prediction with the actual data. It represents the overall degree of fit ranging from 0 (poor fit) to 1 (perfect fit). High values of GFI indicated better fit. GFI values are 0.9 or above indicated this model fit. Adjusted goodness of fit index (AGFI) referred to an adjusted GFI for degree of freedom in the model. AGFI ranged from 0 to 1.00, with closed to 1.00 indicating a good fit. Root mean square error of approximation (RMSEA) was the discrepancy, which was expressed per degree of freedom in terms of the population. RMSEA values less than 0.05 indicated a good fit. RMSEA values high represented the error of approximation in the population.

Measurement model fit was used to examine the indicators for each construct and assessed the reliability of each construct for estimating the relationship evaluated by fixed value and free value. Measurement model fit was conducted to examine the observed variable loadings for a statistically significant level of .05 related to the specific constructs. The posited relationships among indicators and the construct were verified (Hair et al., 1998). The other strategy used was to examine the squared multiple correlation (R^2) of observed variables; R^2 values ranged from 0 to 1.00.

The measurement model of social support was measured by the Personal Resource Questionnaire 85 part 2. The construct indicators of the PRQ 85 part 2 were intimacy, social integration, nurturant, worth, and assistance. The initial scores for measurement model of social support showed that the chi-square was equal 15.05, degree of freedom equal 5, χ^2 /df = 3.01, GFI = 0.99, AGFI = 0.96, RMSEA = 0.069 and p - value = 0.010. It showed that the initial model did not fit with the data. Then the model of social support was modified by freeing a specific fixed parameter to be continued. After modifying the model, the model fit with the data; χ^2 values was equal 3.93, df = 4, χ^2 /df = 0.98, GFI = 1.00, AGFI = 0.99, RMSEA = 0.000 and p - value = 0.41 **(Appendix l; Figure 9).**

The measurement model of symptom experience was composed of six construct indicators; fatigue, nausea, diarrhea, depression, neuropathy and anxiety. The initial scores for the measurement model of symptom experience showed that the chi-square was equal to 28.30, degree of freedom was 9, χ^2 /df = 3.14, GFI = 0.98, AGFI = 0.95, RMSEA = 0.071 and p - value = 0.000. This finding showed that the initial model did not fit with the data so the model was modified. It had low chi-square values resulting in nonsignificant level (p - value = 0.36). χ^2 values was equal 6.57, df = 6, χ^2 /df = 1.09, GFI = 0.99, AGFI = 0.98 and RMSEA = 0.01 **(Appendix l; Figure 10).**

The measurement model of quality of life had five constructs. There were life satisfaction, physical well-being, emotional well - being, social interaction, and self attitude. The initial scores for measurement model of quality of life showed that the chi-square was equal 97.31, degree of freedom equal 5, χ^2 /df = 19.46, GFI = 0.92, AGFI = 0.76, RMSEA = 0.20 and p - value = 0.000. It showed that the initial model did not fit with the data. Then the model of quality of life was modified by freeing a specific fixed parameter to be a continuous variable. After modifying the model, the model fit with the data; χ^2 values was equal 0.96, df = 3, χ^2 /df = 0.32, GFI = 1.00, AGFI = 1.00, RMSEA = 0.000 and p - value = 0.81 **(Appendix l; Figure 11).**

All measurement models were indicated to have overall fit. Chi-square tests had low values and reached nonsignificant levels. Both GFI and AGFI values were closed or equal to 1.00, and RMSEA values ranged from 0.00 to 0.01. All indexes of measurement models were acceptable (See Table 7).

Table 7 Statistic Overall Fitted Index of measurement models (N = 422)

Variables	Chi-square	*df*	*p*	GFI	AGFI	RMSEA
Social support	3.93	4	0.41	1.00	0.99	0.00
Symptom experience	6.38	6	0.38	0.99	0.98	0.01
Quality of life	0.96	3	0.81	1.00	1.00	0.00

Note; *df* = degree of freedom, GFI = Goodness of fit index, AGFI = Adjust goodness of fit index, RMSEA = Root mean square error of approximation

The squared multiple correlation coefficients (R^2) for each observed variable of the latent variables were ranged from 0.03 to 0.68 which illustrated in table 7. R^2 for social support revealed low (0.38) to highly (0.72). The construct reliability was very low on the nurturant subscale (R^2 = 0.38). R^2 for symptom experience revealed low (0.22) to moderately (0.54). It indicated that all subscales were relatively important to the symptom experience. R^2 for quality of life revealed low (0.03**)** to moderately (0.65). The construct reliability was very low on the self attitude subscale (R^2 = 0.03) and emotional well being (R^2 = 0.07). It indicated that all subscale reflected the construct of quality of life (See Table 8).

Table 8 First – Order Measurement model of Studied Variables (N = 422)

Indicators	Loading	T-value	SE	Factor score	R^2
Social support					
Intimacy	0.85	18.94	0.04	0.45	0.72
Social Integration	0.75	15.61	0.05	0.30	0.56
Nurturant	0.61	13.14	0.05	0.11	0.38
Worth	0.76	17.04	0.04	0.20	0.58
Assistance	0.62	13.23	0.05	0.11	0.38
Symptom Experience					
Fatigue	0.60	12.06	0.05	0.06	0.37
Nausea	0.63	12.65	0.05	0.15	0.40
Diarrhea	0.47	9.14	0.05	0.09	0.22
Depression	0.74	14.75	0.05	0.36	0.54
Neuropathy	0.59	10.94	0.05	0.23	0.34
Anxiety	0.69	14.28	0.05	0.25	0.47
Quality of Life					
Life satisfaction	0.72	15.22	0.05	0.28	0.51
Physical well being	0.77	16.55	0.05	0.35	0.60
Emotional well being	0.26	4.78	0.05	-0.03	0.07
Social integration	0.81	7.39	0.05	0.43	0.65
Self attitude	0.16	3.05	0.05	0.04	0.03

Note; SE = standard error, R^2 = Square multiple correlation

Testing the Hypotheses Model

The hypothesized model was composed of twenty observed variables, seven latent variables which separated to four exogenous variables and three endogenous variables. The four exogenous variables were age, stage of disease, antiretroviral drugs treatment and social support. The three endogenous were symptom experience, self-care strategies and quality of life. All variables were entered into structure equation model based on the hypothesized model. One construct of each latent variable was set to 1.0 for loading factor. The result of the hypothesized model was showed in table 9 Chi-square was very large (χ^2 = 457.58, *p*-value 0.000, *df* = 163, with χ^2/df = 2.81). The goodness of fit index was equal 0.90, adjust goodness of fit index was equal 0.87 and Root mean square error of approximation equal 0.07. It indicated that this model did not fit with the data.

Table 9 The structure model of quality of life

Structure model	Chi-square	*df*	χ^2/df	*p*-value	GFI	AGFI	RMSEA
Hypothesized model	457.58	163	2.81	0.000	0.90	0.87	0.07
Modified model	91.56	112	0.49	0.921	0.98	0.96	0.00

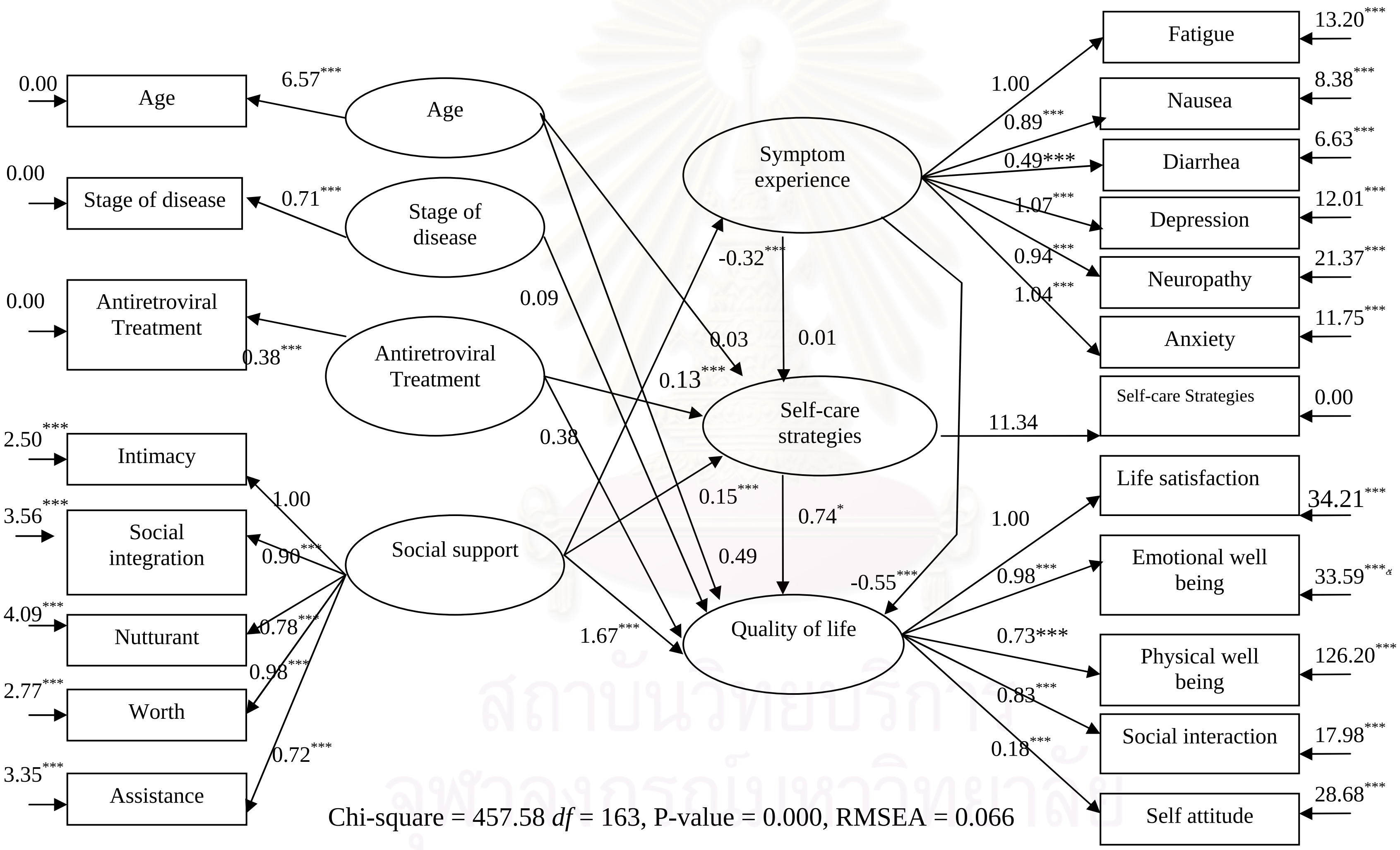
Note; *df* = degree of freedom, GFI = Goodness of fit index, AGFI = Adjust goodness of fit index, RMSEA = Root mean square error of approximation

When examining parameter estimates, some had significant parameters and their direction was as proposed in the theory such as the path from social support to symptom experience ($\beta = -0.32$, $p < 0.05$), self-care strategies ($\beta = 0.15$, $p < 0.05$), and quality of life ($\beta = 1.67$, $p < 0.05$), the path from symptom experience to quality of life ($\beta = -0.55$, $p < 0.05$), and the path from self care strategies to quality of life ($\beta = 0.74$, $p < 0.05$) including the path from antiretroviral treatment to self care strategies ($\beta = 0.13$, $p < 0.05$). However, there was evidence of misspecified parameters between endogenous variables and exogenous variables for the theoretical model. The path from symptom experience to self care strategies was a non significant parameter ($\beta = 0.10$, $p > 0.05$). Two paths were no significant; the path from age to self-care strategies ($\beta = 0.03$, $p > 0.05$) and the path from age to quality of life ($\beta = 0.49$, $p > 0.05$). Corresponding to the path coefficients two path were nonsignificant from stage of disease to quality of life ($\beta = 0.09$, $p > 0.05$) and the path from antiretroviral treatment to quality of life ($\beta = 0.38$, $p > 0.05$) (See Table 10 and Figure 5).

Table 10 Path coefficients, Standard Errors, T-Values of Parameter Estimates of Quality of Life Hypothesized Model (N = 422)

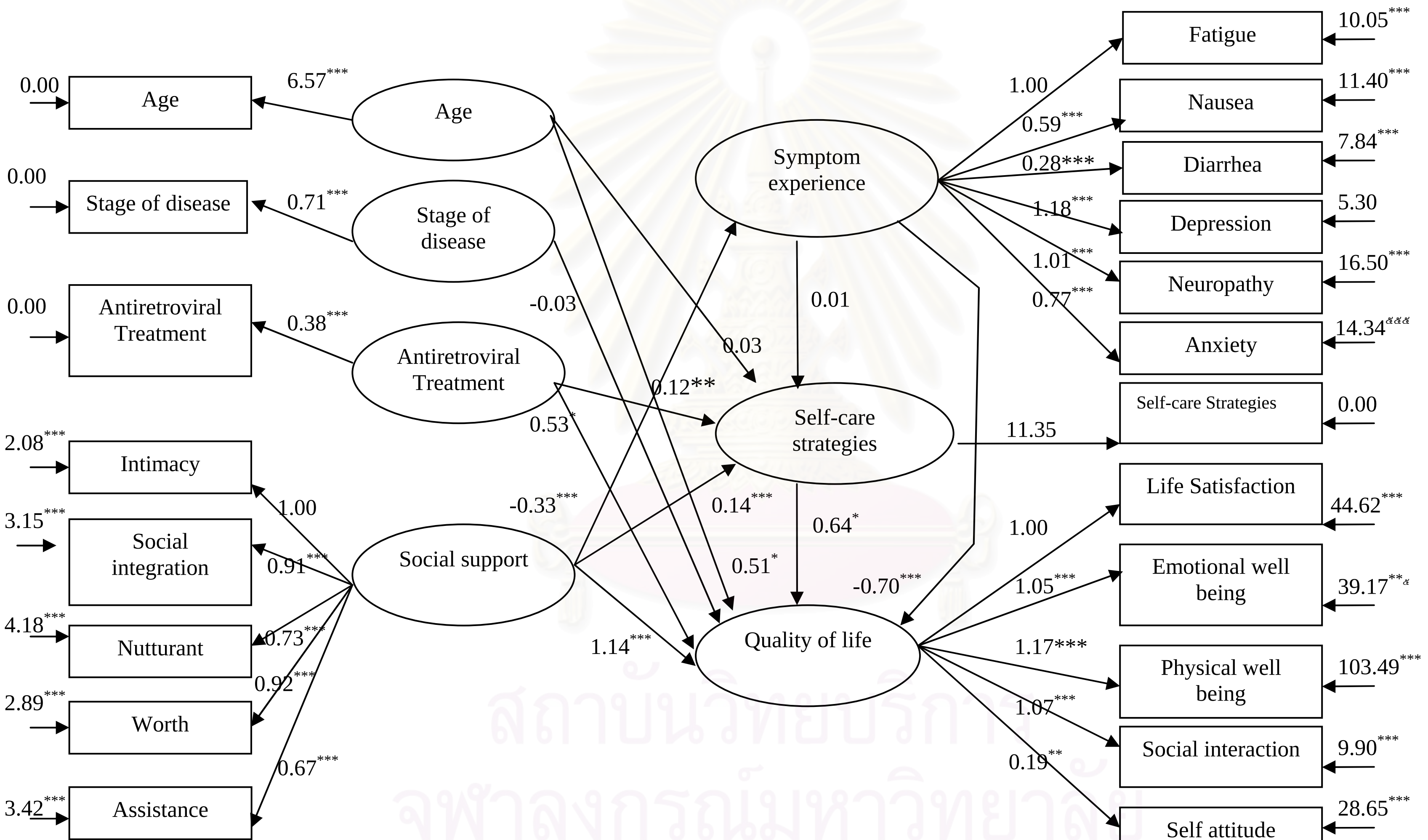
Path	Path coefficients	Standard Error	T-Values
LAMDA- Y			
Symp → Fatigue	1.000		
→ Nausea	0.89	0.08	11.22***
→ Diarrhea	0.49	0.06	8.79***
→ Depression	1.07	0.10	11.24***
→ Neuropathy	0.94	0.10	9.15***
→ Anxiety	1.04	0.09	11.14***
Self-care strategies	11.34		
QOL → Life satisfaction	1.00		
→ Physical well being	0.98	0.07	13.81***
→ Emotional well being	0.73	0.10	7.39***
→ Social interaction	0.83	0.06	14.43***
→ Self attitude	0.18	0.04	4.05***
LAMDA X			
Age	6.57	0.23	29.02***
Stage of disease	0.71	0.03	29.01***
Antiretroviral treatment	0.38	0.01	29.01***
SS → Intimacy	1.000		
→ Social integration	0.90	0.06	14.39***
→ Nurturant	0.78	0.06	12.65***
→ Worth	0.98	0.06	15.95***
→ Assistance	0.72	0.06	12.85***
GAMMA			
Age → Self-care strategies	0.03	0.05	0.63
Age → Quality of life	0.49	0.29	1.65
Stage → Quality of life	0.09	0.29	0.31
Antire → Self-care strategies	0.13	0.05	2.71*
Antire → Quality of life	0.38	0.29	1.30
SS → Symptoms experience	-0.32	0.09	- 3.61***
SS → Self-care strategies	0.15	0.03	5.67***
SS → Quality of life	1.67	0.97	- 8.78***
BETA			
Symp → Self-care strategies	0.10	0.02	0.65
Symp → Quality of life	- 0.55	0.12	- 4.77***
S-C → Quality of life	0.74	0.31	2.38*

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
QOL = Quality of life, SS = Social support, Symp = Symptoms experience,
Antire = Antiretroviral drug treatment, S – C = Self-care strategies.



Chi-square = 457.58 *df* = 163, P-value = 0.000, RMSEA = 0.066

Figure 5 Hypothesized Model of Quality of life (N = 422)



Chi-square = 91.56, *df* = 112, P-value = 0.921, RMSEA = 0.000

Figure 6 Modified Model of Quality of life (N = 422)

Table 11 Path coefficients, Standard Errors, T-Values of Parameter Estimates of Quality of Life Modified Model (N = 422).

Path	Path coefficients	Standard Error	T-Values
LAMDA- Y			
Symp → Fatigue	1.000		
→ Nausea	0.59	0.09	6.43***
→ Diarrhea	0.28	0.06	4.61***
→ Depression	1.18	0.14	8.36***
→ Neuropathy	1.01	0.12	8.48***
→ Anxiety	0.77	0.13	5.77***
Self-care strategies	11.35		
QOL → Life satisfaction	1.00		
→ Emotional well being	1.05	0.07	14.03***
→ Physical well being	1.17	0.15	8.00***
→ Social interaction	1.07	0.10	10.82***
→ Self attitude	0.20	0.05	4.04**
LAMDA X			
Age	6.57	0.23	29.08***
Stage of disease	0.71	0.03	29.02***
Antiretroviral treatment	0.38	0.01	29.06***
SS → Intimacy	1.000		
→ Social integration	0.73	0.06	14.31***
→ Nurturant	0.82	0.06	12.59***
→ Worth	0.92	0.06	15.74***
→ Assistance	0.67	0.05	12.92***
GAMMA			
Age → Self-care strategies	0.03	0.05	0.58
Age → Quality of life	0.51	0.24	2.15*
Stage → Quality of life	- 0.03	0.27	-0.12
Antire → Self-care strategies	0.12	0.05	2.59**
Antire → Quality of life	0.53	0.25	2.10*
SS → Symptoms experience	-0.33	0.09	- 3.87**
SS → Self-care strategies	0.14	0.02	5.61***
SS → Quality of life	1.14	0.16	7.15***
BETA			
Symp → Self-care strategies	0.01	0.02	0.36
Symp → Quality of life	- 0.70	0.13	- 5.25***
S-C → Quality of life	0.64	0.26	2.46*

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
QOL = Quality of life, SS = Social support, Symp = Symptoms experience,
Antire = Antiretroviral drug treatment, S – C = Self-care strategies

From the results, the hypothesized model was not accepted. Then this model was modified by freeing some parameters. Modification indices were used. The researcher added parameters according to the modification indices, standardized residuals which were associated with a correlated error in the model. Delta and epsilon should be correlated between the set of latent variables but not within sets. The results showed that the largest modification index (52.52) was associated with a correlated error and was freely placed in the Theta Epsilon matrix which represented the expected drop in chi-square. Results of the modification were decreased in chi-square (91.56), degree of freedom (112), the RMSRA (0.00) and increased in the GFI (0.98), the AGFI (0.96), and decreased in χ^2/df (0.82) which showed in table 8.

In the modified model, the paths were more statistically significant than in the hypothesized model. The path from age to quality of life ($\beta = 0.51$, $p < 0.05$), and the path from antiretroviral treatment to quality of life ($\beta = 0.53$, $p < 0.05$) were significant. The path of age to self-care strategies ($\beta = 0.03$, $p > 0.05$), the path of stage of disease to quality of life ($\beta = -0.04$, $p > 0.05$), and the path of symptom experience to self-care strategies ($\beta = 0.01$, $p > 0.05$) were statistically non significant with relationships the same as in the hypothesized model which shown in table 10.

The squared multiple correlations (R^2) for quality of life variable found that R^2 of the modified model (R^2 = 53%) was increased from the hypothesized model (R^2 = 47%). However, the squared multiple correlations (R^2) of the modified model for symptom experience and self care strategies variables were the same as the hypothesized model.

Finally, the modified model analysis showed that the standardized residual evidenced negative and positive standardized residuals (- 4.35, 2.54 respectively) indicating that covariance was well explained by the model.

In summary, the modified model was accepted and fit with the empirical data rather than the hypothesized model. The schematic presentation of the modified structure equation model is presented in Figure 6.

Table 12 Total effects, Indirect effects, Direct effects of Causal Variables on Influenced variables of Hypothesized Model (N=422)

Causal Variables	Symptom experience			Self-care strategies			Quality of life		
	TE	IE	DE	TE	IE	DE	TE	IE	DE

Age	-	-	-	0.03	-	0.03	0.50	0.02	0.48
Stage of disease	-	-	-	-	-	-	0.09	-	0.09
Antiretroviral Treatment	-	-	-	013*	-	0.13*	0.48	0.09	0.39
Social support	- 0.32*	-	-0.32*	0.14***	-0.00	0.14***	1.95***	0.28	1.67***
Symptoms Experience	-	-	-	0.01	-	0.01	-0.54***	0.01	-0.55***
Self-care strategies	-	-	-	-	-	-	0.74*	-	0.74*
	$R^2 = 0.04$			$R^2 = 0.10$			$R^2 = 0.47$		

λ^2 = 457.58, df = 163, λ^2/df = 2.80, p-value = 0.00, GFI = 0.90, AGFI = 0.87, RMSEA = 0.06

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
TE = Total effect, IE = Indirect effect, DE = Direct effect

Table 13 Total effect, Indirect effect, Direct effects of Causal Variables on Influenced variables of Modified Model (N=422)

Causal Variables	Symptom experience			Self-care strategies			Quality of life		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
Age	-	-	-	0.03	-	0.03	0.53*	0.02	0.53*
Stage of disease	-	-	-	-	-	-	-0.03	-	-0.03
Antiretroviral Treatment	-	-	-	0.12**	-	0.12**	0.60*	0.07	0.53*
Social support	- 0.33***	-	-0.33***	0.13***	- 0.002	0.132***	1.46***	0.32***	1.14***
Symptoms Experience	-	-	-	0.01	-	0.01	-0.69***	-0.003	-0.693***
Self-care strategies	-	-	-	-	-	-	0.64*	-	0.64*
	$R^2 = 0.04$			$R^2 = 0.10$			$R^2 = 0.53$		

λ^2 = 91.56, df = 112 λ^2/df = 0.81, p-value = 0.92 GFI = 0.98, AGFI = 0.96, RMSEA = 0.00

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
TE = Total effect, IE = Indirect effect, DE = Direct effect

Hypotheses testing

The hypotheses were tested and the results were as follows.

Hypothesis one, age, social support, antiretroviral treatment and symptom experience have a positive direct effect on self care strategies and also social support has a negative direct effect on symptom experience.

The parameter estimate in Table 11 and Figure 6 indicated that age had a nonsignificant positive direct effect on self care strategies ($\beta = 0.03$, $p > 0.05$). Social support had a significant positive direct effect on self care strategies ($\beta = 0.14$, $p < 0.05$). Antiretroviral treatment had a significant positive direct effect on self care strategies ($\beta = 0.12$, $p < 0.05$). Symptom experience had a nonsignificant positive direct effect on self care strategies ($\beta = 0.01$, $p > 0.05$). Social support has a significant negative direct effect on symptom experience ($\beta = -0.33$, $p < 0.05$).

Therefore, hypothesis one was partially supported, as were the causal relationships as proposed in the symptom management conceptual model.

Hypothesis two, age, social support, and antiretroviral treatment have a positive direct effect on quality of life and also stage of disease has a negative effect on quality of life.

Regarding the overall quality of life model, the findings revealed that age had a significant positive direct effect on quality of life ($\beta = 0.51$, $p < 0.05$). The estimated parameter indicated that social support had a significant positive direct effect on quality of life ($\beta = 1.14$, $p < 0.05$) and antiretroviral treatment had a significant positive direct effect on quality of life too ($\beta = 0.53$, $p < 0.05$). However, stage of disease had a non- significant negative direct effect on quality of life ($\beta = -0.03$, $p > 0.05$).

Thus, hypothesis two was partly supported as were the causal relationships proposed in the symptom management conceptual model.

Hypothesis three, age, social supports, antiretroviral treatment, and symptom experience have an indirect effect on quality of life via self care strategies.

The estimate parameter showed that age had a non significant positive indirect effect on quality of life via self-care strategies (β = 0.02, $p > 0.05$). While, social support had a significant positive indirect effect on quality of life via self-care strategies (β = 0.32, $p < 0.05$). Antiretroviral treatment had a non significant positive indirect effect on quality of life via self-care strategies life (β = 0.07, $p > 0.05$). On the other hand, symptom experience had nonsignificant negative indirect effect on quality of life via self care strategies (β = -0.003, $p > 0.05$).

Therefore, hypothesis three was partially supported as were the causal relationships proposed in the symptom management conceptual model.

Hypothesis four, symptom experience has a negative direct effect on quality of life and self- care strategies have a positive direct effect on quality of life.

The estimate parameter indicated that symptoms experience had a significant negative direct effect on quality of life (β = -0.70, $p < 0.05$). The estimate path coefficient indicated that self-care strategies had a significant positive direct effect on quality of life (β = 0.64, $p < 0.05$).

Therefore, hypothesis four was fully supported as were the causal relationships proposed in the symptom management conceptual model.

In conclusion, the modified model of quality of life in persons living with HIV/AIDS fit with the empirical data. The causal relationship indicated that symptoms experience had a significant negative direct effect on quality of life and self-care strategies had a significant positive direct effect on quality of life. Social support strategies had a significant positive direct effect on quality of life and indirect effect on quality of life via self-care strategies life. In addition, the findings indicated that social support had a significant positive direct effect on self-care strategies and negative direct effect on symptoms experience. Antiretroviral treatment had a significant positive direct effect on quality of life and indirect positive effect on quality of life via self-care strategies life. Moreover, age had a significant positive direct effect on quality of life too. However, stage of disease failed to predict quality of life in this model. The predictor variables explain the variance on symptom experience 4%, self-care strategies 10% and quality of life 53%.

In this study, the researcher could not manage the duration for checking CD4. CD4 was checked in different time in these subjects. CD4 was the previous data. Some subjects checked CD4 six month ago. Some subjects checked CD4 the week before this study was conducted. Moreover, most of the subjects took antiretroviral drugs which increased CD4 and decreased viral load. Then, level of CD4 may be the outcome of antiretroviral drugs. CD4 was the criteria for divided stage of disease. Stage of disease in this study was the CD4 in the retrospective that the researcher could not control this data in the same time. CD4 was not represented stage of disease really in this study. So it was not predicted other variables, including quality of life.

Then, the researcher revised the new model by excluding stage of disease. The hypothesized of new model was shown in figure 7.

When examining parameter estimates in the hypothesized new model, most of them had significant parameters and their direction was as proposed in the theory such as the path from social support to symptom experience ($\beta = - 0.32$, $p < 0.05$), to self-care strategies ($\beta = 0.15$, $p < 0.05$), and to quality of life ($\beta = 1.67$, $p < 0.05$), respectively. The path from symptom experience to quality of life ($\beta = - 0.55$, $p < 0.05$), and the path from self care strategies to quality of life ($\beta = 0.75$, $p < 0.05$) including the path from antiretroviral treatment to self care strategies ($\beta = 0.13$, $p < 0.05$). However, there was evidence of misspecified parameters among observe variables and latent variables for the theoretical model. The path from symptom experience to self care strategies was a non significant parameter ($\beta = 0.01$, $p > 0.05$). Two paths were no significant; the path from age to self-care strategies ($\beta = 0.03$, $p > 0.05$) and the path from age to quality of life ($\beta = 0.46$, $p > 0.05$). Corresponding to the path coefficients from antiretroviral treatment to quality of life ($\beta = 0.40$, $p > 0.05$). (See Table 15 and Figure 7)

The squared multiple correlations (R^2) for each observed variable were examined and found that some of R^2 revealed low to moderate levels. However, the findings indicated that diarrhea ($R^2 = 0.26$), neuropathy ($R^2 = 0.29$), emotional well being ($R^2 = 0.16$) and Attitude ($R^2 = 0.05$) were very poor observed variables because the relationships between each variable and the latent variables were weak.

There was large a significant chi-square ($\chi^2 = 427.55$, p = 0.000) relative to degree of freedom ($df = 145$). The goodness of fit index (0.90), adjusted goodness of fit index (0.87), RMSEA (0.07), and χ^2/df (2.94) were not in the accepted range. It indicated that the new model did not fit with the data. (See table 14)

The standardized residuals in hypothesized new model showed large negative and positive standardized residuals (- 6.04, 7.23, respectively) indicating that covariance was not well explained by the model.

In conclusion, the hypothesized new model of quality of life did not fit the sample data, as reflected by the large significant chi square, the poor goodness of fit coefficients and misspecified parameters.

Table 14 The structure new model of quality of life (N =422)

Structure model	Chi-square	*df*	χ^2/df	*p*-value	GFI	AGFI	RMSEA
Hypothesized model	427.55	145	2.94	0.000	0.90	0.87	0.07
Modified model	84.88	94	0.90	0.738	0.98	0.96	0.00

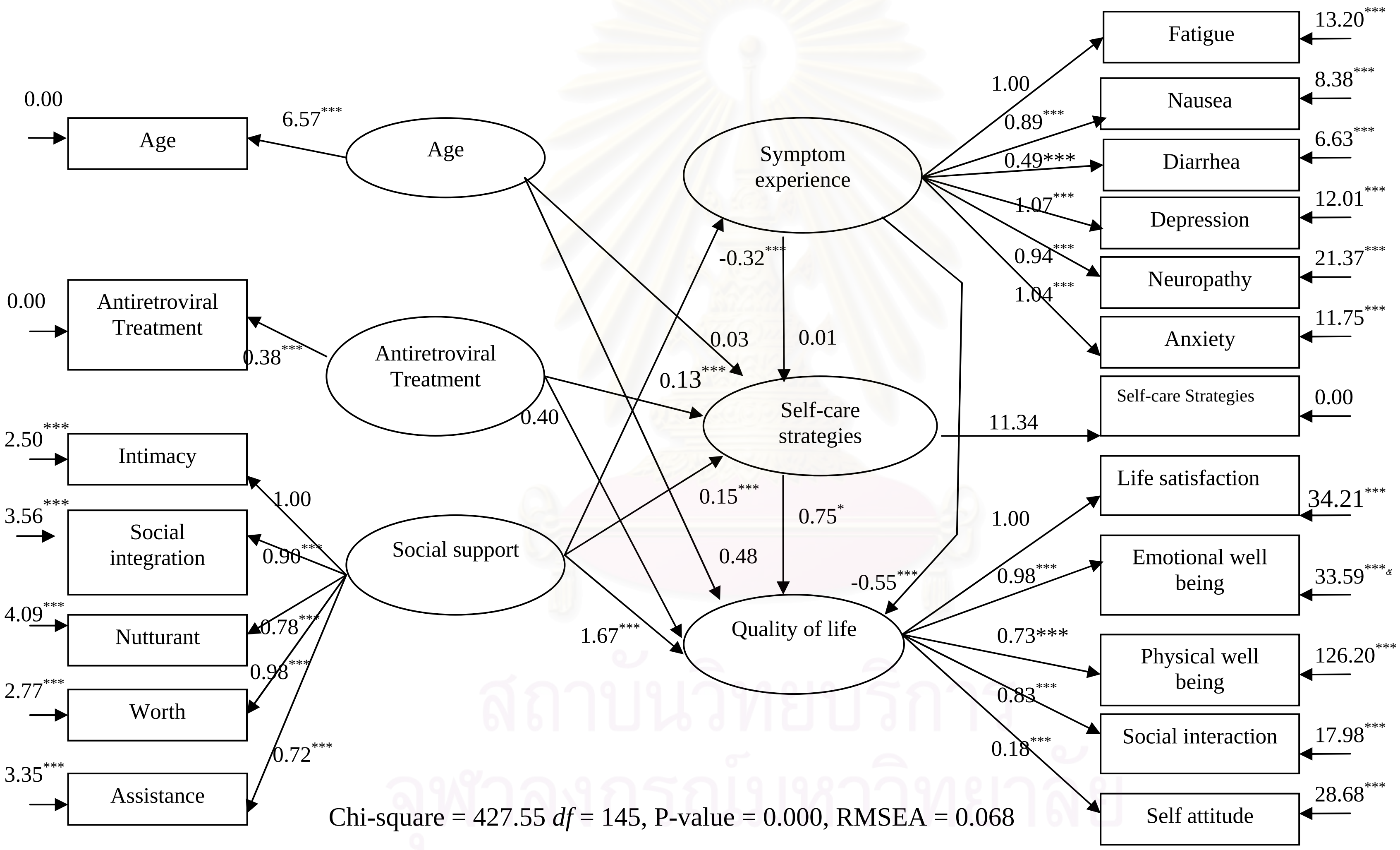
Note; *df* = degree of freedom, GFI = Goodness of fit index, AGFI = Adjust goodness of fit index, RMSEA = Root mean square error of approximation

Table 15 Path coefficients, Standard Errors, T-Values of Parameter Estimates of Quality of Life Hypothesized Model (N = 422)

Path	Path coefficients	Standard Error	T-Values

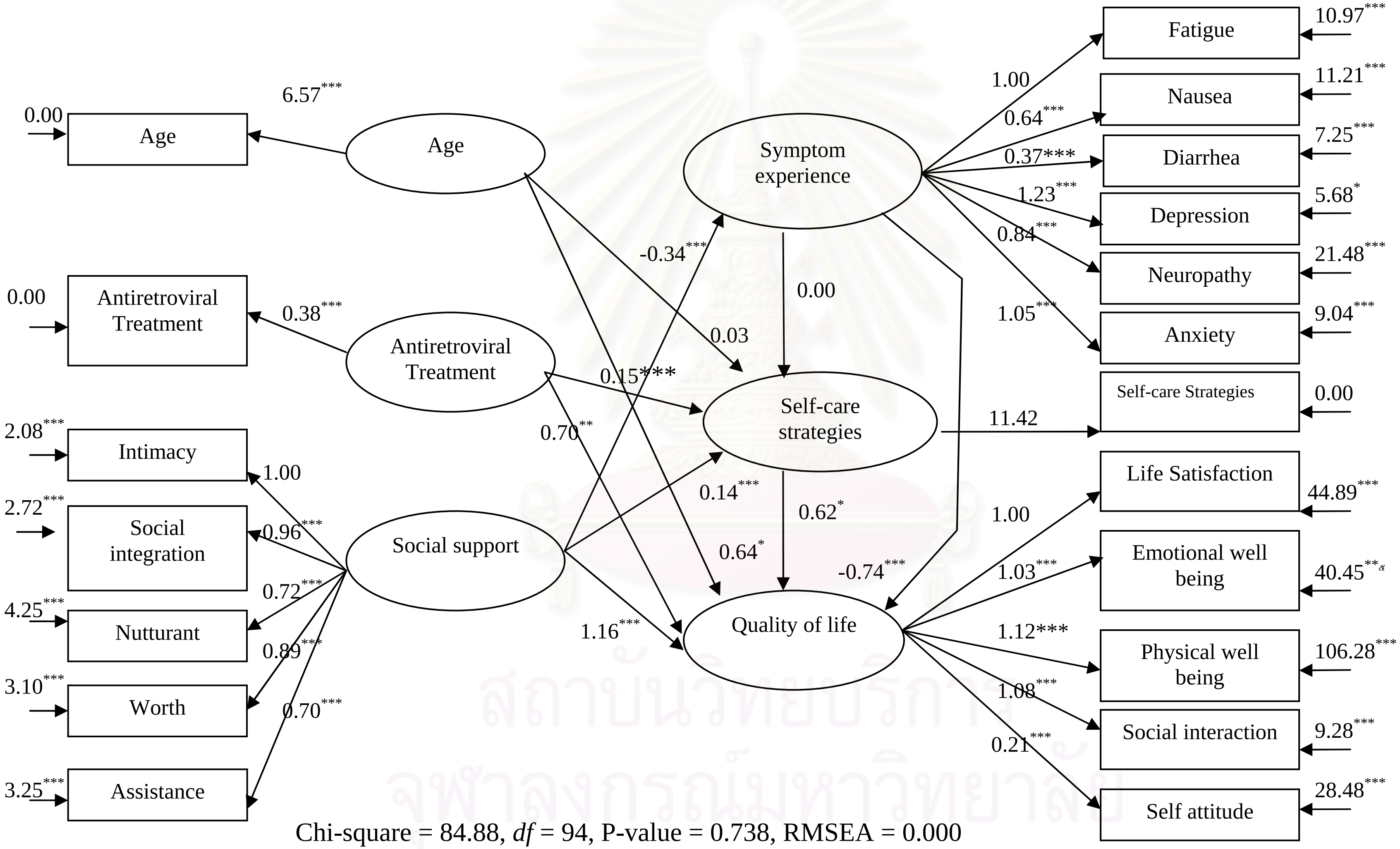
LAMDA- Y			
Symp → Fatigue	1.000		
→ Nausea	0.89	0.08	11.22***
→ Diarrhea	0.49	0.06	8.79***
→ Depression	1.07	0.10	11.24***
→ Neuropathy	0.94	0.10	9.15***
→ Anxiety	1.04	0.09	11.14***
Self-care strategies	11.34		
QOL → Life satisfaction	1.00		
→ Physical well being	0.98	0.07	13.80***
→ Emotional well being	0.73	0.10	7.38***
→ Social interaction	0.83	0.06	14.41***
→ Self attitude	0.18	0.04	4.04***
LAMDA X			
Age	6.57	0.23	29.02***
Antiretroviral treatment	0.38	0.01	29.02***
SS → Intimacy	1.000		
→ Social integration	0.90	0.06	14.39***
→ Nurturant	0.78	0.06	12.65***
→ Worth	0.98	0.06	15.95***
→ Assistance	0.72	0.06	12.85***
GAMMA			
Age → Self-care strategies	0.03	0.05	0.63
Age → Quality of life	0.48	0.29	1.66
Antire → Self-care strategies	0.13	0.05	2.71**
Antire → Quality of life	0.40	0.29	1.35
SS → Symptoms experience	-0.32	0.09	- 3.61***
SS → Self-care strategies	0.15	0.03	5.67***
SS → Quality of life	1.67	0.19	- 8.75***
BETA			
Symp → Self-care strategies	0.01	0.02	0.65
Symp → Quality of life	- 0.55	0.12	- 4.76***
S-C → Quality of life	0.75	0.31	2.39*

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
QOL = Quality of life, SS = Social support, Symp = Symptoms experience,
Antire = Antiretroviral drug treatment, S – C = Self-care strategies.



Chi-square = 427.55 *df* = 145, P-value = 0.000, RMSEA = 0.068

Figure 7 Hypothesized new Model of Quality of life (N = 422)



Chi-square = 84.88, *df* = 94, P-value = 0.738, RMSEA = 0.000

Figure 8 Modified new Model of Quality of life (N = 422)

Table 16 Path coefficients, Standard Errors, T-Values of Parameter Estimates of Quality of Life Modified new Model

Path	Path coefficients	Standard Error	T-Values
LAMDA- Y			
Symp → Fatigue	1.000		
→ Nausea	0.64	0.09	7.39***
→ Diarrhea	0.37	0.06	6.45***
→ Depression	1.23	0.14	8.74***
→ Neuropathy	0.84	0.13	6.30***
→ Anxiety	1.05	0.12	8.92***
Self-care strategies	11.42		
QOL → Life satisfaction	1.00		
→ Emotional well being	1.03	0.07	14.16***
→ Physical well being	1.12	0.14	8.01***
→ Social interaction	1.08	0.09	11.00***
→ Self attitude	0.21	0.05	4.49***
LAMDA X			
Age	6.57	0.23	29.05***
Antiretroviral treatment	0.38	0.01	29.12***
SS → Intimacy	1.000		
→ Social integration	0.95	0.07	14.29***
→ Nurturant	0.72	0.06	12.54***
→ Worth	0.89	0.06	15.48***
→ Assistance	0.70	0.05	13.19***
GAMMA			
Age → Self-care strategies	0.03	0.04	0.67
Age → Quality of life	0.64	0.32	1.96*
Antire → Self-care strategies	0.15	0.05	3.37***
Antire → Quality of life	0.70	0.27	2.62**
SS → Symptoms experience	-0.34	0.08	- 4.10***
SS → Self-care strategies	0.14	0.02	5.89***
SS → Quality of life	1.16	0.16	7.30***
BETA			
Symp → Self-care strategies	0.003	0.02	0.19
Symp → Quality of life	- 0.74	0.13	- 5.53***
S-C → Quality of life	0.62	0.26	2.33*

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
QOL = Quality of life, SS = Social support, Symp = Symptoms experience,
Antire = Antiretroviral drug treatment, S – C = Self-care strategies

Table 17 Total effects, Indirect effects, Direct effects of Causal Variables on Influenced variables of Hypothesized new Model (N=422)

Causal Variables	Symptom experience			Self-care strategies			Quality of life		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
Age	-	-	-	0.03	-	0.03	0.50	0.02	0.48
Antiretroviral Treatment	-	-	-	0.13^{**}	-	0.13^{*}	0.49	0.09	0.40
Social support	0.32^{***}	-	-0.32^{***}	0.14^{***}	-0.00	0.14^{***}	1.95^{***}	0.28	1.67^{***}
Symptoms Experience	-	-	-	0.01	-	0.01	-0.54^{***}	0.008	-0.548^{***}
Self-care strategies	-	-	-	-	-	-	0.76^{*}	-	0.76^{*}
	$R^2 = 0.05$			$R^2 = 0.11$			$R^2 = 0.47$		

$\lambda^2 = 427.55$, df = 145, λ^2/df = 2.95, p-value = 0.00, GFI = 0.90, AGFI = 0.87, RMSEA = 0.06

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
TE = Total effect, IE = Indirect effect, DE = Direct effect

Table 18 Total effect, Indirect effect, Direct effects of Causal Variables on Influenced variables of Modified new Model (N=422)

Causal Variables	Symptom experience			Self-care strategies			Quality of life		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
Age	-	-	-	0.03	-	0.03	0.66^{*}	0.02	0.64^{*}
Antiretroviral Treatment	-	-	-	0.15^{***}	-	0.15^{***}	0.80^{**}	0.09^{*}	0.81^{**}
Social support	$- 0.34^{***}$	-	-0.33^{***}	0.14^{***}	- 0.001	0.141^{***}	1.50^{***}	0.33^{***}	1.47***
Symptoms Experience	-	-	-	0.003	-	0.003	-0.74^{***}	0.002	-0.738^{***}
Self-care strategies	-	-	-	-	-	-	0.62^{*}	-	0.62^{*}
	$R^2 = 0.05$			$R^2 = 0.12$			$R^2 = 0.56$		

$\lambda^2 = 84.88$, df = 94 λ^2/df = 0.90, p-value = 0.738 GFI = 0.98, AGFI = 0.96, RMSEA = 0.00

Note: t > 1.96, * *p* < .05; t > 2.58, ** *p* < .01; t > 3.29, *** *p* < .001
TE = Total effect, IE = Indirect effect, DE = Direct effect

The researcher added parameter according to standardized residuals and the modification indices, associating them with a correlated error in the model. As a result of the modifications, there were deceased in chi square (χ^2 = 84.88), the degree of freedom (94), the χ^2/df (0.90) and the RMSEA (0.000); and an increased in the goodness of fit index (0.98), the adjusted goodness of fit index (0.96). Overall, the fit of the modified new model to the data was improved. (See Figure 8, table 14)

As shown in Figure 8, there were more statistically significant relationships than in the new hypothesized model and old model in Figure 6. The finding of the new modified model indicated that age had a significant positive direct effect on quality of life ($\beta = 0.64$, $p < 0.05$). Antiretroviral treatment had a significant positive direct effect on quality of life ($\beta = 0.70$, $p < 0.05$) too.

The R^2 of modified new model found that R^2 of quality of life (56 %) and R^2 of self care strategies (12 %) were increased from hypothesized new model, R^2 of quality of life (47 %) and R^2 of self care strategies (11 %), respectively. (See table 17, table 18)

The last, the values of negative and positive standardized residual were - 4.08 and 2.43, respectively. It was considered to be acceptable the model.

In conclusion, a comparison between the new hypothesized and modified models indicated that the modified new model had a better fit to the empirical data than the hypothesized new model and old model (See Figure 7 and Figure 8).

CHAPTER V

DISCUSSION

The purpose of this study was to examine the causal relationships between age, antiretroviral treatment, stage of disease, social support, symptom experience, self-care strategies and quality of life in persons living with HIV/AIDS. In this chapter, the results including characteristics of the subjects, hypothesis testing, theoretical and methodological relevance were discussed. The discussion is as follows.

Characteristics of the subjects

The subjects in this study were both male and female who were infected with Human Immunodeficiency Virus. In this study, the female (55.5%) infected HIV disease more than male (45.5%). All of the subjects lived in Chiangrai province in the northern part of Thailand. More than half of the subjects (56.6%) age range was between 31-40 years. The finding was congruent with previous studies conducted on persons living with HIV/AIDS (Kompalaew, 2002; Piyakul, 1999) and with the report reported of the Ministry of Public Health (2006) which found that most persons living with HIV/AIDS were found in range age between 31- 40 years. This finding is striking because those were adults who more significant for their family.

Most of the subjects (71.3%) graduated with elementary education, which was consistent with the studies of Piyakul (1999) and Kompalaew (2002). They graduated with lower than the compulsory education in Thailand. They had no chance for competition in the labor market which affected their income. Approximately, half of the subjects (54.3%) had monthly income ranging from 1,000 to 5,000 baht, while 22.3 % of the subjects had monthly income below 1,000 baht and 18% of the subjects reported that they had no income. Most of the subjects had monthly income which was less than the average national monthly income of Thailand. This indicated that most of the subjects had low socioeconomic status. This finding was consistent with the other studies (Kompalaew, 2002; Pakdewong, 2006; Piyakul, 1999).

However, more than half of the subjects (62.6%) were not paid for antiretroviral drugs (Highly Active Antiretroviral therapy, HAART). The policy of the Thai government supported free treatment and drugs for persons who had low income. Previous studies found that persons living with HIV/AIDS who lived in rural area had low income or poor (Pakdewong, 2006). The subjects (0.7%) who were rich paid for HAART by themselves. The findings showed that all the persons living with HIV/AIDS can receive the HAART equity.

Nearly all of the subjects (90%) lived with their family including father, mother, husband or wife, which was congruent with the studies of Kompalaew (2002) and Pakdewong (2006). These findings reflected the traditional family pattern of extended family in rural Thai society. Most of the subjects contacted the disease by sexual relationship. Some men contacted HIV disease from the prostitutes, while housewives contacted it from their husband. In addition, the result in this study was consistent with other previous studies in that most of the persons living with HIV/AIDS in Thailand contacted the HIV disease by sexual relationship.

Nearly half of the subjects (46%) had the number of CD4 ranging between 201 - 499 cell/mm^3 which was in stage two. Thirty six percent of the subjects were in stage one, where the number of CD4 was more than 500 cell/mmm^3. The number of

CD4 was not steady in the body. Depending of viral load in their body and whether they looked after their health well or not. Moreover, a few subjects (6%) took herbs called Pueraria condolleigran. They believed that this herb would increase their immune.

Social support

The mean score of social support was 3.76 (SD = 0.40, which ranged from 61 to 125. The result showed that the subjects perceived high social support which total scale and in all subscale. Most of the subjects lived with their family. Family members supported them to stay with the disease. Persons living with HIV/AIDS had their friends who were infected with HIV disease in the same community. They met every month to share and solve their problems which was called the self-help group, which was consistent with the scores of the subscale; social integration was high. In addition, health care provider supports them by providing counseling and information regarding self-care. The government supported them by giving free antiretroviral drugs for poor persons living with HIV/AIDS or cheaply antiretroviral drugs for poor persons living with HIV/AIDS who pay by out of pocket. Non - government organization were another resource that helped them by training a job for their extra income.

The result was congruent with the other studies which used the same instrument of social support; PRQ 85 part 2 (Pakdewong, 2006; Puttapitukul, 2001).

Symptom experience

Most of the subjects had symptoms experience more than one symptoms which showed both physical and psychological symptoms, and this was congruent with the study of Bunch (2004). Nearly thirty percent of the subjects (29.4%) had six symptoms experiences; these are fatigue, nausea, diarrhea, depression, neuropathy, and anxiety, while 12.3% had only one symptom experience in the week before this study was conducted. Most of the subjects perceived the severity and the distress of symptoms experience in the same level. The highest mean score was fatigue subscale (2.62, SD = 2.39), while the lowest mean score was diarrhea subscale (0.84, SD = 1.49)

The most frequently experienced symptom was fatigue (84.8%) which was consistent with many previous studies (Makoae, Seboni, Molosiwa et al. 2005; Nantachaipan, 1996; Sarna, Servellen, Padilla, & Brecht, 1999), which found that fatigue was the first factor that reduced energy in their body. Fatigue was a common problem that made persons living with HIV/AIDS do their job with difficulty.

Self care strategies

The mean score of self care strategies was 37.66 (SD = 11.32). This finding showed that self care strategies of the persons living with HIV/AIDS were in the moderate level, and the total score was 58. Two – thirds of them had low income and graduated from elementary education. This affected their ability to select the method of self care strategies. Persons living with HIV/AIDS in Thailand used a variety of self care strategies, which was congruent with Bunch (2004), and Nicholas et al. (2003; 2007). Some of them used negative strategies such as drinking alcohol

(19.1%), smoking cigarettes (14.5%), which was congruent with Nicholas, et al (2007). Most of the subjects knew the methods of taking antiretroviral drugs such as taking the drugs in time and their side effect but they did not know the methods of self care strategies, which was congruent with Nantachaipan (1996). The method for self care strategies used were trail and error such as using herbs which was congruent with the study of Bunch (2004).

Moreover, the age of more than half of the subjects ranged between 31-40 years. They had more responsibility with their family. Some of them were farmers, some were the farm workers, and others were merchants. They had to get up at 1.00 am to buy cheap vegetables and foods to sell from morning to evening, and they went to bed at 9.00 pm. They did not have enough sleep every night. They had to work to earn money for their family. Thus, self care strategies in these subjects were simple including daily routines such as eating 3 meals a day, drinking water, taking a bath. All of these strategies were useful for them to release symptoms, prevent the symptom from occurring, and promote their health too. Fewer subjects used complementary medicine such as meditation and massage. Persons living with HIV/AIDS used different methods of self care strategies depending on their knowledge and belief (Bunch, 2004) and their experience (Chou, Holzemer, Portillo, & Slaughter, 2004), and this varied in each country (Nocholas, Kemppainen, Canaval et al. 2007).

Quality of life

The mean score of quality of life was 70.89 (SD = 12.19), which ranged 34.58 – 99.58. The result showed that the subjects perceived quality of life in rather high level which total scale and in all subscale. Most of the subjects accepted their illness and lived with their family. Thus, they had social support to help them solve the problems. Although all subjects had symptoms, they had daily and regular activities. Some of the subjects were volunteers to help other persons live with HIV/AIDS in the hospital such as giving information, and doing activities in the self-help group. Nevertheless, some of them were disclaimed by the persons in the community who did not understand the HIV disease. Persons living with HIV/AIDS had to fight for rightfulness. In addition, the HIV disease is a chronic disease which cannot be cure. All of these affected quality of life. So, quality of life in persons living with HIV/AIDS was in moderate levels since 1993 (Lubeck et al. (1993); Noimeanwai, 1993) to present. The result was congruent with Nantachaipan (1996) who used the same quality of life instrument. In addition, it was consistent with Krutkaew (1997) and Piyakul (1999), who studied persons living with HIV/AIDS using different quality of life instruments.

The overall Model and Causal Relationship

Hypothesis one, age, social support, antiretroviral treatment and symptom experience have a positive direct effect on self care strategies and also social support has a negative direct effect on symptom experience**.**

The estimate parameter indicated that age had a nonsignificant positive direct effect on self care strategies ($\beta = 0.03$, $p > 0.05$). The finding indicated that the persons living with HIV/AIDS who old age or young age, self care strategies to decrease symptoms was not different. If all age groups of the subjects knew information regarding the method to get their health well, they used that method (self experimental or trial and error) to decrease their symptom. Self care strategies of these subjects in this study did not depend on age. They used different self care strategies to decrease their symptom depend on their knowledge and belief (Bunch, 2004), their experience (Chou, holzemer, portillo, & Slaughter, 2004), and varied in each country (Nicholas et al. 2007).

The estimate parameter indicated that social support had a significant positive direct effect on self care strategies ($\beta = 0.14$, $p < 0.05$). The finding showed that the persons living with HIV/AIDS who perceived high social support increased their self care strategies. Social support was the significant resource for facilitating self care strategies in persons the living with HIV/AIDS. Health care team provided support and advises the method of self care strategies for decrease their symptoms. This finding was congruent with Prasatketikan (2001).

The estimate parameter indicated that antiretroviral treatment had a significant positive direct effect on self care strategies ($\beta = 0.15$, $p < 0.05$). The finding showed that the persons living with HIV/AIDS who took antiretroviral treatment adherence were likely to have self care strategies to decrease symptom well. The subjects had their schedule or timetables for taking antiretroviral drugs. They participated actively in treatment regimen. Self care strategies include taking the correct dosage and in time.

Self care strategies It was found that symptom experience had a positive but nonsignificant direct effect on self care strategies ($\beta = 0.003$, $p > 0.05$). The finding indicated that persons living with HIV/AIDS with higher symptom experience had higher self care strategies, but the result was not statistically significant. The subjects used variably of self care strategies to decrease symptom.

The finding indicated that social support had a significant negative direct effect on symptom experience ($\beta = - 0.33$, $p < 0.05$). It showed that the persons living with HIV/AIDS who perceived high social support were less likely to have symptom experience which was congruent with many studies (Pakdewong, 2006; Sowell et al. 1997). Pakdewong (2006) found that social support had a significant negative direct effect on depressive symptom. The subjects have a meeting every month. They exchanged information and experience each other. The government provided support the antiretroviral drugs to persons living with HIV/AIDS who had low income for increased life expectancy. It helped them decreased the symptom by increasing immune and reduce viral load (Gill et al. 2002).

Hypothesis two, age, social support, and antiretroviral treatment have a positive direct effect on quality of life.

The estimate parameter showed that the age had a significant positive direct effect on the quality of life ($\beta = 0.64$, $p < 0.05$). This means that the persons living with HIV/AIDS who were older had higher quality of life. Most of the subjects in all age groups (87.44%), especially in the age range of 31 – 40 years (49.29%) had more than one symptom experience. The older subjects looked after them well that affected to their quality of life. The finding was congruent with the study of Campsmith, Nakashima & Davidson (2003), Gielen et al. (2000), Liu et al. (2006), Nokes et al. (2000), Sarna et al. (1999), and Sithimongkol (1998) who found that age could predict quality of life in persons living with HIV/AIDS. However, this result was inconsistent with Eller (2001), Kompalaew (2002), and Piyakul (1999) who found that age was not correlated with quality of life.

The estimate parameter indicated that social support had a significant positive direct effect on quality of life ($\beta = 1.16$, $p<0.001$). The finding indicated that the persons living with HIV/AIDS who perceived high social support had high quality of life. . Most of the subjects (90%) lived with their family, including father, mother, husband or wife, which gave them care and psychological support. Path coefficient of worth was the highest ($\beta = 0.92$, $p < 0.05$) followed by nurturant ($\beta = 0.82$, $p < 0.05$). They felt meaningful, valuable and competent in role accomplishment. Moreover, health care provider supported them by providing counseling, and information regarding self care; the government supported them by giving free antiretroviral drugs, and non - government organization supported them with psychological support as well. All of this affected to their quality of life. This finding was congruent with many studies (Bastardo & Kimberlin, 2000; Carolyn et al. 2006; Clingerman, 2004; Dantas, Motzer and Ciol, 2002; Gielen et al. 2001; Piyakul, 1999; Nunes et al. 1995; Vichitvatee, 1991; Yang Chen, Kuo, & Wang, 2003).

The estimate parameter indicated that antiretroviral treatment had a significant positive direct effect on quality of life ($\beta = 0.70$, $p<0.01$). The finding indicated that the persons living with HIV/AIDS who received antiretroviral treatment had good quality of life. Before the persons living with HIV/AIDS received the antiretroviral treatment, the healthcare team and the volunteers who were infected with HIV disease like them would advise them about the time to take the drugs and drug adherence until they understood this information well. The subjects felt that antiretroviral treatment could help them to feel better although it had many side effects such as skin rash. The volunteers visited at their homes and reminded them to take antiretroviral on time. If they had side effects of antiretroviral drugs, the volunteers would advise them to meet the doctor immediately. Persons living with HIV/AIDS feel better and the opportunistic infections rate was decreased. Thus, antiretroviral treatment affected their quality of life directly. The result was congruent with Lui et al. (2006), Jelsma et al. (2005), Mannheimer, et al. (2005), and Penedo et al. (2003) who found that antiretroviral treatment had enhanced quality of life in persons living with HIV/AIDS. This finding disagrees with Gill et al. (2002), who found that antiretroviral treatment had a negative effect on physical functioning, which was one dimension of the quality of life.

Hypothesis three, age, social supports, antiretroviral treatment, and symptom experience have an indirect effect on quality of life via self care strategies.

The estimate parameter in Table 16 and Figure 8 illustrated that age had a non significant positive indirect effect on the quality of life via self-care strategies ($\beta = 0.02$, $p > 0.05$). Most of the subjects in all age group (87.44%), especially in range age 31 – 40 years (49.29%) had more than one symptom experience. The major of them received antiretroviral drugs. They used the same formula of antiretroviral drugs, taking drugs the same time every day. They believed that antiretroviral drugs could help them get better. So, age had a non- significant indirect effect on the quality of life through self-care strategies.

In addition, social support had significant positive indirect effect on quality of life via self-care strategies ($\beta = 0.33$, $p < 0.05$). This means that social support had indirect effect on quality of life via self-care strategies. Persons living with HIV/AIDS were advice regarding self care strategies to decrease symptom from health care team, their family, and non government organization. If these subjects practiced it followed the advice strictly, quality of life increased. So, social support affected quality of life via self care strategies.

On the other hand, antiretroviral treatment had a significant positive indirect effect on quality of life via self-care strategies ($\beta = 0.09$, $p < 0.05$). The persons living with HIV/AIDS had their schedule or timetable for taking the antiretroviral drugs. They were good adherence and participated actively in the treatment regimen. They used the same formula of antiretroviral treatment drugs and took the drugs the same time every day. They knew and believed that antiretroviral drugs could help them get better.

All of above, the findings showed that self care strategies were a good mediator between social support and quality of life in current study.

Hypothesis four, symptom experience has a negative direct effect on quality of life and self care strategies have a positive direct effect on quality of life.

The path analysis showed that perceived symptom experience had a significantly negative direct effect on quality of life ($\beta = - 0.74$, $p < 0.05$). This indicated that the persons living with HIV/AIDS who had symptom experience were likely to have low quality of life. Most of the subjects (87.44 %) had more than one symptom experience and nearly thirty percent of the subjects (29.38 %) had six symptoms experience while only 12.58 % of the subjects had one symptom experience. The subjects perceived more symptoms, severity and distress then the symptom experience affected to quality of life. This was consistent with many studies (Cunningham et al. 1998; Yang, Chen, Kuo, & Wang, 2003) which showed that the indicator of diminished quality of life was the presence of symptom. The effects on quality of life were not different in persons living with HIV/AIDS who had one symptom or more than one symptom. This may be because other components such as their knowledge, their economic and their resources.

Self care strategies have a positive direct effect on quality of life. The estimate path coefficient showed that self care strategies had a significantly positive direct effect on quality of life ($\beta = 0.62$, $p < 0.05$). This means that the persons living with HIV/AIDS who had high quality of life had high self care strategies. This finding was congruent with the hypothesis and the symptom management conceptual model. Symptom management is a dynamic process, the strategies of which changed over time to solve the symptoms. This affected to their quality of life. The subjects learned from health care providers, family, friends, and community resources. If they knew information regarding methods to get themselves healthy, they would be using those methods. Nowadays, all the hospitals in Chiangrai managed self - help group for persons living HIV/AIDS. They met each other to exchange their opinion and experience once a month. They talked about their self care strategies which were appropriate to help them get better. On the other hand, the volunteers (persons who were infected with HIV) visited the persons living with HIV/AIDS at their home to follow their symptom and self care strategies. All of these affected their quality of life.

Summary

The findings partially supported the prediction of symptom management conceptual model. Age, social support, antiretroviral treatment, symptom experience and self-care strategies were significant factors in explaining and predicting quality of life in Thai persons living with HIV/AIDS. However, self-care strategies act as a mediator linking between antiretroviral treatment, social support, and quality of life in Thai persons living with HIV/AIDS. Thus, the results of this study partially support the symptom management conceptual model in Thai persons living with HIV/AIDS.

Contribution to Nursing Science

The model of quality of life in persons living with HIV/AIDS in this study was developed based on the symptom management conceptual model which proposes that age, stage of disease, antiretroviral treatment, social support, symptom experience and self care strategies affect quality of life. Age, social support, symptom experience and self care strategies were found to have effects on quality of life in testing the model Symptom management.

Symptom management can be classified as a explain theory or factor – relating theory. It provided the specificity needed for usefulness in research and practice. The model was designed to predict symptom outcome that is quality of life. Accordingly, the model was tested so that it could contribute to knowledge development. The level of theory could be raised up to a situation- relating theory or predictive theory.

Thus, this current study contributed to the new knowledge to explain quality of life in Thai persons living with HIV/AIDS.

.

CHAPTER VI

CONCLUSION

Summary of the study

The purpose of this study was to examine the causal relationship among age, stage of disease, antiretroviral treatment, social support, symptom experience, self-care strategies and quality of life in Thai persons living with HIV/AIDS. The Symptom Management Model had provided a conceptual framework for the study.

The Sample and Data collection

Simple random sampling was used to identify the subjects. The subjects consisted of 422 Thai persons living with HIV/AIDS from eight hospitals in Chiang rai province. The data collection was performed between Aprils to September 2006.

Many instruments were used in this study. The personal data form, Personal Resource Questionnaire (PRQ 85) was granted by Winert and Brandt (1987) which was used by Puttapitukpol (2001) in the Thai version. Symptom experience Questionnaire and Self -care strategies Questionnaire were granted by Holzemer et al. (2004). The back-translation technique was used to assure the accuracy of the translation. Quality of life Questionnaire was developed by Nantachaipan (1996). The validity and reliability of the instruments were tested. The exploratory factor analysis was conducted to determine the construct validity. The confirmatory factor analysis was conducted to test hypothesized measurement model of the instruments. Finally, LISREL was used to examine the causal model.

Research Findings

1. Sample characteristics

The subjects consisted of 188 males (44.5 %) and 234 females (55.5%). The age of the subjects range from 21 to 71 years, and the mean age were 36.56 years. Most of the subjects (71.3 %) had graduated from elementary education and 5.5% did not go to school. The mean years of education was 2.06 (SD = 1.1). Nearly all of the subjects (90 %) lived with their family including father, mother and husband or wife. Approximately half of the subjects (54.3 %) had monthly earning of 1,000 – 5,000 baht, while 18.5% of the subjects reported no monthly income. More than half of the subjects (62.6%) were not paid for antiretroviral drugs and treatment, but 0.7% paid out of their over pocket. The subjects smoked cigarettes approximate 14.9 % and 19.4 % of the subjects drank alcohol. Four subjects were blind but they could do their daily and regular activities.

Nearly half of the subjects (46%) were in stage 2 where of CD4 cell count was between 201 - 499 cell/mm^3, and 18 % of the subjects were in stage 3, where the number of CD4 was less than 200 cell/mm^3. The majority (82.5 %) of the subjects received antiretroviral drugs, and a few subjects (6.1 %) reported taking herbs (Pueraria condolleigrah).

2. Causal Model of Quality of life

The overall model of quality of life was fitted to the sample data. The overall goodness of fit indices was $\chi^2 = 84.88$, df = 94, p = 0.738 GFI = 0.98, AGFI = 0.96, RMSEA = 0.000.

The findings of causal relationship testing of the overall model were as follows:

1. Social support, and antiretroviral treatment have a positive direct effect on self care strategies ($\beta = 0.14$, $p < 0.05$, $\beta = 0.70$, $p < 0.05$), respectively. Social support has a negative direct effect on symptom experience ($\beta = - 0.34$, $p < 0.05$). However, age and symptom experience have a non significant direct effect on self care strategies ($\beta = 0.03$, $p > 0.05$, $\beta = 0.003$, $p > 0.05$), respectively.

2. Age, social support, and antiretroviral treatment have a positive direct effect on quality of life ($\beta = 0.64$, $p < 0.05$, $\beta = 1.6$, $p < 0.05$, $\beta = 0.70$, $p < 0.05$), respectively**.**

3. Social support and antiretroviral treatment have a positive indirect effect on quality of life via self care strategies ($\beta = 0.33$, $p < 0.05$, $\beta = 0.09$, $p < 0.05$), respectively**.** Age and symptom experience have a non significant direct effect on quality of life via self care strategies ($\beta = 0.02$, $p > 0.05$, $\beta = 0.002$, $p > 0.05$), respectively**.** Self-care strategies act as mediator linking social supports and antiretroviral treatment to quality of life in this study.

4. Self-care strategies has a positive direct effect on quality of life ($\beta = 0.62$, $p < 0.05$). Symptom experience has a negative direct effect on quality of life ($\beta = -0.74$, $p < 0.05$).

Implications and Recommendations

The implications and recommendations of this study focused on the implications for nursing practice, nursing education, nursing research, health policy and recommendations for further studies.

1. Implications of research finding

1.1 Implications for practice. The findings of this study suggest as the following:

1.1.1 The result of this study suggested that symptom experience affected to quality of life. Nurses should encourage the persons living HIV/AIDS to determine their abnormal symptom regularly including side effects of drugs and advise them to detect the symptom of disease early. Early symptom detection can prevent exacerbation of the disease. If symptom experience occurred, intervention should be targeted to reduce the severity and distress of the disease. Effective interventions should be emphasized to improve their quality of life.

1.1.2 Self care strategies affected quality of life. Nurses should advise the persons living with HIV/AIDS about self care strategies to prevent the symptom experience and to promote self-care ability and quality of life. In addition, nurses should support and facilitate them to practice self care correctly, not using trial and error. The interventions should emphasize the methods of self management to solve or prevent the symptom for enhancing their quality of life.

1.1.3 Antiretroviral treatment affected to quality of life. Nurses should encourage persons living with HIV/AIDS to take antiretroviral drugs right dose and on time every day. Nurses should emphasize them to observe side effects of antiretroviral drugs for preventing exacerbation of symptoms.

1.1.4 Social support was found to have the strongest effect on quality of life. Thus, nurses should promote social support system including enhancing exiting support: their family, friends and community, self-help group and facilitate to provide social network. Nursing care should emphasize an effective counseling program for the persons living with HIV/AIDS. The intervention should promote the psychological support, family support, source of information, and community support.

2. **Implications for education**

The findings in this study suggest social support, symptom experience, and self care strategies influence quality of life. Then, nursing curricular should include the quality of life model based on symptom management conceptual model in the field of adult nursing.

3. **Implications for further research**

Based on the results of this study suggest for future research as follow:

3.1 Selecting variables in three domains of nursing science in symptom management model should be recommending because other variables may affect to predictor the symptom outcome.

3.2 For generalize of the study, replication studies should be conducted in diverse setting and with diverse population.

3.3 The intervention program to promote self care strategies, social support and quality of life should be established for persons living with HIV/AIDS and other population.

3.4 The factor analysis of the instrument self-care strategies is more constructs. Thus, it needs to be improved for appropriate in Thai context.

4. **Implications for health care policy**

Health policy of Thailand focuses on health promotion in population. The findings of this study showed that social support, self care strategies and antiretroviral treatment had an effect on quality of life. Thus, health care policies should support quality of life in persons living with HIV/AIDS by promoting social network in the community. The policy should promote social support systems in the hospital and in the community by co-operating with non – government organization.

Policies for promoting self care strategies and preventing symptom experience should be proposed through mass media such as newspaper, internet, and so on.

The policies should support the antiretroviral treatment to persons living with HIV/AIDS continuously.

Limitations of the study

1. The subjects stayed in the northern part of Thailand. They are not representative of all areas in Thailand. Thus, the results may not be generalized to other population.

2. While the subjects answered the questionnaires, they had to follow up their disease with the doctor so they wanted to answer the questionnaires at their home. It might make them misunderstand some items of the questionnaires.

Reference

Al-Hussaini, A. (2001). Vipassana meditation: a naturalistic, preliminary observation in Muscat. **Journal for Scientific Research** 3: 87 - 92.

Bastardo, Y.M., and Kimberlin, C.L. (2000). Relationship between quality of life, social support and disease-related factors in HIV-infected persons in Venezuela. **AIDS Care** 12: 673 - 684.

Bedard, M., et al. (2003). Pilot evaluation of a mindfulness-based intervention to improve quality of life among individuals who sustained traumatic brain injuries. **Disability and Rehabilitation** 25: 722 - 731.

Brandt, P., and Weinert, C. (1981). The PRQ - A Social Support Measure. **Nursing Research** 30: 277 - 280.

Bunch, E.H. (2004). Symptom management for HIV-positive persons in Norway. **International Council of Nurses** S1: 167-175.

Campsmith, M.L., Nakashima, A.K., and Davidson, A.J. (2003). Self-reported health-related quality of life in persons with HIV infection: results from a multi-site interview project. **Health and Quality of Life Outcomes** 1: 1-6.

Capili, B., and Anastasi, J.K. (1998). A symptom review: nausea and vomiting in HIV. **Journal of the Association of Nurse in AIDS Care** 9: 47-56.

Carlson, B., Riegel, B., and Moser, D.K. (2001). Self- Care abilities of patients with hearth failure. **Heart & Lung** 30: 351-359.

Carlson, B., et al. (2003). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress, and immune parameters in breast and prostate cancer outpatients. **Psychosomatic Medicine** 65: 571 – 581.

Carlson, B., et al. (2004). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (DHEAS) and melatonin in breast and prostate cancer outpatients. **Psychoneuroendocrinology** 29: 448 – 474.

Carolyn, M., Linda, L., Kirby, J., Kenneth, P., and Abbas, T. (2006). Predictors of quality of life in HIV-infected rural women: psychometric test of the chronic illness quality of life ladder. **Quality of Life Research** 15(5): 777-789.

Casey House Hospice. (2001). **Model 4: Palliative care, a comprehensive quide for the care of persons with HIV disease**. Toronto: Oulton Technology Management.

Castro, et al. (1992). Revised classification system for HIV infection. **MMWR** 12: 1-19.

Cederfjall, et al. (2001). Gender difference in perceived health-related quality of life among patients with HIV infection. **AIDS Patients Care and STDs** 15: 31-39.

Chai-aree, C. (1990). **Quality of Life in Patients with Congestive Heart Failure**. Master’s thesis, Department of Nursing Science, Faculty of Graduate Studies. Mahidol University.

Chen, H., Katz, P.P., Eisner, M.D., et al. (2004). Health – related quality of life in adult rhinitis: The role of perceived control of disease. **American Academy of Allergy, Asthma and Immunology**.

Cleary, P.D., Fowler, F.J., and Weissman, J., et al. (1993). Health – related quality of life in person with acquired immune deficiency syndrome. **Medical Care** 569-580.

Chou, F., Holzemer, W.L., Portillo, C.J., and Slaughter, R. (2004). Self-care strategies and sources of information for HIV/AIDS symptom management. **Nursing Research** 53: 332 -339.

Chou, F-U. (2004).Testing a predictive model of the use of HIV/AIDS symptom self-care strategies. **AIDS Patient Care and STDs** 18: 109-117.

Corless, L.B., Nicholas, P.K., McGibbon, C.K., and Wilson, C. (2004). Weight change, body image, and quality of life in HIV disease: a pilot study. **Applied Nursing Research** 17(4): 292 - 296.

Clingerman, E. (2004). Physical activity, social support, and health-related quality of life among person with HIV disease. **Journal of Community Health Nursing** 21: 179-197.

Cohen, S., and Syme, S.L. (1985). **Social Support and Health**. Orlando: Academic Press.

Cowdery, J.E. and Pesa, L.A. (2002). Assessing quality of life in women living with HIV infection. **AIDS Care** 14: 235-245.

Cunningham, W.E., Shapiro, M.F., Hays, R.D., Dixon, W.J., Visscher, B.R., George, W.L., et al. (1998). Constitutional symptoms and health – related quality of life in patients with symptomatic HIV disease. **The American Journal of Medicine** 104: 129-136.

Danial, W.W. (1991). **Biostatistics: A Foundation of Analysis in the Health Science**. 5$^{ed.}$ New York: John Wiley and Son.

Dantas, R.A.S., Motzer, S.A., and Ciol, M.A. (2002). The relationship between quality of life, sense of coherence and self-esteem in persons after coronary artery bypass graft surgery. **International Journal of Nursing Studies** 39: 745-755.

Darikanon, S. (1998). Quality of life and suicidal idea in HIV infection. Mental Health, Ministry of Public Health.

Dedkaew, D. (2001). **Evaluation of antiretroviral combination regimens by declining viral load of HIV patients in Chiangmai**. Master's thesis, Department of Pharmacy, Graduate School, Chiangmai University.

Dodd, M., et al. (2001). Advancing the science of symptom management. **Journal of Advanced Nursing** 33: 668 - 676.

Douaihy, A., and Singh, N. (2001). Factors affecting quality of life in patients with HIV infection. **AIDS Read** 11: 450- 461.

Eller, L.S. (1999). Effects of cognitive-behavioral interventions on quality of life in persons with HIV. **International Journal of Nursing Studies** 36: 223-233.

Eller, L.S. (2001). Quality of life in persons living with HIV. **Clinical Nursing Research** 10(4): 401-423.

Ferrans, C.S. (1990). Quality of life: conceptual issues. **Seminars in Oncology Nursing** 6: 248-254.

Ferrans, C. E. and Powers, M. J. (1992). Psychometric assessment of the quality of life index. **Research in Nursing and Health** 15: 29-38.

Fawcett, J. (2000). **Analysis and Evaluation of Contemporary Nursing Knowledge: Nursing Models and Theories.** Philadelphia: F.A. Davis Company.

Finlayson, T.L., Moyer, C.A., and Sonnad, S.S. (2004). Assessing symptoms, disease severity, and quality of life in the clinical context: a theoretical framework. **The American Journal of Managed Care** 10(5): 336-344.

Flannelly, L.T., and Inouye, J.I. (2001). Relationships of religious, health status, and socioeconomic status to the quality of life of individuals who are HIV positive. **Mental Health Nursing** 22: 253-272.

Fuller, E., et al. (2005). Symptom experiences of chronically constipated women with pelvic floor disorders. **Clinical Nurse Specialist** 19: 34-40.

Gasemgitvata S. (1993). **A causal model of caregiver role stress in wives of chronically ill patients.** Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies. Mahidol University.

Gielen, A.C., et al. (2001). Quality of life among women living with HIV: the importance violence, social support, and self care behaviors. **Social Science and Medicine** 52: 315-322.

Gill, et al. (2002). Relationship of HIV viral loads, CD4 counts, and HAART use to health-related quality of life. **Journal of Acquired Immune Deficiency Syndromes** 30: 485-492.

Globe, D.R., Hay, R.D., and Cunningham, W.E. (1999). Associations of clinical parameter with health-related quality of life in hospitalized persons with HIV disease. **AIDS Care** 11: 71-86.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998). **Multivariate data Analysis.** 5th ed. New Jersey: Prentice-Hall.

Han, H., Kim, M., and Weinert, C. (2002). The Psychometric evaluation of Korean translation of the personal resource questionnaire 85-Part 2. **Nursing Research** 51: 309 – 316.

Hanrungchrotorn, U. (2001). **Factors Related to the Quality of Life of Clients with Type 2 Diabetic**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Hay, R.D., Cunningham, W.E., Sherbourne, C.D., et al. (2000). Health – related quality of life in patients with human immunodeficiency virus infection in the United States: results from the HIV cost and services utilization study. **The American Journal of Medicine** 108: 714- 722.

Hass, B.K. (1999). A multidisciplinary concept analysis of quality of life. **Western Journal of Nursing Research** 21: 728-742.

Heckman, T.G. (2003). The chronic illness quality of life (CIQOL) model: explaining life satisfaction in people living with HIV disease. **Health Psychology** 22: 140-147.

Heineich, C.R. (2003). Enhancing the perceived health of HIV seropositive men. **Western Journal of Nursing Research** 25: 367-382.

Hogan, C.M. (1997). Cancer nursing: the art of symptom management. **Oncology Nursing Forum** 24: 1335- 1341.

Hollertz, V. (2001). Mae Chan workshop on integrated community Mobilization Toward Effective Multisectoral HIV/AIDS Prevention and Care, UNDP South East Asia HIV and Development Project.

Holzemer, W.L., and Wilson, H.S. (1995). Quality of life and the spectrum of HIV infection. In J.J. Fitzpatrick and J.S. Stevenson (Eds.) **Annual review of nursing research,** (pp.3-29) New York: Springer.

Holzemer, W.L., et al. (1998). Validation of the quality of life scale: living with HIV. **Journal of Advance Nursing** 28: 622-630.

Holzemer, W.L., Henry, S.B., Nokes, K.M., et al. (1999). Validation of the Sign and Symptom Check – List for Person with HIV Disease (SSC – HIV). **Journal of Advance Nursing** 30: 1041-1049.

Holzemer, W.L., et al. (2001). The revised sign and symptom check-list foe HIV (SSC-HIVrev). **Journal of the Association of Nurses in AIDS Care** 12: 60-70.

Hudson, A., Kirksey, K., and Hozemer, W. (2004). The influence of symptoms on quality of life among HIV-infected women. **Western Journal of Nursing Research** 26: 9-23.

Hu, J. (2004). Health - related quality of life in order adults with chronic illness. public heath and the environment, November, 6-10. Available from; http://apha.complex.com/apha/132am/techprogram/paper_77951, [August, 21]

Jantaramano, et al. (2003). **Effectiveness of meditation by using the pyramid on an immmune system and quality of life in HIV carrier and AIDS: case study of Pra – Achan Rat Ratanapanyo's method in meditation at wat doi Koeng**, Mae Sariang District, Mae Hongson Province. Ministry of University Affair, September.

Jackson, H. (1992). Guideline for developing a workplace policy and program on HIV/AIDS and STDS. Available from; http://www.ahi.co.za/aids/1-4.html [August, 21]

Jelsma, J., Maclean, E., Hughes, J., Tinise, X., and Daeder, M. (2005). An investigation into the health-related quality of life individuals living with HIV who are receiving HAART. **AIDS Care** 17(5): 579-588.

Justice, A.C., et al. (2001). Development and validation of a self-completed HIV symptom index. **Journal of Clinical Epidemiolody** 54: s77-s90.

Kemppainen, J.K. (2001). Predictors of quality of life in AIDS patients. **Journal of the Association of Nurses in AIDS Care** 12: 61-70.

Kemppainen, J.K., et al. (2003). Self- care management of anxiety and fear in HIV disease. **Journal of the Association of Nurses in AIDS Care** 14: 21-29.

Kevin, W., et al. (1999). Distinguishing between quality of life and health status in quality of life research: a meta-analysis. **Quality of Life Research** 8: 447-459.

Kompalaew, W. (2002). **Quality of life of people with HIV/AIDS in AIDS club Mueng District Lampang Province**. Master's thesis, Department of Public Health, Faculty of Graduate Studies, Chiang Mai University.

Krutkaew, W. (1997). **Hardiness and Quality of Life in HIV – Infected Person**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Chiang Mai University.

Laddapong, P. (2000). **Effectiveness of the method of Wat- doi Koeng meditation on knowledge, perception, behavioral practice in HIV/AIDS patients in Cholburi province**. Master's thesis, Department of Public Health, Faculty of Graduate Studies, Mahidol University.

Larson, P.J., et al. (1994). A model for symptom management. **IMAGE: Journal of Nursing Scholarship** 26: 272 - 276.

Lenderking, W.R., et al. (1997). Measuring quality of life in early HIV disease: the modular approach. **Quality of Life Research** 6: 515-530.

Liu, C., Lisette, J., David, O., Antony, S., Barbara, V., et al. (2006). Predictors for lower quality of life in the HAART era among HIV-infected men. J**ournal of Acquired Immune Deficiency Syndrome** 42 (4): 470-477.

Lorenz, K.A., et al. (2001). Associations of symptoms and health-related quality of life: findings from a national study of persons with HIV infection. **American Society of Internal Medicine** 134 (9): 854-860.

Lubeck, D.P., and fries, J.F. (1992). Changes in quality of life among persons with HIV infection. **Quality of Life Research** 1: 359 - 366.

Lubeck, D.P., and fries, J.F. (1997). Assessment of quality of life in early stage HIV-infected persons: data from the AIDS time-oriented health outcomes study (ATHOS). **Quality of Life Research** 6: 496- 506.

Lubeck, D.P., et al. (1993). Quality of life and health service use among HIV-infected patients with chronic diarrhea. **Journal of Acquire Immune Deficiency Syndromes** 6: 478-484.

Liu, C., Ostrow, D., Detels, R., Hu, Z., Johnson, L., Kingsley, L., et al. (2006). Impacts of HIV and HAART use on quality of life. **Quality of life Research** 15: 941-949.

Mahannirankul, S., et al. (1997). Comparison of the WHOQOL-100 and the WHOQOL-BREF-26 items. Suan Prung hospital, Chiang Mai Province.

Makoae, L.N., Seboni, N.M., Molosiwa,K., Moleko, M., Human,S., Sukati,N.A., et al. (2005). The Symptom experience of people living with HIV/AIDS in Southern Africa. **Journal of the Association of nurses in AIDS Care** 16 (3): 22-32.

Mannheimer, S.B., et al. (2005). Quality of life in HIV-infected individuals receiving antiretroviral therapy is related to adherence. **AIDS Care** 17 (1): 10-22.

Mast, T.C., et al. (2004). Measuring quality of life among HIV-infected women using a culturally adapted questionnaire in Rakai distric, Uganda. **AIDS Care** 16: 81-94.

McDonnell, et al. (2000). Measuring health related quality of life among women living with HIV. **Quality of Life Research** 9: 931- 940.

Meeberg, G.A. (1993). Quality of life: a concept analysis. **Journal of Advanced Nursing** 18: 32-38.

Ministry of Public Health. (2002-2006). **The Ninth National Economic and Social Development Plan**, Bangkok.

Ministry of Public Health. (2004). Situation AIDS disease in THAILAND. Available from: http://aidsthai.org [August, 21]

Ministry of Public Health. (2006). Statistic of HIV/AIDS. Available from: http://203.157.16.193/aids/Aidstab1 [February,20]

Morrison, et al. (2002). Depressive and anxiety disorders in women with HIV infection. **American Journal Psychiatry** 159: 789- 796.

Molassiotis, A., Callaghan, P., Twinn, S.F., and Lam, S.W. (2001). Correlates of quality of life in symptomatic HIV patients living in Hong Kong. **AIDS care** 13: 319-334.

Motzer, S.U., and Stewart, B.J. (1996). Sense of coherence as a predictor of quality of life in persons with coronary heart disease surviving cardiac arrest. **Research in Nursing & Health** 19: 287- 298.

Murdaugh, C. (1999). Health-related quality of life in HIV disease: achieving a balance. **Journal of the Association of Nurses in AIDS care** 9: 59-71.

Nantachaipan, P. (1996). **Development of Self-Care Agency Model in Persons with HIV Infection / AIDS.** Doctoral dissertation, Philosophy of Nursing Science, Faculty of Graduate Studies, Mahidol University.

Namjanta, R. (2003). **Coping Process of Persons with long-term HIV Infection**. Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Narkdee, K. (2001). **Impacts of meditation on spiritual changes of persons with HIV and AIDS in Surin Province**. Master's thesis, Department of Community Nursing, Graduate School, Khon Kaen University.

Nicholas, P.K., et al. (2003). A behavioral – medicine program in HIV. **Journal of Holistic Nursing** 21: 163 - 178.

Nirawutt, N. (1996). Buddhist and caring HIV/AIDS case study; Wat Doi Kerg. **Public Health** 5 (January- March): 1.

Noimeanwai, P. (1993). **Social support, self-care deficit, and quality of life in HIV/AIDS patients.** Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Nuamah, I.F., et al. (1999). Testing a theory for health - related quality of life in cancer patients: a structural equation approach. **Research in Nursing & Health** 22: 231-242.

Nunes, J.A., et al. (1995). Social support, quality of life, immune function, and health in person living with HIV. **Journal of Holistic Nursing** 13: 174-198.

O' Connor, P., et al. (2001). Determinants of overall quality of life in secondary progressive MS: a longitudinal study. **Neurology** 57: 889-891.

Packa, D.R. (1998). Quality of life of adults after a heart transplant. **Journal of Cardiovascular Nursing** 3: 12-22.

Pakdewong, (2006). **A Structural Model Development of Mercer's Maternal Role Attainment in Thai HIV- Seropositive Mothers**. Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Padilla, G.V., and Grant, M.M. (1985). Quality of life as a cancer nursing outcome variable. **Advance in nursing science** 8: 45 – 60.

Panuwatsuk, P. (1998). **A Study of Self-care in HIV Sero-positive Pregnant Women during Pregnancy.** Master's thesis, Department of Medical Health Social Science, Faculty of Graduate Studies, Mahidol University.

Penedo, F.J., et al. (2003). Personality, quality of life and HAART adherence among men and women living with HIV/AIDS. **Journal of Psychosomatic Research** 54: 271-278.

Pintobtang, S. (2002). **Complementary and Alternative Therapy Using in Hospitalized HIV/AIDS patients.** Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Piyakul, S. (1999). Quality of life of PLWA in Sanpatong hospital and Sansai hospital in Chiang Mai Province. Master"s thesis, Department of Medical Health Social Science, Faculty of Graduate Studies, Mahidol University.

Phillips, K. D., and Morrow, J.H. (1998). Nursing management of anxiety in HIV infection. **Mental Health Nursing** 19: 375-397.

Pochanapan**,** S., Satayawiwat, W., and Thongjaroen, V. (1995). The relationship between selected factors, social support, health behavior and quality of life in the elderly. Mahidol University.

Polit, D.F., and Beck, C.T. (2004). **Nursing Research Principle and Methods**. 7ed. Philadelphia: Lippincott Williams & Wilkins.

Polngarm, A., Tawichsri C., and Patumanond, J. (2004). AIDS patients who abandoned at hospital after discharge. **Thai AIDS Journal** 16: 49-59.

Prasatkettkan, W. (2001).The Relationship between Selected Basic Conditioning Factors, Self- Efficacy, Social support and Self-care strategies in the Muslim Elderly in the Bangkok Metropolitan Area. Master's thesis, Department of Public Health, Faculty of Graduate Studies, Mahidol University.

Public Health of Chiang Rai. (2005, October 31). **The AIDS situation in Chiang Rai province**, **Thailand**.

Puttapitukpol, S. (2001). **A Causal Model of the Health Responsibility of Pregnant Adolescents.** Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Orem, D.E. (2001). **Nursing Concepts of Practice.** 6ed. Si.Louis: Mosby.

Quinn Griffin, M.T., and Fazio, V. (2004). Self esteem: major predictor of quality of life in patients with ulcerative colitis following ileal pouch anal anastomosis surgery. Available from: http://stti.comfex.com/stti/inrc15 [August, 21]

Ragsdale, D., and Morrow, J.R. (1990). Quality of life as a function of HIV classification. **Nursing Research** 39: 355-359.

Ragsdale, D., et al. (1992). Quality of life of hospitalized persons with AIDS. **Journal of Nursing Scholarship** 22: 259-265.

Reibel, D.K., et al. (2001). Mindfulness-based stress reduction and health-related quality of life in a heterogeneous patient population. **General Hospital Psychiatry** 23: 183-192.

Rhodes, V.A., et al. (2000). An instrument to measure symptom experience Symptom occurrence and symptom distress. **Cancer Nursing** 23: 49-54.

Robinson, F.P. (2004). Measurement of quality of life in HIV disease. **Journal of the Association of Nursing**. **AIDS Care** 15: 14S – 19S.

Sarna, L., Servellen, G.V., Padilla, G., & Brecht, M-L. (1999). Quality of life in women with symptomatic HIV/AIDS. **Journal of Advanced Nursing** 30: 597-605.

Stoff, D., et al. (2004). HIV/AIDS and aging. **AIDS** 18: 1-2.

Servellen, G.V., Sarna, L., & Jablonski, K. J. (1998). Women with HIV: living with symptoms. **Western Journal of Nursing Research** 20: 448-464.

Servellen, G.V., Chang, B., & Lombardi, E. (2001). Acculturation, socioeconomic vulnerability, and quality of life in Spanish-speaking and bilingual Latino HIV- infected men and women. **Western Journal of Nursing Research** 24: 246 -263.

Sousa, K.H., & Williamson, A. (2003). Symptom status and health-related quality of life: clinical relevance. **Journal of Advanced Nursing** 42: 571-577.

Sowell, R.L., Seals, B.F., Moneyham, L., Demi, A., Cohen, L., Brake, S., (1997). Quality of life in HIV-infected women in the south-eastern United State. **AIDS Care** 9 (5): 501-512.

Spilker, B. (1996). **Quality of Life and Phamaconomies in clinical trail**. 2nd ed Philadelphia: Lippincott.

Stearns, S. (2000). The economic implications of self-care: the effect of lifestyle, functional adaptation, and medical self-care among a national sample of Medicare beneficiaries. **American Journal of Public Health** 90: 1608-1612.

Stuifbergen, A.K., Seraphine, A., Roberts, G. (2000). An explanatory model of health promotion and quality of life in chronic disabling conditions. **Nursing Research** 49: 122 - 129.

Sukati, N.A., et al. (2005). HIV/AIDS symptom management in Southern Africa. **Journal of Pain and Symptom Management** 29: 185-192.

Sutthaviresan, K. (1992). **Sense of Coherence, Social support and Burn out in Critical Care Nurse**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Swanson, B et al. (2000). Complementary and alternative therapies to manage HIV-related symptoms. **Journal of the Association of Nurse in AIDS Care** 11: 40-60.

Swindells, S., et al. (1999). Quality of life in patients with human immunodeficiency virus infection: impact of social support, coping style and hopelessness. **Internal STD AIDS** 10: 383 - 391.

Tangjaroen, M., and Tepnamwong, J. (1994). Self-care agency and quality of life in AIDS patients. **4th International AIDS Conference** July, 27-29.

Tantisak, et al., (1999), A. abstract; survey the situation alternative care in HIV/AIDS in Thailand 2542. **In 9th International AIDS Seminar**. Bangkok, July, 7-9.

Tantiwinyupong, S. (2000). **The Relationship between Stigma Perception, Hope, AND Self-care Agency in HIV/AIDS Patients**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

TB/HIV Research Project Thailand. (2000). Available from: C:\Documents and Settings\owner\My Documents\TB-HIV Research Project Thailand.htm [August, 21]

Thadapark, A. (2003). **Development of the Specific Instrument Measuring Quality of Life for HIV-Infected Persons: MOS-HIV (Thai Version).** Chiang Mai University.

Thanasilp, S. (2001). **Effectiveness of the Symptom Management Program on Symptom Status and Quality of Life among Persons with Pneumocystis Carinii Pneumonia.** Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

The WHOQOL HIV Group. (1995). The world health organization quality of life assessment (WHOQOL): position paper from the world health organization. **Social Science and Medicine** 14: 1403-1409.

The WHOQOL HIV Group. (2003). Initial steps to developing the world health organization's quality of life Instrument (WHOQOL) module for international assessment in HIV/AIDS. **AIDS care** 15: 347-357.

The WHOQOL HIV Group. (2003). Preliminary development of the world health organization quality of life instrument (WHOQOL-HIV): analysis of the pilot version. **Social Science & Medicine** 57: 1259-1275.

Tilden, V.P., and Weinert, C. (1987). Social support and the chronically ill Individual. **Nursing Clinics of North America** 22: 613 -620.

Tsai, Y-F., Hsiung, P-C., and Holzemer, W.L. (2002). Symptom management in Taiwanese patients with HIV/AIDS. **Journal of Pain Symptom Management** 23: 301 - 309.

Ua – kit, N. (2004). **Factors Influencing Cigarette Smoking Behavior among Thai Adolescents in Metropolitan Bangkok**. Doctoral dissertation, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Vichitvatee, S. (1991). **The Relationship among Self-Esteem, Social Support and Self-care strategies of the Amputee**. Master’s thesis, Department of Nursing, Mahidol University.

Viratchai, N. (1999). **Model Lisrel: Statistic Analysis for Research**. Chulalongkorn University: Bangkok.

Vitsarutrat, S., Tantiwipatsakul, P., and Tunyawinichkul, S. (1999). AIDS! The First Factor of suicide in Chiang Mai. **7th International AIDS Conference**, April, 21-23.

Vogl, D., et al. (1999). Symptom prevalence, characteristics and distress in AIDS outpatients. **Journal of Pain and Symptom Management** 18: 253 - 262.

Voss, J.G. (2005). Predictor and correlates of fatigue in HIV/AIDS. **Journal of Pain and Symptom Management** 29: 173- 184.

Wanthong, A. (2002). **Self – esteem, concern, and quality of life of mothers with** HIV infection. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Mahidol University.

Wachtel, et al. (1992). Quality of life in persons with human immunodeficiency virus infection: measurement by the medical outcomes study instrument. **Annal of Internal Medicine** 116: 129-137.

Watson, A., Samore, M.H., Wanke, C.A. (1996). Diarrhea and quality of life in ambulatory HIV-infected patients. **Digestive Disease and Sciences** 41 (9): 1794 – 1800.

Wattanachewin, K. (1998). **Effect of Reflecting Self- Thinking, Self-care agency and Quality of life in HIV/AIDS Patients**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Chiang Mai University.

Webb, A., and Norton, M. (2004). Clinical assessment of symptom-focused health-related quality of life in HIV/AIDS. **Journal of the Association of Nursing AIDS Care** 15: 67 - 81.

Wilson, I.B., Kaplan, S. (1995). Clinical practice and patients' health status: how are the two related? **Medical Care** 33: 209-215.

Weinert, C. (1987). A social support measure: PRQ 85. **Nursing Research** 36: 273 - 277.

Weinert, C., and Brandt, P.A. (1987). Measuring social support with the personal resource Questionnaire. **Western Journal of Nursing Research** 9: 589 - 602.

Weinert, C., and Tilden, V. (1990). Measures of social support: assessment of validity. **Nursing Research** 39: 212-216.

Weiss, R. S. (1969). The Fund of Sociability. **Tran- action Social Science and Modern Society**. July/August.

Wongsabut, M. (1997). **Relationship among Social Support, Hope, and The Self-care strategies of Persons with AIDS Receiving Treatment at Phabatnampu Temple, Lop-Buri Province**. Master's thesis, Department of Nursing, Faculty of Graduate Studies, Chiang Mai University.

World Health Organization, Division of Mental health. (1993). **WHO-QOL study protocol: the development of the world health organization quality of life assessment instrument (MNG/PSF/93.9).** Geneva, Switzerland.

Wu, A.W. (2000). Quality of life assessment comes of age in the ear of highly active antiretroviral therapy. **AIDS** 14: 1449-1451.

Yang, M., et al. (2003). Quality of life and related factors for people living with HIV/AIDS in Northern Taiwan. **Journal of Nursing Research** 11: 217-225.

Zhan, Lin. (1992). Quality of life: conceptual and measurement issues. **Journal of Advanced Nursing** 17: 795-800.

Zingmond, D.S., et al. (2003). Differences in symptom expression in older HIV-positive patients: the veterans aging cohort 3 site study and HIV cost and service utilization study experience. **Journal Acquire Immune Deficiency Syndrome** 1 (33): 84-92.

APPENDICES

APPENDIX

LIST OF EXPERTS

APPENDIX A

LIST OF EXPERTS

1. Professor Dr. Somchit Hanucharurnkul
   Department of Nursing, Faculty of Medicine
   Ramathibodi Hospital, Mahidol University
2. Associate Dr. Prakong Intrarasombat
   Department of Nursing, Faculty of Medicine
   Ramathibodi Hospital, Mahidol University
3. Assistant Dr. Pikul Nunthachaipan
   Faculty of Nursing, Chiangmai University
4. Doctor Patcharee Khuntipong
   Chiang rai prachanukroh Hospital

APPENDIX

INSTRUMENTS

APPENDIX B

แบบสอบถาม

แบบสอบถามฉบับนี้ ประกอบด้วยแบบสอบถาม 5 ส่วน คือ ข้อมูลส่วนบุคคล แบบสอบถามประสบการณ์เกี่ยวกับอาการ แบบสอบถามแรงสนับสนุนทางสังคม แบบสอบถามกลวิธีการจัดการกับอาการ และแบบสอบถามคุณภาพชีวิต

ข้อมูลส่วนบุคคล กรุณาตอบคำถามในช่องว่าง

1. อายุ .... ปี 2. เพศ ....
3. ระดับการศึกษา ....
4. ระดับเม็ดเลือดขาว (CD4 count) ....
   ระยะของโรค ....
5. ท่านรับประทานยาต้านไวรัสเอดส์หรือไม่
   .....ไม่ได้รับประทานยาต้านไวรัสเอดส์ .....รับประทานยาต้านไวรัสเอดส์ชื่อ ....
6. ท่านอาศัยอยู่กับ ....
   สถานที่อยู่เป็น .... บ้านตัวเอง .... บ้านญาติ
7. รายได้ ....ต่อเดือน
   ท่านคิดว่า ......รายได้เพียงพอ ......ค่อนข้างเพียงพอ ......ไม่เพียงพอ
8. ท่านใช้สิทธิการรักษาพยาบาลโดย
   .... บัตรทอง .... 30 บาท .... เบิกต้นสังกัด .... ใช้เงินส่วนตัวจ่ายเอง

APPENDIX C

PERMISSION TO USE THE PERSONAL RESOURCE QUESTIONNAIRE

PERMISSION TO USE THE PRQ85 and PRQ2000

IS GRANTED TO: Thitiarpha (Manlika) Tangkawanich

THE PRQ85 IS A TWO PART INSTRUMENT. EITHER PART -1 OR PART -2 OR BOTH PARTS MAY BE ADMINISTERED. HOWEVER, NO PART OF PRQ85 OR PRQ2000 MAY BE MODIFIED WITHOUT CONSULTATION WITH THE AUTHORS.

Clarann Weinert, SC

Clarann Weinert, SC,PhD,RN,FAAN DATE: Mar 28, 2005

แบบสอบถาม แรงสนับสนุนทางสังคม

โปรดอ่านข้อความแต่ละข้อ และ **X** เลือกข้อที่ตรงกับความรู้สึกของท่านมากที่สุด

ไม่เห็นด้วยอย่างยิ่ง หมายถึง ข้อความนั้นๆ ไม่ตรงกับความรู้สึกของท่านมากที่สุด
ไม่เห็นด้วย หมายถึง ข้อความนั้นๆ ไม่ตรงกับความรู้สึกของท่าน
ไม่แน่ใจหรือเฉยๆ หมายถึง ข้อความนั้นๆ ท่านรู้สึกเฉยๆ
เห็นด้วย หมายถึง ข้อความนั้นๆ ตรงกับความรู้สึกของท่าน
เห็นด้วยอย่างยิ่ง หมายถึง ข้อความนั้นๆ ตรงกับความรู้สึกของท่านมากที่สุด

ข้อคำถาม	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจหรือเฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1. ฉันมีคนที่ฉันรู้สึกใกล้ชิดสนิทสนมที่ทำให้ฉันรู้สึกอบอุ่นปลอดภัย					
2. ฉันมีกลุ่มเพื่อนหรือเพื่อนบ้านซึ่งทำให้ฉันรู้สึกว่าฉันมีความสำคัญกับกลุ่ม					
3. คนรอบข้างหรือเพื่อนร่วมงานบอก หรือแสดงให้เห็นว่าฉันทำงาน (งานบ้าน หรือที่ทำงาน) ได้ดี					
4. ฉันไม่สามารถพึ่งพาญาติและเพื่อน ที่จะช่วยเหลือฉัน เมื่อฉันมีปัญหา					
5.					
.					
.					
.					
.					
.					
.					
.					
.					
.					
.					
24. มีคนคิดว่าฉันไม่ได้เป็นเพื่อนที่ดีอย่างที่ฉันควรจะเป็น					
25. ถ้าฉันเจ็บป่วย มีคนที่จะให้คำแนะนำฉันในการดูแลตนเอง					

APPENDIX D

แบบสอบถาม ประสบการณ์อาการ (Symptom experience)

ท่านอาจมีประสบการณ์ เกี่ยวกับอาการและอาการแสดงที่เกิดขึ้น X ลงในช่องว่างหากท่านมีอาการดังต่อไปนี้ ในสัปดาห์ที่แล้ว

.... ปวดศีรษะ ตาลาย เวียนศีรษะหน้ามืด วิงเวียน หายใจลำบาก หัวใจต้นเร็ว ใจสั่น พักไม่ได้ วิตกกังวล กลุ้มใจ เครียด ตัวสั่น กล้ามเนื้อตึง

.... รู้สึกหดหู่ รู้สึกตกต่ำ ซึมเศร้า อาจมีนอนไม่หลับร่วมด้วย เบื่ออาหาร น้ำหนักลด หรือน้ำหนักเพิ่ม บางครั้งมีอาการอ่อนล้าร่วมด้วย

.... ท้องเสีย ถ่ายเหลว 3 ครั้งหรือมากกว่า 3 กว่า ครั้งต่อวัน

.... เมื่อย ล้า รู้สึกอ่อนเพลีย เมื่อยเนื้อเมื่อยตัว เหนื่อยอ่อน ไม่มีสมาธิ

.... คลื่นไส้ อาเจียน เรอ สะอึก ไม่สบาย ปั่นป่วนในท้อง

.... ชาขา หรือชาแขน ปวด ปวดแสบปวดร้อน หรือไม่มีความรู้สึกบริเวณแขน มือ ขา หรือเท้า

หากท่านมีอาการดังกล่าว กรุณาตอบคำถามในหน้าต่อไป

เมื่อย ล้า อ่อนเพลีย เมื่อยเนื้อเมื่อยตัว หรือ เหนื่อยอ่อน ไม่มีสมาธิ

1. **วงกลม จำนวนวัน** ที่มีอาการเมื่อยล้า เมื่อยเนื้อเมื่อยตัว อ่อนเพลีย เหนื่อยอ่อนในสัปดาห์ที่แล้ว

1 2 3 4 5 6 7 (จำนวนวัน)

2. **วงกลมตัวเลข** ที่แสดงถึง **ความรุนแรง** อันเกิดจากความ เมื่อยล้า เมื่อยเนื้อเมื่อยตัว อ่อนเพลีย เหนื่อยอ่อน

1 2 3 4 5 6 7 8 9 10
ต่ำมาก มากที่สุด

3. **วงกลมตัวเลข** ที่แสดงถึง **ความทุกข์ทรมาน** อันเกิดจาก ความเมื่อยล้า เมื่อยเนื้อเมื่อยตัว อ่อนเพลีย เหนื่อยอ่อน

1 2 3 4 5 6 7 8 9 10
ต่ำมาก มากที่สุด

4. **วงกลมตัวเลข** ที่แสดงถึง **ผลกระทบต่อชีวิตประจำวัน** อันเกิดจาก ความเมื่อยล้า เมื่อยเนื้อเมื่อยตัว อ่อนเพลีย เหนื่อยอ่อน

1 2 3 4 5 6 7 8 9 10
ต่ำมาก มากที่สุด

APPENDIX E

แบบสอบถามกลวิธีการดูแลตนเองในการจัดการกับอาการ

โปรดอ่านข้อความแต่ละข้อ และเลือกข้อที่ตรงกับวิธีการของท่านในการดูแลตนเองในการจัดการกับอาการเมื่อมีอาการเจ็บป่วยในอาการดังต่อไปนี้

1. เมื่อย ล้า รู้สึกอ่อนเพลีย เมื่อยเนื้อเมื่อยตัว เหนื่อยอ่อน ไม่มีสมาธิ
2. ชาขา หรือชาแขน ปวด ปวดแสบปวดร้อน หรือไม่มีความรู้สึกบริเวณแขน มือ ขา หรือเท้า
3. คลื่นไส้ อาเจียน เรอ สะอึก ไม่สบาย ปั่นป่วนในท้อง
4. ท้องเสีย ถ่ายเหลว 3 ครั้งหรือมากกว่า 3 กว่า ครั้งต่อวัน
5. ปวดศีรษะ ตาลาย เวียนศีรษะหน้ามืด วิงเวียน หายใจลำบาก หัวใจต้นเร็ว ใจสั่น พักไม่ได้ วิตกกังวล กลุ้มใจ เครียด ตัวสั่น กล้ามเนื้อตึง
6. รู้สึกเศร้า หดหู่ รู้สึกตกต่ำ ซึมเศร้า อาจมีนอนไม่หลับร่วมด้วย เบื่ออาหาร น้ำหนักลด หรือน้ำหนักเพิ่ม บางครั้งมีอาการอ่อนล้าร่วมด้วย

1. เลือก X ในช่องคำว่า “ใช่” ในข้อที่ท่านได้ปฏิบัติเมื่อมีอาการข้างบนอย่างใดอย่างหนึ่ง หรือ X ในช่องคำว่า “ไม่ใช่” ในข้อที่ท่านไม่ได้ปฏิบัติ
2. ถ้าท่านได้ปฏิบัติ เลือกคำว่าใช่ ท่านปฏิบัติบ่อยแค่ไหน กี่วันใน 1 สัปดาห์ เลือก X ในชิองเดียว
3. ผลของการปฏิบัติได้ผลมากน้อยเพียงใด เลือก X ในช่องตัวเลขที่ท่านคิดว่าได้ผลจากการปฏิบัติ ในกิจกรรมนั้นๆ เพียงตัวเลขเดียว

กิจกรรม	ท่านปฏิบัติ		ถ้าท่านปฏิบัติ “ใช่”																
			ความถี่ในการปฏิบัติ กี่วันต่อสัปดาห์							กิจกรรมนี้ลดอาการได้มากน้อยเท่าใด									
	ไม่ใช่	ใช่	1 วัน	2	3	4	5	6	7 วัน	1 น้อย	2	3	4	5	6	7	8	9	10 มาก
1. ท่านนอนหลับพักผ่อนอย่างเพียงพอในตอนกลางคืน																			
2. ขณะทำงานท่านต้องพักบ่อยๆ																			
3. ท่านปรับการมีกิจกรรมในสังคม ไม่หักโหม																			

APPENDIX F

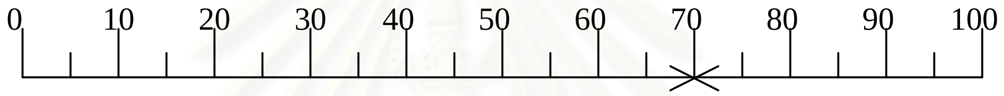
แบบสอบถาม

คุณภาพชีวิตในผู้ติดเชื้อเอช ไอ วี

ในแต่ละข้อต่อไปนี้ เป็นคำบรรยายเกี่ยวกับความเป็นอยู่ ตามการรับรู้หรือความรู้สึกของท่านในขณะนี้ ข้อความแต่ละข้อจะมีคะแนนปรากฏอยู่บนเส้นตรงมีค่าอยู่ในช่วง 0-100 คะแนน ขอให้ท่านอ่านข้อความ และทำเครื่องหมายกากบาท (x) ลงบนเส้นตรง พร้อมทั้งเขียนตัวเลขกำกับตรงกับจุดที่ตรงกับการรับรู้และความรู้สึกของท่านจริงๆ

ตัวอย่าง

ท่านพึงพอใจต่อเสื้อผ้าที่ท่านสวมใส่อยู่ขณะนี้เพียงใด



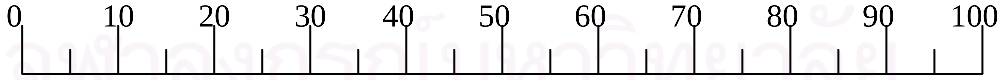
ไม่พึงพอใจเลย พึงพอใจมากที่สุด

เครื่องหมายกากบาทที่จุดนี้แสดงว่า ผู้ตอบมีคะแนนความพึงพอใจ 70 คะแนน ซึ่งถือว่ามีความพึงพอใจค่อนข้างมาก แต่ไม่ถึงกับมากที่สุด

หมายเหตุ ไม่ว่าท่านจะเลือกคำตอบที่ตำแหน่งใดบนเส้นตรง จะไม่ถือว่าเป็นคำตอบที่ถูก ผิด หรือดีเลว เพราะเป็นการรับรู้และความรู้สึกของท่าน คำตอบจึงมีเพียงตำแหน่งเดียว คือคำตอบที่ตรงกับการรับรู้และความรู้สึกของท่านมากที่สุด

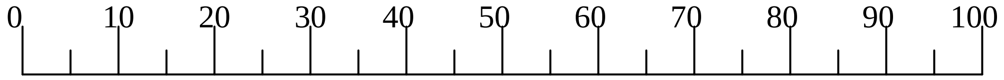
ข้อคำถาม

1. ท่านมีความรู้สึกโดดเดี่ยวอ้างว้าง ไร้ที่พึ่งพา มากน้อยเพียงใด



ไม่รู้สึกเช่นนั้นเลย รู้สึกมากที่สุด

2. ท่านมีความวิตกกังวลเกี่ยวกับตนเอง มากน้อยเพียงใด



ไม่มีความวิตกกังวลเลย วิตกกังวลมากที่สุด

APPENDIX

DESDRIPTIVE STATISTIC

TEST ASSUMPTION

AND

MEASUREMENT MODEL OF THE VARIABLES

APPENDIX G

Descriptive statistic of social support

Table 19 Descriptive statistic of social support

Items	Mean	SD.	Skewness	Kurtosis
1. ฉันมีคนที่ฉันรู้สึกใกล้ชิดสนิทสนมที่ทำให้ฉันรู้สึกอบอุ่นปลอดภัย	4.12	.76	-1.01	2.08
2. ฉันมีกลุ่มเพื่อนหรือเพื่อนบ้านซึ่งทำให้ฉันรู้สึกว่าฉันมีความสำคัญกับกลุ่ม	3.84	.80	-.68	.92
3. คนรอบข้างหรือเพื่อนร่วมงานบอก หรือแสดงให้เห็นว่าฉันทำงาน (งานบ้าน หรือที่ทำงาน) ได้ดี	3.70	.80	-.78	1.04
4. ฉันไม่สามารถพึ่งพาญาติและเพื่อน ที่จะช่วยเหลือฉัน เมื่อฉันมีปัญหา	3.28	1.17	-.15	-.97
5. ฉันรู้สึกว่าฉันเป็นคนมีค่าสำหรับญาติ และ/หรือเพื่อนๆ	3.90	.87	-.98	1.52
6. ฉันใช้เวลาพูดคุย หรือทำกิจกรรมร่วมกับคนอื่นๆ ที่มีความสนใจในเรื่องคล้ายๆกัน	3.86	.81	-1.29	2.56
7. ฉันไม่ค่อยได้เป็นผู้ให้หรือช่วยเหลือผู้อื่น	3.46	1.12	-.42	-.69
8. คนรอบข้างหรือเพื่อนๆ แสดงให้ฉันรู้ว่าเขาชอบที่ได้ทำงานร่วมกับฉัน	3.65	.85	-.76	1.07
9. มีคนพร้อมที่จะสละเวลาช่วยเหลือฉัน ถ้าฉันต้องการความช่วยเหลือแม้จะต้องใช้เวลานานพอสมควร	3.70	.89	-.68	.58
10. ฉันไม่รู้จะระบายความรู้สึกกับใคร เมื่อฉันมีปัญหา หรือไม่สบายใจ	3.15	1.16	-.13	-1.05
11. ในกลุ่มเพื่อนฝูง เราต่างก็ทำในสิ่งที่เพื่อนชอบให้กันและกัน	3.82	.83	-.94	1.24
12. ฉันได้มีส่วนช่วยให้เพื่อน หรือคนรู้จักทำงานได้ดีขึ้น	3.74	.88	-.89	1.02
13. ครอบครัวของฉันแสดงให้ฉันทราบว่า ฉันมีความสำคัญสำหรับเขา	4.17	.77	-1.20	2.66
14. ฉันมีญาติหรือเพื่อนที่พร้อมจะช่วยเหลือฉัน ถึงแม้ว่าฉันจะไม่สามารถตอบแทนเขาได้	3.84	.85	-.91	1.24
15. เมื่อฉันรู้สึกไม่สบายใจ ฉันมีคนใกล้ชิดที่เข้าใจฉัน และทำให้ฉันรู้สึกเป็นตัวของตัวเอง	4.01	.79	-.87	1.20
16. ฉันรู้สึกว่าไม่มีใครมีปัญหามากเท่าฉันหรือเหมือนฉันเลย	3.24	1.09	-.18	-.83
17. ฉันรู้สึกมีความสุขที่จะทำสิ่งพิเศษเล็กๆน้อยๆ ที่ทำให้ผู้อื่นพอใจ	3.94	.78	-1.04	2.15
18. ฉันรู้สึกว่ามีคนชื่นชมฉัน	3.38	.81	-.13	.03
19. ฉันมีคนที่เขารักและห่วงใยฉัน	4.11	.74	-.80	1.25
20. ฉันมีเพื่อนที่จะพูดคุย เที่ยว หรือทำอะไรด้วยกัน	3.89	.83	-1.20	2.21
21. ฉันมีความรับผิดชอบในการช่วยเหลือผู้อื่นเมื่อเขาต้องการ	3.98	.69	-1.16	3.37
22. ถ้าฉันต้องการคำแนะนำ มีคนพร้อมที่จะช่วยฉัน	3.98	.74	-1.07	2.81
23. ฉันรู้สึกว่าฉันเป็นที่ต้องการของเพื่อน ญาติ หรือคนรู้จัก	3.79	.76	-.50	.68
24. มีคนคิดว่าฉันไม่ได้เป็นเพื่อนที่ดีอย่างที่ฉันควรจะเป็น	3.29	.96	-.05	-.37
25. ถ้าฉันเจ็บป่วย มีคนที่จะให้คำแนะนำฉันในการดูแลตนเอง	4.20	.64	-.91	3.10

APPENDIX H

Descriptive statistic of self care strategies

Table 20. Descriptive statistic of self care strategies

Items	Mean	SD.	Skewness	Kurtosis
1. Activities	6.95	3.43	-0.93	-0.40
2. Activities	3.63	3.85	0.44	-1.39
3. Activities	3.97	3.84	0.29	-1.48
4. Activities	5.66	3.87	-0.37	-1.38
5. Activities	5.25	3.73	-0.19	-1.43
6. Activities	3.72	3.83	0.42	-1.38
7. Activities	1.82	3.44	1.56	0.76
8. Activities	2.00	3.67	1.45	0.31
9. Activities	1.90	3.31	1.44	0.51
10. Exercise	5.91	3.87	-0.46	-1.31
11. Exercise	0.71	2.17	3.19	9.31
12. Activities	5.36	4.06	-0.20	-1.56
13. Activities	7.82	3.20	-1.45	0.84
14. Supplement/vitamin	3.36	4.09	0.60	-1.36
15. Supplement/vitamin	1.65	3.04	1.64	1.30
16. Supplement/vitamin	2.50	3.73	1.05	-0.56
17. Supplement/vitamin	2.11	3.67	1.35	0.09
18. Food suggest to eat	7.44	3.54	-1.20	-0.01
19. Food suggest to eat	2.92	3.57	0.78	-0.87
20. Food suggest to eat	8.12	3.03	-1.66	1.59
21. Food suggest to eat	5.10	4.11	-0.10	-1.63
22. Food suggest to eat	0.62	1.98	3.39	11.15
23. Changing eating pattern	2.03	3.32	1.33	0.28
24. Changing eating pattern	2.18	3.31	1.24	0.12
25. Changing eating pattern	1.60	3.20	1.84	1.84
26. Activities	0.57	1.94	3.60	12.44
27. Food suggest to eat	1.40	2.81	1.89	2.28

28. Food suggest to eat	8.80	2.40	-2.34	4.91
Items	Mean	SD.	Skewness	Kurtosis
29. Food suggest to eat	4.94	3.73	-0.10	-1.46
30. Food suggest to avoid	3.73	4.51	0.51	-1.61
31. Food suggest to avoid	2.13	3.53	1.30	0.04
32. Food suggest to avoid	2.93	4.00	0.87	-0.96
33. Food suggest to eat	1.77	3.08	1.52	0.92
34. Complementary alternative medicine	3.41	4.10	0.58	-1.39
35. Complementary alternative medicine	2.17	3.48	1.26	0.01
36. Complementary alternative medicine	2.62	3.81	0.99	-0.71
37. Complementary alternative medicine	0.64	2.17	3.37	10.23
38. Medications	8.64	2.78	-2.20	3.68
39. Medications	3.62	3.63	0.40	-1.32
40. Being prepared	1.18	2.77	2.33	4.15
41. Being prepared	4.20	4.40	0.29	-1.71
42. Activities	0.45	1.81	4.17	16.80
43. Activities	7.78	3.03	-1.29	0.59
44. Activities	5.53	3.89	-0.30	-1.46
45. Activities	6.98	3.22	-0.83	-0.49
46. Activities	5.57	3.99	-0.29	-1.53
47. Activities	0.29	1.47	5.45	29.96
48. Activities	4.71	4.09	0.02	-1.63
49. Activities	1.46	3.04	1.94	2.29
50. Activities	1.23	2.83	2.17	3.25
51. Activities	1.10	2.53	2.32	4.25
52. Activities	5.85	3.89	-0.48	-1.32
53. Activities	5.12	3.95	-0.14	-1.53
54. Activities	6.70	3.83	-0.80	-0.94
55. Activities	7.77	3.16	-1.41	0.76
56. Activities	3.10	4.14	0.75	-1.21
57. Activities	7.34	3.21	-1.10	0.06
58. Medications	0.60	1.92	3.45	11.29

APPENDIX I

Descriptive statistic of quality of life

Table 21. Descriptive statistic of quality of life

Items	Mean	SD.	Skewness	Kurtosis
1. Social interaction	68.77	28.10	-.58	-.60
2. Emotional well being	61.38	28.18	-.27	-.72
3. Self Attitude	79.06	24.17	-1.23	.98
4. Physical well being	75.20	23.45	-1.07	.87
5. Emotional well being	69.34	24.52	-.60	.02
6. Social interaction	71.49	23.33	-.60	-.04
7. Physical well being	76.54	28.01	-1.18	.45
8. Social interaction	51.33	33.43	.09	-1.20
9. Social interaction	71.11	24.95	-.64	-.10
10. Self Attitude	50.54	31.93	.13	-1.06
11. Physical well being	93.18	14.95	-3.19	12.54
12. Life satisfaction	80.95	22.71	-1.45	2.13
13. Physical well being	83.32	18.86	-1.10	.64
14. Self Attitude	68.86	28.49	-.53	-.71
15. Emotional well being	63.32	24.97	-.29	-.44
16. Emotional well being	70.45	21.95	-.48	-.08
17. Social interaction	63.49	26.21	-.40	-.43
18. Physical well being	79.05	23.91	-1.10	.30
19. Life satisfaction	69.41	25.82	-.77	.20
20. Emotional well being	82.33	18.31	-.89	-.03
21. Self Attitude	78.29	25.99	-.94	-.11
22. Emotional well being	57.50	31.21	-.13	-1.08
23. Self Attitude	65.27	21.92	-.24	-.00
24. Life satisfaction	71.19	23.39	-.64	.07

APPENDIX J

Table 22 Assessment of Multicollinearity testing among Predicting Variables

Variables	Tolerance	Variance inflation factor
1. Age	.954	1.049
2. Stage of disease	.939	1.065
3. Antiretroviral treatment	.902	1.108
4. Fatigue	.646	1.549
5. Nausea	.571	1.751
6. Diarrhea	.742	1.348
7. Depression	.610	1.640
8. Neuropathy	.735	1.361
9. Anxiety	.621	1.610
10. Intimacy	.470	2.127
11. Social Integration	.580	1.723
12. Nurturant	.660	1.515
13. Worth	.484	2.064
14. Assistant	.632	1.581

Model	Dimension	Eigenvalue	Condition index	Constant	1	2	3	4	5	6	7	8	9	10	11	12	13	14
S-C	1	11.423	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	1.416	2.84	.00	.00	.00	.00	.01	.05	.07	.04	.02	.03	.00	.07	.00	.00	.00
	3	.547	4.57	.00	.00	.00	.00	.03	.00	.64	.00	.18	.04	.00	.00	.00	.00	.00
	4	.396	5.37	.00	.00	.00	.00	.02	.07	.17	.15	.65	.02	.00	.00	.00	.00	.00
	5	.356	5.67	.00	.00	.00	.01	.05	.53	.01	.21	.00	.19	.00	.00	.00	.00	.00
	6	.274	6.46	.00	.00	.00	.00	.09	.01	.03	.55	.10	.50	.00	.00	.00	.00	.00
	7	.250	6.77	.00	.00	.00	.01	.76	.26	.03	.01	.01	.19	.00	.00	.00	.00	.00
	8	.148	8.77	.00	.00	.01	.86	.00	.05	.03	.02	.01	.01	.00	.00	.00	.00	.00
	9	.009	11.14	.00	.00	.85	.07	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
	10	.003	17.87	.00	.68	.06	.00	.01	.00	.00	.00	.02	.00	.01	.01	.01	.01	.00
	11	.001	31.52	.00	.01	.00	.00	.01	.00	.00	.00	.00	.00	.00	.40	.58	.07	.01
	12	.001	33.24	.01	.01	.00	.01	.00	.00	.00	.01	.01	.00	.11	.38	.33	.03	.22
	13	.001	36.92	.03	.03	.00	.02	.01	.00	.00	.00	.00	.00	.19	.10	.01	.26	.50
	14	.001	43.17	.04	.04	.01	.01	.00	.00	.00	.00	.00	.00	.67	.10	.03	.58	.00
	15	.000	47.96	.92	.23	.07	.00	.01	.02	.01	.00	.00	.02	.01	.00	.04	.05	.26

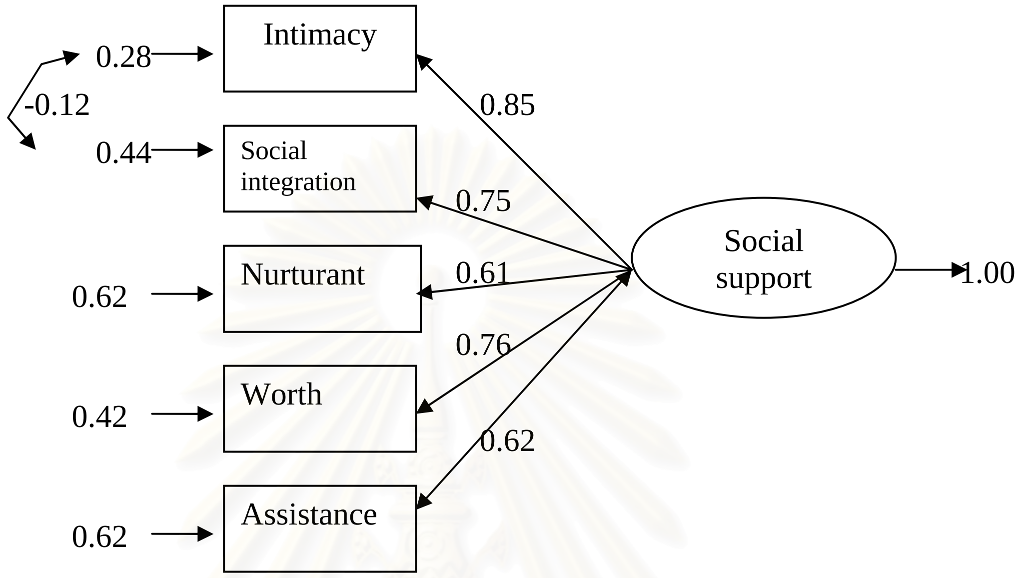
APPENDIX K

Age	1.000														
Stage of disease	.061	1.000													
Anteretroviral	.043	.160	1.000												
Intimacy	-.116	-.105	.065	1.000											
Social integration	-.088	-.100	-.016	.517	1.000										
Nurturant	-.062	-.098	.013	.519	.460	1.000									
Worth	-.070	-.096	.024	.636	.583	.447	1.000								
Assistance	-.081	-.104	.140	.536	.430	.412	.469	1.000							
Fatigue	.028	.062	-.003	-.163	-.153	-.089	-.181	-.070	1.000						
Nausea	.016	.107	.045	-.061	-.061	-.054	-.055	.020	.490	1.000					
Diarrhea	-.031	.007	-.119	-.067	-.053	-.050	-.064	-.076	.260	.438	1.000				
Depression	-.012	.060	-.107	-.116	-.142	-.117	-.096	-.084	.418	.482	.393	1.000			
Neuropathy	.141	.092	.022	-.113	-.077	-.054	-.115	-.088	.385	.358	.242	.332	1.000		
Anxiety	-.018	.033	-.080	-.139	-.148	-.101	-.166	-.111	.441	.434	.314	.501	.405	1.000	
Self are strategies	.005	.025	.126	.248	.231	.170	.168	.243	-.048	.013	.035	-.087	.028	-.039	1.000

Table 23 The Correlation coefficient for independent variables

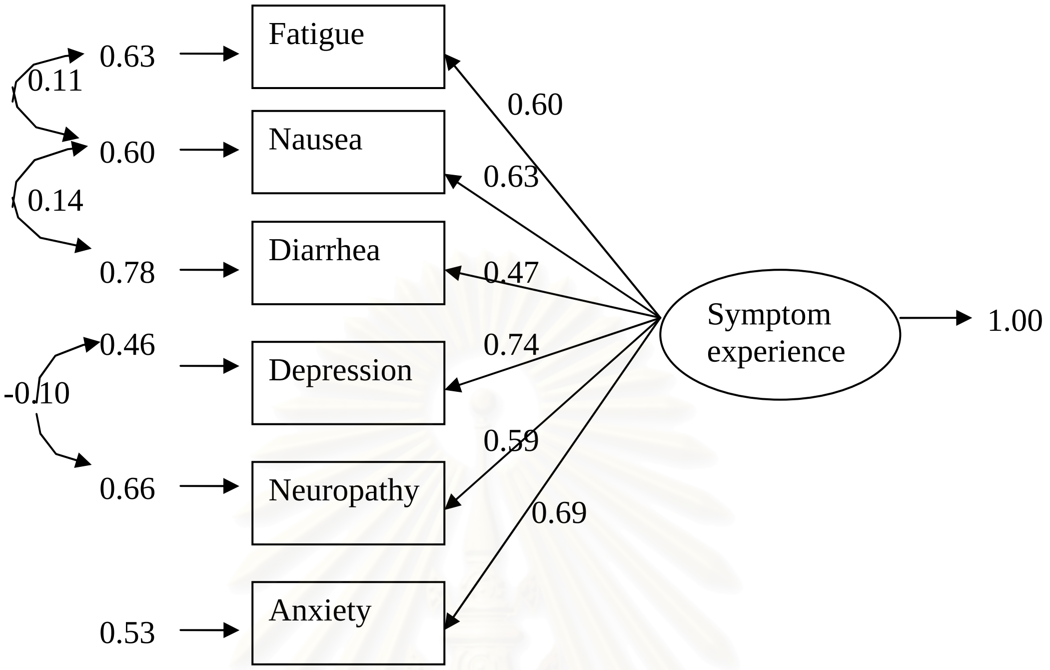
APPENDIX L

Measurement Model of variables



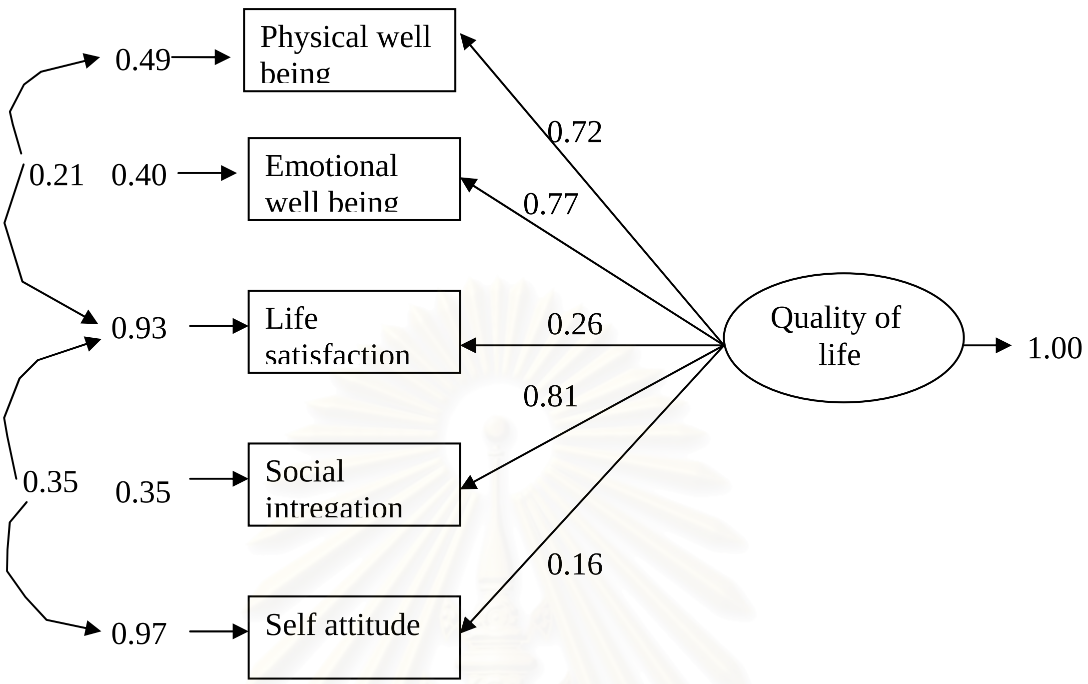
Chi-Square=3.93, df = 4, P-value = 0.415, RMSEA = 0.000

Figure 9 Measurement model of Social support



Chi-Square=6.57, df = 6, P-value = 0.36242, RMSEA = 0.015

Figure 10 Measurement Model of Symptom Experience



Chi-Square=0.96, df = 3, P-value = 0.81064, RMSEA = 0.000

Figure 11 Measurement Model of quality of life

APPENDIX

CONSENT FORM AND THE PARTICIPANT

APPENDIX M

ใบยินยอมของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย

(Informed Consent Form)

เลขที่ ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย ....

ข้าพเจ้าได้ทราบจากผู้วิจัยชื่อ นาง มัลลิกา ตั้งค้าวานิช อยู่บ้านเลขที่ 281 หมู่ 6 ถนน พิษณุโลก-นครสวรรค์ ตำบล ท่าทอง อำเภอ เมือง จังหวัด พิษณุโลก 65000

ซึ่งได้ลงนามด้านท้ายของหนังสือนี้ ทำการศึกษาวิจัยเรื่อง แบบจำลองเชิงสาเหตุของคุณภาพชีวิตในผู้ติดเชื้อเอช ไอ วี โดยมีวัตถุประสงค์เพื่อศึกษาและทดสอบแบบจำลองโมเดล ความสัมพันธ์เชิงสาเหตุระหว่างตัวแปร อายุ, แรงสนับสนุนทางสังคม, ระยะของโรค, การใช้ยาต้านไวรัสเอดส์, ประสบการณ์อาการ, กลวิธีในการดูแลตนเอง และ คุณภาพชีวิตในผู้ติดเชื้อเอชไอวี รวมทั้งทราบถึงผลดีของการวิจัยจะเป็นประโยชน์ในการส่งเสริมคุณภาพชีวิต และการพัฒนาการดูแลตนเองเมื่อมีอาการและอาการแสดงของโรคเกิดขึ้นเช่นอาการถ่ายเหลว อาการคลื่นไส้อาเจียน

ข้าพเจ้าจะเป็น 1ในผู้ถูกสัมภาษณ์ทั้งหมด 430 คน และ ข้าพเจ้าจะถูกสัมภาษณ์จากผู้วิจัยเป็นเวลาประมาณ 30-45 นาที ขณะสัมภาษณ์หากข้าพเจ้ามีอาการอ่อนเพลีย ข้าพเจ้าสามารถพัก หรืออาจถอนตัวจากการเข้าร่วมศึกษานี้ หรือหากข้าพเจ้าได้รับผลกระทบกระเทือนด้านจิตใจ ผู้วิจัยจะยุติการสัมภาษณ์ทันทีและผู้วิจัยจะให้การประคับประคองด้านจิตใจ รวมทั้งประสานนักจิตวิทยาเพื่อประเมินสภาวะจิตใจและให้คำปรึกษาแก่ข้าพเจ้า

ข้าพเจ้าทราบดีว่า ข้อมูลที่ระบุเหล่านี้อาจเชื่อมโยงหรือพาดพิงถึงข้าพเจ้า แต่ข้อมูลทั้งหมดจะถูกถอดออกเป็นรหัสและเก็บไว้เป็นความลับ ข้อมูลถูกเก็บในตู้ที่ล็อกกุญแจ โดยผู้วิจัยมีกุญแจเปิดเพียงผู้เดียว และผลการวิจัยที่ตีพิมพ์จะไม่มีชื่อของข้าพเจ้าปรากฏอยู่

ข้าพเจ้าได้ซักถามและทำความเข้าใจเกี่ยวกับการศึกษาดังกล่าวนี้จนเข้าใจ และข้าพเจ้ายินดีให้ข้อมูลของข้าพเจ้าแก่ผู้วิจัยเพื่อเป็นประโยชน์ในการศึกษาวิจัยครั้งนี้

....

สถานที่/วันที่ ลงนามประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย

....

สถานที่/วันที่ (...)

ลงนามผู้วิจัยหลัก

....

(...)

สถานที่/วันที่ ลงนามพยาน

Informed Consent Form

Title: Causal Model of Quality of Life in Persons living with HIV/AIDS

Code number: Population or Participant……………………………………………….

I was informed by Mrs. Manlika Tangkawanich
Address 281 Moo 6 Pitsanulok-Nakornsawan Road, Tumbol Tatong,
Amphur Muang, Pitsanulok province, 57000.

She has signed her name in this document and has explained the objectives of the study, research process, benefit and harm which may occur during investigation. I have asked all questions until I fully understand the whole research process.

I agree to participate in this study. I may withdraw from the study without providing a reason.

I recognize any side effects or harm that may occur during the study. If I experience any harmful effects, I will follow the advice given to me by the researcher. I was informed by the researcher that if, it harmful effects occur during the investigation. I will be protected by the Law. I will report any harmful effects to researcher as soon as possible. If not, I will not be protected by Law.

I agree to provide honest information to the researcher, so as to bring a benefit to this study.

Finally, I agree willingly to participate in this study under the conditions above.

----------------------------	--
Place / Date	Name of subject/ participant
----------------------------	------------------------------------
	(…………………………………….)
Place / Date	Main researcher signature
----------------------------	---------------------------------------
Place / Date	Witness signature

APPENDIX N

ข้อมูลสำหรับประชากรตัวอย่างหรือผู้เข้าร่วมในการวิจัย
(Population sample / Participant information sheet)

1. ชื่อโครงการวิจัย เรื่อง แบบจำลองเชิงสาเหตุของคุณภาพชีวิตในผู้ติดเชื้อเอช ไอ วี
2. ชื่อผู้วิจัย นาง มัลลิกา ตั้งค้าวานิช นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
3. สถานที่ปฏิบัติงาน คณะพยาบาลศาสตร์ มหาวิทยาลัยนเรศวร
   โทรศัพท์ที่ทำงาน 055 – 261108 โทรศัพท์ที่บ้าน 055 – 241519
   โทรศัพท์เคลื่อนที่ 01-887-8707 E-mail:Manlikat@hotmail.com
4. ข้อมูลที่เกี่ยวข้องกับการให้คำยินยอมในการวิจัยประกอบด้วย คำอธิบายดังนี้

4.1 โครงการนี้เกี่ยวข้องกับการศึกษาคุณภาพชีวิตในผู้ติดเชื้อเอชไอวี

4.2 วัตถุประสงค์ของการวิจัย เพื่อศึกษาและทดสอบแบบจำลองโมเดลเชิงสาเหตุ ความสัมพันธ์เชิงสาเหตุระหว่างตัวแปร อายุ, แรงสนับสนุนทางสังคม, ระยะของโรค, การใช้ยาต้านไวรัสเอดส์, ประสบการณ์อาการ, กลวิธีในการดูแลตนเอง และ คุณภาพชีวิตในผู้ติดเชื้อเอชไอวี

5. การวิจัยนี้เป็นการวิจัยเชิงสำรวจ ที่กระทำในผู้ติดเชื้อเอช ไอ วี ทั้งที่มีอาการและไม่มีอาการ ตามคุณสมบัติที่กำหนดไว้คือ ประชากรตัวอย่างรับรู้ว่าตนเองติดเชื้อ เอช ไอ วี และมีอายุมากกว่า 18 ปีขึ้นไป รวมทั้งมีสติสัมปชัญญะดี เข้าใจภาษาไทย และยินดีให้ความร่วมมือในการตอบแบบสอบถาม โดยที่ผู้วิจัยคาดว่าไม่มีความเสี่ยงใดๆ เกิดขึ้นกับประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย ซึ่งข้อมูลที่ระบุอาจเชื่อมโยงหรือพาดพิงถึงผู้ติดเชื้อเอช ไอ วี จะถูกถอดออกเป็นรหัสและเก็บไว้เป็นความลับ ข้อมูลถูกเก็บในตู้ที่ล็อกกุญแจ โดยผู้วิจัยมีกุญแจเปิดเพียงผู้เดียว และผลการวิจัยที่ตีพิมพ์จะไม่มีชื่อของประชากรตัวอย่าง หรือผู้มีส่วนร่วมในการวิจัย

6. เครื่องมือที่ใช้ในการเก็บข้อมูลประกอบด้วย ข้อมูลส่วนบุคคล ประกอบด้วยอายุ ระยะของโรค และการใช้ยาต้านไวรัสเอดส์ แบบสอบถามแรงสนับสนุนทางสังคม แบบสอบถามประสบการณ์อาการที่เกิดขึ้น รวมทั้งการประเมินความรุนแรงของอาการ และ ความรู้สึกที่มีต่ออาการที่เกิดขึ้น แบบสอบถามกลวิธีการดูแลตนเอง และแบบสอบถามคุณภาพชีวิต

7. ประชากรตัวอย่างหรือผู้เข้าร่วมวิจัยสามารถปฏิเสธที่จะเข้าร่วมหรือสามารถถอนตัวจากโครงการวิจัยได้ตลอดเวลาโดยการปฏิเสธที่จะเข้าร่วมการวิจัยครั้งนี้โดยไม่มีผลต่อการได้รับการบริการหรือการดูแลจากบุคลากรในทีมสุขภาพที่ได้รับแต่ประการใด

8. ระหว่างดำเนินการเก็บข้อมูล ผู้ร่วมวิจัยสามารถถาม หรือปฏิเสธการตอบคำถามได้

9. หากผู้วิจัยมีข้อมูลเกี่ยวกับประโยชน์และโทษเกี่ยวกับการวิจัยครั้งนี้ ผู้วิจัยจะแจ้งให้ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัยทราบโดยไม่ขัดข้อง

10. การวิจัยครั้งนี้ไม่มีการจ่ายค่าตอบแทนให้แก่ประชากรตัวอย่าง หรือผู้มีส่วนร่วมในการวิจัย

11. ผลการวิจัยจะนำเสนอในภาพรวม ส่วนชื่อและที่อยู่ ประชากรตัวอย่าง หรือ ผู้เข้าร่วมวิจัยจะได้รับการปกปิดอยู่เสมอ เก็บไว้เป็นความลับ ยกเว้นว่าได้รับคำยินยอมไว้ โดยระเบียบและกฎหมายที่เกี่ยวข้องเท่านั้น จึงเปิดเผยข้อมูลแก่สาธารณชนได้ ในกรณีที่ผลการวิจัยได้รับการตีพิมพ์

12. จำนวนประชากรตัวอย่าง หรือผู้เข้าร่วมในการวิจัยโดยประมาณในการวิจัยครั้งนี้ 422 คน

13. ในกรณีที่ประชากรตัวอย่าง หรือผู้เข้าร่วมวิจัยได้รับผลกระทบกระเทือนด้านจิตใจ ผู้วิจัยจะดำเนินการดังนี้

13.1 ยุติการสัมภาษณ์ทันทีและให้การประคับประคองด้านจิตใจ

13.2 ประสานนักจิตวิทยาเพื่อประเมินสภาวะจิตใจและให้คำปรึกษา

13.3 ประสานงานกับจิตแพทย์ เพื่อการรักษาที่เหมาะสม

14. การติดต่อกับผู้วิจัยในกรณีที่มีปัญหาเกี่ยวกับโครงงานวิจัย สามารถติดต่อได้ 24 ชั่วโมง กับผู้วิจัย คือ นาง มัลลิกา ตั้งค้าวานิช หมายเลข 01-8878707

Population sample / Participant Information Sheet

1. Title: Causal Model of Quality of life in Persons living with HIV/AIDS.

2. Researcher name: Mrs. Manlika Tangkawanich. Faculty of Nursing, Chulalongkorn University

3. Work place Faculty of Nursing, Naresuan University

Office: 055 – 241 -519 Home: 055 – 241519

Mobile phone: 01- 8878707 E-mail: Manlikat@hotmail.com.

4. Information relevant to informed consent form of this study consists of

4.1. This study focuses on the causal model of quality of life

4.2. The objectives of the study is to examine the causal relationships between age, antiretroviral treatment, stage of disease, social support, symptom experience, self-care strategies and quality of life in persons living with HIV/AIDS.

5. This study is survey research. The study will investigate through persons living with HIV/AIDS in all stage of disease with high expectation of no harm and risk of participant's health. Participants' name will be placed by code number. Specific name in the acknowledgement will not be directed links with the research environment.

6. Participants can refuse and withdraw from the study at any point of time without jeopardizing the survivors' care.

7. During answer questionnaires, participants can ask doubtful questions or refuse to answer some questions.

8. If the researcher finds whatever benefit or harm relevant to this study, she will inform me without hesitation.

9. I understood all research process of collecting data, benefit or harm due to participation in this study. I agreed to participate in this study.

11. No payment.

12. The research finding will be presented as a whole picture. Name and address of the participants will be kept as a secret. Except in case of receiving permission by Law, all information will be revealed to publish by publication.

13. The number of the participants is estimate 470-480 persons.

14. In case of the participants feel uncomfortable during answer the questionnaires, the researcher will:

14.1. Stop interviews in advance and psychological support.

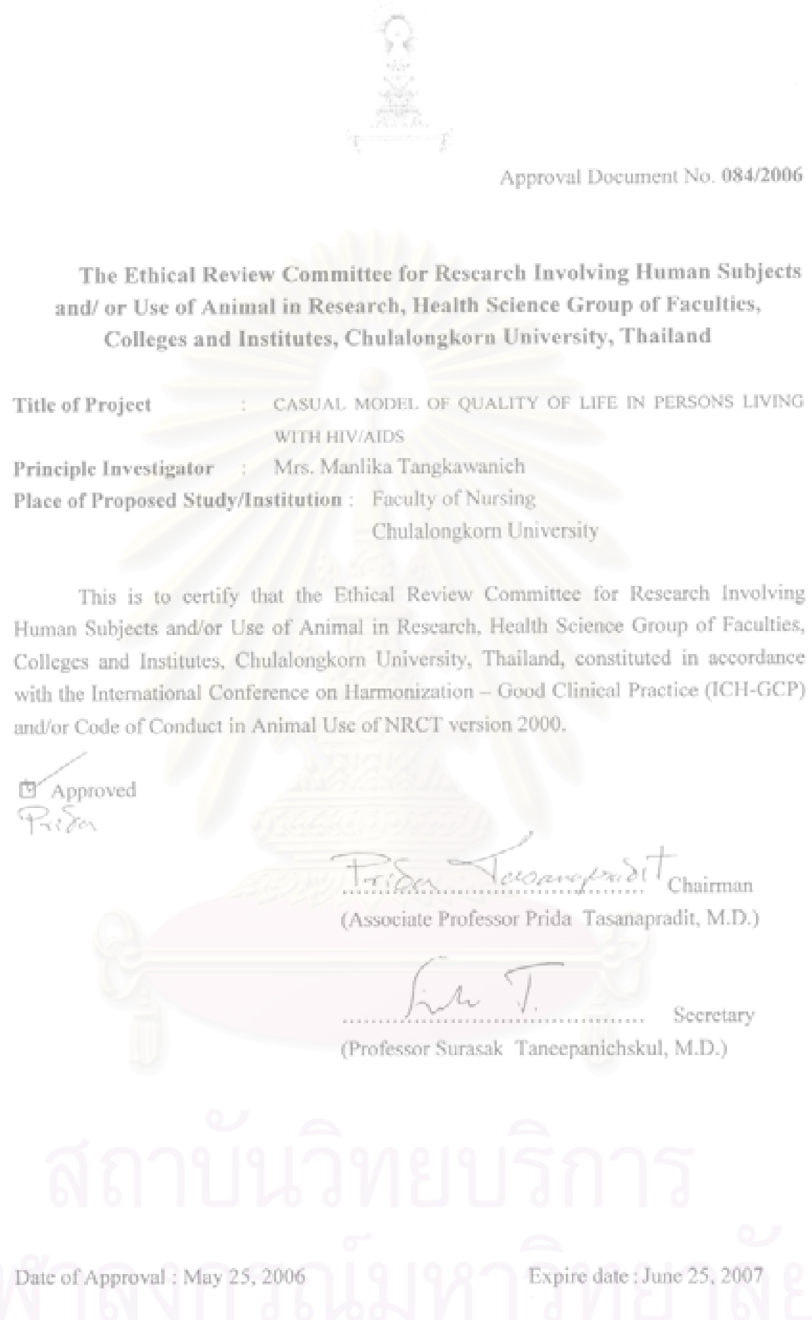
14.2. Consult psychologist to assess psychological consequence and counseling.

14.3. Consult psychiatrist for appropriate intervention and treatment.

15. Researcher will be available for all participants 24 hours when they need help or in trouble, contact by mobile phone: 01-8878707.

APPENDIX

HUMAN SUBJECT APPROVEAL



Approval Document No. **084/2006**

The Ethical Review Committee for Research Involving Human Subjects and/ or Use of Animal in Research, Health Science Group of Faculties, Colleges and Institutes, Chulalongkorn University, Thailand

Title of Project : CASUAL MODEL OF QUALITY OF LIFE IN PERSONS LIVING WITH HIV/AIDS

Principle Investigator : Mrs. Manlika Tangkawanich

Place of Proposed Study/Institution : Faculty of Nursing
Chulalongkorn University

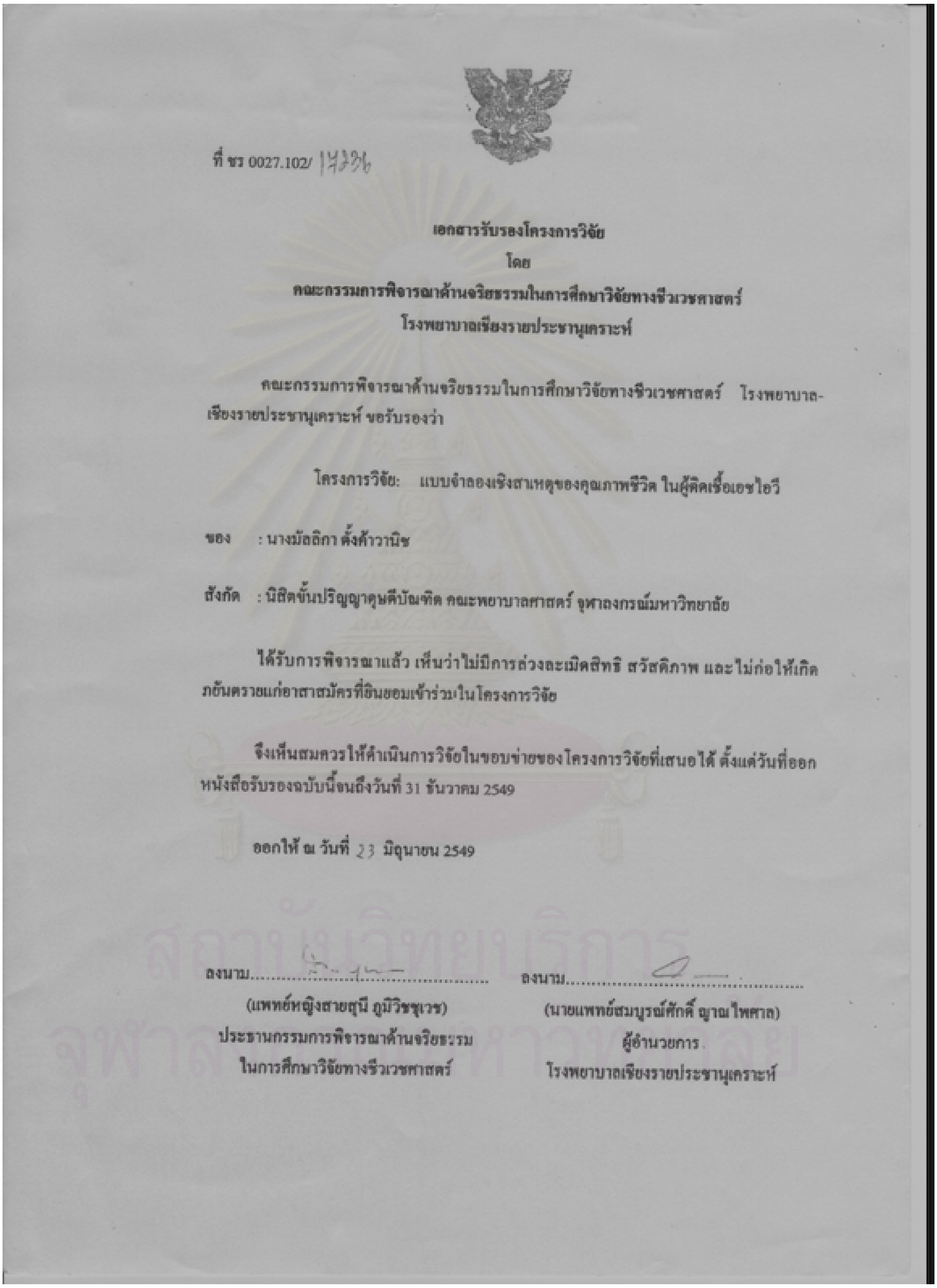
This is to certify that the Ethical Review Committee for Research Involving Human Subjects and/or Use of Animal in Research, Health Science Group of Faculties, Colleges and Institutes, Chulalongkorn University, Thailand, constituted in accordance with the International Conference on Harmonization – Good Clinical Practice (ICH-GCP) and/or Code of Conduct in Animal Use of NRCT version 2000.

☑ Approved
Prida

Prida Tasanapradit .... Chairman
(Associate Professor Prida Tasanapradit, M.D.)

.... Secretary
(Professor Surasak Taneepanichskul, M.D.)

Date of Approval : May 25, 2006 Expire date : June 25, 2007



ที่ ชร 0027.102/ 14336

เอกสารรับรองโครงการวิจัย

โดย

คณะกรรมการพิจารณาด้านจริยธรรมในการศึกษาวิจัยทางชีวเวชศาสตร์

โรงพยาบาลเชียงรายประชานุเคราะห์

คณะกรรมการพิจารณาด้านจริยธรรมในการศึกษาวิจัยทางชีวเวชศาสตร์ โรงพยาบาลเชียงรายประชานุเคราะห์ ขอรับรองว่า

โครงการวิจัย: แบบจำลองเชิงสาเหตุของคุณภาพชีวิต ในผู้ติดเชื้อเอชไอวี

ของ : นางมัลลิกา ตั้งค้าวานิช

สังกัด : นิสิตขั้นปริญญาดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

ได้รับการพิจารณาแล้ว เห็นว่าไม่มีการล่วงละเมิดสิทธิ สวัสดิภาพ และไม่ก่อให้เกิดภยันตรายแก่อาสาสมัครที่ยินยอมเข้าร่วมในโครงการวิจัย

จึงเห็นสมควรให้ดำเนินการวิจัยในขอบข่ายของโครงการวิจัยที่เสนอได้ ตั้งแต่วันที่ออกหนังสือรับรองฉบับนี้จนถึงวันที่ 31 ธันวาคม 2549

ออกให้ ณ วันที่ 23 มิถุนายน 2549

ลงนาม...
(แพทย์หญิงสายสุนี ภูมิวิชชุเวช)
ประธานกรรมการพิจารณาด้านจริยธรรม
ในการศึกษาวิจัยทางชีวเวชศาสตร์

ลงนาม...
(นายแพทย์สมบูรณ์ศักดิ์ ญาณไพศาล)
ผู้อำนวยการ
โรงพยาบาลเชียงรายประชานุเคราะห์

BIOGRAPHY

My name is Mrs Thitiarpha Tangkawanich. I was born in August, 20, 1961, at Chiangrai province, Northern, Thailand. I graduated Bachelor of Science (Nursing) in 1979 – 1983 from Mahidol University and Master of Science (Acute care Nursing) in 1989- 1991 from Mahidol University. I studied Doctor of Philosophy (Nursing) at Chulalongkorn University in 2002 – 2006.

I received fund for studied from Ministry of Education and dissertation from Thai Health Promotion Foundation Thailand.

My experience**,** I worked as register nurse in 1983 – 1987 at medicine department at Ramathibodi Hospital, Mahidol University. Because of the illness of my father, I changed the working place. I worked at Chiangrai prachanukroh hospital, as a register nurse in 1987 – 1997. Nowadays, I'm an instructor at faculty of nursing, Naresuan University.