PREDICTING FACTORS OF RECOVERY AMONG PERSONS WITH MAJOR DEPRESSIVE DISORDER

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การศึกษาวิเคราะห์ความสัมพันธ์เชิงบรรยายในครั้งนี้ มีวัตถุประสงค์เพื่ออธิบายความสัมพันธ์ของปัจจัยที่ส่งผลต่อการฟื้นหายของบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้า มีตัวแปรประกอบด้วย ความเชื่อมั่นในความเข้มแข็งของตนเอง แหล่งทักษะภายในตนเอง เป้าหมายในชีวิต การสนับสนุนทางสังคม และปัญหาการดื่มสุรา โดยมีแบบจำลองการแสวงหาสุขภาวะที่สัมพันธ์กับการฟื้นหายของ Schlotfeldt เป็นกรอบแนวคิดในการศึกษา ผู้เข้าร่วมในการวิจัยคือบุคคลที่มีประวัติการเจ็บป่วยด้วยโรคซึมเศร้า จำนวน 444 ราย ซึ่งมารับการรักษาที่ห้องตรวจโรคผู้ป่วยนอก คลีนิกสุขภาพจิต แผนกสุขภาพจิตและจิตเวชจากโรงพยาบาล สถานบริการสาธารณสุข และโรงพยาบาลส่งเสริมสุขภาพตำบล จำนวน 8 แห่ง ใน 4 ภาคของประเทศไทย และกรุงเทพมหานคร เก็บรวบรวมข้อมูลโดยการสัมภาษณ์และตอบแบบสอบถาม ประกอบด้วย แบบบันทึกข้อมูลส่วนบุคคล แบบประเมินการมีเป้าหมายในชีวิต แบบประเมินความเชื่อมั่นในความเข้มแข็งของตนเอง แบบประเมินแหล่งทักษะภายในตนเอง แบบประเมินการรับรู้การสนับสนุนทางสังคมพหุมิติ แบบประเมินเพื่อคัดกรองปัญหาการดื่มสุรา และ แบบประเมินการฟื้นหายทางจิตใจ ค่าความเที่ยงของแบบสอบถามทั้งหมดอยู่ในช่วง .72 ถึง .94 ทดสอบเส้นทางอิทธิพลของสมมติฐานการวิจัยโดยใช้โปรแกรมลิสเรล 8.72

ผลการศึกษาพบว่า โมเดลแสดงเส้นทางความสัมพันธ์มีความสอดคล้องกับข้อมูลเชิงประจักษ์ และสามารถอธิบายความแปรปรวนของการฟื้นหายของบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้าได้ร้อยละ 77 (χ^2 = 103.46, df= 89, p= .068, χ^2 /df= 1.162, RMSEA= .027, GFI=.97, AGFI=.95) ทั้งนี้ปัจจัยที่มีอิทธิพลต่อการฟื้นหายมากที่สุดคือ ความเชื่อมั่นในความเข้มแข็งของตนเอง รองลงมาคือแหล่งทักษะภายในตนเอง เป้าหมายในชีวิต การรับรู้การสนับสนุนทางสังคม และปัญหาการดื่มสุรามีอิทธิพลทางตรงต่อการฟื้นหายอย่างมีนัยสำคัญทางสถิติ (β = .64, .56, .42, .28 และ -.17 ตามลำดับ)

ข้อมูลจากการศึกษาที่ได้ในครั้งนี้ ช่วยทำให้เกิดความเข้าใจถึงปัจจัยที่ส่งผลต่อการฟื้นหายของบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้าทั้งทางตรงและทางอ้อม เพื่อนำไปใช้ในการพัฒนาการปฏิบัติทางการพยาบาล พิจารณาถึงการจัดกิจกรรมทางการพยาบาลที่ครอบคลุมการส่งเสริมความเชื่อมั่นในความเข้มแข็งของตนเอง พัฒนาแหล่งทักษะภายในตนเอง การมีเป้าหมายในชีวิต การส่งเสริมการสนับสนุนทางสังคม และป้องกันการเกิดปัญหาการดื่มสุรา เพื่อส่งเสริมการฟื้นหายในกลุ่มบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้าต่อไป

สาขาวิชา พยาบาลศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2560 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

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KEYWORDS: RECOVERY / MAJOR DEPRESSIVE DISOREDER / HEALTH SEEKING MODEL / STRENGHT SELF EFFICACY / RESOURCEFULNESS / PURPOSE IN LIFE / SOCIAL SUPPORT / ALCOHOL ABUSE

NUSRA VORAPATRATORN: PREDICTING FACTORS OF RECOVERY AMONG PERSONS WITH MAJOR DEPRESSIVE DISORDER. ADVISOR: ASSOC. PROF. JINTANA YUNIBHAND, Dip.APPMHN, CO-ADVISOR: ASST. PROF. SUNIDA PREECHAWONG, Dip.ACNP., 222 pp.

The purposes of this descriptive research was to examine the causal relationship between strength self-efficacy, resourcefulness, purpose in life, social support, alcohol abuse, and recovery among persons with major depressive disorder (MDD). The conceptual framework was guided by Schlotfeldt's Health Seeking Model. 444 participants with MDD. who attended outpatient department, mental health and psychiatric clinics, and mental health and psychiatric division in eight hospitals from all part of Thailand participated in this study. The participants were obtained by simple random sampling. The research instruments included a personal data sheet, the Strength Self-Efficacy Scale, the Resourcefulness Scale, the Purpose in Life subscale, the Multidimensional Scale Perceive Social Support, the Alcohol Use Identification Test and the Thai Mental Health Recovery Measure, having reliability ranging from .72 to .94. Data were analyzed using descriptive statistics and a linear structural relationship (LISREL) analysis.

The result illustrated that the hypothesized model fit with the empirical data, and explained 77% of the variance of recovery among persons with MDD. (χ^2 = 103.46, df= 89, p= .068, χ^2 /df= 1.162, RMSEA= .027, GFI=.97, AGFI=.95). The significantly factors, strength self-efficacy was the most influential factor direct affecting recovery, follow by resourcefulness, purpose in life, social support, and alcohol abuse, respectively (β = .64, .56, .42, .28, -.17).

The results contribute to the better understanding of the variables that predict recovery among persons with MDD. Thus, mental health nurses need to be aware of the effects of these contributing factors and develop appropriate nursing interventions. The further interventions should be concerned about enhancing strength self-efficacy, supporting resourcefulness, motivating purpose in life, enhancing perceived of social support and preventing alcohol abuse to increase recovery among persons with major depressive disorder.

Field of Study: Nursing Science
Academic Year: 2017

Student's Signature .....
Advisor's Signature .....
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INTRODUCTION

Background and significance of the study

Recovery has been determined as health goal of person with major depressive disorder. On other hand, for mental health and psychiatric nurses' perspective, recovery defined as an outcome of treatment and therapeutic intervention. The evidences supported that pharmacological treatment as anti-depressant drugs, and non-pharmacological treatment such as interpersonal therapy (IPT), and cognitive behavioral therapy (CBT) are effective for person with MDD in Thailand. However, an indicator to determine the effectiveness of those interventions has been focused on depressive symptom severity instead of recovery-oriented perspective such as Thai Depressive Inventory: TDI, and functioning (Global Assessment Functioning: GAF). This phenomenon need to consider for seeking the indicator or measurement of recovery construct as a nursing outcome.

The World Health Organization (WHO) recognizes depression as a major health problem which impacts on patient functioning, work productivity and health care utilization (Kroenke et al., 2008). Major Depressive Disorder (MDD) is a substantial clinical problem presenting to mental health and psychiatric nurses. It is predicted to become the second leading cause of disability by the year 2020 and the first leading cause of disability (DALYs) by the year 2030 (WHO, 2007). According to the Mental Health Department of the Ministry of Public Health of Thailand (2012), about three million Thais are living with depression but less than 100,000 of these

patients get treatment. Treating MDD individuals presents a unique challenge to psychiatric nurses and nursing interventions directed toward promoting optimal health and recovery from MDD (Zauszniewski, 1992). Martina L., and colleagues (2007) suggested that it is imperative for mental health nurses to acquire a sound understanding of clinical depression and related factors that assisted in recovery.

The study of Schlotfeldt's (1975) claimed nurses focus on the person's health, particularly their strengths, rather than on problems or pathology. Moreover, Zauszniewski (1992) proposed that working with depressed clients present a challenge. Hence, the identification of specific nursing interventions will be particularly useful in assisting MDD persons toward more productive and healthy lifestyles. Therefore, mental health nurses should be aware of the factors that contribute to recovery, as this will be crucial information to provide appropriate intervention for persons with MDD.

Accordingly, the WHO (2004) addressed many different approaches that have been put forward as ways of helping to improve the health and outcomes for persons living with mental health problems. This paradigm is compatible with the concept of recovery from MDD. It is now widely accepted that patients and mental health professions should collaborate in setting recovery as a health goal (Sheldon & Kasser, 2001). The knowledge base regarding therapeutic interventions for MDD persons have been limited. Although high rate of relapse and recurrence of MDD patients in psychiatric hospital still occur, 58% of persons recovering from a major depressive episode are unlikely to relapse after five years (Kanai, et al., 2003). What has been needed is to understand whether the factors contributing to recovery and how to enhance sustainable recovery.

In traditional terms, “recovery” refers to the absence of symptoms or characteristic impairments of an illness (Anthony, 1993). For serious mental illness such as Major Depressive Disorder (MDD) this has usually meant the remission of significant depressive symptoms. According to the scientific literature, recovery is often defined by the absence of symptoms and the return to ability of functioning for a specified period of time (Liberman, Kopelowicz, 2005; Davidson, O’Connell, Tondor, et al., 2005). Those definitions have been applied for MDD clinical evaluation and monitor the response of anti-depressant treatment. In this sense, recovery has been associated with better prognosis of depression and is also a partial goal expressed by person with MDD.

The experience of depression is not just one of symptoms and disability but equally importantly one of major challenge to sense of self. Equally, recovery from mental illness is experienced not just in terms of symptoms and disability but also as a recovery of sense of self (Davidson & Strauss, 1992; Schiff, 2004). A person may continue to experience significant impairment as a result of symptoms and disability but may have a much stronger sense of self. Inversely, symptoms and disability may improve while sense of self remains weak. The mental health consumer movement has advocated for the subjective dimension of recovery to share equal importance with the objective dimension in the clinical environment (Deegan, 2003). This implies much closer attention to the psychological and spiritual wellbeing of the person with mental illness than is characteristic of the standard service environment. It also has implications for evaluation of the effectiveness of mental health services (Anthony et al., 2003; Frese et al., 2001).

One of the main difference point of view to recovery between MDD person and health profession is the focusing factor on recovery. The study of Zimmerman and colleagues (2006) determined which factors defined recovery from the patient‘s point of view. This study asked 535 clients with MDD about the importance of 16 different factors to determine if depression was in recovery. Social and work functioning, expressed as return to normal functioning level, was a factor identified as—very important by 74% of the patients. This was even above absence of depressive symptoms, where 70% of the patients considered it as a—very important factor. However, besides recovery, presence of positive mental health (optimism and self-confidence) and feeling as before, as oneself, were identified as—very important by the patient (Zimmerman et al., 2006). It might be concluded that the definition of recovery, from the patient‘s point of view and within their recovery expectations, recovery is an outcome is considered to be highly relevant and significant. Moreover, recovery within patient‘s view point is more likely they have a better feeling, willing to participated with other for unrestricted of timeframe. The empirical study proposed that recovery, it feels like gradually improving until returning to normal (Nantapuk Chanapan, 2013, Young et al., 1999). This information is useful for mental health nurses to provide nursing intervention that suitable for persons living with MDD.

Each person's recovery has been different, some persons with MDD recover in a few weeks or months. But for others, depression is a long-term illness. About 20% to 30% of persons who have an episode of depression, the symptoms still existed (Fochtmann, 2005). The Mental Health Department of Thailand (2012) reported a 22% relapse rate in patients with MDD who have depressive symptoms after

recovering within six months. In spite of the prevalence and incidence of MDD, there is no consensus regarding which factor predict recovery.

A study of Keitner et al. (1992) examined the probability of recovery from a major depressive episode 12 months after hospital discharge. There were five most important factors related to recovery which are shorter length of hospital stay, older age at onset of depression, better family functioning, less than two previous hospitalizations, and absence of co-morbid illness. Papakostas, (2009) studied the clinical factors that were associated with functional improvement or restoration in patients with MDD. The factors that have been identified as contributing to this include, among others, functional pathway of the patient over life, treatment effectiveness, time to recovery, duration of recovery and quality of recovery. The study of Huiting (2012) showed that strengths in self-efficacy and resourcefulness correlated positively with and predicted recovery. Persons with MDD reported that using their personal strengths to help them cope with mental illnesses and focusing on something positive and allowed them time to recover.

In addition, literature review reveals that there are other factors associated with recovery in MDD. Keitner and colleagues (2012) found that social support had been of interest as a predictor of recovery in depressed patients. Brugha and colleagues (2004) found that social support predicted clinical improvement in depressed patients in psychiatric hospitals, even when other potential risk factors such as age, sex, diagnosis, and severity of depression were controlled. In summary, social support has a strong connection to depression and is strongly predictive of recovery. Ongoing alcohol and drug abuse in persons with MDD is known to hamper active treatment and is predictive of poor recovery and negative response to antidepressant

treatment. The co-occurrence of substance abuse with depression is very common. Alcohol and drug abuse, in combination with depression, are strongly predictors of poor response to medication treatment (Regier, Farmer, Rae, et al., 1990; Helzer, et al., 1991; Lin, et al., 2000).

Existing knowledge by mental health researchers has contributed to understanding of recovery in MDD patients, according to earlier studies focused on the factors with correlated and predicted recovery. However, there is a lack of a comprehensive causal study that would explain the recovery phenomena among persons with MDD. Previous research studies of recovery in persons living with MDD employed Schlotfeltd‘s (1975) health seeking model to explain the recovery phenomena of MDD persons (Zauszniewski, 1992; Huiting, 2012). Schlotfeldt‘s health seeking model was developed to provide nursing activities that will be the stimulation of health seeking behaviors within the person suffering from MDD. Accordingly, Schlotfeldt‘s health seeking model believed that humans use both health-seeking mechanisms (innate) and health-seeking behaviors (acquired) in the quest for optimal physical and mental health. Schlotfeldt‘s health seeking model was developed to promote nursing activities that will stimulate health seeking behaviors within the person. Existing studies employed health seeking model as a nursing theory that provides a roadmap for exploring the relationships among health seeking resources, intervening factor, and health goal (Zauszniewski, 1992; Huiting, 2012).

The health seeking model has three major constructs which are health seeking resources, intervening factor, and a health goal. Previous studies were conducted to explain the relationship in some part of each concept and selected some variables to be the indicator for each concept such as Zauszniewski‘s (1992) study which examined

social interest and resourcefulness as health seeking resources. Depressive symptoms and negative personal beliefs have been determined as intervening factors. Zauszniewski examined adaptive functioning as a health goal of MDD persons. Moreover, a study by Huiting (2012) examined strength self-efficacy and resourcefulness as health seeking resources. While stigma experienced of MDD persons has been represented intervening factor. Perception of mental health recovery has been represented as a health goal. However, no study has been conducted to systematically explain the comprehensive relationship of all three of the variables in Schlotfeltd's (1975) health seeking model. A previous study about the recovery concept in Thailand was conducted in patients diagnosed with schizophrenia (Chetta, 2012).Therefore, a study that could illustrate the recovery concept specifically related to persons with MDD is needed.

There is a need to examine a causal model of recovery among persons with MDD because of (1) an increase incidence and relapse of MDD patients in Thailand; (2) recovery recognized as an optimal health goal of MDD patients and being a mental health goal policy in Thailand, (3) as one important step to contribute effective interventions to fill the gap of knowledge on therapeutic approaches towards persons with mental health illness. Moreover, understanding about the causal relationship of recovery in MDD persons might enhance rapidly recovery and will be the crucial knowledge to preventing relapse and promoting recovery in persons with MDD (Mueser, & Susan, 2011; Til, 2007; Huiting, 2012). The purpose of this study was to examined variables influencing recovery to provide important information for mental health nurses and researchers attempting to develop effective interventions to enhance recovery in persons with MDD in Thailand.

Research questions

What are the relationships between strength self-efficacy, resourcefulness, purpose in life, social support, alcohol abuse and recovery among persons with major depressive disorder?

Purpose of the study

The purpose of the study was to examine the relationships between strength self-efficacy, resourcefulness, purpose in life, social support, alcohol abuse and recovery among persons with major depressive disorder.

Conceptual framework of the study

Schlotfeldt's (1975) Health-Seeking Model (HSM) was employed to guiding this research. HSM provides a useful framework for research that seeks to identify specific health-seeking resources and their relationship to intervening factors and health goals (Schlotfeldt, 1975). Accordingly, Schlotfeldt's HSM believed that human uses both health-seeking mechanism (innate) and health-seeking behaviors (acquired) in the quest for optimal physical and mental health. Presently, the HSM used as a conceptual framework in mental health nursing research worldwide, and it has had strong empirical support in research with persons with MDD (Glazer & Pressler, 1989; Zauszniewski, 1992; Huiting, 2012). Therefore, the HSM was appropriated to employed in this study.

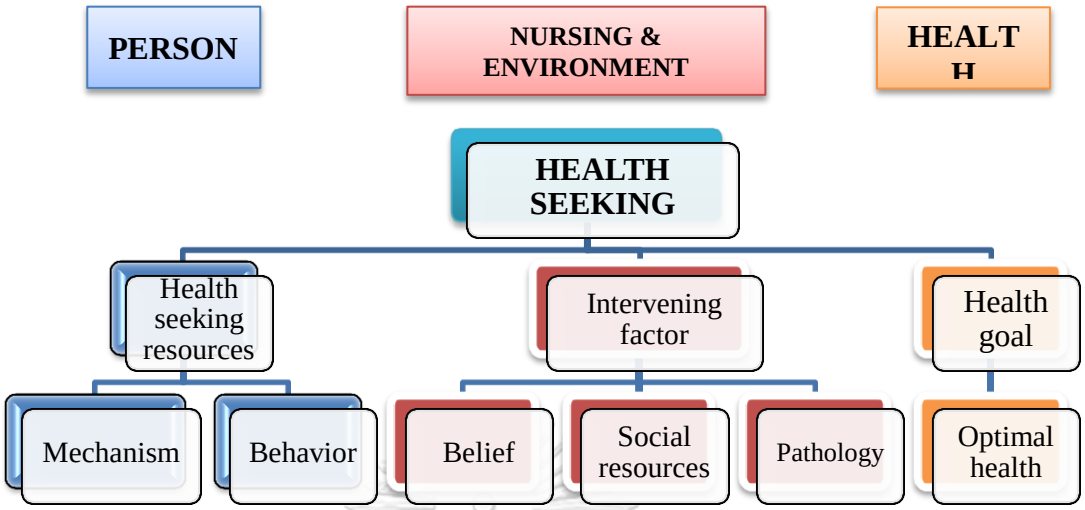


Figure 1.1 The Schlotfeldt's Health-Seeking Model (1975)

The Schlotfeldt's Health-Seeking Model has three major constructs which are health-seeking resources, intervening factors, and health goal. Within this model Schlotfeldt identified the following major concepts: Person (health-seeking resources); health-seeking behaviors, health-seeking mechanisms, Nursing and Environment (intervening factors); personal belief, environment, pathology, Health (health goal); optimal health (Glazer & Pressler, 1989).

Schlotfeldt's (1975) health-seeking model was derived to testing for this study. Health seeking resources construct included both Health-Seeking Behavior and Health-Seeking Mechanism that was indicated by resourcefulness and strength self-efficacy, respectively. Intervening factors construct included Personal Belief, Social Resources, and Pathology concepts. For Personal Belief concept was indicated by purpose in life, Social Resources was indicated by social support and Pathology concept was indicated by alcohol abuse. For health goal construct, optimal health concept was indicated by recovery.

Then, theoretical substruction provides a mechanism for reevaluating the models and creates results for the model testing that may contribute to nursing knowledge development (McQuiston & Campbell, 1977; Wolf & Heinzer, 1999; Bekhet & Zauszniewski, 2008). The constructs are highly abstract and must be operationally defined and testable and derived from theoretical concept, as seen in

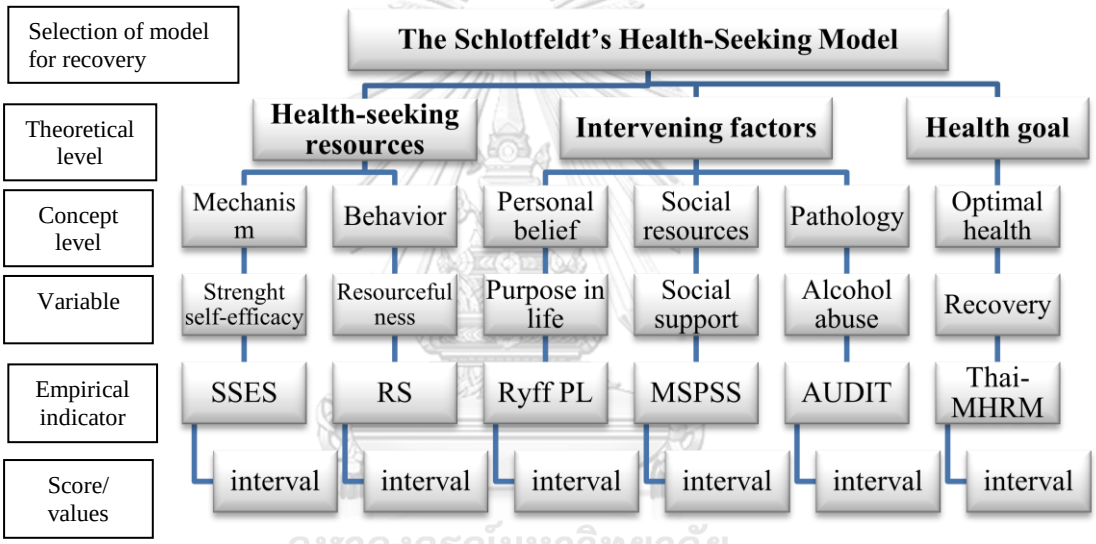


Figure 1.2 Substruction diagram derived from Schlotfeldt's health-seeking model

Research hypotheses and rationales

According to Schlotfeldt's (1975) health-seeking model, she defined health as a goal of the individual (Glazer & Pressler, 1989). Schlotfeldt (1975) conceptualized health as a dynamic state that may be inferred from one's level of physical and psychological functioning (Glazer & Pressler, 1989). In this study, the "recovery" of the MDD person will be the outcome variable of interest. As similar as the recovery definition that refer to the change of individual's feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to depressive symptoms (Young et al., 1999). Therefore, those two major constructs are quite similar and suitable for employ the Schlotfeldt's (1975) health-seeking model to explain the recovery phenomena among persons with MDD. Young and colleagues (1999) proposed that everyone experiences problems in living at some time in their life. Sometimes these problems are very serious and include significant emotional or behavioral problems, or psychiatric symptoms. Moreover, the process of recovery is complex and is different for each individual. This process may include changes in your feelings, thoughts, and behaviors that give you a renewed sense of hope and purpose, a new sense of yourself, or better adjustment to psychiatric symptoms.

The rationale and empirical evidence to support the hypotheses were presented as follows:

Strength self-efficacy has a positive direct effect on recovery

Health-seeking mechanisms represent inherent phenomena that may be physiological, psychological, or sociological (Glazer & Pressler, 1989). Health-seeking mechanism concept will be represented by the variable "strength self-

efficacy.” Strength self-efficacy is *persons's beliefs about their capabilities to produce designated levels of performance* (Bandura, 1977). The two major components of self-efficacy theory are perceived self-efficacy expectations (judgement about personal ability to perform tasks) and outcome expectations (belief that behavior will result in a specific outcome). Strength self-efficacy can motivate a person to approach situations where they can implement their personal strengths to influence their performance in tasks they want to accomplish (Chaichanasakul et al., 2009). The idea of linking personal strengths and self-efficacy (strengths self-efficacy) is relatively new. The instrument to measure strengths self-efficacy was only recently developed in 2009 (Chaichanasakul et al., 2009). Beside studies pertaining to the development of the instrument to measure strengths self-efficacy, only one study was found to have examined the variable strengths self-efficacy in relation to an outcome. The results of the study on people employed within an organization showed that strengths self-efficacy was positively correlated with employee engagement (Collins, 2009). Even though this was not a mental health study, the results suggested that the presence of strengths self-efficacy brought about a positive outcome. Often, people dealing with stressful life events needs a feeling of control over the situation and that they can effect changes in their lives (Taylor, Kemeny, Gruenewald & Reed, 2000). Hence, a first step for many people to learn how to cope with and manage psychiatric illnesses may be to establish a sense self-efficacy (Davidson, Shahar, Lawless, Sells & Tondora, 2006). The results of Huiting’s (2012) study indicated that both strengths self-efficacy and resourcefulness had direct correlations with mental health recovery. As strengths self-efficacy and resourcefulness increased, the likelihood of recovery also increased. Therefore, strength self-efficacy would have a

positive direct on recovery and in-direct effect on recovery through intervening factors in persons with MDD.

Resourcefulness has a positive direct effect on recovery

Health-seeking behaviors include a range of acquired physiological, psychological, social, cultural, institutional, philosophic, and spiritual activities which are essential in achieving optimal health (Glazer & Pressler, 1989). Health-seeking behavior concept will be represented by the variable "resourcefulness." The conceptualization of resourcefulness provided by Zauszniewski (2006) was more encompassing and had a better representation of personal strengths. In that conceptualization, resourcefulness is defined as *the ability one has to engage in everyday activities without the assistance of others as well as the ability to seek help when the daily activities cannot be performed independently* (Zauszniewski, 2006). Resourcefulness has been linked to improvements in mental health. In a study of 104 cognitively intact elders who were dealing with the stressor of relocation, resourcefulness made the relocation process more psychologically pleasant by acting as a moderating variable to relocation controllability and adjustment (Bekhet, Zauszniewski & Wykle, 2008). In an experimental study, it was found that people with greater resourcefulness had better control over non-contingency events and coped better. Participants scoring high on resourcefulness tended to refer to their successes while participants with lower resourcefulness tended to focus on their failures (Rosenbaum & Ari, 1985). In two studies relating resourcefulness to depression in the caregiver population, the results revealed that resourcefulness was negatively related to depressive symptoms. (Musil, Warner, Zauszniewski, Wykle & Standing, 2009 and Zauszniewski, Bekhet & Suresky, 2009). Similarly, low

resourcefulness had also been shown to be associated with poor general mental health (Zauszniewski, Bekhet & Suresky, 2009). With regards to people with mental illnesses, the results drew great similarity. A study showed that patients (N=112) who had higher resourcefulness at intake had lower depression scores after weeks of cognitive behavioral therapy. Therefore, resourcefulness would have a positive direct on recovery and in-direct effect on recovery through intervening factors in persons with MDD.

Purpose in life has a positive direct effect on recovery

Accordingly, Schlotfeldt's (1975) health-seeking model identified intervening factor that enhance or decline of the health goal. Intervening factors could be environmental factors such as social, educational and economic factors, personal beliefs and pathology-related factors (Glazer & Pressler, 1989). In general, Schlotfeldt (1975) claimed that intervening factors included intrapersonal, interpersonal, and extrapersonal variables within the person's experience that may enhance or decline the attainment optimal health (Glazer & Pressler, 1989). This study included variables that represent three categories of intervening factors identified by Schlotfeldt (1975) which are Personal Belief, Environment factor, and Pathology.

Personal belief concept will be represented by "purpose in life" which is the variable that enhancing attainment optimal health within intervening factor. Ryff (2005) defined purpose in life of individual as *person can provides the essential and motivating message of a better future that they can and do overcome the barriers and obstacles that confront them. He or she having goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.* In addition, Schaefer and colleagues

(2013) proposed that having purpose in life may motivate reframing stressful situations to deal with them more productively, thereby facilitating recovery from depression. In turn, enhanced ability to recover from negative events may allow a person to achieve or maintain a feeling of greater purpose in life over time. Therefore, purpose in life would have a positive direct on recovery.

Social support has a positive direct effect on recovery

Environment factors will be represented by "social support" which is the variable that enhancing attainment optimal health within intervening factor. Social support has been of interest as a predictor of recovery in depressed patients. Zimet and colleagues (1988) define perceived social support as *an individual's perception of how resources can act as a buffer between stressful events and symptoms.* According to Zimet et al. (1988), perceived social support consists of three dimensions, namely family, friends and significant other. Whereas family and friends are self-explanatory, a significant other could be a supervisor, peer, co-worker or any other person not explicitly defined, but with whom the individual has contact on a daily basis. Several studies have examined the link of social support to recovery in MDD person. Clayton and her colleagues, (1994) have reported that a close, confiding relationship and physical proximity (i.e. social support) offers protection against the development of depression in persons in stressful situations. Warheit (1979) provided evidence that individuals with low social support are at much greater risk of poor recovery. In their study of 44 outpatients with MDD, Flaherty and colleagues, (1983) found that patients with high social support had significantly better recovery from depression than did patients with low social support. In summary, social support has been strongly

predictor of recovery. Therefore, social support would have a positive direct on recovery.

Alcohol abuse has a negative direct effect on recovery

Pathology will be represented by alcohol abuse which is the variable that decline attainment optimal health within intervening factor. Major depressive disorder often co-occurs with substance use disorders, especially alcohol use disorders, and the course of each of these problems seems be complicated by the other (Ostacher, 2007). The previous studies showed that current alcohol and alcohol abuse in depressed individuals is known to hamper active treatment and is predictive of poor outcome in response to antidepressant treatment. Moreover, current or past substance abuse was associated with longer time to recovery from depression (Akiskal, 1982; O'Connell et al., 1991; Ostacher, 2010). In summary, the concurrence of substance abuse with depression is very common. Alcohol and drug abuse, in combination with depression, are predictors of poor recovery. Therefore, alcohol abuse would have a negative direct effect on recovery in persons with MDD.

In summary, Schlotfeldt's (1975) HSM was derived for this study. Health seeking resources factors included both health-seeking behavior and health-seeking mechanism (i.e. resourcefulness, strength self-efficacy). Intervening factors included personal belief, environmental factors and pathology (i.e. purpose in life, social support, and alcohol abuse). Recovery was be represented the optimal health regarding to health goal construct of Schlotfeldt's (1975) HSM. A significant amount of literature asserts the relationships among resourcefulness, strength self-efficacy, purpose in life, social support, alcohol abuse, and recovery in person with MDD. However, as previously mentioned, no study has been conducted to systematically

explain the comprehensive relationship of all these variables in Schlotfeltd's (1975) health seeking model. As research examining a result of this hypothesized model testing (see Figure 1.3), development of more complete causal model of variables influencing recovery provide important information for mental health nurses and researchers attempting to develop effective interventions to enhance recovery in Thai MDD patients.

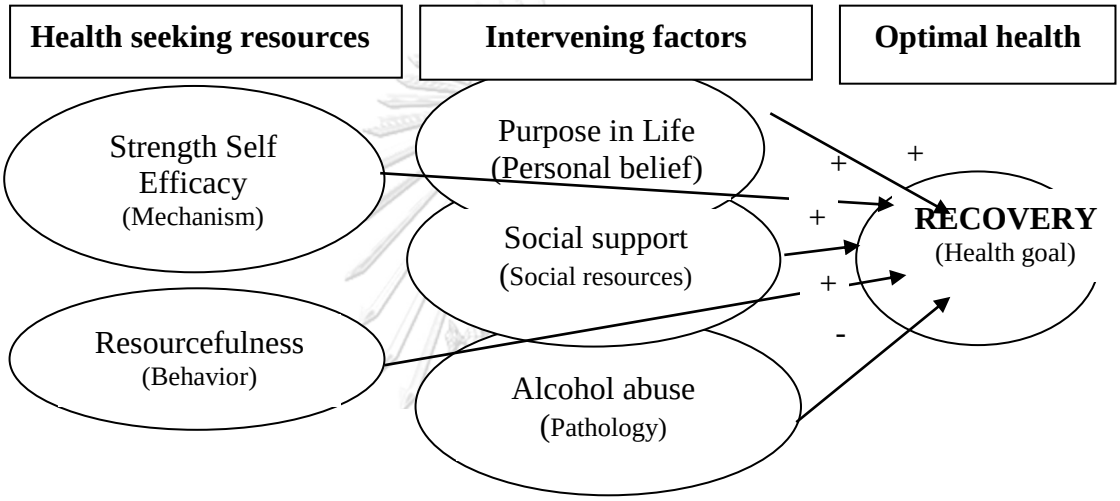


Figure 1.3 A hypothesizes causal model of recovery among persons with MDD

Research Hypotheses

As previously mentioned, the following research hypotheses were formulated:

1. Strength self-efficacy has a positive direct effect on recovery in persons with major depressive disorder.

2. Resourcefulness has a positive direct effect on recovery in persons with major depressive disorder.

3. Purpose in life has a positive direct effect on recovery in persons with major depressive disorder.

4. Social support has a positive direct effect on recovery in persons with major depressive disorder.

5. Alcohol abuse has a direct negative effect on recovery in persons with major depressive disorder.

Scope of the study

This study examined factors predicting recovery among persons with major depressive disorder in Thailand. Schlotfeldt's (1975) health-seeking model was used to guiding to select the independent variables which are strength self-efficacy, resourcefulness, purpose in life, social support, and alcohol abuse. While recovery was the dependent variable of the study. The populations were persons with MDD participants who attended outpatient department, mental health and psychiatric clinics, and mental health and psychiatric division in eight hospitals from all part of Thailand participated in this study and had clinical recovered from depression which assess by absence of depressive symptoms at least eight weeks after hospital discharge (APA, 2000). The time of the study for data collection was February to May 2018.

Definitions of terms

Recovery refer to the change of individual's feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to depressive symptoms. Persons with MDD can overcoming stuckness, maintain his/her self-empowerment, learning and self-redefinition, ability to act as basic functioning, seeking well-being, creates new potentials in life, doing as spirituality and understand their advocacy/enrichment. In this study, recovery was

measured by the Thai-Mental Health Recovery Measure modified from Mental Health Recovery Measure MHRM by Young et al. (1999). A higher score indicated a higher level of recovery and vice versa.

Overcoming Stuckness: ability to 1) finding someone who has experienced a similar recovery journey and use them as inspiration and a mentor for your journey, 2) connect or reconnect with his/her own sense of spirituality. Many others find this to be useful in finding a source of hope that things can get better, 3) it is important that individual somehow believe that change and progress is possible for his/her, and you need to have the desire to work toward that change.

Self-Empowerment: ability to 1) research his/her mental illness. Read books, pamphlets, articles, and talk to other consumers and staff about it. Find out ways you can contribute to your treatment plan and what strategies might help, 2) give his/her input and work together with the staff and family/caregivers to develop a treatment plan, 3) take responsibility for actions and learn from your mistakes how to do things differently, 4) try new things like attending a new program at his/her agency or spending time getting to know a new friend, even if feel like it might be risky, 5) stop drinking alcohol, using drugs, and drinking too much caffeine. Begin to take better care of his/herself, 6) don't be afraid to work hard and to believe in his/herself.

Learning and Self-Redefinition: ability to 1) spend time exploring both your inner and outer world. This means spending quiet time with his/herself thinking about what you like about yourself as a person, both now and before your mental illness symptoms were so distressing. Take time to also find out what you like to do and what things in the world interest you. What old and new hobbies do you like to participate in? What do you need to be happy? 2) learn to think about his/her illness as

being separate from his/herself. Although individual may have to cope with symptoms and manage his/her diet, exercise, and medication a certain way to maintain stability, individual is free to live the rest of his/her lives any way they choose. 3) try not to be too focused on how life used to be. Individual are living a new life now, with a new purpose, and his/her goals for life will change and be different from before.

Basic Functioning: ability to 1) maintain a proper sleeping and eating routine. These two basic needs will make his/her feel better, and also is an easy way for his/her to take responsibility and be independent., 2) start some type of exercise, which may help with his/her morale as well as his/her physical health., 3) monitor his/her symptoms and how they respond to his/her medication. Keep track and discuss with his/her doctor, 4) take pride in his/her living space. Clean it and decorate it so that it feels like a comforting space for them., 5) try to be more active in life. Participate in more activities at the agency, at church, or with friends. Get involved and develop a different set of purpose for his/herself., 6) connect with people and spend time socializing with people. Find people that have similar recovery journey experiences.

Overall Well-Being: ability to 1) find something to do that makes you feel good about his/herself. Increasing his/her positive self-image is important and will help their motivation., 2) strive for serenity and peacefulness. This may come to them when they begin to feel stable and "normal." 3) Recognize when they are not using helpful thinking patterns, and learn to change them. Increase positive attitudes and reduce negative self-talk.

New Potentials: ability to 1) complete more of your baseline goals to feel more confident and ready for the next step., 2) take on a new role or challenge

his/herself in a different way., 3) dig deeper into the meaning of his/her life and what you want out of it., 4) consider his/her spirituality and how to deepen his/her connection., 5) spend some time mentoring someone who is experiencing a similar situation as individual, and help them on their path., 6) look for new opportunities to try new things., 7) look into some kind of vocational work with the potential for personal enjoyment and earning income., 8) Examine closely how individual symptoms have decreased or improved, and recognize the change in his/her life due to that.

Spirituality: ability to made a spiritual connection with something that inspires his/herself. Talk to others about his/her spirituality, and explore different faiths to try and figure out what inspires and helps individual make meaning out of his/her life. Spirituality is important because it gives people hope and the idea that progress, and recovery, is possible.

Advocacy/Enrichment: ability to made the transition into becoming a role model of recovery. At some point individual will feel more confident and comfortable with his/her journey, and being able to share that with someone and help them progress along his/her own path. Keep using his/her experience to help others and expand his/her feelings of progress, independence, and wellness.

Strength self-efficacy refer to the level of MDD person's confidence in her/his ability to practice and apply her/his strengths in a specific task. In this study, Strengths Self-Efficacy Scale (SSES) measured the level of one's confidence to apply his or her strengths (Chaichanasakul et al., 2009). A higher score indicated a higher level of strength self-efficacy and vice versa.

Resourcefulness as the ability of MDD person has to engage in everyday activities without the assistance of others as well as the ability to seek help when the daily activities cannot be performed independently. In this study, resourcefulness will be measured by the Resourcefulness Scale: RS (Zauszniewski, Lai and Tithiphontumrong, 2006). A higher score indicated a higher level of resourcefulness and vice versa.

Purpose in life refer to MDD person having life goals and a belief that one's life is meaningful. In this study, purpose in life will be measured by Ryff (2005) Inventory Scale: RIS (purpose in life subscale). A higher score indicated a higher level of purpose in life and vice versa.

Social support refer to an MDD individual's perception of how resources can act as a buffer between stressful events and symptoms. Perceived social support consists of three dimensions, namely family, friends and significant other. Social support measured using Multi-dimensional Scale of Perceived Social Support (MSPSS) Thai version (Wongpakaran et al., 2011). A higher score indicated a higher level of social support and vice versa.

Alcohol abuse refer to MDD person having the harmful or hazardous use of alcohol. Alcohol abuse is classified by Alcohol Used Drug Identification: AUDI (WHO, 2001) as score < 7 = low risk, 8-15 = hazardous drinking, 16-19 = harmful drinking, and > 20 = alcohol dependent. A high score indicates high risk to alcohol abuse.

Expected usefulness and benefits of the study

1. The research contributes to the body of knowledge concerning the Schlotfeldt's health seeking model. The findings supported the validity of the Schlotfeldt's health seeking model, and explained the causal relationship of the relevant aspects of the theory in the phenomena of recovery in Thai MDD persons.

2. This study proposed a Schlotfeldt's health seeking model in Thai MDD persons. It provides a data base about the causal relationships among the selected variables. It is crucial to help nurse and health care providers to understand both the direct and indirect effects of predictive factors on recovery in Thai MDD persons.

3. The findings provide a scientifically-based guideline for health care providers, mental health multidisciplinary teams and policy makers to provide suitable support and guidance to enhance recovery in Thai MDD person.

4. Mental health nurses will be able to use the findings of this study to develop research and nursing interventions to help MDD clients to improve their recovery.

CHAPTER II
LITERATURE REVIEW

This chapter provides an integrative review of theoretical and empirical literature describing the concepts of interest and interrelationships among factors associated with recovery in persons with major depressive disorder. The review covers the following topics: 1) persons with major depressive disorder and therapeutic management, 2) recovery concept in mental health illness 3) Existing recovery instruments 4) Schlotfeldt's health seeking model, and 5) the relationships among resourcefulness, strength self-efficacy, purpose in life, social support, alcohol abuse, and recovery in persons with MDD.

1. Persons with major depressive disorder and therapeutic management

Depression, represents a clinical syndrome with biological changes characterized by a specific cluster of signs and symptoms. It presents in three distinct forms to the primary care physician: major depression, chronic depression, and minor depression. According to the *Diagnostic and Statistical Manual of Mental Disorders IV* (DSM-IV), chronic depression is also known as "dysthymia" and minor depression is classified as "adjustment disorder with depressed mood" or "depressive disorder not otherwise specified" (American Psychiatric Association, 1994).

Persons with Major Depressive Disoreder (MDD), DSM-IV identifies nine signs and symptoms of major depression that can be categorized into four groups: *1) Depressed mood:* subjective feelings of sadness or emptiness most of the day, nearly every day; *2) Anhedonia:* markedly diminished interest or pleasure in all or almost all activities; *3) Physical Symptoms:* fatigue, significant change in appetite or weight,

sleep disturbances, and psychomotor retardation or agitation; and *4) Psychological Symptoms:* feelings of worthlessness, inappropriate guilt, inability to concentrate, and recurrent thoughts of death or suicidal ideation.

For a diagnosis of major depression, the patient must have exhibited either a depressed mood or a markedly diminished interest in enjoyment or pleasurable activities, and four other symptoms; three, if both depressed mood and diminished pleasure are present. These symptoms must be present for at least two weeks, occurring most of the day, nearly every day.

1.1 **Management strategies for MDD patients**

Depression can almost always be treated successfully, either with medication, psychotherapy, or a combination of both. Not all patients respond to the same therapy. However, a patient who fails to respond to the first treatment is likely to respond to a change in strategy. Management depends largely on the severity of functional impairment. Realistic goals can be set when patient preferences are respected.

For persons with MDD**,** research demonstrates that mild to moderate forms of major depression respond equally well to psychotherapy or pharmacotherapy. However, more severe forms of major depression should be treated with pharmacotherapy. A combination of pharmacotherapy and psychotherapy may be superior to either approach alone for patients with severe, chronic, or recurrent forms of depression (Schulberg, Katon, Simon, Rush AJ, 2009). Combination therapy may also prove particularly useful for patients with significant psychosocial problems. Efficacious antidepressants have been available for over 40 years, but many new agents now offer the advantages of fewer side effects and greater ease of use, resulting in increased adherence by patients (Janicak, Davis, Preskorn, & Ayd, 1997).

1.2 Psychological approaches and nursing intervention

Patients with minor depression, chronic depression, and mild to moderate major depression may benefit from psychotherapy. Cognitive behavioral therapy and interpersonal therapy have proven effective for the treatment of major depression. These therapies are time-limited, focused on current functioning, and directed toward adaptation rather than personality change. The efficacy of long-term, insight-oriented psychotherapy for major depression is not known. Therefore, this therapy is not recommended as a first-line treatment for major depression.

Cognitive Behavioral Therapy

Many depressed patients habitually view themselves, the world, and the future with pronounced negativism. Cognitive behavioral therapy focuses on revising maladaptive processes of thinking, perceptions, attitudes, and beliefs. Emphasis is placed on identifying positive experiences, experimenting with new behaviors, and gradually progressing to more difficult situations. By challenging negative interpretations and reinforcing positive experiences, the therapist facilitates internalization of a more positive outlook on life. This approach also encourages the depressed patient to increase pleasant activities and become more socially active.

Interpersonal Therapy

Interpersonal conflict and social isolation can be associated with depression. Interpersonal therapy is a time-limited approach aimed at clarification of interpersonal difficulties, such as role disputes, prolonged grief reactions, or role transitions. The therapist and patient define the nature of the problem, identify solutions, and utilize skills to reach a resolution.

Supportive Counseling

Supportive counseling is based on empathic listening to patients' perceptions of life stresses. It focuses on managing current difficulties with emphasis on the patient's strengths and available resources. Discussing practical approaches to daily living can simply be a matter of making common sense suggestions by discouraging patients from assuming new stresses, and encouraging them to engage in pleasurable activities. Reiterate that negative thinking passes as depression improves. Patients should be encouraged to increase contact with family, friends, and community groups to benefit from social support.

1.3 Measures and screening tests for depression in Thailand

Thammanard Charernboon, (2011) proposed that there were 17 measures for depression in Thailand. Most of them were translated from English version (12 measures), and five of them were created only in Thai language. There were 12 measures for screening depression, and four measures for symptom-severity. There were two main objectives to apply the depression measurements in Thailand which are 1) Screening; TGDS, Thai-HADS, BDI, CDI, CES-D, HRSR, EPDS, PDSS, KKU-DI, 9-ISAAN depression screening, PHQ-9 and Thai version of the EURO-D scale, 2) Symptom-severity measures; HRSD, BDI, MADRS and TDI. There were two methods for using the depression measurement which are 1) Self-report measure; TGDS, Thai-HADS, CDI, CES-D, HRSR, EPDS, PDSS, KKU-DI, 9-ISAAN depression screening and PHQ-9, 2) Clinician-rated measure; HRSD, BDI, MADRS and Thai version of the EURO-D scale.

MDD has been a substantial clinical problem presented to mental health and psychiatric nurses. The only mental health disorder with an associated morbidity due

to suicide, it is predicted to become the second leading causes of disability by the year 2020 and become the first leading cause of disability (DALYs) by the year 2030 (WHO, 2007). According to the Mental Health Department of Thailand (2012), about three million Thais are living with depression but less than 100,000 of depressive patients get treatment. Some MDD persons recover in a few weeks or months. However, about 20% to 30% of persons who have an episode of depression, the symptoms still existed (Fochtmann, 2005). Unfortunately, Mental Health Department, Thailand (2012) reported that 22% relapse rate which is MDD persons who have depressive symptoms after recovered within six months.

In summary, Major depressive disorder (MDD) is a highly prevalent psychiatric condition that is associated with significant levels of disability, morbidity, and mortality. Treatment of MDD traditionally aims to reduce depressive symptoms. Consequently, the treatment is considered fully effective when complete or near-complete absence of the MDD symptoms (for a certain period of time) is achieved. However, MDD is associated with major and sometimes long-lasting decreased levels of functioning and productivity. Approximately 60% of the patients with an MDD report severe or very severe functional impairment and can continue to experience (partial) impairment long after mood symptoms have been resolved. Moreover, patients in remission report better functioning than those with mild depression, although their functioning is significantly worse than that found in the general population.

Clinically, recovery from depression is usually defined as sustained remission for a longer period of time. The operational criteria encompass 1) severity of symptoms assessed through symptom measurement instruments and 2) duration or

a certain period of time. A reduction in symptom severity of ≥50% during the course of treatment became an indicator of clinical response, that is, a clinically significant improvement (Diego N. et al., 2017).

2. Recovery concept

This part consists of definition of recovery, recovery concept and model, and existing instrument of recovery.

2.1 Recovery as a process

Recovery is understood as a process in which persons living with mental health problems and illnesses are empowered and supported to be actively engaged in their own journey of well-being. The recovery process builds on individual, family, cultural and community strengths and enables persons to enjoy a meaningful life in their community while striving to achieve their full potential.

Since the initial conceptualization of recovery by Anthony (1993), a variety of definitions have been proposed by consumers, families, practitioners, and researchers. There currently is no single definition (Corrigan & Ralph, 2005) and some researchers have suggested that recovery defies definition (Davidson, et al., 2005). *"Recovery is a process; a vision; a belief which infuses a system which providers can hold for service users grounded on the idea that persons can recover from 'mental illness', and that the delivery system service must be constructed based on this knowledge…"(Anthony, 2000).*

The term 'recovery' as used in the mental health and psychiatric nursing, for Serious Mental Illness (SMI) patients has been variously described as a process, an outcome, a model, and a framework. It does not refer purely to the remission of

clinical symptoms but is a wider concept which incorporates the person's total adjustment to life. A recovery approach aims to support an individual in their own personal development, building self-esteem, identify and finding a meaningful role in society (Allott and Loganathan, 2003). Anthony (1993) describes recovery thus *"a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills and/or roles. It is a way of living a satisfying, hopeful and contributing life even with limitations caused by illness. Recovery includes the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness"*

Roberts (2004) points out that this definition implies that a person with mental illness can recover even though the illness is not cured and that the process of recovery can proceed in the presence of continuing symptoms and disability. Moreover, Substance Abuse and Mental Health Services Administration Center for Mental Health Services: SAMHSA (2004) defined mental health recovery is a journey of healing and transformation enabling a person with a mental health problem to live a meaningful life in a community of his or her choice while striving to achieve his or her full potential. SAMHSA (2004) released a consensus statement outlining ten fundamental components of recovery, which can be viewed including hope, medication treatment, empowerment, support, knowledge, self-help, spirituality, and meaningful activity.

The Center for Mental Health Services recently invited consumer leaders to discuss and define recovery. Based upon their personal experiences and a review of the recovery literature, the Recovery Advisory Group described recovery as a nonlinear progression through phases of anguish; awakening; insight; action plan;

determination to be well; and well-being, empowerment, and recovery. (Ralph, 1999)

According to the literature on recovery, generally describes it as a complex, individual and self-defined process concerned with regaining hope and independence (Turner-Crowson & Wallcraft, 2002). In mental health service, authors' writings about recovery, the most common themes are: recovering hope, developing a perspective on the past in order to move on, taking control of one's own life, repairing or developing new, valued relationships and social roles, developing new meaning and purpose in life, and persevering in spite of reverses and ongoing problems (Deegan 1988; Coleman, 1999; Barker, Campbell and Davidson, 2000; Curtis et al, 2000; Read, 2002).

Young and colleagues (1999) defined recovery as an ongoing process of working to better handle problems in living, learning to cope more successfully with challenging life situations, or coping better with psychiatric symptoms. This process included changes in his or her feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to psychiatric symptoms.

As existing knowledge above, the common concepts underpinning definitions of recovery in the literature could be summarized as follows: living well, participating fully in community, autonomy, self-management and responsibility, hope, personal growth, person-centered services, resilience, and empowerment. The literature is also clear that recovery is not a linear process; it is an individual process of small goals and achievable steps.

2.2 Recovery as an outcome

Researchers have also attempted to defined recovery as an outcome. The outcome definitions are based on clinical experience as well as quantitative and qualitative research methodologies. All recovery as an outcome definitions include the criterion of symptom remission or stabilization as well as improved psychosocial functioning, which has been defined in a variety of ways (eg, global rating versus assessment of involvement in social or employment activities). Researchers also require that the criteria be met for varying lengths of time, ranging from 1–5 years. Furthermore, Liberman & Kopelowicz (2002) provided an expanded list of criteria to consider in operational definitions of recovery outcome. The list included symptom remission; working or studying in a normative setting; independent living without supervision of money, self-care skills, and medication; social activities with peers; supportive family relations; recreational activities in normative settings; use of problem solving skills when faced with conflict; life satisfaction; positive self-esteem and participation as a citizen in voting, self-advocacy, neighborliness, and other civic areas.

In recent years, evidence from many clinical studies has demonstrated that remission is the best goal in the treatment of depression (Keller, 2003). According to the American College of Neuropsychopharmacology (ACNP) work group re-commendations on remission published in 2006, the concept of remission would imply that the signs and symptoms of the disease are absent or practically absent. This is typically associated with a return to the previous daily functioning of the patient (Rush, et al., 2006).

The term remission also has been equated to the presence of “health.” As in other chronic diseases, health level in depression should be evaluated, taking into consideration the combination of three key domains: symptoms, functional status and physiopathological changes (Keller, 2003). Given the current limitations on the valuation of the physiopathological changes, it is proposed that the best approach to the definition of remission would be a system that primarily takes into account the patient’s psychosocial functioning. That is, the best result of the treatment would be remission with absence of symptoms and absence of functional alteration or re-establishment of complete and healthy functioning.

However, recovery does not necessarily mean ‘cure,’ although it does acknowledge that ‘cure’ is possible for many persons. Recovery principles – including hope, empowerment, self-determination and responsibility – are relevant to everyone experiencing mental health problems or illnesses, but must also be adapted to the realities of the different stages of life. Therefore, the definition of recovery as an outcome may useful for researchers to measure recovery in mental health and psychiatric patients. These definitions include which are the remission of significant psychiatric symptoms, accompanied by adequate psychosocial functioning such as independent living and going to work or study (Mueser & Gingerich, 2011). Since the experience of recovery from mental illness is necessarily individually defined and is much wider than the remission of clinical signs and symptoms there is an increasing need for researchers to develop more sophisticated outcome measures which reflect this broader definition of recovery.

The scientific conceptualization generally views recovery as an outcome that often defined by the elimination or reduction of symptoms and the return to a normal level of functioning for a specified period of time. While recovery as a process is an individually feeling, attitude, and behavior of person with mental health illness. Recovery is not a linear process; it is an individual process of small goals and achievable step.

2.3 Recovery model

The evolution of knowledge about the conditions of recovery has resulted in proposals of a variety of models, whose main emphasis is on services that focus on recovery Anthony (Anthony, 1993; Anthony, 2000) thus describes the services of a recovery-oriented system by suggesting 12 organizational markers, such as integration and accessibility of services. These markers are interesting and probably useful for a health-care system seeking to orient services towards recovery, but they are not specific to recovery, and they do not take the subjective nature of the process into account.

Anthony (1993) in his review of the recovery literature summarized the common assumptions about the recovery process as follows: 1) Recovery can occur without professional intervention, 2) A common denominator of recovery is the presence of persons who believe in and stand by the person in need of recovery, 3) A recovery vision is not a function of one's theory about the causes of mental illness, 4) Recovery can occur even though symptoms reoccur, 5) Recovery is a unique process. There is no one path to recovery, nor one outcome. It is a highly personal process, 6) Recovery demands that a person has choices, and 7) Recovery from the consequences of the illness is sometimes more difficult than recovering from the illness itself.

Andresen and colleagues (2003) proposed five-stage model of recovery that was one of the first attempts to succinctly incorporate a variety of conceptualizations of recovery into a single model and significantly contributes to this growing body of literature.

Noiseux and colleagues (2009) developed a model of recovery in mental health. They suggested that the theoretical conception of recovery is something new and innovative in the field of mental health in that it offers a vision that differs from the one traditionally associated with the restoration of functional capabilities. In short, the results provide pieces of the puzzle and allow for a better understanding both of the conditions that must obtain for the recovery process to emerge from the individual and a of how care providers can facilitate and sustain these conditions.

One of the more widely accepted definitions of recovery was developed by SAMSHA: Substance Abuse and Mental Health Services Administration (National Consensus Conference on Mental Health Recovery and Systems Transformation, 2005) on basis of consensus conference of more than 100 clients, mental health professions, and scientists. According to that definition, recovery is a journey of healing and transformation the enables a person with mental health disability to live a meaningful life in communities of his or her choice while striving to achieve full human potential or personhood (SAMSHA, 2004). SAMSHA identified ten characteristics of recovery, namely self-direction, individualized or person-centered, empowerment, holistic, nonlinear, strengths based, peer support, respect, responsibility, and hope. SAMHSA consensus statement on mental health was defined recovery as “mental health recovery is a journey of healing and transformation enabling a person with a mental health problem to live a meaningful life in a

community of his or her choice while striving to achieve his or her full potential."

In summary, the current study views recovery as an outcome that defined by the elimination or reduction of symptoms and the return to a normal level of functioning for a specified period of time. Recovery defined as the change of individual's feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to depressive symptoms. Persons with MDD can overcoming stuckness, maintain his/her self-empowerment, learning and self-redefinition, having ability to act as basic functioning, seeking well-being, creatings new potentials in life, making the spirituality and understand their advocacy/enrichment.

3. Existing recovery instruments

The greatest barrier to the measurement of recovery is that the concept of recovery has not been clearly defined, so studies and instrumentation vary widely. The recovery instruments and much of information found in this review are in a dynamic state, changing from time to time, data analysis is done, and revisions are completed. Moreover, recovery instruments have been found though an extensive review of mental health literature. Ralph & Kidder (1999) summarized in the paper *Can we measure recovery? A summary of recovery instruments*. As noted, the nine existing recovery instruments and published were summarized as follows:

3.1 Recovery Assessment Scale (RAS)

The Recovery Assessment Scale (Giffort, et al, 1995) was developed by analyzing four consumer stories of recovery and, from the concepts identified, 39 items were developed. These items were reviewed by a group of 12 consumers, whose

feedback was instrumental in the creation of the final 41 item scale. This scale has 41 items which are rated on a 5 point agreement Likert Scale in which 5 = Strongly Agree. It is administered by reading the items to participants in an interview format. It was tested with 35 consumers in the University of Chicago partial hospitalization program. Test-retest reliability between two administrations fourteen days apart was .88. Alpha was .93. Factor analysis revealed that recovery was positively associated with the following factors: self-esteem, empowerment, social support, and quality of life. Other measures were used in the study to determine concurrent validity. These measures were the Empowerment Scale (Rogers, Chamberlin, Ellison, & Crean, 1997), the subjective component of Lehman's (1988) Quality of Life Interview, the short version of the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983), and the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

3.2 Recovery Attitudes Questionnaire (RAQ)

The Recovery Attitudes Questionnaire (RAQ-7; Borkin et al., 1998; RAQ-16; Steffen, Borkin, Krzton, Wishnick & Wilder, 1998) was developed by a team comprised of mental health consumers, professionals, and researchers at the Hamilton County (Ohio) Recovery Initiative. It was "developed to compare attitudes about recovery among different respondent groups, particularly consumers, mental health professionals, family members of mental health consumers, and members of the general public" (Steffen & Wishnick, 1999). In the initial effort, 21 items reflecting the recovery process were piloted with 825 consumers, family members, mental health professionals, and students. Responses from these 21 items were factor analyzed, which reduced the items to a final scale of 7(RAQ-7) with the addition of two items which measure "somewhat unconventional attitudes about mental illness

and its treatment but which are important to the idea of recovery" (Borkin et al., 1998). Psychometrically the measure was found to have good inter-item reliability (alpha = .838). The two factors (Recovery is possible and needs faith, and Recovery is difficult and differs among persons) underlying the scale account for 54% of the variance. The RAQ-7 is self-administered. It can be used to make comparisons across different groups.

Thus, the RAQ-16 was developed using items from the original 21 items, which reflected the different attitudes of each group. Four separate scales were developed, for consumers, family members, mental health professionals, and the general public. All four scales are included in the RAQ-16 due to content overlap. The RAQ-16 is self-administered and measures attitudes within groups.

3.3 Personal Vision of Recovery Questionnaire (PVRQ)

The Personal Vision of Recovery Questionnaire (PVRQ; Ensfield, Steffen, Borkin, & Schafer, 1998) "was designed to measure consumers' beliefs about their own recovery" (Ensfield, 1998). Developed by a team of professional and consumer researchers through a participatory process, the scale was "created to capture the consumer perspective of this highly personal, multifaceted process" (Ensfield, 1998). Factor analysis identified the final 24 items and the following five factors: (1) support (alpha = .70), (2) personal challenges (alpha = .65), (3) professional assistance (alpha= .63), (4) action and help-seeking (alpha = .61), and (5) affirmation (alpha = .57). Convergent construct validity was addressed through comparison with a number of other measures.

3.4 Agreement with Recovery Attitudes Scale (ARAS)

The Agreement with Recovery Attitudes Scale (Murnen & Smolak, 1996) was developed by Knox County researchers in collaboration with consumers. “It was designed to assess change in attitudes with regard to movement toward a recovery process. Some items were based on the empowerment-oriented outcomes discussed in Rapp, Shera, & Kisthardt (1993). The researchers report the internal consistency for this 22 item Likert response scale as Coefficient Alpha = .87” (Ohio Demonstration Project, 1998).

3.5 Mental Health Recovery Measure (MHRM)

The MHRM (Young, Ensing, & Bullock, 1999) was developed with input from consumers and adapted from the original 36-item Recovery Scale. It is intended to comprehensively measure elements of recovery based upon a specific recovery model grounded in the self-described recovery experiences of consumers (Young & Ensing, 1999). It was shown to have high internal consistency (alpha = .91). The Cronbach Alphas for the subscales ranged from .55 - .83.

The participants’ perception of mental health recovery was measured by the Mental Health Recovery Measure (MHRM) developed by Young, et al. (1999). MHRM is a valid instrument for persons with mental illnesses as it was developed after a grounded theory analysis of narrative data provided by individuals with psychiatric disabilities. MHRM is a self-administered instrument that assesses the degree of recovery using 30 questions on a five point Likert scale with the options strongly disagree, disagree, neutral, agree and strongly agree. A sample question is: “I still grow and change in positive ways despite my mental health problems” Scores were summed and higher scores reflected greater recovery (Young, et al., 1999).

MHRM has eight subscales assessing the domains of: Overcoming Stuckness, Self-Empowerment, Learning and Self-Redefinition, Basic Functioning, Overall Well-Being, and New Potentials, Spirituality and Advocacy/Enrichment. Convergent validity of MHRM had been demonstrated by its correlation with other instruments assessing empowerment, resilience and community living ability based on data from 150 to 180 persons with mental illnesses recruited from community mental health centers (Bullock, 2005). MHRM had been tested with adults with serious mental illnesses from several ethnic groups with no significant differences in mean MHRM scores between different.

3.6 Illness Management and Recovery (IMR) Scales

Researchers developed the Illness Management and Recovery (IMR) Scales (Mueser et al., 2004) to measure outcomes targeted by the Illness Management and Recovery Program. The IMR program is an evidence-based practice designed to assist individuals with psychiatric disabilities develop personal strategies to manage their mental illness and advance toward their goals. The IMR Scales were developed as a measure of illness management, based on the stress-vulnerability model of severe mental illness. It has two versions, allowing for an assessment of recovery from the perspective of the consumer him/herself (client version) and a provider (clinician version). Both versions contain 15 items, each of which is rated on a 5-point Likert scale. Both internal consistency and test-retest statistics are .70 and .82 respectively. As noted above, test-retest results are based on an interval of two weeks between first and second administration of the scale. Validity of the Client IMR Scale was supported by significant correlations between the Consumer IMR Scale and self-reported symptom distress on the Colorado Symptom Inventory (Shern et al., 1996)

and perceptions of recovery on the RAS (Corrigan et al., 2004) ($r = -.38$ and $.54$, $p < .01$).

3.7 Stages of Recovery Instrument (STORI)

The STORI is designed to capture the following stages of recovery from the consumer's perspective: moratorium (a time of withdrawal characterized by a profound sense of loss and hopelessness); awareness (realization that all is not lost, and that a fulfilling life is possible); preparation (taking stock of strengths and weaknesses regarding recovery, and starting to work on developing recovery skills); rebuilding (actively working towards a positive identity, setting meaningful goals and taking control of one's life); and growth (living a full and meaningful life, characterized by self-management of the illness, resilience and a positive sense of self). The STORI comprises 50 items, each of which is rated on a 6-point Likert scale. The STORI does not provide an overall status or level score; thus it is not well-suited for use as an evaluation measure of outcomes or programs or to examine factors out-side the model that mediate and moderate recovery.

3.8 Recovery Process Inventory (RPI)

Developed by the South Carolina Department of Mental Health, the RPI is based on a definition of recovery consisting of ten dimensions—hope, empowerment, self-esteem, self-management, social relations, family relations, housing, employment, stigma, and spirituality. The instrument has good face and content validity, and coefficient alphas for six derived factors were good, but little information is avail-able about concurrent validity. In addition, the RPI is not structured for self-administration, making its use impractical in clinical setting.

3.9 Maryland Assessment of Recovery in Persons with SMI (MARS)

Amy et al, (2012) proposed the development of the Maryland Assessment of Recovery in Persons with Serious Mental Illness, or MARS, a 25-item self-report instrument that measures recovery of persons with serious mental illness, based on SAMSHA's recovery definition. MARS was developed through an iterative process by a team of doctoral-level clinical scientists with expertise in serious mental illness supplemented by structured interviews with six independent experts and a panel of consumers. Because the SAMHSA domains are often somewhat vague and several contain overlapping constructs and parameters, the team first reviewed the SAMHSA definition, operationalized domains to reflect measurable person characteristics, and eliminated redundancies. The MARS demonstrated excellent internal consistency (α=.96) and test-retest reliability (r=.86).

In summary, numerous existed recovery instruments have been used to apply for serious mental illness. Although several extant recovery measures have good psychometric properties, each has important limitations. Notably, none has been widely accepted by the field especially in Thai context. In present study, the Mental Health Recovery Measure by Young et al., 1999 was modified and psychometrically tested to employed in this study.

4. Schlotfeldt's health seeking model

Schlotfeldt's health seeking model was developed to provide nursing activity that will be the stimulation of health seeking behaviors within the person. Accordingly, Schlotfeldt's health seeking model believed that human uses both health-seeking mechanism (innate) and health-seeking behaviors (acquired) in the quest for optimal physical and mental health.

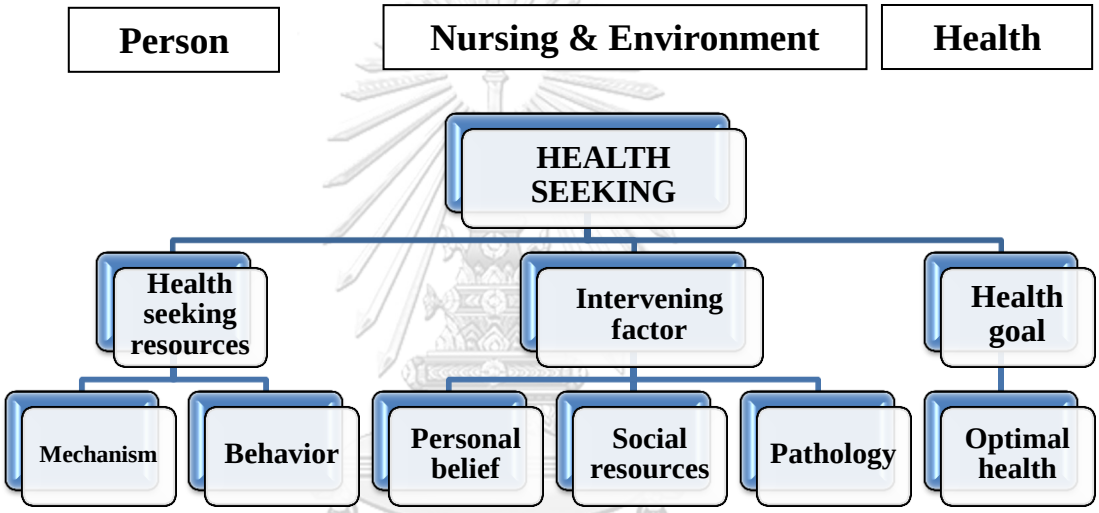


Figure 2.1 Schlotfeldt's health-seeking model

Intervening factors mediate between health-seeking resources and health. Personal beliefs and pathology affect the attainment of optimal health. The patient's health seeking is defined as a dynamic state that represents all of the individual's existence at a specific moment in time (Glazer & Pressler, 1989).

According to Schlotfeldt's (1975) health-seeking model, there were extracted in three major constructs: ***health-seeking resources, intervening factors, and the health goal***. The construct, ***health-seeking resources*** (Person) is defined as certain

inherent, or acquired, personal characteristics that individuals employ in the quest for optimal health (Glazer & Pressler, 1989). ***Intervening factors*** (Nursing and environment) are defined as intrapersonal, interpersonal, or interfere with achievement of health goals (Glazer & Pressler, 1989). Intervening factors mediate between health-seeking resources and health goal. ***The health goal*** (Health) is defined as a dynamic state that represents all of the individual's existence at a specific moment in time (Glazer & Pressler, 1989). According to this review, key concepts of recovery and its component may be particularly relation to the patient's health seeking model in mental health services.

In Schlotfeldt's (1975) health-seeking model identifies concepts derived from the three major constructs described above. **Health-seeking resources include health-seeking mechanisms and health-seeking behaviors**. Whereas *health-seeking mechanism* are inherent physiological, psychological, or sociological characteristics, *health-seeking behaviors* represent a range of acquired physiological, psychological, social, cultural, institutional, philosophic, or spiritual; activities of the person that are necessary to achieve health (Glazer & Pressler, 1989). **Intervening factors** include *personal beliefs, social resources, and pathology* (Schlotfeldt, 1975), both of which represent aspects or dimensions of the larger construct, intervening factors. Finally, Schlotfeldt (1975) conceptualizes the health goal in terms of optimal physical and mental health. Therefore, optimal health represents the concept extracted from the larger construct, health goal.

In summary, Schlotfeldt's (1975) HSM was derived for this study. Health seeking resources factors included both health-seeking behavior and health-seeking mechanism (i.e. resourcefulness, strength self-efficacy). Intervening factors included

personal belief, social resources and pathology (i.e. purpose in life, social support, and alcohol abuse). Recovery was represented the optimal health regarding to health goal construct of Schlotfeldt's (1975) HSM.

5. The relationships among resourcefulness, strength self-efficacy, purpose in life, social support, alcohol abuse, and recovery and its measurement.

Based on the HSM and empirical literature, the selected variables to predict recovery among persons with MDD are resourcefulness, strength self-efficacy, purpose in life, social support, and alcohol abuse. The detail of each variable and their relationships are as follows:

5.1 Resourcefulness

The conceptualization of resourcefulness provided by Zauszniewski (2006) was more encompassing and had a better representation of personal strengths. In that conceptualization, resourcefulness is defined as the ability one has to engage in everyday activities without the assistance of others as well as the ability to seek help when the daily activities cannot be performed independently (Zauszniewski, 2006).

Resourcefulness theory attempted to bridge this gap between an individual's ability to overcome problems on their own and his/ her ability to seek help from other people. The ability to attain, maintain or regain health involves the ability to perform tasks independently despite potentially adverse situations and to seek help from others when unable to function independently (Zauszniewski, 2006). According to the Resourcefulness Theory, resourcefulness can impact on quality of life including mental health outcomes (Zauszniewski, 2006). Resourcefulness theory was derived from the Theory of Learned Resourcefulness. The theory of learned resourcefulness

identified three dimensions of resourcefulness namely reformative self-control (involves problem solving and delay receiving gratification), use of depressive self-control (involves using positive self-instructions and perceived self-efficacy (belief in the effectiveness of one's own coping skills when faced with stressful situations) (Rosenbaum, 1990). Further factor analysis work on the instrument measuring resourcefulness suggested that self-efficacy was not a dimension of resourcefulness (Zauszniewski, 2006).

Resourcefulness has been linked to improvements in mental health. In a study of 104 cognitively intact elders who were dealing with the stressor of relocation, resourcefulness made the relocation process more psychologically pleasant by acting as a moderating variable to relocation controllability and adjustment (Bekhet, Zauszniewski & Wykle, 2008). In an experimental study, it was found that people with greater resourcefulness had better control over non-contingency events and coped better. Participants scoring high on resourcefulness tended to refer to their successes while participants with lower resourcefulness tended to focus on their failures (Rosenbaum & Ari, 1985). In two studies relating resourcefulness to depression in the caregiver population, the results revealed that resourcefulness was negatively related to depressive symptoms. (Musil, Warner, Zauszniewski, Wykle & Standing, 2009 and Zauszniewski, Bekhet & Suresky, 2009). Similarly, low resourcefulness had also been shown to be associated with poor general mental health (Zauszniewski, Bekhet & Suresky, 2009).With regards to people with mental illnesses, the results drew great similarity. A study showed that patients (N=112) who had higher resourcefulness at intake had lower depression scores after weeks of cognitive behavioral therapy.

Resourcefulness can measured by using Resourcefulness Scale (RS) developed by Zauszniewski, Lai and Tithiphontumrong (2006) to assess people's ability to function in potentially adverse situations. RS measured both personal and social resourcefulness simultaneously. Construct validity was taken into account in the development of RS where items were examined in conjunction with the Self-Control Schedule, a well-known measure of personal (i.e. learned) resourcefulness, and the Help Seeking Resource Scale that assessed social resourcefulness. RS contains 8 items. RS items were scored based on participants' self-report of the degree that they identified themselves with statements depicting resourcefulness, using a Likert scale, namely: 0 (not at all like me), 1 (pretty much not like me), 2 (a little bit not like me), 3 (a little bit like me) 4 (pretty much like me) and 5 (very much like me). A sample question is:

"When I am feeling depressed, I try to think about pleasant events" Scores were summed and higher scores indicated greater resourcefulness (Zauszniewski, et al., 2006). RS had been tested on 451 chronically ill elders and a high level of internal consistency was obtained for the total scale ($\alpha = 0.85$). A factor analysis was done, and it showed that RS had two subscales, namely personal resourcefulness and social.

5.2 Strength self-efficacy

The concept of self-efficacy in Self-Efficacy Theory is about people's beliefs about their capabilities to produce designated levels of performance (Bandura, 1977). The two major components of self-efficacy theory are perceived self-efficacy expectations (judgment about personal ability to perform tasks) and outcome expectations (belief that behavior will result in a specific outcome). Even though conflicting information had been discussed about which self-efficacy component was

a stronger predictor of behavior (McAuley, 1993 and Resnick & Spellbring, 2000), some researchers had found that self-efficacy and outcome expectations both predicted recovery (Stanley & Maddux, 1996).

It has been theorized that a person who possesses high self-efficacy can cope with or recover better from adverse situations than a person with low self-efficacy (Bandura, 1997). Strength self-efficacy can motivate a person to approach situations where they can implement their personal strengths to influence their performance in tasks they want to accomplish (Chaichanasakul et al., 2009). The idea of linking personal strengths and self-efficacy (strengths self-efficacy) is relatively new. The instrument to measure strengths self-efficacy was only recently developed in 2009 (Chaichanasakul et al., 2009). Beside studies pertaining to the development of the instrument to measure strengths self-efficacy, only one study was found to have examined the variable strengths self-efficacy in relation to an outcome. The results of the study on people employed within an organization showed that strengths self-efficacy was positively correlated with employee engagement (Collins, 2009). Even though this was not a mental health study, the results suggested that the presence of strengths self-efficacy brought about a positive outcome. Often, people dealing with stressful life events needs a feeling of control over the situation and that they can effect changes in their lives. (Taylor, Kemeny, Gruenewald & Reed, 2000). Hence, a first step for many people to learn how to cope with and manage psychiatric illnesses may be to establish a sense self-efficacy (Davidson, Shahar, Lawless, Sells & Tondora, 2006).

Recently, the study by Huiting (201) found that Strengths self-efficacy and resourcefulness were related to mental health recovery and significantly predicted

recovery. The results of this current study indicated that both strengths self-efficacy and resourcefulness had direct correlations with mental health recovery. As strengths self-efficacy and resourcefulness increased, the likelihood of recovery also increased.

Strenght self-efficacy can measured by using the Strengths Self-efficacy Scale (SSES) that was developed by Chaichanasakul, et al. (2009) to assess people's perceived personal strengths and the application of these strengths in their daily lives. Content validity of SSES was assessed independently by four experts in positive psychology, a field of study that focuses on looking at the positive attributes of people. The SSES originally contained 34 items and a factor analysis procedure reduced it to 16 items with two subscales namely, strengths application and strengths building. The SSES uses an 11-point scale Likert scale, as recommended by Bandura (2001) when assessing self-efficacy. The SSES includes the following anchors: 0 (not at all confident), 5 (moderately confident), and 10 (extremely confident). Participants' responses were summed and higher scores reflected stronger degrees of strengths self-efficacy. A sample question is: How confident are you in your ability to use your strengths to enhance your relationships?

SSES had been tested out with 214 participants in the community, and it yielded a high level of internal consistency (reliability) for the total scale (Cronbach's alpha, $\alpha = 0.97$). Reliability was also high for the subscale of strengths application and strengths building, $\alpha = 0.97$ and 0.91 respectively (Chaichanasakul, et al, 2009). A Cronbach's alpha above 0.70 is acceptable for scientific studies (Schneider, 2003).

5.3 Purpose in life

Most recently, Ryff (1989; Ryff & Keyes, 1995) has proposed and tested a theoretical model of psychological well-being that includes six dimensions of

wellness, one of which is purpose in life. She suggested that a critical component of mental health includes "beliefs that give one the feeling that there is purpose in and meaning to life" (Ryff, 1989, P. 1071). Theories of adult development and maturity include the concept of purpose in life as well:

> *The definition of maturity ... emphasizes a clear comprehension of life's purpose, a sense of directedness, and intentionality. The lifespan developmental theories refer to a variety of changing purposes or goals in life ... Thus, one functions positively has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful (Ryff, 1989, p. 1071).*

Purpose in life is central to recovery and can be enhance by each person seeing how they can have more active control over their live and by seeing how others have found a way forward (South London and Maudsley NHS Foundation Trust and South West London and St.George's Mental Health NHS Trust, 2010). Ryff (2005) suggested that patient can provides the essential and motivating message of a better future that they can and do overcome the barriers and obstacles that confront them. Positive hope as goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living. Schaefer and colleagues (2013) proposed that having purpose in life may motivate reframing stressful situations to deal with them more productively, thereby facilitating recovery from stress and trauma. In turn, enhanced ability to recover from negative events may allow a person to achieve or maintain a feeling of greater purpose in life over time.

Purpose in life can measured by using the Purpose in Life scale on Ryff's measure of psychological well-being was derived from theories about positive psychological health and lifespan development. It has a 20-, 14-, 9- and 3-item version. Three examples of items are: "I live life one day at a time and don't really think about the future"; "Some people wander aimlessly through life, but I am not one of them"; and "I sometimes feel as if I've done all there is to do in life." High scorers on the Purpose in Life scale have goals and a sense of directedness in life, they feel that there is meaning to their life both currently and in the past, they hold beliefs that give life purpose, and they have aims and objectives for living. Low scorers lack a sense of meaning in life, have few goals, lack a sense of direction, do not see purpose in their past, and do not have meaningful outlooks on life (Ryff & Keyes, 1995, P. 727). Extensive reliability and validity information is available in Ryff (1989; 1995), Ryff, Lee, Essex, and Schmutte (I994), and Ryff and Keyes (1995). *In summary*, empirical literature suggested that having purpose in life has an important impact on recovery from MDD. Finding and nurturing purpose in life has been described as a key to recovery (Repper, & Perkin, 2006). Ryff's scales of psychological well-being: RPWB, 6-Purpose in life subscale) refer to person having life goals and a belief that one's life is meaningful. High scorers on the Purpose in Life scale have goals and a sense of directedness in life, they feel that there is meaning to their life both currently and in the past, they hold beliefs that give life purpose, and they have aims and objectives for living. Low scorers lack a sense of meaning in life, have few goals, lack a sense of direction, do not see purpose in their past, and do not have meaningful outlooks on life (Ryff & Keyes, 1995, P. 727). Chronbach's alpha for the whole Thai-

PWB was .93 and the purpose in life subscale the chronbach's alpha was .86 (Kakanang Maneesri, 2007).

5.4 Social support

Social support refers to the various types of support (i.e., assistance/help) that people receive from others and is generally classified into two (sometimes three) major categories: emotional, instrumental (and sometimes informational) support. Emotional support refers to the things that people do that make us feel loved and cared for, that bolster our sense of self-worth (e.g., talking over a problem, providing encouragement/positive feedback); such support frequently takes the form of non-tangible types of assistance. By contrast, instrumental support refers to the various types of tangible help that others may provide (e.g., help with childcare/housekeeping, provision of transportation or money). Informational support represents a third type of social support (one that is sometimes included within the instrumental support category) and refers to the help that others may offer through the provision of information.

Existing data indicate that higher levels of social support, particularly emotional support are both associated with higher SES and appear to be protective with respect to a number of health outcomes. This pattern of relationships suggests that social support may function as one of the mediators of SES effects on health and should be a focus of on-going research into relationships between SES and health. Further support for the potentially important role of social support comes from evidence linking such support to differences in physiological reactivity (Seeman & McEwen, 1996). There are, however, a number of outstanding issues. For example, to date, research has largely examined social support as a main effect and as a mediator

of SES (and other) effects on health. However, recent evidence suggests important moderating effects of social support with respect to SES links to health (Ryff et al, 2004) as well as in relation to risk factors for declines in physical functioning (Unger et al, 1999). Such evidence points to the importance of greater consideration of a moderating role for social support. Also, as indicated above, there are a number of different measures in use and there is no consensus regarding which, if any, is the best and little or no direct comparisons of the ability of different measures to predict outcomes in a given study. Happily, the construct appears to be quite sturdy in the face of such diversity of measures: consistent findings have generally been seen across different measures of social support. Nonetheless, development of a more commonly used set of measures would be advantageous, particularly for future comparative research. Overall, this construct appears likely to be useful in research on SES and health.

Social support has been of interest as a predictor of recovery outcome in depressed patients. Several studies have examined the link of social support to depression. Clayton and her colleagues, (1994) have reported that a close, confiding relationship and physical proximity (i.e., social support) offers protection against the development of depression in persons in stressful situations. Warheit (1979) provided evidence that individuals with low social support are at much greater risk of developing depressive symptoms. In their study of 44 outpatients with unipolar depression, Flaherty and colleagues, (1983) found that patients with high social support had significantly better depression rating scores than did patients with low social support. *In summary*, social support has a strong connection to depression and be strongly predictor of recovery.

Social support can be measured by the using Multi-dimensional Scale of Perceived Social Support: MSPSS (Wongpakaran T. et al., 2011). The MSPSS is intended to measure the extent to which an individual perceives social support from three sources: Significant Others (SO) (Items 1, 2, 5, and 10), Family (FA) (Items 3, 4, 8, and 11) and Friends (FR) (Items 6, 7, 9, and 12). The MSPSS is a brief, easy to administer self -report questionnaire which contains twelve items rated on a seven-point Likert-type scale with scores ranging from ‘very strongly disagree’ (1) to ‘very strongly agree’ (7). The MSPSS has proven to be psychometrically sound in diverse samples and to have good internal reliability and test-retest reliability, and robust factorial validity. The revised version conducted by provided better internal consistency, increasing the Cronbach's alpha for the Significant Others sub-scale from .86 to .92.

5.5 Alcohol abuse

Alcohol use disorders (abuse and dependence) are highly prevalent in people with depression and/or anxiety (Burns & Teesson , 2002; Hasin et al., 2007; Boschloo et al., 2011) and have been suggested to be important predictors of a poor outcome. However, few prospective studies have examined the effects of alcohol use disorders on the natural course of depressive and anxiety disorders, and these have reported conflicting results. For example, people with comorbid alcoholism have a decreased risk of remission of major depressive disorder (Mueller et al., 1994).

The previous studies showed that current alcohol and drug abuse in depressed individuals is known to hamper active treatment and is predictive of poor outcome in response to antidepressant treatment (Akiskal, 1982; O'Connell et al., 1991). In the O'Connell et al. study of bipolar disorder, 36% of the people in the poor outcome

group were found to have substance abuse problems but only 7% of the people in the good outcome group. Akiskal (1982) found that concurrent sedative or alcohol abuse with depression was more likely to be associated with a poorer response to antidepressants. *In summary*, the concurrence of substance abuse with depression is very common. Alcohol and drug abuse, in combination with depression, are predictors of poor outcome to medication treatment.

Alcohol abuse can be measured by using the Alcohol Used Drug Identification: AUDIT (WHO, 2001) as score < 7 = low risk, 8-15 = hazardous drinking, 16-19 = harmful drinking, and > 20 = alcohol dependent. The AUDIT is a widely used screening instrument to detect hazardous alcohol consumption. It has a high level of validity and reliability. Score of 8 or higher is considered a positive screen. Ten questions from AUDIT scored frequency (item 1), quantity (item 2) of alcohol use, frequency of binge drinking (heavy episodic consumption) (item 3), and consequences (items 4–10) of alcohol consumption. All ten items were given scores ranging from 0 through 4 in the generic tool, depending on the response. A composite score was generated from the 10 items according to the guideline, and a respondent scoring eight or higher was identified as a hazardous alcohol user. Alcohol users who scored below eight were identified as harmless users

6. Structural equation modeling of analysis

The measurement model determines how latent variables or constructs as common factors are indicated by the observed variables or indicators through confirmatory factor analysis. The latent variables and the error or specific terms are uncorrelated (McDonald and Ho, 2002). Furthermore, concept constructs will be

evaluated to specify reliability an d construct validity using confirmatory factor analysis (CFA). The model uses the following equation:

$X = \delta\xi + \Delta$

x' = (x1, x2, ……, xq) are the measured variables

Δ = matrix Δ x of the general model

ξ' = (ξ 1, ξ 2,……, ξ n) are latent variables, and

δ' = δ 1, δ 2, ……. δ q) are error variables (Joreskog and Sorborm ,19962001: 123)

In turn, the structural model is a hypothesized relationships model using the latent variables which are based on causal relationships. The structural or path model is also a composite hypothesis. It requires the specification of both, a set of present versus absent directed paths between latent variables, and a set of present versus absent non-directed paths.

Though the measurement model and structural model can be concurrently examined, the measurement model should be firstly tested before running the full model. (Hoyle, 1995; Byrne, 2000; K line, 2005). According to Kline's recommendation (2005) the measurement model is initially tested, and only when the model has a good fit, the second step, which consists of running the structural model is conducted. That is, the researcher runs the structural model only when the measurement model has been validated. Two or more alternative models are then compared in terms of "model fit," which measures the extent to which the covariances predicted by the model correspond to the observed covariances in the data.

The maximum of likelihood (ML) method of parameter estimation is employed because the estimator is consistency efficient and has computed large sample standard errors under normal theory. The overall fit of the models is examined based on several indices including Chi-square (2 χ), the Goodness of Fit Index (GFI), and the Adjusted Goodness of Fit Index (AGFI). The chi-square test indicates the

amount of difference between expected and observed covariance matrices. A chi-square value close to zero indicates little difference between the expected and observed covariance matrices. The probability level must be greater than 0.05 when chi-square is close to zero. Chi-square statistics is sensitive to a large sample size; therefore, 2 χ divided by degrees of freedom (2 χ/df) is used to correct for sample size, and a value of less than two considered an acceptable fit (Tabachnick and Fidell, 2007). On the other hand, the comparative fit is examined using the Benter-Bonett Normed Fit Index (NFI>.90), and the Comparative Fit Index (CFI>.90). The CFI is equal to the discrepancy function adjusted for sample size (Hu and Bentler, 1999). The covariance residual fit is evaluated using the Root Mean Square Error of Approximation (RMSEA) (Hair et al., 1998). A RMSEA value of less than 0.05 and a GFI and AGFI value close to 1 or greater than 0.9 indicate a good fit (Hair et al., 1998).

In addition, confirmatory factor analysis can be used to estimate the reliability (R2) and standardized validity coefficient (s λ) of the measurement. An R2 for an item above 0.40 provides evidence of acceptable reliability (Munro, 2001) and a coefficient above 0.50 is considered acceptable validity (Bollen, 1989; Nunnally and Bernstrin, 1994).

If model fit is acceptable, the parameters estimated are tested. The ratio of each parameter estimate to its standard error is distributed as a z statistic and is significant at the 0.05 level if its value exceeds 1.96 (Hoyle, 1995). In turn, if an unacceptable model fit is found, the model is then modified until a suitable fit is found or tested for as long as the parameters do not lose their meaningfulness. Model modification involves adjusting a specified and estimated model by either freeing

parameter that were fixed or fixing parameters that were free. On the other hand, the model can be re-specified, if necessary, based on the researcher's rationality and understanding of the model to support them.

SEM is an appropriate approach in the present study for three reason s. First, the development of the hypothesized causal pathway in the model has been based upon significant prior research knowledge and substantial theory. Second, the parameters of the model will estimate both the direct and indirect effects of the proposed determinants on physical activity so that the total effect of the significant variables on physical activity can be more accurately accounted for. Finally, it will illustrate the overall causal structure because of the mediator variables in the causal model. However, there are potential problem s in using causal models. The selected variables in the model may not be genuine sources in the effects estimated. This issue has been reduced by including all known variables in the causal models which were strongly supported from other studies. Another problem may result from measurement errors which influence parameter estimates. The researcher attempted to minimize this issue by using measurements which were based on the theoretical framework and of acceptable value from psychometric properties. Another problem might be due to cross-sectional research design. Although, this design is limited in its ability to explain the causal relationship between variables due to a lack of manipulation or control of the independent variables, it has still benefit for investigation (Polit and Hungler, 1995). As stated by Polit and Hungler (1995), this design can determine the relationship among variables in natural occurring situations without any artificial manipulation, and it is a feasible design rather than an experimental one. According to two criteria for inferring causality: one variable preceded the other (logical reason)

and a theoretical framework points the analysis (Polit and Hungler, 1995; Cohenet al., 2003), therefore this design is appropriate for the current study

In summary, there are the factors that directly targeted in person recovery. As a result of this study, development of more complete causal model of variables influencing recovery provided important information for mental health nurses and researchers attempting to develop effective interventions to enhance recovery in Thai MDD individuals.

CHAPTER III
METHODOLOGY

This chapter describes the research design and methods that were used to conduct the present study. The research design, population, sampling technique and sample selection, instrumentation, protection of human subject, data collection and data analysis procedures are included.

1. Research design

In the present study, a model testing design was employed to explore the theoretical linkage among potential factors of interest and recovery among persons with MDD in Thailand. The potential factors were derived from Schlotfeldt's (1975) health seeking model and available relevant research evidence. Generally, a descriptive correlation design examined many interrelationships in a situation that has already occurred or in a current situation (Burns and Grove, 2005).

Finally, Schlotfeldt's health seeking model was selected for this present study of causal relationships among personal variables, health seeking resources variables, and intervening variables that affect recovery in Thai MDD persons.

2. Population and sample

According to the mental health department of ministry of public health of Thailand (2016) reported about 3,000,000 Thais are living with depression. The population of interest in this study was Thai MDD patients who attended outpatient mental health and psychiatric clinics, mental health and psychiatric hospitals, mental health and psychiatric division in primary care unit from all part of Thailand.

2.1 **Sample size**

According to Joreskog and Sorbom (2001), there is no definite formula for calculating sample size for structural equation modeling (SEM). However, Hair, Anderson, Tathum and Black (1998) suggested that the most appropriate ratio of respondents for each estimated parameter is 10:1. Nunnally (1978) suggested 10-20 subjects per item for performing confirmatory factor analysis. The other suggestions exist as well. For example, a good general rule of thumb for factor analysis is 300 cases (Tabachnick & Fidell, 1996) or 50 participants per factor (Pedhazur & Schmelkin, 1991). Furthermore, Comrey and Lee (1992) gave the following guide for samples sizes: 50 as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1,000 as excellent. Guadagnoli and Velicer (1988) have shown that solutions with several high-loading marker variables (> .80) do not require as many cases. In addition, if the dependent variable was skewed and the effect size expected was small, substantial measurement error could occur; thus, larger samples are needed (Tabachnick & Fidell, 1996).

In this study, the hypothesized model contained 17 free estimated parameters, thus a sample size of 170 to 340 are the minimum requirement. However, the measurement model of recovery had 24 free parameters, thus should be at least 240 to 480. In addition, Hair, Anderson, Thatham and Black (1998) suggested missing data is a common problem in multivariate analysis. The researcher should consider an estimate of the sample survey and add 10 % to arrive at a true population value. Thus, 24-48 cases were added, bringing the total sample size to 224-512. In this study, 486 persons with MDD were recruited and only 444 completed the questionnaires were used in data analysis.

2.2 Sampling technique

The following steps were followed to select participants and to maximize the normal distribution of the samples. Thailand is divided into five regions: Northern, Central, Southern, Northeastern, and Bangkok. Each province is divided into districts, which are further divided into sub-districts; a sub-district is a collection of sub-disdrict hospitals. This sampling frame ensured all regions of the country were covered and that there were participated with mental health and psychiatric unit services of persons with MDD.

Stage 1. Uthaithani, Supanburi, Khonkhan, Nakornrachasima, Nongbualampu, Songkla, Chumporn and Bangkok provinces were simple random sampling selected from each of the five regions of Thailand.

Stage 2. One district was randomly selected from each selected province including Mueang, Donchedi, Mueang, Mueang, Mueang, Mueang, Mueang and Saimai district, respectively.

Stage 3. one primary care units (PCU) or hospital was randomly chosen from each district including NongKae sub-district health promoting hospital, Srakrachom, sub-district health promoting hospital, Srinakarin hospital, Nakornrachasima hospital, Songkla hospital, and Bhumibol hospital, respectively.

Stage 4. In each sub-district hospital, 30 participants were selected based on the inclusion criteria, in each hospital, 60 participants were selected based on the inclusion, in hospital at Bangkok, 90 participants were selected based on the inclusion criteria. Using a simple random sampling technique from a name list obtained from the sub-district hospitals. A simple random technique was applied and every second

name in the list was selected until the required sample size was reached. The sampling frame configuration is depicted in Figure 3.1

2.3 Sample recruitment

The criteria for the sample recruitment as follows: 1) MDD patient who diagnosed with DSM- IV, 2) Being 18 years of age or older, 3) Being able to communication in Thai and 4) MDD participants who had hospitalization experienced at psychiatric hospital in Bangkok and four regions and had clinical recovered from depression which assess by researcher and assess the information that reflect the absence of depressive symptoms at least eight weeks after hospital discharge by using Thai Depression Inventory (TDI score < 35) (APA, 2000).

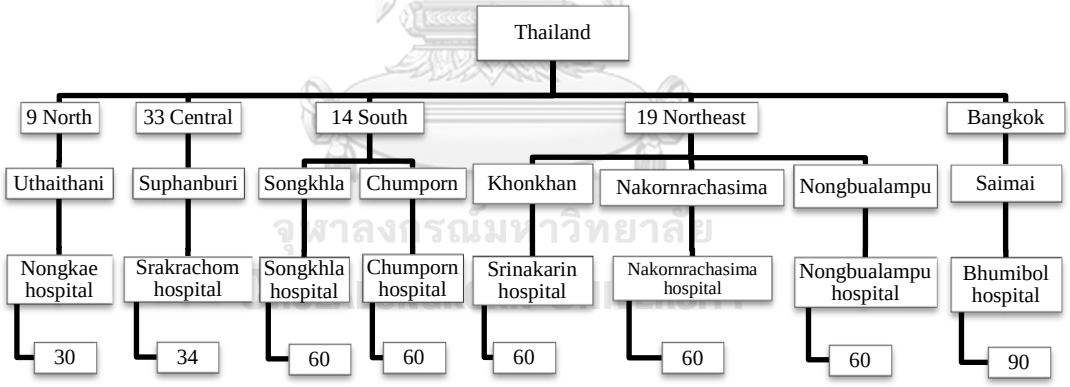


Figure 3.1 Sample sampling of the study

3. Research instruments

Six measurements were employed in this study: 1) Mental Health Recovery Measure (30-MHRM), 2) Strength Self-Efficacy Scale (16-SSES), 3) Resourcefulness Scale (8-RS), 4) Ryff Inventory Scale (6-Purpose in life subscale), 5) Multi-dimensional Scale of Perceived Social Support (12-MSPSS), and 6) Alcohol Used Drug Identification (10-AUDI). This section addresses: translation procedures of the translated instruments; content validity of instruments; and instrument description.

3.1 Translation procedures of the translated instruments

After obtaining written consent from the author, the instruments were applied and modified by researcher to reflect recovery among persons with MDD. Through back-translatation. Firstly, the translation process initiates by translating the Mental Health Recovery Measure (MHRM) original English version of the instrument into Thai language by linguistic expert at translation and interpretation service unit, Faculty of Arts, Chulalongkorn University, and next the instrument was reviewed by a bilingual Thai mental health and psychiatric nurse with a PhD in nursing to confirm semantic equivalence and cultural relevance. In addition, considering content equivalence, terminology modification is also applied.

Secondly, two bilingual Thai mental health and psychiatric nurse translators undertake back-translation. The back-translated versions were compared with the original (English language) versions. Reaching congruence of meaning between the original and target versions in Thai requires back-translations. The translators separately translated odd and even items and then independently cross-examined the back-translated versions (i.e. odd items and even items) and compared these items

with the original instrument. In this study was presented in assuring equivalence of the instruments as the followings:

Content equivalence has been achieved by launching content validity. Seven nursing experts were performed content validity. The experts rated each item of the instrument of Thai version on a four-point scale to validate its appropriateness of the construct studied. The content validity index (CVI) was calculated. All items have rated as 3 (relevant with minor revision) or 4 (very relevant) are retained. CVI score is 90%.

3.2 Instruments description

3.2.1. Recovery

The participants' perception of mental health recovery was measured by the Mental Health Recovery Measure (MHRM) developed by Young, et al. (1999). MHRM is a valid instrument for persons with mental illnesses as it was developed after a grounded theory analysis of narrative data provided by individuals with psychiatric disabilities. MHRM is a self-administered instrument that assesses the degree of recovery using 30 questions on a five point Likert scale with the options strongly disagree, disagree, neutral, agree and strongly agree. A sample question is: "I still grow and change in positive ways despite my mental health problems" Scores were summed and higher scores reflected greater recovery (Young, et al., 1999).

MHRM has eight subscales assessing the domains of: Overcoming Stuckness, Self-Empowerment, Learning and Self-Redefinition, Basic Functioning, Overall Well-Being, and New Potentials, Spirituality and Advocacy/Enrichment. Convergent validity of MHRM had been demonstrated by its correlation with other instruments assessing empowerment, resilience and community living ability based on data from

150 to 180 persons with mental illnesses recruited from community mental health centers (Bullock, 2005). MHRM had been tested with adults with serious mental illnesses from several ethnic groups with no significant differences in mean MHRM scores between different. MHRM subscales defined as follows:

Overcoming Stuckness: You are at the beginning of your recovery journey, which may be the hardest to overcome. Acknowledging and accepting that you have mental illness is a crucial piece to this part of your journey. You may feel like you aren't ready to change, or you may feel ready and either physically, emotionally, or otherwise not be able to change. Some ideas to help you include: 1) Finding someone who has experienced a similar recovery journey and use them as inspiration and a mentor for your journey, 2) Connect or reconnect with your own sense of spirituality. Many others find this to be useful in finding a source of hope that things can get better, 3) It is important that you somehow believe that change and progress is possible for you, and you need to have the desire to work toward that change.

Self-Empowerment: You may not yet feel that you are in control of your own life, and you may be struggling with how to have more independence and take on more responsibility in your recovery journey. You may not have yet been able to shed the feeling that you are a victim, or you may not believe in yourself yet. Some ideas to help you include: 1) Research your mental illness. Read books, pamphlets, articles, and talk to other consumers and staff about it. Find out ways you can contribute to your treatment plan and what strategies might help you, 2) Give your input and work together with your staff and family/caregivers to develop a treatment plan, 3) Take responsibility for your actions and learn from your mistakes how to do things differently, 4) Try new things like attending a new program at your agency or

spending time getting to know a new friend, even if you feel like it might be risky, 5) Stop drinking alcohol, using drugs, and drinking too much caffeine. Begin to take better care of yourself, 6) Don't be afraid to work hard and to believe in yourself.

Learning and Self-Redefinition: You may not have yet been able to figure out who you are yet. You may be missing parts of your old self and life, and not yet able to incorporate them into your new self and life as it is now. You may be confused as to how your illness fits in with your sense of self and the world, and you may not know how to be yourself yet. Some ideas to help you include: 1) Spend time exploring both your inner and outer world. This means spending quiet time with yourself thinking about what you like about yourself as a person, both now and before your mental illness symptoms were so distressing. Take time to also find out what you like to do and what things in the world interest you. What old and new hobbies do you like to participate in? What do you need to be happy? 2) Learn to think about your illness as being separate from yourself. You are a person with an illness...you are not the illness itself. Think of it like this: If a person has diabetes, they have to deal with a life-long condition. Although they may have to cope with symptoms and manage their diet, exercise, and medication a certain way to maintain stability, they are free to live the rest of their lives any way they choose. So are you., 3) Try not to be too focused on how life used to be. You are living a new life now, with a new purpose, and your goals for life will change and be different from before.

Basic Functioning: You are still struggling with getting your basic needs met, and still seem to depend on others for help. While you are making progress on how you are feeling about your new self and your new life, you may have not been able to figure out where to start to change. Some ideas to help you include: 1) Maintain a

proper sleeping and eating routine. These two basic needs will make you feel better, and also is an easy way for you to take responsibility and be independent., 2) Start some type of exercise, which may help with your morale as well as your physical health., 3) Monitor your symptoms and how they respond to your medication. Keep track and discuss with your doctor, so you can have input., 4) Take pride in your living space. Clean it and decorate it so that it feels like a comforting space for you., 5) Try to be more active in life. Participate in more activities at the agency, at church, or with friends. Get involved and develop a different set of purpose for yourself., 6) Connect with people and spend time socializing with people. Find people that have similar recovery journey experiences.

Overall Well-Being: Though you are making progress, you may not feel consistently good about yourself. Your motivation may be suffering if you haven't fully developed a positive sense of self. You may have times when you feel at peace with yourself and your life, but you aren't able to maintain that sense of peace yet. Some things to help you include: 1) Find something to do that makes you feel good about yourself. Increasing your positive self-image is important and will help your motivation., 2) Strive for serenity and peacefulness. This may come to you when you begin to feel stable and "normal." 3) Recognize when you are not using helpful thinking patterns, and learn to change them. Increase positive attitudes and reduce negative self-talk.

New Potentials: You may still be working on more basic goals now, such as increasing positive self-esteem, managing your treatment, or working on becoming more socially involved. This means that you may not have thought about what is next or how to achieve these higher-level goals. Some things that may help you include:

1) Complete more of your baseline goals to feel more confident and ready for the next step., 2) Take on a new role or challenge yourself in a different way., 3) Dig deeper into the meaning of your life and what you want out of it., 4) If you haven't already, consider your spirituality and how to deepen your connection., 5) Spend some time mentoring someone who is experiencing a similar situation as you, and help them on their path., 6) Look for new opportunities to try new things., 7) Look into some kind of vocational work with the potential for personal enjoyment and earning income., 8) Examine closely how your symptoms have decreased or improved, and recognize the change in your life due to that.

Spirituality: You have not yet made a spiritual connection with something that inspires you. Talk to others about their spirituality, and explore different faiths to try and figure out what inspires you and helps you make meaning out of your life. Spirituality is important because it gives people hope and the idea that progress, and recovery, is possible.

Adocacy/Enrichment: You have not yet made the transition into becoming a role model of recovery. At some point you will feel more confident and comfortable with your journey, and being able to share that with someone and help them progress along their own path. Keep using your experience to help others and expand your feelings of progress, independence, and wellness.

For this study, MHRM was translated from English version in to Thai. To produce a Thai version of the MHRM, the researcher have applied translating process, after which it was back-translated by a bilingual school teacher who had no knowledge of the wording from the original English version. The two versions were compared item by item and revised through consensus by the authors and the

bilingual teacher. The draft version was tested with 30 individuals who were not participating in the study. Grammatical errors, misspellings and other minor discrepancies were addressed and corrected before field testing.

Psychometric properties testing

The participants consisted of 308 Thai adult with MDD who were receiving mental health services in psychiatric hospital, Pramongkutklao general hospital 108 Thai adults with MDD and the mental health department of primary care unit 200 Thai adult with MDD. The simple random sampling technique was employed to select the participants. Considering demographic data with age, gender, education, marriage status, occupation, underlying disease, and medication behavior.

The criteria for the participant recruitment as follows: 1) MDD participants who diagnosed with DSM- IV, 2) Being 18 years of age or older, 3) Being able to communication in Thai and 4) MDD participants who had hospitalization experienced at psychiatric hospital in Bangkok and four regions and had clinical recovered from depression which assess by researcher and assess the information that reflect the absence of depressive symptoms at least eight weeks after hospital discharge by using Thai Depression Inventory (TDI score < 35).

Confirmatory Factor Analysis (CFA) were used to examine the factor structure of the Thai-MHRM. Correlations of the Thai-MHRM with measures of depressive symptom severity was computed to further establish construct validity. Cronbach's alpha was used to assess the internal reliability of the Thai-MHRM. In order to be considered a good measure of a particular construct, the researcher must concern about validity and reliability of the instrument after translation.[18] The followings were

present on the assuring of validity and reliability of the instrument translation in this study.

Scoring and Interpreting the Thai-MHRM

The Total Score for the MHRM is derived by adding up the number corresponding to the response for each item (using a 0, 1, 2, 3, 4 Likert scale with 0 = Strongly Disagree; 1 = Disagree; 2 = Not Sure; 3 = Agree; and 4 = Strongly Agree). There are no reverse scored items. The theoretical range for the Total Score is 0 to 120, and in practice. The MHRM using total score as an overall assessment of self-reported recovery. If researchers or program evaluators want to look at scores on the individual conceptual domains, the items comprising each domain are as following table.

Table 3.1 hows the items comprising each domain of Thai-MHRM

No	Domains	Item No.
1	Overcoming Stuckness	1, 2, 3, 4
2	Self-Empowerment	5, 6, 7, 8
3	Learning and Self-Redefinition	9,10,11,12
4	Basic Functioning	13,14,15,16
5	Overall Well-Being	17,18,19,20
6	New Potentials	21, 22, 23, 24
7	Spirituality	25,26
8	Advocacy/Enrichment	27,28,29,30

MHRM Total Score = sum of scores for items 1 through 30 (using a 0, 1, 2, 3, 4 Likert scale)

The Thai-MHRM total score is not currently being used in conjunction with any kind of "clinical cut point" to determine who is or is not "in recovery." Nonetheless, anyone scoring below a 60 on Thai-MHRM Total Score (i.e., more than one standard deviation from the mean of 80) is describing their current recovery at a level that is significantly below average compared to their peers.

Validity of Instrument

In this instrument validity, psychometric testing of the Thai-MHRM version were focused on content and construct validity.

Content validity of the instrument was assessed by seven experts. Three experts were professional mental health nurses who work in the hospital from psychiatric hospital. Two experts were nursing instructors working in faculty of nursing, Mahidol University and the Royal Thai Army Nursing College and expert in mental health and psychiatric nursing field. And the other two experts were psychiatrist who have experienced in fields of psychiatry. This expert panel was evaluated the content validation index (CVI) both item level and scale level.

The content validity index for items (I-CVI), a panel of content experts is asked to rate each scale item in terms of its relevance to the underlying construct. These item ratings are on a 4-point ordinal scale in order to avoid having a neutral and ambivalent midpoint. The four points are: 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant and 4 = high relevant (David, 1992). Then, for each item, the I-CVI was be computed as the number of experts giving a rating of either 3 or 4, and was divided by the total number of experts. The score of I-CVI is 1.00 as acceptable. The score I-CVI recommended to not lower than 0.78.

The content validity index for scale/Ave (S-CVI/Ave) is referred to the average proportion of items given a rating of quite/very relevant (3 or 4) across the various judges (Polit & Beck, 2006). S-CVI/Ave will calculate by averages proportion of items rated relevant across experts divide by number of experts. The acceptable score of S-CVI/Ave is 0.90 or higher (Lynn, 1986). The score of S-CVI/Ave is 1.00 as acceptable.

Construct validity: Factor analysis was approach to test the construct validity of the instrument. Confirmatory analysis concerns with the question of how many factors are factor loadings. CFA was used in this study in the last step to assess the overall goodness of fit, the chi-square test will be used (indicates a good fit when values of less than three are achieved); the RMSEA (<0.05) and its confidence interval (90% CI) (indicates a good fit when values of <0.05 are achieved); the Comparative Fit Index (CFI) (displays a range of 0–1, with a minimum goodness-of-fit value of 0.95) and finally the Standardized Root Mean Square Residual (SRMR) (indicates a good fit with values of <0.08).

Reliability of Instrument

In this study was be focused on internal consistency and consistency reliability (stability). The values of the test statistics for Thai-MHRM internal consistency, and test-retest reliability are offered as follows:

Internal Consistency:

The internal consistency was test by *Coefficient alpha (Cronbach's alpha)* which is a reliability index that estimates the internal consistency or homogeneity of a measure composed of several items or subparts. The acceptable score of Cronbach's Alpha Coefficient is .80 or higher.

The internal consistency statistics by subscale for the Thai-MHRM was determined. Alpha for total score = .93. Alphas for each subscale: Overcoming stuckness = .76, Self -empowerment =.75, Learning and self-redefinition= .68, Basic functioning=.78, Overall well-being=.86, New potentials = .81, Spirituality= .86, and Advocacy/Enrichment= .74.

Test-retest reliability is a method of estimating test reliability in which a researcher gives the same test to the same group of research participants on two different occasions. The results from the two tests are then correlated to produce a stability coefficient. For using test-retest reliability for the Thai-MRHM was determined using data from a sub-sample of 70 participants who completed the MRHM twice, with an average of one-week between administrations and considered the acceptance test-retest reliability by correlation coefficient. One-week test-retest reliability was .92. The acceptable score of correlation coefficient is 0.8 or higher.

3.2.2 Strengths Self-efficacy

Strengths Self-Efficacy Scale (SSES) that was developed by Chaichanasakul, et al. (2009) to assess people's perceived personal strengths and the application of these strengths in their daily lives. Content validity of SSES was assessed independently by four experts in positive psychology, a field of study that focuses on looking at the positive attributes of people. The SSES originally contained 34 items and a factor analysis procedure reduced it to 16 items with two subscales namely, strengths application and strengths building. The SSES uses an 11-point scale Likert scale, as recommended by Bandura (2001) when assessing self-efficacy. The SSES includes the following anchors: 0 (not at all confident), 5 (moderately confident), and 10 (extremely confident). Participants' responses were summed and higher scores reflected stronger degrees of strengths self-efficacy. A sample question is: How confident are you in your ability to use your strengths to enhance your relationships?

SSES had been tested out with 214 participants in the community, and it yielded a high level of internal consistency (reliability) for the total scale (Cronbach's alpha, $\alpha = 0.97$). Reliability was also high for the subscale of strengths application and

strengths building, α = 0.97 and 0.91 respectively (Chaichanasakul, et al, 2009). A Cronbach's alpha above 0.70 is acceptable for scientific studies (Schneider, 2003).

3.2.3 Resourcefulness

Resourcefulness Scale (RS) developed by Zauszniewski, Lai and Tithiphontumrong (2006) to assess people's ability to function in potentially adverse situations. RS measured both personal and social resourcefulness simultaneously. Construct validity was taken into account in the development of RS where items were examined in conjunction with the Self-Control Schedule, a well-known measure of personal (i.e. learned) resourcefulness, and the Help Seeking Resource Scale that assessed social resourcefulness. Both the items of the Self-control Schedule and the Help Seeking Resource Scale were correlated, suggesting that items of both personal and social resourcefulness could be combined into an instrument that measured resourcefulness. RS contains 8 items. RS items were scored based on participants' self-report of the degree that they identified themselves with statements depicting resourcefulness, using a Likert scale, namely: 0 (not at all like me), 1 (pretty much not like me), 2 (a little bit not like me), 3 (a little bit like me) 4 (pretty much like me) and 5 (very much like me). A sample question is:

"When I am feeling depressed, I try to think about pleasant events" Scores were summed and higher scores indicated greater resourcefulness (Zauszniewski, et al., 2006).

RS had been tested on 451 chronically ill elders and a high level of internal consistency was obtained for the total scale (α = 0.85). A factor analysis was done, and it showed that RS had two subscales, namely personal resourcefulness and social.

3.2.4 Purpose in life

Ryff's scales of psychological well-being: RPWB, 6-Purpose in life subscale) refer to person having life goals and a belief that one's life is meaningful. Negative items (no. 2,5,6) were recoded before calculate the total score. High scorers on the Purpose in Life scale have goals and a sense of directedness in life, they feel that there is meaning to their life both currently and in the past, they hold beliefs that give life purpose, and they have aims and objectives for living. Low scorers lack a sense of meaning in life, have few goals, lack a sense of direction, do not see purpose in their past, and do not have meaningful outlooks on life (Ryff & Keyes, 1995, P. 727). Chronbach's alpha for the whole Thai-PWB was .93 and the purpose in life subscale the chronbach's alpha was .86 (Kakanang Maneesri, 2007).

3.2.5 Social support

Multi-dimensional Scale of Perceived Social Support: MSPSS (Wongpakaran T. et al., 2011). The MSPSS is intended to measure the extent to which an individual perceives social support from three sources: Significant Others (SO) (Items 1, 2, 5, and 10), Family (FA) (Items 3, 4, 8, and 11) and Friends (FR) (Items 6, 7, 9, and 12). The MSPSS is a brief, easy to administer self -report questionnaire which contains twelve items rated on a seven-point Likert-type scale with scores ranging from 'very strongly disagree' (1) to 'very strongly agree' (7). The MSPSS has proven to be psychometrically sound in diverse samples and to have good internal reliability and test-retest reliability, and robust factorial validity. The revised version conducted by provided better internal consistency, increasing the Cronbach's alpha for the Significant Others sub-scale from .86 to .92.

3.2.6 Alcohol abuse

Alcohol Used Drug Identification: AUDIT (WHO, 2001) as low risk, hazardous drinking, harmful drinking, and alcohol dependent. The AUDIT is a widely used screening instrument to detect hazardous alcohol consumption. It has a high level of validity and reliability. Score of 8 or higher is considered a positive screen. Ten questions from AUDIT scored frequency (item 1), quantity (item 2) of alcohol use, frequency of binge drinking (heavy episodic consumption) (item 3), and consequences (items 4–10) of alcohol consumption. All ten items were given scores ranging from 0 through 4 in the generic tool, depending on the response. A composite score was generated from the 10 items according to the guideline, and a respondent scoring eight or higher was identified as a hazardous alcohol user. Alcohol users who scored below eight were identified as harmless users.

4. Protection of human subjects

This study was conducted with the approval of the Royal Thai Army Medical Department Institutional Review Board (IRBRTA) and committee on human rights related research involving human subjects, clinical research center, faculty of medicine, Thammasat university. Both written and verbal informed consent was obtained in Thai on the same date as the data collection. The informed consent form explained the purpose of the study, benefits, risks, the types of questionnaires and tasks to be completed, and the length of time needed to complete the interview. In particular, it explained about risk prevention and treatment when the risk may occur during the interview or when collection of data is taking place. Permission was obtained from participants prior to data collection. At the setting, the participants were

informed about the purpose of the study and their right to refuse participation. If participants chose not to answer the questionnaire, they could withdraw from the study at any time without penalty. They were also notified that their relationship with the health care team would not be affected. Their names were not used; instead, a code number was used to ensure confidentiality. There was no harm to the participants in this study.

5. Pilot study

The pilot study was carried out in Januray 2018. The aims of the pilot study were to assess the feasibility of using the proposed instruments, to assess psychometric properties, and to evaluate data-collection procedures. It provided an opportunity to test the instructions and the translated instruments including MHRM, Strength Self-Efficacy, and Resourcefulness Scale. These three instruments were used for the first time with MDD Thai people. After obtaining ethical approval from committee on human rights related research involving human subjects, clinical research center, faculty of medicine, Thammasat university, consent was obtained from the directors of Sub-district hospital at Nakornpathom province, to conduct the pilot study. Participants were MDD Thai people who met the following inclusion criteria; 18 years of age and over and cognitively capable of answering questions accurately. Convenience sampling was employed to recruit a sample of 30 persons with MDD. from setting. After the participants were identified and introductions were made, the investigator explained the objectives of the study. They were informed of their rights; if the subject was willing to participate in the pilot study they would be asked to sign a consent form. The participants were then asked to complete the

questionnaire and to evaluate the clarity and appropriateness of the questions. The investigator recorded the time spent to complete the questionnaires, administration issues associated with the questionnaire and suggested improvements. They were interviewed at their homes or at a local place, whichever suited them.

Table 3.2 Psychometric properties of the instruments used in the pilot study (n=30) and main study (n=444)

Instruments	Number of item	Coefficient alpha	
		Pilot study (N=30)	Main study (N=444)
Thai Mental Health Recovery Measure (MHRM)	30	.89	.94
Purpose in Life Scale (PL)	6	.71	.72
Strength Self Efficacy (SSE)	16	.97	.97
Resourcefulness Scale (RS)	8	.85	.88
Multi-dimensional Scale of Perceived Social Support (MSPSS)	12	.86	.92
Alcohol Used Drug Identification (AUDIT)	10	.91	.92

Prior to gathering data, two research assistants, nursing graduates with master's degrees who had previous research experience, were trained to interview participants who met the criteria. The research assistants were instructed and tested to confirm their understanding of sample criteria, definitions, and base concepts of each questionnaire until a satisfactory level had been reached at the discretion of the investigator. Each research assistant and the investigator interviewed five samples and inter-rater reliability was assessed. Agreement between the research assistants and the investigator ranged from 78-92%, with an average agreement of 87%.

6. Data collection

1. A letter asking for the permission to collect the data was sent to the directors of eight hospitals (research settings). After permission from the setting was approved, the researcher made appointments with psychiatrists and nurses of psychiatric outpatient departments in each hospital and informed them about the objectives, process of the study and asked for cooperation.

2. The researcher was study personal records of MDD patients, who had appointments with psychiatrist at psychiatric outpatient clinics each day. Then, the researcher studies patients' medical diagnosis and medical record.

3. The researcher selected the participant by random sampling and congruence with the inclusion criteria. The participants were given clear explanation about the study objectives and process of the study and the right to participate in the study. The participants were asked to sign the informed consent form before data collection.

4. The participants were asked to complete the questionnaires. The researcher examines the questionnaires for completeness of the data. Participants were asked to answer any missing items.

7. Data analysis

Data analysis included the application of descriptive and inferential statistics. Descriptive statistics (i.e. frequency, percentage, range, mean, and standard deviation) were applied to delineate characteristics of the sample, and examine the distribution of demographic variables and the variables of interest in this study using the Statistical Package of the Social Science for Personal Computer (SPSS/PC) version 22. LISREL 8.53, a structural equation modeling program, was used to answer research questions. An alpha level of .05 was selected as the accepted level of significance for this study. The processes used for data analysis are described in the following section.

1. Preparation of data for analysis: Missing data and outliers were determined to prevent compromised analytic power and non-response bias by the researcher. The data was cleansed to prevent random and systematic errors (e.g. typing or coding the wrong value) using descriptive statistics. A total of 486 questionnaires were selected for accuracy of data. The amount of missing data was analyzed using the missing value analysis technique in SPSS. A univariate statistic was used to examine the amount of missing value on each study variable. A missing range of 0.31 to 0.63% was found in the study variables; this represented a value of less than 5% (Tabachnick and Fidell, 2007). However, the statistical analysis showed that one case with a single or more than one missing value on friend support (n=1) was deleted, leaving 444 cases for analysis.

2. The samples' characteristics were analyzed using descriptive statistics.

3. The assumptions underlying multivariate analysis for structural equation modeling were tested, including normality, homoscedasticity, the linearity of relationship and multicollinearity.

4. The measurement model was evaluated to verify that the theoretical constructs were accurately represented by observed variables using confirmatory factor analysis. Separate measurement models were tested for each latent variable.

According to Jöreskog and Sörbom (1996), there are two methods to assess the measurement model, overall fit and measurement model fit. The overall model fit is indicated by chi-square value ($\chi 2$), relative or normed $\chi 2$ ($\chi 2$/df) and goodness of fit

indices. If the goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) are greater than 0.9, the root mean square residual (RMR) is close to zero (Hair et al., 1998) and normed $\chi 2$ is less than 2 (Pedhazur and Schmelkin, 1991), this indicates a good fit. To determine measurement model fit, the observed variable loading related to the construct and the relationship among indicators and the construct were examined. The square multiple correlation (R^2), which is the proportion of variance in the observed variable that is accounted for by the latent variables for which it is an indicator, were examined.

5. Once it was determined that the measurement model fit the data, the hypothesized model was then analyzed. In the proposed model, there were three exogenous variables (purpose in life, social support, and alcohol abuse) and three endogenous variables (strength self-efficacy, resourcefulness). In this step, path coefficient and R^2 were estimated and the effects of the independent variable on dependent variables were determined to answer the research questions and test the

hypotheses. The goodness-fit-indices were used to determine whether the model adequately fit the data.

Summary, a descriptive correlation, cross-sectional research design was applied to test a causal relationship of recovery among persons with MDD. There were 444 participants in the research sample. Questionnaires and a data collection form were used to collect the data addressing the research proposes. All of instruments and questionnaires were reported appropriate validity and reliability. Descriptive statistics, confirmatory factor analysis and structural equation modeling analysis were conducted using the computer program LISREL version 8.53 and SPSS version 22. Finally, criteria for model testing and model modification have been explained.

CHAPTER IV
RESULTS

This chapter presents the findings of the study. Firstly, it presents the characteristics of the participants. Then, the characteristics of the study variables and the preliminary analysis are illustrated. Finally, principle analyses including model testing and hypothesis testing are presented.

1. Characteristics of the study participants

A total of 444 participants aged ranged from 18-60 years and 41.2% of the participants were between 31-45 years old. Male participants accounted for 53.2% of the total. 55% of the participants were married. More than half of the participants had completed bachelor degree education (54.3%). Most of the participants were employed (83.8%). A total of 62.4% of employed participants were government officer. Regarding marital status, almost half of the participants were married (45.9%).

Most of the participants reported no underlying disease (66.9%). Regarding the participants that had underlying disease, 33.1% of the participants expressed that they suffered health problems; hypertension (35.4%), hyperlipidemia (19.1%), and others (not specified) (17.7%) respectively (Table 4.1). A total of 75.5% of the participants regarding the period of health problems were between 1-5 years. Most of the participants taking medication consistency (70.8%).

Table 4.1 Demographic characteristics of the study participants (n = 444)

Demographic characteristic		n	%
Gender			
	Male	236	53.2
	Female	208	46.8
Age			
	18 - 30	113	25.45
	31 - 45	183	41.22
	46 - 60	148	33.33
Education			
	Elementary education	47	10.6
	Secondary education	80	18.0
	Bachelor degree	241	54.3
	Higher Bachelor degree	74	16.7
	Other, No format education	2	0.5
Marital status			
	Married	204	45.9
	Widowed	43	7.7
	Separated	30	6.8
	Single	170	38.3
	Others	6	1.4
Occupation			
	Self employed	60	13.5
	Company employee	35	7.9
	Government officer	277	62.4
	Own business	37	8.3
	Other	35	7.9

Table 4.1 (con't)

Demographic characteristic		n	%
Underlying disease			
	Yes	147	33.11
	No	297	66.89
Health problem			
	Hypertension	52	35.37
	Hypertension and Diabetes Mellitus	13	8.84
	Diabetes Mellitus	6	4.08
	Respiratory problem, Asthma	8	5.44
	Cardiovascular problem	3	2.04
	Hyperlipidemia	28	19.05
	Hypertension, DM, hyperlipidemia	7	4.77
	Allergy	4	2.72
	Others (not specified)	26	17.69
Period of health problem			
	1 – 5 years	111	75.51
	5 – 10 years	28	19.05
	> 10 years	8	5.44
Medication taking behavior			
	Consistency	104	70.75
	Not consistency	43	29.25

2. Result of the study variables

The current study includes latent variable (recovery) and independent variables which are health seeking resources behavior (resourcefulness), health seeking resources mechanism (strength self-efficacy), personal belief (purpose in life), environment (social support), and pathology (alcohol abuse) in persons with MDD.

1.1 Variables

2.1.1 Recovery

The recovery score is a continuous indicator calculated. Table 4.2 demonstrates that the recovery score range from 49 - 120 with a mean of 87.91 (SD= 16.41). The skewness coefficient (.048) was indicating normal distribution While, the kurtosis coefficient reported of -.375. This also indicates that the majority of the participants reported a moderate recovery score.

The eight domain of recovery overcoming stuckness, self-empowerment, learning and self-redefinition, basic functioning, overall well-being, new potentials, spirituality, and advocacy/enrichment had the score from 0 – 16, 0 - 16, 2 – 16, 4 - 16, 4 - 16, 4- 16, 4 – 16, 0 – 8, 4 – 16, with a mean of 11.06 (SD=3.46), 12.13 (SD=2.68), 12.12 (SD=2.61), 10.98 (SD=2.82), 12.05 (SD=2.92), 12.14 (SD=2.72), 5.78 (SD=1.80), and 11.65 (SD=2.76), respectively.

Table 4.2 Descriptive statistics for recovery (n=444)

Recovery	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Overcoming Stuckness	11.06	3.46	0 - 16	0-16	-.889	1.102
Self-Empowerment	12.13	2.68	0 - 16	0-16	-.589	1.085
Learning Self-Redefinition	12.12	2.61	0 - 16	2-16	-.509	.370
Basic Functioning	10.98	2.82	0 - 16	4-16	-.098	-.312
Overall Well-Being	12.05	2.92	0 - 16	4-16	-.533	.029
New Potentials	12.14	2.72	0 - 16	4-16	-.249	-.771
Spirituality	5.78	1.80	0 - 8	0-8	-.666	.320
Advocacy/Enrichment	11.65	2.76	0 - 16	4-16	-.261	-.324
Total	87.91	16.41	0 - 120	49-120	.048	-.375

2.1.2 Strength self-efficacy

Data in table 4.3 depict the total scores of strength self-efficacy which ranged from 20 to 200, with a mean of 125 (SD = 22.62). The skewness value (-.528) indicates that the majority of respondents had a high strength self-efficacy score, however the kurtosis value (1.46) showed a normal distribution. Regarding subscales, the total sum score of perceived strength self-efficacy ranged from 4 to 40, while actual strength self-efficacy varied from 16 to 120. The means of perceived and actual strength self-efficacy were 30.94 (SD = 5.96), 94.07 (SD = 16.99), respectively. Perceived and actual strength self-efficacy values were normally skewed (-.768 and -.955), which indicates that most participants had a moderate level

of strength self-efficacy. In addition, the kurtosis of perceived and actual strength self-efficacy had a normal distribution (1.24 and 1.34, respectively).

Table 4.3 Descriptive statistics for strength self-efficacy (n=444)

Strength Self-Efficacy	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Perceived Strength Self-Efficacy (PSSE)	30.94	5.96	4 - 40	4 - 40	-.768	1.243
Actual Strength Self-Efficacy (ASSE)	94.07	16.99	16 – 160	16 – 120	-.955	1.339
Total	125.00	22.62	20 - 200	20 – 200	-.528	1.455

The figure 4.1 showed that elements of the covariance matrix reproduced by the parameter estimates of the SSE were not significantly different from the covariance of empirical data ($p = .218$); the RMSEA was small (0.034) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (1.00 and .99) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 (1.52) which indicates the relative efficiency of the CFA model in accounting for the data.

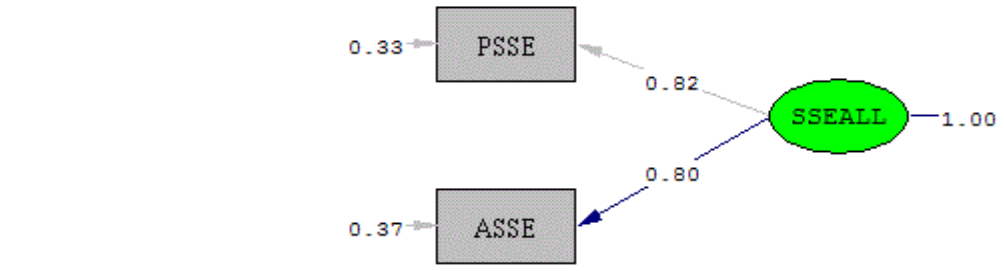


Figure 4.1 Strength Self-Efficacy CFA model

2.1.3 Resourcefulness

Data in table 4.4 illustrate that the total of resourcefulness scores including both personal resourcefulness and social resourcefulness ranged from 9 to 25 and 0 – 15, with a mean of 18.45 (SD = 4.01) and 10.80 (SD = 2.52), respectfully. Moreover, the total sum score for resourcefulness ranged from 1.25 to 5.00, with a mean of 29.25 (SD = 6.03). The skewness value (-.236) was negative which indicates that most participants had a high score for resourcefulness, however the kurtosis value (-.298) was reasonably normally distributed.

Table 4.4 Descriptive statistics for resourcefulness (n=444)

Resourcefulness	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Person resourcefulness (PRS)	18.45	4.01	0 - 25	9-25	-.223	-.562
Social resourcefulness (SRS)	10.80	2.52	0 – 15	0 – 15	-.405	.260
Total	29.25	6.03	0 - 40	10-40	-.236	-.298

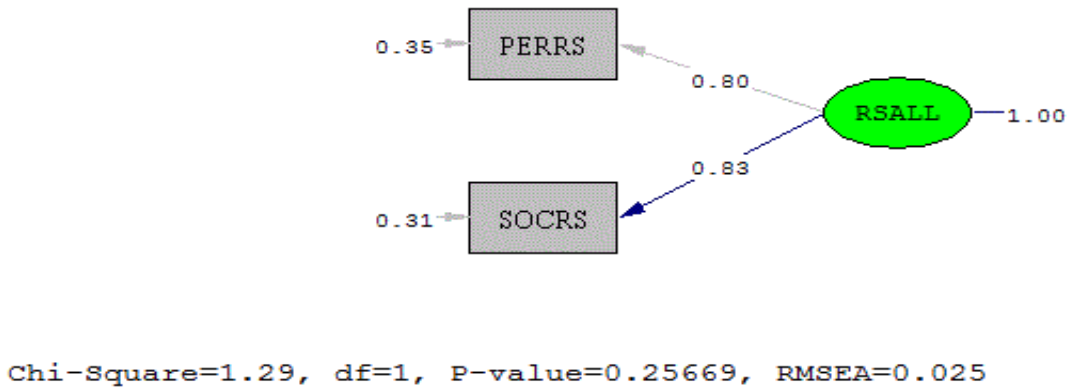


Figure 4.2 Resourcefulness CFA model

The figure 4.2 showed that elements of the covariance matrix reproduced by the parameter estimates of the Resourcefulness were not significantly different from the covariance of empirical data (p = .256); the RMSEA was small (0.025) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (1.00 and .99) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 (1.29) which indicates the relative efficiency of the CFA model in accounting for the data.

2.1.4 Purpose in life

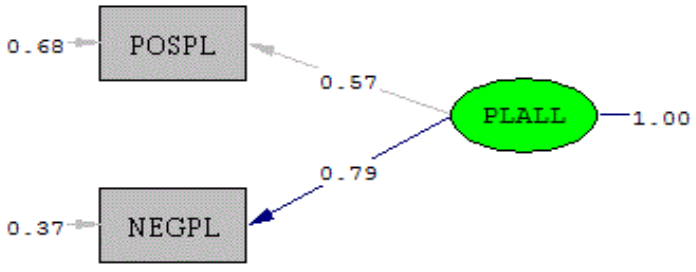
Data in table 4.5 depict the total scores of purpose in life which ranged from 6 to 30, with a mean of 19.10 (SD = 3.36). The skewness value (.048) indicates that the majority of respondents had a moderate purpose in life score, however the kurtosis value (-.375) showed a normal distribution. The scores of positive purpose in life which ranged from 3 to 15, with a mean of 12.04 (SD = .55). The skewness value (-.666) indicates that the majority of respondents had a moderate purpose in life score, however the kurtosis value (.320) showed a normal distribution. The scores of negative purpose in life which ranged from 3 to 15, with a mean of 7.05 (SD = 3.07). The skewness value (-.261) indicates that the majority of respondents had a moderate

purpose in life score, however the kurtosis value (-.324) showed a normal distribution.

Table 4.5 Descriptive statistics for purpose if life (n=444)

Variables	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Positive	12.04	2.27	3 -15	3 -15	-.666	.320
Negative	7.05	3.07	3 -15	3 -15	-.261	-.324
Total	19.10	3.36	6 - 30	6 - 30	.048	-.375

The figure 4.3 showed that elements of the covariance matrix reproduced by the parameter estimates of the Purpose in life were not significantly different from the covariance of empirical data (p = .251); the RMSEA was small (0.027) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (1.00 and .99) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 (1.32) which indicates the relative efficiency of the CFA model in accounting for the data.



Chi-Square=1.32, df=1, P-value=0.25127, RMSEA=0.027

Figure 4.3 Purpose in life CFA model

2.1.5 Social support

Data in table 4.6 show that the total social support scores ranged from 12 to 48, with a mean of 38.70 (SD = .51). The skewness (-.108) and the kurtosis (1.246) values indicate that most participants had moderate social support when dealing with recovery with a flat distribution. The mean of the significant others support score was high (M = 13.25, SD = 2.27) with an actual score range of 4 to 16 and was reasonably normally distributed (Skewness = -.555, and Kurtosis = .591). The mean of the family support score was high (M = 12.67, SD = 2.14) with an actual score range of 4 to 16 and was reasonably normally distributed (Skewness = -.566, and Kurtosis = 783). Furthermore, the mean of the friend support score was moderate (M= 12.78, SD = 2.05) with an actual score range of 4 to 16 and was positively skewed (-.310) indicating that most respondents had a high level of support towards recovery from friends. The kurtosis value (1.157) shows a platykurtic distribution.

Table 4. 6 Descriptive statistics for Social Support (n=444)

Social support	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Significant Others (SOSS)	13.25	2.27	4 - 16	4 - 16	-.555	.591
Family (FASS)	12.67	2.14	4 - 16	4 - 16	-.566	.783
Friends (FRSS)	12.78	2.05	4 - 16	4 - 16	-.310	1.157
Total	38.70	5.87	12 - 48	12 - 48	-.108	1.246

The figure 4.4 showed that elements of the covariance matrix reproduced by the parameter estimates of the Social Support were not significantly different from the covariance of empirical data (p = .325); the RMSEA was small (0.019) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (1.00 and .99) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 (χ^2 /2 =1.17) which indicates the relative efficiency of the CFA model in accounting for the data.

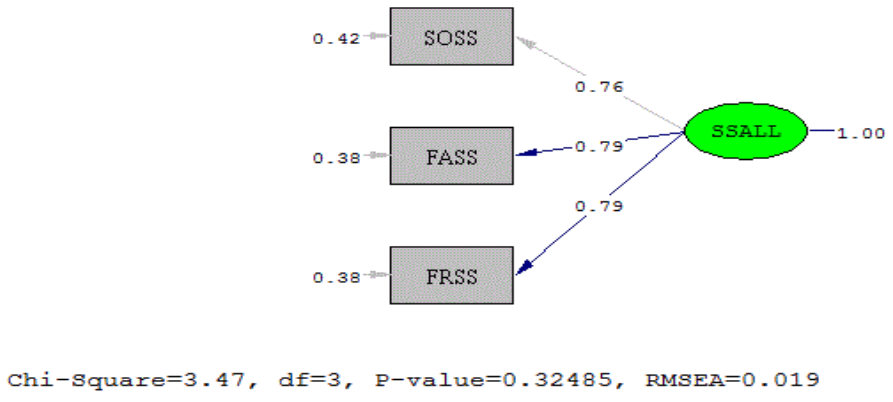


Figure 4.4 Social Support CFA model

2.1.6 Alcohol abuse

Data in table 4.7 illustrate that the total of alcohol abuse scores including both harmless user and hazardous user ranged from 0 to 28 and 0 – 9, with a mean of 5.52 (SD = 6.50) and 1.11 (SD = 1.11), respectfully. Moreover, the total sum score for alcohol abuse ranged from 0 to 33, with a mean of 6.18 (SD = 7.21). The skewness value (1.197) was positive which indicates that most participants had a low score for alcohol abuse, however the kurtosis value (.806) was reasonably normally distributed.

Table 4.7 Descriptive statistics for alcohol abuse (n=444)

Alcohol abuse	Mean	SD	Possible range	Actual range	Skewness	Kurtosis
Harmless user(SCAA)	5.52	6.50	0 - 32	0 - 28	1.267	1.015
Hazardous user(SVAA)	1.11	1.11	0 – 8	0 -9	1.790	2.652
Total	6.18	7.21	0 - 40	0 - 33	1.197	.806

The figure 4.5 showed that elements of the covariance matrix reproduced by the parameter estimates of the Alcohol Abuse were not significantly different from the covariance of empirical data (p = .793); the RMSEA was small (0.000) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (1.00 and .99) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 (0.07) which indicates the relative efficiency of the CFA model in accounting for the data.

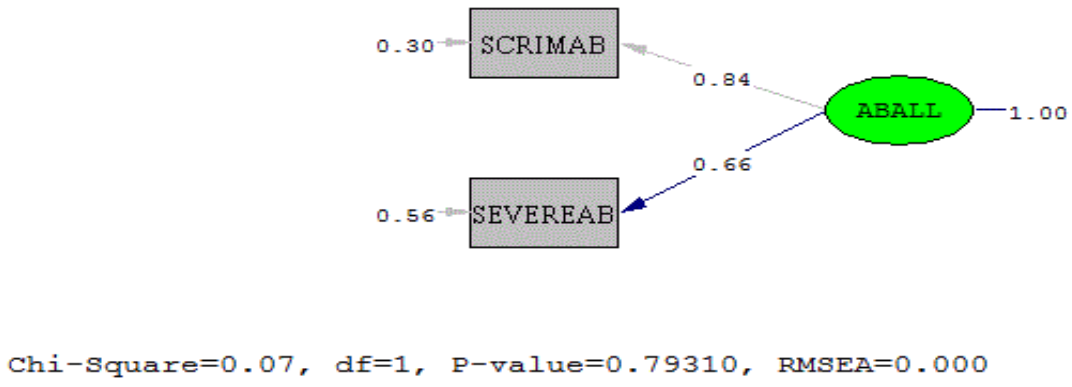


Figure 4.5 **Alcohol Abuse CFA model**

3. Preliminary analysis

According to Tababnick and Fidell (2007), the assumptions underlying multivariate analysis include normality, multi-collinearity, homoscedasticity, and linearity. This section presents the assessment of the statistical assumptions prior to the structural equation model (SEM) analysis.

3.1 Normality

Estimation procedures in SEM assume normal distributions for continuous variables. Univariate normality was examined using a histogram with a normal curve, normal probability plot, skewness, and kurtosis. Multivariate normality was diagnosed through bivariate normality testing using scatter plots for each pair of variables. Most of the normal probability plots of each study variable demonstrate that the line representing the actual data distribution closely follows the diagonal. Skewness values ranged from -.528 to 1.197 and kurtosis values from -.375 to 1.455 (Table 4.8). The Pearson's Skewness Coefficients {skewness= (mean-median)/SD} did not exceed + .2 indicating that these study variables were normally distributed (Hildebrand, 1986 cited in Munro, 2001, p.43). Despite the skew ness and kurtosis values being above +2.58 indicating non-norm al distributions (Hair et al., 2006), West and colleagues (1995) suggested the high of normal and non-normal are greater than 3.00 for skewness and 21.00 for kurtosis. Moreover, by using the PRELIS program (Jöreskog and Sörbom, 1996), the current data met assumptions of multivariate normality with a relative multivariate kurtosis of 1.020, meaning that no serious deviations from multivariate normality existed. The type of estimation used was maximum likelihood. Therefore, the data were acceptable for SEM analysis.

Table 4.8 Normality of study variables (n=444)

Variables	Mean	SD	Skewness	Kurtosis
Strength Self-Efficacy	7.84	1.47	-.528	1.455
Resourcefulness	3.66	0.75	-.236	-.298
Purpose of life	2.93	0.55	.048	-.375
Social support	3.23	0.51	-.108	1.246
Alcohol abuse	0.62	0.72	1.197	.806
Recovery	2.93	0.55	.048	-.375

3.1 Multicollinearity

Bivariate multicollinearity was checked by examining the correlation matrix among individual variables included in the analysis. Bivariate multicollinearity occurs when correlations of any variable is greater than .85 (Munro and Page, 1993). In addition, multivariate multicollinearity occurs when the tolerance values are less than 0.01, the variance inflation factor (VIF) values are greater than 5.3, or the condition index is greater than 30 for two or more coefficients in the same dimension with a value greater than .90 (Hair et. al, 2006). Evidence of multicollinearity was not found, with tolerance values from .67 to .96, and VIF values ranging from 1.05 to 1.50 (Table 4.9). The tolerance and VIF values indicate no evidence of multicollinearity.

Table 4. 9 Assessment for multicolinearity among the predicting variables (n=444)

Variables	Tolerance	VIF
Strength Self-Efficacy	0.850	1.177
Resourcefulness	0.665	1.503
Purpose of life	0.950	1.052
Social support	0.673	1.486
Alcohol abuse	0.961	1.041

3.2 Homoscedasticity and linearity

Residuals scatter plots were evaluated to assess homoscedasticity and linearity (Munro and Page, 1993). The residual pattern did not deviate from a horizontal band; the spread was equivalent across the zero axis within +2 standard deviations which indicates a homoscedasticity and linear relationship. This assumption was therefore reasonably accepted (Appendix D).

4. Principal analysis

To answer the research questions and test the research hypotheses, the model and hypothesis testing are described below.

4.1 Model testing

The model of recovery was tested using a two-step approach: the measurement model and the structural equation model. The measurement model was tested first, followed by the structural equation model.

4.1.1 Assessment of measurement models

The measurement model determines how latent variables or constructs are indicated by the observed variables. In this study, six concept constructs were evaluated including recovery, strength self-efficacy, resourcefulness, purpose in life, social support, and alcohol abuse in order to specify reliability and construct validity using confirmatory factor analysis (CFA). This section presents the fit indices of the measurement models along with the reliability (R^2) and standardized validity coefficient (s λ) using confirmation factor analysis.

Table 4. 10 Goodness of Fit of each construct (n=444)

Construct	χ^2	df	χ^2/df	p-value	GFI	AGFI	RMSEA
SSE	1.52	1	1.52	0.218	1	0.99	0.034
RS	1.29	1	1.29	0.257	1	0.99	0.025
PL	1.32	1	1.32	0.251	1	0.99	0.027
SS	3.47	3	1.17	0.325	0.99	0.99	0.019
AA	0.07	1	0.07	0.793	1	1	0.000
MHR	18.40	12	1.53	0.104	0.99	0.97	0.035

Note: GFI = Goodness of fit index
AGFI = Adjusted goodness of fit index
RMSEA = Root mean square error of approximation
SSE = Strength self-efficacy
RS = Resourcefulness
PL = Purpose in life
SS = Social support
AA = Alcohol abuse
MHR = Recovery

The results of CFA reveal that the five measurement models had a good overall model fit (Table 4.10). The second-order CFA shows that all measurements had low Chi-square values resulting in a non-significant difference level of .05. The 2 χ/df ratio fell within the recommended level of 2, with both GFI and AGFI values close to 1.00 and equal to 1.00 respectively. The RMSEA values ranged from 0.00 to 0.03, indicating validity of measurement constructs (Confirmatory factor analysis of the measurement models are presented in Appendix D, Figure 6-14).

Factor Loading of Each Constructs

Table 4.11 illustrates the loading with t-values and squared multiple correlations among all observed variables for recovery measurement. Based on an accepted level of .05, the t-value test statistic needs to be >+ 1.96 before the hypothesis could be rejected. The results reveal that all sub-scales of the measurement had significant low to high parameter estimates which were related to their specific constructs and validated the relationships among observed variables and their constructs.

Table 4.11 Factor Loading of Each Constructs

Construct and Indicators	Factor loading	t-value	Standard error	R^2
SSE				
• PSSE	0.82	--	--	0.67
• ASSE	0.80	18.03**	0.05	0.63
RS				
• PER	0.80	--	--	0.65
• SOC	0.83	18.93**	0.06	0.69
PL				
• POSPL	0.57	--	--	0.32
• NEGPL	0.79	10.64**	0.18	0.63

Construct and Indicators	Factor loading	t-value	Standard error	R^2
SS				
• SOSS	0.76	--	--	0.58
• PASS	0.79	16.53**	0.06	0.62
• FRSS	0.79	16.63**	0.06	0.62
AA				
• SCREEN	0.84	--	--	0.79
• SEVERE	0.66	10.41**	0.04	0.44
MHR				
• OSMHR	0.59	--	--	0.35
• SEMPHR	0.70	11.30**	0.08	0.50
• LSRMHR	0.87	12.22**	0.09	0.76
• BFMHR	0.82	12.28**	0.09	0.68
• OWBMHR	0.69	9.87**	0.10	0.47
• NPOMHR	0.65	10.13**	0.09	0.43
• SPMHR	0.50	8.99**	0.10	0.25
• AEMHR	0.66	11.20**	0.08	0.43

Note: R2 = Square multiple correlation
SSE = Strength self-efficacy
PSSE = Perceived strength self-efficacy
ASSE = Actual strength self-efficacy
RS = Resourcefulness
PRS = Personal resourcefulness
SRS = Social resourcefulness
PL = Purpose in life
POSPL = Positive purpose in life
NEGPL = Negative purpose in life
SS = Social support
SOSS = Significant others social support
FASS = Family social support
FRSS = Friends social support
AA = Alcohol abuse for recovery
SCREEN = Screening alcohol abuse
SEVERE = Severe alcohol abuse
MHR = Mental health recovery
OSMHR = Overcoming stuckness mental health recovery
SEMPHR = Self-empowerment mental health recovery
LSRMHR = Learning and self-redefinition mental health recovery
BFMHR = Basic functioning mental health recovery
OWBMHR = Overall well-being mental health recovery
NPOMHR = New potentials mental health recovery
SPMHR = Spirituality mental health recovery
AEMHR = Advocacy/Enrichment mental health recovery

In summary, the findings reveal that all measurement models fit the empirical data. Chi-square tests show low values with non-significant levels. Both GFI and AFI values were close to or equal to 1.0, and RMSEA values were less than .05. All measured models' indices were acceptable. The classical testing approach for reliability and validity provided adequate support for the five measures. Therefore, the structural equation analysis was conducted to estimate the hypothesis model of recovery in the following steps.

4.1.2 Assessment of structural model

Once acceptable measurement models were determined, the SEM was analyzed. To be congruent with the hypothesized model presented (Figure 4.1) social support, and pathology are treated as exogenous variables with four observed variables: significant others support, family support, friend support, and alcohol abuse. The endogenous variables include strength self-efficacy, resourcefulness, personal belief and recovery with six observed variables: perceived strength self-efficacy, actual strength self-efficacy, personal resourcefulness, social resourcefulness, purpose in life, and recovery. The equation of SEM is:

$$\eta = \beta\eta + \gamma\xi + \zeta$$

Where η = an m x 1 random vector of endogenous variable

β = an m x m matrix of coefficient of endogenous variable

γ = an m x m matrix of coefficient of exogenous variable

ξ = an n x 1 vector of exogenous variable and

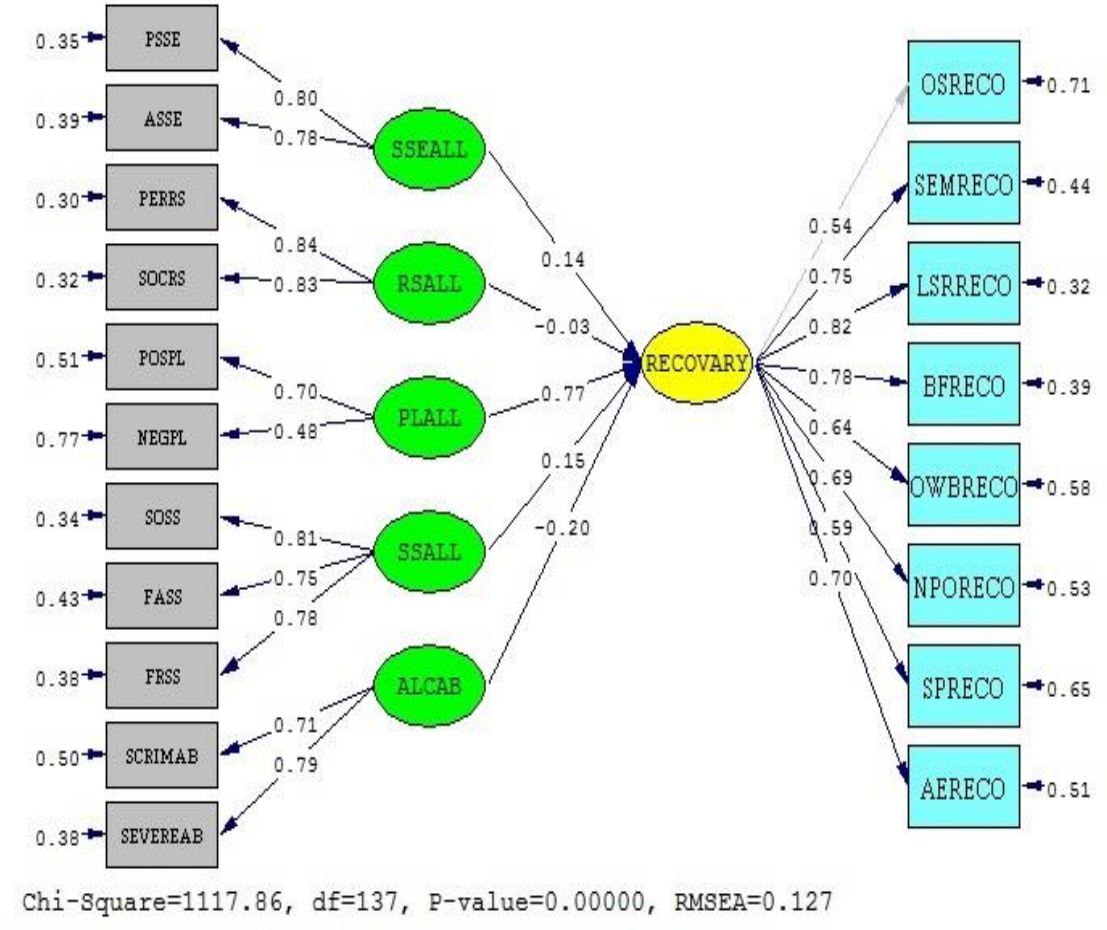
ζ = an m x vector of equation error in the structure relationship between η and ξ (Jöreskog, and Sörbom, 1996-2001:.2)

4.2 Model identification

According to Tabachnick and Fidell's (2007) suggestion, the overidentified model is one with more data points than free parameters. The number of data points is {p (p+1)}/2, where p equals the number of observed variables (Tabachnick & Fidell, 2007,). In the hypothesized model, there are 10 measured variables with a total of 55 data points: 10(10+1)/2= 55 and 36 parameters. The hypothesized model has 69 fewer parameters than data points, thus the model is overidentified which means that it can be identified.

Step one: Hypothesized model testing

The proposed model tested is shown in Figure 4.6 and table. Path coefficients are standardized because it is easier to compare the model coefficient (Hair, et al, 1998). The results reveal that the hypothesized model did not fit the data using the following values χ^2= 1117.86, df = 137, p = 0.00, χ^2 / df = 8.160, GFI = .73, AGFI =.78, and RMSEA= .127. Hair and colleagues (2006) suggested that the significant χ^2 for a sample size greater than 250 is an acceptable value. These diagnostics suggest the hypothesized model provided a bad fit with the data. In order to decrease χ^2 values, the modification indices, standardized residuals, and expected value suggested through the Theta-Epsilon metric (TE) and Theta-Delta (TD) was used. Therefore, the proposed model was refitted to get a suitable model that fit the data.



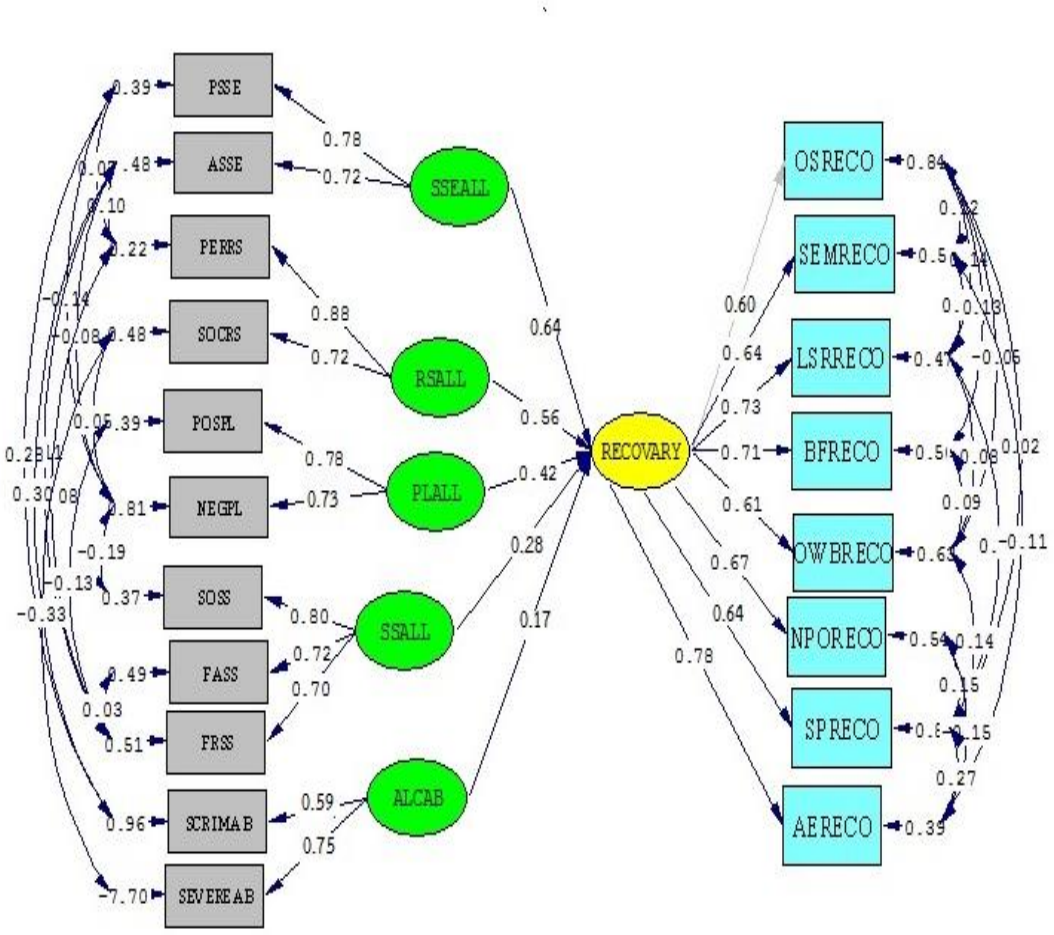
*p<.0, 05

Goodness-of-fit indices: χ^2= 1117.86, df= 137, p= 0.00, GFI=0.73, AGFI=0.78, RMSEA= 0.126.

Figure 4.6 The proposed model of recovery among persons with major depressive disorder

Step two: Model modification

The modified model (Figure 4.7) had a better fit than the hypothesized model. The χ^2 estimate was non-significant (χ^2 = 103.46, df= 89, p= 0.06), indicating a good fit. The model shows the GFI and AGFI were greater than 0.90 (GFI=0.97, AGFI=0.95) and the RMSEA was less than .05 (RMSEA= .027); meanwhile the χ^2 per degree of freedom was 1.162. It can be seen that the p-value and goodness of fit indices have been improved by adding the relationship of the error for strength self-efficacy.



*p<.0, 05,

** p<.001

Goodness-of-fit indices: χ^2 = 103.46, df= 89, p= 0.068, GFI=0.97, AGFI=0.95, RMSEA= 0.027

Figure 4.7 The modified of recovery among persons with major depressive disorder

Table 4.12 Comparison of hypothesized and revised structural model

Goodness of Fit indices	Hypothesized model	Revised model
Chi-square (χ^2)	1117.86	103.46
Degree of freedom (df)	137	89
χ^2 / df	8.004	1.26
p-value	0.000	0.068
Goodness of fit index(GFI)	0.73	0.97
Adjusted goodness-of fit- index(AGFI)	0.78	0.95
Root mean square error of approximate (RMSEA)	0.104	0.024
R^2 for structural equations	-	0.77

Evaluation of goodness of fit criteria:

1. Offending estimates

The modified model had no negative error variance, standardized coefficient close to 1, or very large standard errors indicating that there were no offending estimates.

2. Overall fit index

The absolute fit measures showed that elements of the covariance matrix reproduced by the parameter estimates of the hypothesized model were not significantly different from the covariance of empirical data (p = .06); the RMSEA was small (0.027) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (.97 and .95) respectively. The ratio of χ^2 to the degrees of freedom was less than 2 which indicates the relative efficiency of the competing model in accounting for the data.

3. Measurement model fit

All indicators loading were statistically significant at level .05. The reliability of indicators ranged from 0.25 to 1.00 suggesting that most indicators were sufficient to represent the constructs.

4. Structural model fit

All path coefficients were statistically significant. The correlations between the constructs were not high. The R^2 for the structural equation was 0.77, meaning that the revised model accounted for 77% of the variance in recovery among persons with MDD.

In conclusion, the statistics confirm that the revised model fit with the empirical data.

4.3 Hypothesis testing

Five hypotheses and their direct and indirect effects were estimated. A summary of the effects of the causal variables on the affected variables is presented in table 4.13. The hypotheses of the proposed causal model of recovery among persons with major depressive disorder were examined and the findings were as follows.

Table 4.13 Summary of the causal variables on the affected variables (n=444)

Causal variable	**Affected variables**	
	REOVERY	
	DE	**TE**
Strength Self	0.64	0.64
Efficacy	(3.59**)	(3.59**)
Resourcefulness	0.56	0.56
	(4.20**)	(4.20**)
Purpose in life	0.42	0.42
	(2.24**)	(2.24**)
Social support	0.28	0.28
	(2.69**)	(2.69**)
Alcohol Abuse	-0.17	-0.17
	(-2.83**)	(-2.83**)
R^2	0.77	

** p<.01 (t-value≥2.58)

4.3.1 Effect of strength self-efficacy on recovery

Strength self-efficacy had a significant positive direct effect on recovery (β = .64, p<.001). The total effect of strength self-efficacy had a significant positive direct effect on recovery (β = .64, p<.001)

4.3.2 Effect of resourcefulness on recovery

Resourcefulness had a significant positive direct effect on recovery (β = .56, p <.001). The total effect of resourcefulness had a significant positive direct effect on recovery (β = .56, p<.001)

4.3.3 Effect of purpose in life on recovery

Purpose in life had a significant positive direct effect on recovery (β = .42, p<.001). The total effect of purpose in life had a significant positive direct effect on recovery (β= .42, p<.001.)

4.3.5 Effect of social support on recovery

Social support had a significant positive direct effect on recovery (β = .28, p<.001). The total effect of social had a significant positive direct effect on recovery (β = .05, p<.001)

4.3.5 Effect of alcohol abuse on recovery

Alcohol abuse had a significant negative direct effect on recovery (β = -.17, p<.001). The total effect of alcohol abuse had a significant negative direct effect on recovery (β = -.17, p<.001).

The equation of SEM illustrated that the recovery model fit with the empirical data, and explained 77% of the variance of recovery among persons with MDD. Strength self-efficacy was the most influential factor direct affecting recovery, follow by resourcefulness, purpose in life, social support, and alcohol abuse, respectively.

Hypothesis 1: *Strength self-efficacy has a positive direct effect on recovery among persons with MDD.* **Accept**

Hypothesis 2: *Resourcefulness has a positive direct effect on recovery among persons with MDD.* **Accept**

Hypothesis 3: *Purpose in life has a positive direct effect on recovery among with MDD.* **Accept**

Hypothesis 4: *Social support has a positive direct effect on recovery among with MDD.* **Accept**

Hypothesis 5: *Alcohol abuse has a negative direct effect on recovery among persons with MDD.* **Accept**

In summary, the descriptive static characteristics of study variables have been explained. The preliminary analysis demonstrated that the assumptions for SEM analysis were not violated. Each one of the measurement models was examined and confirmed the construct validity. Following this, the hypothesized causal model of recovery among persons with MDD was analyzed and modified. The modified causal model fits well with the empirical data. All of the research hypotheses were supported, the model significance and is practical for explaining factors affecting recovery among persons with MDD. As a final point, all the variables in the modified model explain approximately 77% of the variance in overall recovery.

CHAPTER V
DISCUSSION, IMPLICATIONS, AND RECCOMMENDATIONS

The findings of the study will be discussed in this chapter. It includes a conclusion of the study participants and variables, discussion of the variables, model and hypothesis testing, implications for nursing, and recommendations for future research.

1. Summary of the study participants

The statistical analyses demonstrated that the characteristics of the study participants were similar to those of previous studies. Participants aged ranged from 18-60 years and 41.2% of the participants were between 31-45 years old. Male participants accounted for 53.2% of the total. 55% of the participants were married. More than half of the participants had completed bachelor degree education (54.3%). Most of the participants were employed (83.8%). A total of 62.4% of employed participants were government officer. Regarding marital status, almost half of the participants were married (45.9%).

Most of the participants reported no underlying disease (66.9%). Regarding the participants that had underlying disease, 33.1% of the participants expressed that they suffered health problems; hypertension (35.4%), hyperlipidemia (19.1%), and others (not specified) (17.7%) respectively. A total of 75.5% of the participants regarding the period of health problems were between 1-5 years. Most of the participants taking medication consistency (70.8%).

2. Summary of the study variables

2.1 Recovery

The recovery score is a continuous indicator calculated. Table 4.2 demonstrates that the recovery score range from 49 - 120 with a mean of 87.91 (SD= 16.41). The skewness coefficient (.048) was indicating normal distribution While, the kurtosis coefficient reported of -.375. This also indicates that the majority of the participants reported a moderate recovery score.

The finding show that can be defined recovery as a health goal for persons with major depressive disorder. Although, there were previous studies defined recovery definitions include the criterion of symptom remission or stabilization as well as improved psychosocial functioning, which has been defined in a variety of ways. Furthermore, Liberman & Kopelowicz (2002) provided an expanded list of criteria to consider in operational definitions of recovery outcome. The list included symptom remission; working or studying in a normative setting; independent living without supervision of money, self-care skills, and medication; social activities with peers; supportive family relations; recreational activities in normative settings; use of problem solving skills when faced with conflict; life satisfaction; positive self-esteem and participation as a citizen in voting, self-advocacy, neighborliness, and other civic areas. However, the result of the study reflected that recovery not only defined as absence of symptom, can be assigned recovery as health goal. Recovery, also defined as the change of individual's feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to depressive symptoms. Persons with MDD can overcoming stuckness, maintain his/her self-empowerment, learning and self-redefinition, ability to act as basic functioning,

seeking well-being, creates new potentials in life, doing as spirituality and understand their advocacy/enrichment.

Strength self-efficacy

The findings show that strength self-efficacy which ranged from 20 to 200, with a mean of 125 (SD = 22.62). The skewness value (-.528) indicates that the majority of respondents had a high strength self-efficacy score, however the kurtosis value (1.46) showed a normal distribution. Regarding subscales, the total sum score of perceived strength self-efficacy ranged from 4 to 40, while actual strength self-efficacy varied from 16 to 120. The means of perceived and actual strength self-efficacy were 30.94 (SD = 5.96), 94.07 (SD = 16.99), respectively.

The concept of self-efficacy in Self-Efficacy is about people's beliefs about their capabilities to produce designated levels of performance (Bandura, 1977). The two major components of self-efficacy theory are perceived self-efficacy expectations (judgment about personal ability to perform tasks) and outcome expectations (belief that behavior will result in a specific outcome). Even though conflicting information had been discussed about which self-efficacy component was a stronger predictor of behavior (McAuley, 1993 and Resnick & Spellbring, 2009), some researchers had found that strength self-efficacy and outcome expectations both can predicted recovery (Stanley & Maddux, 1996).

The finding reflected that persons with MDD. who recovered from depression have a high level of strength self-efficacy. It might be assumed that effects of maintain strength self-efficacy would be enhancing the confidence in her/his ability to recover from their depression.

Resourcefulness

The resourcefulness score of the study illustrate that the total of resourcefulness scores including both personal resourcefulness and social resourcefulness ranged from 9 to 25 and 0 – 15, with a mean of 18.45 (SD = 4.01) and 10.80 (SD = 2.52), respectfully. Moreover, the total sum score for resourcefulness ranged from 1.25 to 5.00, with a mean of 29.25 (SD = 6.03). The skewness value (-.236) was negative which indicates that most participants had a high score for resourcefulness, however the kurtosis value (-.298) was reasonably normally distributed.

According to the Resourcefulness Theory, resourcefulness can impact on quality of life including mental health outcomes (Zauszniewski, 2006). In an experimental study, it was found that people with greater resourcefulness had better control over non-contingency events and coped better. Participants scoring high on resourcefulness tended to refer to their successes while participants with lower resourcefulness tended to focus on their failures (Rosenbaum & Ari, 1985). In two studies relating resourcefulness to depression in the caregiver population, the results revealed that resourcefulness was negatively related to depressive symptoms. (Musil, Warner, Zauszniewski, Wykle & Standing, 2009 and Zauszniewski, Bekhet & Suresky, 2009). Similarly, low resourcefulness had also been shown to be associated with poor general mental health (Zauszniewski, Bekhet & Suresky, 2009). Regarding to people with mental illnesses, the results drew great similarity. A study showed that patients (N=112) who had higher resourcefulness at intake had lower depression scores after weeks of cognitive behavioral therapy.

The findings reflected that the persons with MDD. will recover might be maintain the resourcefulness skill. Individual who have high level of resourcefulness might have a chance to recover from depression.

1.2 Purpose in life

The purpose in life variable was assigned as predicting factor of recovery in terms of personal belief. The result of the current study reported the total scores of purpose in life which ranged from 6 to 30, with a mean of 19.10 (SD = 3.36). The skewness value (.048) indicates that the majority of respondents had a moderate purpose in life score, however the kurtosis value (-.375) showed a normal distribution. The scores of positive purpose in life which ranged from 3 to 15, with a mean of 12.04 (SD = .55). The skewness value (-.666) indicates that the majority of respondents had a moderate purpose in life score, however the kurtosis value (.320) showed a normal distribution. The scores of negative purpose in life which ranged from 3 to 15, with a mean of 7.05 (SD = 3.07). The skewness value (-.261) indicates that the majority of respondents had a moderate purpose in life score, however the kurtosis value (-.324) showed a normal distribution.

Ryff (2005) suggested that patient can provides the essential and motivating message of a better future that they can and do overcome the barriers and obstacles that confront them. Positive hope as goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living. Schaefer and colleagues (2013) proposed that having purpose in life may motivate reframing stressful situations to deal with them more productively, thereby facilitating recovery from stress and trauma. In turn, enhanced

ability to recover from negative events may allow a person to achieve or maintain a feeling of greater purpose in life over time.

The results the role play of purpose in life affected recovery among persons with MDD. Similar with the previous study proposed that the positive personal beliefs might help individual accomplish health goal (Lai, C.Y., 2013).

2.5 Social Support

The findings showed that the total social support scores ranged from 12 to 48, with a mean of 38.70 (SD = .51). The skewness (-.108) and the kurtosis (1.246) values indicate that most participants had moderate social support when dealing with recovery with a flat distribution.

Perhaps Social support has been of interest as a predictor of recovery outcome in depressed patients. Several studies have examined the link of social support to depression. Clayton and her colleagues, (2014) have reported that a close, confiding relationship and physical proximity (i.e., social support) offers protection against the development of depression in persons in stressful situations. Warheit (2009) provided evidence that individuals with low social support are at much greater risk of developing depressive symptoms. In their study of 44 outpatients with unipolar depression, Flaherty and colleagues, (2013) found that patients with high social support had significantly better depression rating scores than did patients with low social support. The findings reflected that social support is a vital and effective part of depression recovery. It can turn around damaging isolation, affect a person's life focus, and contribute solution for depression management. (Krull, E., 2016). In summary, social support has a strong connection to depression but not significantly affected recovery.

2.6 Alcohol abuse

The result showed the total of alcohol abuse scores including both harmless user and hazardous user ranged from 0 to 28 and 0 – 9, with a mean of 5.52 (SD = 6.50) and 1.11 (SD = 1.11), respectfully. Moreover, the total sum score for alcohol abuse ranged from 0 to 33, with a mean of 6.18 (SD = 7.21). The skewness value (1.197) was positive which indicates that most participants had a low score for alcohol abuse, however the kurtosis value (.806) was reasonably normally distributed.

As expected, the result of the current study confirmed that alcohol use disorders (abuse and dependence) are highly prevalent in people with depression and/or anxiety (Burns & Teesson , 2002; Hasin et al., 2007; Boschloo et al., 2011) and have been suggested to be important predictors of a poor outcome. However, few prospective studies have examined the effects of alcohol use disorders on the natural course of depressive and anxiety disorders, and these have reported conflicting results. For example, people with comorbid alcoholism have a decreased rate of remission of major depressive disorder (Mueller et al., 2014). One well-known group is variation of AA called “Double Trouble in Recovery.” It does really help to have support that persons with MDD. who have a problem with alcohol abuse might be poor recovery.

3. Model and hypotheses testing results

The result of the SEM analysis demonstrated that the modified causal model fits well with the empirical data. Although one of the research hypotheses was not supported, the model retained significance and is practical for explaining factors affecting recovery among persons with MDD. As a final point, all the variables in the modified model explain approximately 68% of the variance in overall recovery.

3.1 Hypothesis testing

The findings reveal that five hypotheses were fully supported by the empirical data.

Hypothesis 1: *Strength self-efficacy has a positive direct effect on recovery among persons with MDD.* **Accept**

As expected, the result of the current study supports the hypothesis that strength self-efficacy had a significant positive direct effect on recovery ($\beta = .53$, $p<.01$) and a non-significant negative indirect effect on recovery ($\beta = -.06$, $p<.01$). The total effect of strength self-efficacy had a significant positive direct effect on recovery ($\beta = .47$, $p<.001$).

Health-seeking mechanism concept will be represented by the variable "strength self-efficacy." (Glazer & Pressler, 1989). Strength self-efficacy is *persons's beliefs about their capabilities to produce designated levels of performance* (Bandura, 1977). Strength self-efficacy can motivate a person to approach situations where they can implement their personal strengths to influence their performance in tasks they want to accomplish (Chaichanasakul et al., 2009). The idea of linking personal strengths and self-efficacy (strengths self-efficacy) is relatively new. The results of the study on people employed within an organization showed that strengths

self-efficacy was positively correlated with employee engagement (Collins, 2009). Even though this was not a mental health study, the results suggested that the presence of strengths self-efficacy brought about a positive outcome. Often, people dealing with stressful life events needs a feeling of control over the situation and that they can effect changes in their lives (Taylor, Kemeny, Gruenewald & Reed, 2000). Hence, a first step for many people to learn how to cope with and manage psychiatric illnesses may be to establish a sense self-efficacy (Davidson, Shahar, Lawless, Sells & Tondora, 2006). The results of Huiting's (2012) study indicated that both strengths self-efficacy had direct correlations with mental health recovery. As strengths self-efficacy, the likelihood of recovery also increased. Therefore, strength self-efficacy would have a positive direct on recovery through intervening factors in persons with MDD. Even though conflicting information had been discussed about which self-efficacy component was a stronger predictor of behavior (McAuley, 1993 and Resnick & Spellbring, 2009), some researchers had found that strength self-efficacy and outcome expectations both can predicted recovery (Stanley & Maddux, 1996).

The finding reflected that persons with MDD. who recovered from depression have a high level of strength self-efficacy. It might be assumed that effects of maintain strength self-efficacy would be enhancing the confidence in her/his ability to recover from their depression.

Hypothesis 2: *Resourcefulness has a positive direct effect on among persons with MDD.* **Accept**

As expected, the result of the current study supports the hypothesis that resourcefulness had a significant positive direct effect on recovery ($\beta = .26$, $p > .01$) and significant negative indirect effect on recovery ($\beta = .18$, $p < .01$). The total effect

of resourcefulness had a significant positive direct effect on recovery ($\beta = .44$, $p<.05$). In that conceptualization, resourcefulness is defined as *the ability one has to engage in everyday activities without the assistance of others as well as the ability to seek help when the daily activities cannot be performed independently* (Zauszniewski, 2006). Resourcefulness has been linked to improvements in mental health. In a study of 104 cognitively intact elders who were dealing with the stressor of relocation, resourcefulness made the relocation process more psychologically pleasant by acting as a moderating variable to relocation controllability and adjustment (Bekhet, Zauszniewski & Wykle, 2008). In an experimental study, it was found that people with greater resourcefulness had better control over non-contingency events and coped better. Participants scoring high on resourcefulness tended to refer to their successes while participants with lower resourcefulness tended to focus on their failures (Rosenbaum & Ari, 1985). In two studies relating resourcefulness to depression in the caregiver population, the results revealed that resourcefulness was negatively related to depressive symptoms. (Musil, Warner, Zauszniewski, Wykle & Standing, 2009 and Zauszniewski, Bekhet & Suresky, 2009).

Similarly, low resourcefulness had also been shown to be associated with poor general mental health (Zauszniewski, Bekhet & Suresky, 2009). With regards to people with mental illnesses, the results drew great similarity. A study showed that patients (N=112) who had higher resourcefulness at intake had lower depression scores after weeks of cognitive behavioral therapy. Therefore, the result confirmed that resourcefulness would have a positive direct on recovery through intervening factors in persons with MDD.

The findings reflected that the persons with MDD. will recover might be maintain the resourcefulness skill. Individual who have high level of resourcefulness might have a chance to recover from depression.

Hypothesis 3: *Purpose in life has a positive direct effect on recovery in persons with MDD.* **Accept**

As expected, the result of the current study supports the hypothesis that purpose in life had a significant positive direct effect on recovery ($\beta = .25$, $p<.01$). The total effect of purpose in life had a significant positive direct effect on recovery ($\beta.25$, $p<.01$). Personal belief concept will be represented by "purpose in life" which is the variable that enhancing attainment optimal health within intervening factor. Ryff (2005) defined purpose in life of individual as *person can provides the essential and motivating message of a better future that they can and do overcome the barriers and obstacles that confront them. He or she having goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.* In addition, Schaefer and colleagues (2013) proposed that having purpose in life may motivate reframing stressful situations to deal with them more productively, thereby facilitating recovery from depression. In turn, enhanced ability to recover from negative events may allow a person to achieve or maintain a feeling of greater purpose in life over time.

The results the role play of purpose in life affected recovery among persons with MDD. Similar with the previous study proposed that the positive personal beliefs might help individual accomplish health goal (Lai, C.Y., 2013).

Hypothesis 4: *Social support has a positive direct effect on recovery in persons with MDD.* **Accept**

As expected, the result of the current study reject the hypothesis as social support had a non-significant positive direct effect on recovery (β = .05, p=.69). Social support has been of interest as a predictor of recovery in depressed patients. Zimet and colleagues (2008) define perceived social support as *an individual's perception of how resources can act as a buffer between stressful events and symptoms.* According to Zimet et al. (2008), perceived social support consists of three dimensions, namely family, friends and significant other. Whereas family and friends are self-explanatory, a significant other could be a supervisor, peer, co-worker or any other person not explicitly defined, but with whom the individual has contact on a daily basis. Several studies have examined the link of social support to recovery in MDD person. Clayton and her colleagues, (2004) have reported that a close, confiding relationship and physical proximity (i.e. social support) offers protection against the development of depression in persons in stressful situations. Warheit (2009) provided evidence that individuals with low social support are at much greater risk of poor recovery. In their study of 44 outpatients with MDD, Flaherty and colleagues, (2013) found that patients with high social support had significantly better recovery from depression than did patients with low social support.

The findings reflected that social support is a vital and effective part of depression recovery. It can turn around damaging isolation, affect a person's life focus, and contribute solution for depression management. (Krull, E., 2016). In summary, social support has a strong connection to depression but not significantly affected recovery.

Hypothesis 5: *Alcohol abuse has a negative direct effect on recovery in persons with MDD.* **Accept**

As expected, the result of the current study supports the hypothesis that alcohol abuse had a significant negative direct effect on recovery ($\beta = .19$, $p<.01$). The total effect of alcohol abuse on recovery was .19, $p<.01$. Pathology will be represented by alcohol abuse which is the variable that decline attainment optimal health within intervening factor. Major depressive disorder often co-occurs with substance use disorders, especially alcohol use disorders, and the course of each of these problems seems be complicated by the other (Ostacher, 2007). The previous studies showed that current alcohol and alcohol abuse in depressed individuals is known to hamper active treatment and is predictive of poor outcome in response to antidepressant treatment. Moreover, current or past substance abuse was associated with longer time to recovery from depression (Akiskal, 1982; O'Connell et al., 1991; Ostacher, 2010). One well-known group is variation of AA called "Double Trouble in Recovery." It does really help to have support that persons with MDD. who have a problem with alcohol abuse might be poor recovery.

In summary, the concurrence of substance abuse with depression is very common. Alcohol and drug abuse, in combination with depression, are predictors of poor recovery.

3.2 The conceptual model of the study

According to Schlotfeldt's (1975) health-seeking model, she defined health as a goal of the individual (Glazer & Pressler, 1989). Schlotfeldt (1975) conceptualized health as a dynamic state that may be inferred from one's level of physical and psychological functioning (Glazer & Pressler, 1989). In this study, the "recovery" of

the MDD person will be the outcome variable of interest. As similar as the recovery definition that refer to the change of individual's feelings, thoughts, and behaviors that give one a renewed sense of hope and purpose, a new sense of oneself, or better adjustment to depressive symptoms (Young et al., 1999). Therefore, those two major constructs are quite similar and suitable for employ the Schlotfeldt's (1975) health-seeking model to explain the recovery phenomena among persons with MDD. Young and colleagues (1999) proposed that everyone experiences problems in living at some time in their life. Sometimes these problems are very serious and include significant emotional or behavioral problems, or psychiatric symptoms. Moreover, the process of recovery is complex and is different for each individual. This process may include changes in your feelings, thoughts, and behaviors that give you a renewed sense of hope and purpose, a new sense of yourself, or better adjustment to psychiatric symptoms.

In Schlotfeldt's (1975) health-seeking model identifies concepts derived from the three major constructs described above. Health-seeking resources include health-seeking mechanisms and health-seeking behaviors. Whereas *health-seeking mechanism* are inherent physiological, psychological, or sociological characteristics, *health-seeking behaviors* represent a range of acquired physiological, psychological, social, cultural, institutional, philosophic, or spiritual; activities of the person that are necessary to achieve health (Glazer & Pressler, 1989). Intervening factors include *personal beliefs, environment factors, and pathology* (Schlotfeldt, 1975), both of which represent aspects or dimensions of the larger construct, intervening factors. Finally, Schlotfeldt (1975) conceptualizes the health goal in terms of optimal physical

and mental health. Therefore, optimal health represents the concept extracted from the larger construct, health goal.

4. Conclusion

The purposes of this descriptive research was to examined the causal relationships among strength self-efficacy, resourcefulness, purpose in life, social support, alcohol abuse, and recovery among persons with major depressive disorder (MDD). The sample, 444 participants with MDD aged between 18 - 60 years who resided in eight health services within Bangkok and four regions of Thailand was obtained by simple random sampling. Research instruments were a personal data sheet, the Strength Self-Efficacy Scale, the Resourcefulness Scale, the Purpose in Life subscale, the Multidimensional Scale Perceive Social Support, the Self-efficacy for Physical Activity, the Social Support for Physical Activity questionnaires, the Alcohol Use Identification Test and the Thai Mental Health Recovery Measure. Data were analyzed using descriptive statistics and structural equation modeling.

The goodness of fit indices illustrated that the recovery model fit with the empirical data, and explained 77% of the variance of recovery among persons with MDD. Strength self-efficacy was the most influential factor direct affecting recovery, follow by resourcefulness, purpose in life, social support and alcohol abuse, respectively. According to the current study results, the variables affected recovery include strength self-efficacy (.64), resourcefulness (.56), purpose in life (.42), social support (.28) ,and alcohol abuse (-.17).

5. Implications for nursing

The implications of this study with respect to nursing are as follows:

Implications for nursing science

Since little is known about the determinants for recovery among persons with major depressive disorder, this study proposed a causal model which explained 77% of the variance in MDD' recovery. The results of this study contribute in the nursing knowledge by explaining the important effects of strength self-efficacy, resourcefulness, purpose in life, social support, and alcohol abuse on the likelihood of persons with major depressive disorder in recovery. This study also contributes to nursing's body of knowledge by developing a health seeking theory to explain and guide the promotion of recovery in this group.

Implications for nursing practice

Based on the findings of the current study, some participants believed that being recovery from depression could contribute personal competences and skills including having strength self-efficacy, resourcefulness, purpose in life, social support, and have not alcohol abuse. Nurses who are responsible for promoting the health of persons with MDD should be provide a nursing intervention enhancing recovery by focus those essential factors. The further interventions should be concerned about enhancing strength self-efficacy, supporting resourcefulness, motivating purpose in life, maintain social support and preventing alcohol abuse to increase recovery among persons with major depressive disorder. Motivation should be provided to depressive person to achieve performance along with interdisciplinary recovery programs.

The results of this study suggest that strength self-efficacy is the most influencing recovery among persons with MDD. Therefore, mental health professions would provide the strength self-efficacy lessons or activity to this group as part of daily routine nursing care. In addition, health profession should provide resources and activities that may be helpful to increase resourcefulness. As resourcefulness increases, favorable changes resulting from engaging in recovery are likely to occur. This program should include activities regarding the knowledge about alcohol use, provide encouragement and reinforce the depressive person reduce alcohol drinking. Nurses need to be ready to address the changes in these expectations once recovery has begun. However, further

research based on the findings of the current study should be considered before any proposed program is conducted for this target group.

Implications for nursing education

The findings of the present study suggest the need to promote recovery among persons with MDD in light of the significance of strength self-efficacy, resourcefulness, purpose in life, social support, and alcohol abuse. That is, engagement in recovery could be improved through a holistic approach, particularly one incorporating personal health seeking mechanism and intervening factors. Thus, the recovery model should be included in the curriculum of mental health and psychiatric nursing.

6. Recommendations for future research

Instrumentation issues

Psychometric evaluations of the instruments used in this study including content validity, construct validity, internal consistency and stability were satisfactory. All of

instruments are subjective measure; the responses of participants can be over-or-under estimated for a variety of reasons such as personal influences, and social desirability. Regarding Thai Mental Health Recovery Measure measurement, it was modified to suit the Thai context, and this is the first time that it has been used to study Thais depressive person. Although the instrument was found to be suitable for measuring recovery with an acceptable internal consistency, only a small proportion of the variability in recovery was explained by the recovery model in this study. The additional variables such as strength self-efficacy, resourcefulness, social support, and purpose in life need to be explored to fully understand the recovery of MDD people.

Data collection issues

Interviews were found to be appropriate for MDD people, since most participants had at least a primary education. The researcher and co-researcher were aware of the importance of clarity in the respondents' answers and the words used in the questions. In addition, the face-to-face interview might have led the participants to feel pressured into answering the questions according to social norms. As a consequence, these factors might have had some influence on the internal validity of the research. The investigator should therefore reserve time to collect data and be concerned about the social desirability issue.

Research design issues

This study had a cross-sectional design. All the variables in the theoretical model were measured at one point in time and not manipulated during the study period. Nevertheless, this de sign is a systematic way to determine predicted relationships and a preliminary step for intervention research.

Theoretical issue

Results from theoretical modeling can guide further theory development and testing. This study confirms that strength self-efficacy, resourcefulness, purpose in life, social support, and alcohol abuse can predict recovery among persons with MDD. However, social support was not a factor influencing self-efficacy. These findings are consistent with Schlofeldt's health seeking model (1977). Accordingly, Schlotfeldt's health seeking model believed that humans use both health-seeking mechanisms (innate) and health-seeking behaviors (acquired) in the quest for optimal physical and mental health. Schlotfeldt's health seeking model was developed to promote nursing activities that will stimulate health seeking behaviors within the person. Existing studies employed health seeking model as a nursing theory that provides a roadmap for exploring the relationships among health seeking resources, intervening factor, and health goal (Zauszniewski, 1992; Huiting, 2012). The health seeking model has three major constructs which are health seeking resources, intervening factor, and a health goal. Previous studies were conducted to explain the relationship in some part of each concept and selected some variables to be the indicator for each concept. These findings reflected that recovery was the health goal by Schlotfeldt's health seeking model explanation. While, strength self-efficacy and resourcefulness were the representative variable of health seeking resources. For intervening factor of the theory explanation; purpose in life was the variables representative of personal belief, social support might be a representative of social resources concept. Whereas, alcohol abuse can be the representative factor for pathology of health seeking theory.

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APPENDICES

Appendix A: Patient/Participant Information Sheet

Appendix B: Informed Consent Form

Appendix C: Instruments of the study

Appendix D: Normality Q-Q Plot

Appendix E: Permission document for collecting data and ethical consideration

Appendix F: Reliability of research instruments

APPENDIX

A Patient/Participant Information Sheet

เอกสารชี้แจงข้อมูล/คำแนะนำแก่ผู้เข้าร่วมการวิจัย

(Patient/Participant Information Sheet)

ชื่อโครงการ โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่ป่วยด้วยโรคซึมเศร้า

ชื่อผู้วิจัย พันโทหญิง นุสรา วรภัทราทร

สถานที่วิจัย แผนกจิตเวชและประสาทวิทยาโรงพยาบาลพระมงกุฎเกล้า โรงพยาบาลจิตเวชในภาคต่างๆ และศูนย์บริการสาธารณสุขชุมชน กรุงเทพมหานคร ที่บริการงานด้านสุขภาพจิตและจิตเวช

บุคคลและวิธีการติดต่อเมื่อมีเหตุฉุกเฉินหรือความผิดปกติที่เกี่ยวข้องกับการวิจัย

พันโทหญิง นุสรา วรภัทราทร
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ผู้สนับสนุนการวิจัย

ความเป็นมาของโครงการ

โรคซึมเศร้าเป็นความผิดปกติทางจิตอันมีลักษณะโดยรวมคือ มีภาวะซึมเศร้าต่อเนื่องร่วมกับมีความภูมิใจแห่งตนต่ำ และขาดความสนใจหรือสุขารมณ์ในกิจวัตรซึ่งปกติน่าพอใจ คำว่า "ซึมเศร้า" ใช้ในหลายทาง มักใช้เพื่อหมายถึงกลุ่มอาการนี้ แต่อาจหมายถึงความผิดปกติทางจิตอื่นหรือหมายถึงเพียงภาวะซึมเศร้าก็ได้ โรคซึมเศร้าเป็นภาวะทำให้พิการ (disabling) ซึ่งมีผลเสียต่อครอบครัว งานหรือชีวิตโรงเรียน นิสัยการหลับและกิน และสุขภาพโดยรวมของบุคคล ราว 3.4% ของผู้ป่วยโรคซึมเศร้าฆ่าตัวตาย และมากถึง 60% ของผู้ที่ฆ่าตัวตายนั้นมีภาวะซึมเศร้าหรือความผิดปกติทางอารมณ์อย่างอื่น โรคซึมเศร้าเป็นโรคทางจิตเวชที่พบได้บ่อยและเป็นปัญหาทางจิตเวชที่สำคัญ โดยโรคซึมเศร้าส่งผลกระทบต่อคุณภาพชีวิตของผู้ป่วยเป็นอย่างมาก จากการศึกษาองค์การอนามัยโลกพบว่า โรคซึมเศร้าเป็นโรคที่อยู่ในอันดับที่ 3 ที่ทำให้เกิดความสูญเสียปีสุขภาวะ (DALYs) ในปี ค.ศ. 2004 และทำนายว่าในปี ค.ศ. 2030 โรคซึมเศร้าจะขึ้นไปเป็นอันดับหนึ่งของโรคที่ทำให้เกิดความสูญเสียปีสุขภาวะ

ทั่วโลกมีผู้ป่วยโรคซึมเศร้ามากกว่า 350 ล้านคน ผู้หญิงป่วยมากกว่าผู้ชาย ในจำนวนนี้เข้าถึงบริการรักษาเพียง 1 ใน 10 ส่วนในไทย จากข้อมูลของศูนย์ โรคซึมเศร้าไทย กรมสุขภาพจิต รายงานว่า ขณะนี้คนไทยอายุ 15 ปีขึ้นไป ป่วยเป็นโรคซึมเศร้า 1.5 ล้านคน หรือประมาณร้อยละ 2 ของประชากรทั้งหมด สังคมไทยยังให้ความสำคัญโรคนี้น้อย ส่วนใหญ่เข้าใจว่าผู้ป่วยโรคนี้เป็นคนบ้า และจากข้อมูลการให้บริการของสถานบริการสาธารณสุขทั่วประเทศ ผู้ป่วยโรคซึมเศร้า 100 คน เข้าถึงบริการได้รับการวินิจฉัยและรักษา 28 คนเท่านั้น ดังนั้นปัญหาโรคซึมเศร้าจึงเป็นเรื่องสำคัญที่ทุกภาคส่วนที่เกี่ยวข้องต้องประสานความร่วมมือ รณรงค์ให้ความรู้แก่ประชาชนให้ตระหนักว่าโรคซึมเศร้าเป็นภัยเงียบใกล้ตัว แต่เป็นโรคที่รักษาหายขาดได้

สำหรับผู้ป่วยโรคซึมเศร้าและบุคลากรทางด้านสุขภาพจิตและจิตเวช มีเป้าหมายสำคัญที่สุดคือการรักษาให้หายจากภาวะนี้ อย่างไรก็ตามการศึกษาการฟื้นหายจากโรคซึมเศร้าในประเทศไทยยังมีไม่มากนัก จากการทบทวนวรรณกรรมงานวิจัยที่เกี่ยวข้อง ไม่พบการศึกษาถึงปัจจัยเชิงสาเหตุที่ทำให้ผู้ป่วยโรคซึมเศร้าฟื้นหายจากโรคนี้ ซึ่งส่งผลให้การประเมินผลการรักษาพยาบาลผู้ป่วยโรคซึมเศร้ายังไม่เป็นองค์รวมทั้งทางร่ายกาย จิตใจ สังคม อารมณ์ และจิตวิญญาณ ทำให้การให้การพยาบาลต่อผู้ป่วยกลุ่มนี้ในการที่จะช่วยส่งเสริมการฟื้นหายยังไม่ปรากฏหลักฐานยืนยันที่แน่ชัด การศึกษาโมเดลเชิงสาเหตุในการฟื้นหายสำหรับผู้ป่วยโรคซึมเศร้า จึงมีความจำเป็นและเป็นประโยชน์สำหรับพยาบาลจิตเวช บุคลากรทางการแพทย์และสาธารณสุข เพื่อนำไปใช้วางแผนการปฏิบัติการพยาบาล ทั้งยังเป็นสร้างองค์ความรู้เกี่ยวกับปัจจัยที่แท้จริงในการส่งเสริมการฟื้นหายสำหรับผู้ป่วย ซึ่งจะส่งผลโดยตรงให้ผู้ป่วยโรคซึมเศร้ามีกำลังใจและมีความหวังในการรักษาตัวเองให้หายขาดการโรคซึมเศร้า และสามารถกลับไปใช้ชีวิตอย่างมีความหมายตามศักยภาพ

วัตถุประสงค์การวิจัย

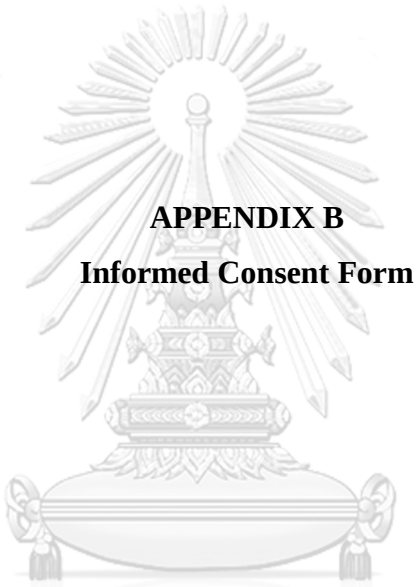
1. เพื่อพัฒนากรอบแนวคิดของการฟื้นสภาพจิตใจ (recovery) ของคนไทยที่ป่วยด้วยโรคซึมเศร้า
2. เพื่อพัฒนาและวิเคราะห์โมเดลเชิงสาเหตุของการฟื้นสภาพจิตใจสำหรับคนไทยที่ป่วยด้วยโรคซึมเศร้า

ประโยชน์และผลข้างเคียงที่จะเกิดแก่ผู้เข้าร่วมการวิจัย

การศึกษาครั้งนี้อาจไม่เกิดประโยชน์แก่ผู้เข้าร่วมวิจัยในขณะนี้ แต่ผลของการวิจัยจะส่งผลต่อการฟื้นสภาพจิตใจของผู้ที่ป่วยด้วยโรคซึมเศร้าต่อไป โดยผลของการวิจัยจะทำให้ทราบถึงปัจจัยเชิงสาเหตุของการฟื้นสภาพจิตใจที่เหมาะสมสำหรับคนไทยที่ป่วยด้วยโรคซึมเศร้า และเป็นข้อมูลสนับสนุนให้พยาบาลและเจ้าหน้าที่ในทีมสุขภาพตระหนักถึงความสำคัญของมิติและองค์ประกอบต่างๆของการฟื้นสภาพจิตใจ ก่อให้เกิดความเข้าใจผู้ที่เจ็บป่วยด้วยโรคซึมเศร้ามากขึ้น ซึ่งมีผลทำให้ผู้ป่วยได้รับบริการตรมความต้องการอย่างมีคุณภาพและเป็นประโยชน์อย่างแท้จริง และที่สำคัญอีกประการหนึ่งคือผู้ป่วยโรคซึมเศร้าสามารถประเมินปัจจัยการฟื้นสภาพจิตใจของตนเองได้ ส่งผลโดยตรงให้ผู้ป่วยมีกำลังใจและมีความหวังในการหายจากการเจ็บป่วย นำไปสู่การมีชีวิตที่มีความหมายเต็มศักยภาพของตนเองต่อไป

การศึกษาครั้งนี้เป็นการสัมภาษณ์เชิงลึก และการตอบแบบสอบถาม จึงไม่มีผลข้างเคียงที่กระทบต่อด้านร่างกาย แต่อาจมีบางคำถามที่กระทบความรู้สึกของผู้เข้าร่วมวิจัยได้ ดังนั้นผู้เข้าร่วมวิจัยจึงมรสิทธิที่จะปฏิเสธการตอบแบบสอบถาม หรือถอนตัวออกจากการศึกษาครั้งนี้ได้ทุกเวลาที่ต้องการ

การเก็บข้อมูลเป็นความลับ ข้อมูลส่วนตัวของผู้ป่วยจะได้รับการเก็บรักษาไว้ ไม่เป็นเผยต่อสาธารณะเป็นรายบุคคล แต่จะรายงานผลการวิจัยเป็นข้อมูลส่วนรวม การเปิดเผยข้อมูลเกี่ยวกับผู้ป่วยต่อหน่วยงานต่างๆที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น และข้อมูลในแบบสอบถามผู้ป่วยจะเก็บไว้เป็นความลับ ผู้วิจัยจะทำการทำลายแบบสอบถามเหล่านั้นด้วยตนเองภายหลังเสร็จสิ้นการวิจัย



APPENDIX B

Informed Consent Form

หนังสือยินยอมโดยได้รับการบอกกล่าวและเต็มใจ

(Informed Consent Form)

ชื่อโครงการ .....

ชื่อผู้วิจัย .....

ชื่อผู้เข้าร่วมการวิจัย .....

อายุ .....เลขที่เวชระเบียน.....

คำยินยอมของผู้เข้าร่วมการวิจัย

ข้าพเจ้า นาย/นาง/นางสาว.....ได้ทราบรายละเอียดของโครงการวิจัยตลอดจนประโยชน์ และข้อเสี่ยงที่จะเกิดขึ้นต่อข้าพเจ้าจากผู้วิจัยแล้วอย่างชัดเจน ไม่มีสิ่งใดปิดบังซ่อนเร้น และยินยอมให้ทำการวิจัยในโครงการที่มีชื่อข้างต้น และข้าพเจ้ารู้ว่าถ้ามีปัญหาหรือข้อสงสัยเกิดขึ้น ข้าพเจ้าสามารถสอบถามผู้วิจัยได้ และข้าพเจ้าสามารถไม่เข้าร่วมโครงการวิจัยนี้เมื่อใดก็ได้ โดยไม่มีผลกระทบต่อการรักษาที่ข้าพเจ้าพึงได้รับ นอกจากนี้ผู้วิจัยจะเก็บข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าเป็นความลับและจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ลงชื่อ.....(ผู้เข้าร่วมวิจัย)

.....(พยาน)

.....(พยาน)

วันที่.....

คำอธิบายของแพทย์หรือผู้วิจัย

ข้าพเจ้าได้อธิบายรายละเอียดของโครงการ ตลอดจนประโยชน์ของการวิจัย รวมทั้งข้อเสี่ยงที่อาจจะเกิดขึ้นแก่ผู้เข้าร่วมการวิจัยทราบแล้วอย่างชัดเจนโดยไม่มีสิ่งใดปิดบังซ่อนเร้น

ลงชื่อ.....(แพทย์หรือผู้วิจัย)

วันที่.....

APPENDIX C

Instruments of the study Instruments of the study

[DOCUMENT TITLE]

[Document subtitle]

แบบสอบถามการวิจัย

ปัจจัยทำนายการฟื้นหายสำหรับบุคคลที่ป่วยด้วยโรคซึมเศร้า

ทุกคนล้วนประสบกับปัญหาในช่วงเวลาหนึ่งของการดำเนินชีวิต บางครั้งปัญหาเหล่านี้เป็นปัญหาที่หนัก เป็นปัญหาสำคัญทั้งทางด้านอารมณ์และพฤติกรรม หรืออาการทางสุขภาพจิต การฟื้นหายทางสุขภาพจิตของบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้านั้น หมายถึงการที่บุคคลที่เจ็บป่วยด้วยโรคซึมเศร้าสามารถที่จะดำเนินชีวิตอย่างมีความหมายในชุมชนตามความต้องการของตัวเอง ประสบความสำเร็จในชีวิตเต็มศักยภาพ ความสามารถเหล่านี้ประกอบด้วยการเปลี่ยนแปลงทางด้านความรู้สึก ความคิด และพฤติกรรม ซึ่งส่งผลให้บุคคลนั้นเริ่มกลับเข้าสู่ ความรู้สึกถึงการมีความหวังและเป้าหมาย ความรู้สึกใหม่ของการเป็นตัวเอง หรือการปรับตัวได้ดีขึ้นต่ออาการซึมเศร้า การฟื้นหายทางสุขภาพจิตนั้นซับซ้อนสำหรับแต่ละบุคคล เป้าหมายของแบบประเมินนี้คือการค้นหาว่าท่านมีมุมมองต่อการฟื้นหายทางสุขภาพจิตของตนเองอย่างไร

แบบสอบถามการวิจัยฉบับนี้ประกอบด้วย

๑. แบบสอบถามข้อมูลส่วนบุคคล	จำนวน	๘	ข้อ
๒. แบบประเมินการฟื้นหาย	จำนวน	๓๐	ข้อ
๓. แบบประเมินการมีเป้าหมายในชีวิต	จำนวน	๖	ข้อ
๔. แบบประเมินการรับรู้ความเข้มแข็งของตนอง	จำนวน	๑๖	ข้อ
๕. แบบประเมินทักษะความคิดและการแก้ปัญหา	จำนวน	๘	ข้อ
๖. แบบประเมินการสนับสนุนทางสังคมแบบพหุมิติ	จำนวน	๑๒	ข้อ
๗. แบบประเมินเพื่อคัดกรองปัญหาการดื่มสุรา	จำนวน	๑๐	ข้อ

กรุณาตอบคำถามให้ครบทุกข้อตามความเป็นจริง แบบสอบถามฉบับนี้ใช้เวลาทำประมาณ ๓๐-๔๕ นาที ถ้ามีปัญหาหรือข้อสงสัยเกิดขึ้น ท่านสามารถสอบถามผู้วิจัยได้ตลอดเวลา และหากท่านสามารถไม่เข้าร่วมโครงการวิจัยนี้ สามารถยุติการเข้าร่วมวิจัยเมื่อใดก็ได้ โดยไม่มีผลกระทบต่อการรักษาที่ท่านพึงได้รับ นอกจากนี้ผู้วิจัยจะเก็บข้อมูลเฉพาะเกี่ยวกับท่านเป็นความลับและจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับท่านต่อหน่วยงานต่างๆที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ส่วนที่ ๑ แบบสอบถามข้อมูลส่วนบุคคล

๑. เพศ

○ หญิง ○ ชาย

๒. อายุ .....ปี

๓. ระดับการศึกษา

○ ประถมศึกษาหรือเทียบเท่า
○ มัธยมศึกษาหรือเทียบเท่า
○ ปริญญาตรีหรือเทียบเท่า
○ สูงกว่าปริญญาตรีหรือเทียบเท่า
○ อื่นๆ ระบุ.....

๔. สถานภาพสมรส

○ คู่
○ หม้าย/หย่าร้าง
○ แยกกันอยู่
○ โสด

๕. อาชีพ

○ รับจ้าง
○ พนักงานบริษัท
○ ข้าราชการ/รัฐวิสาหกิจ
○ ธุรกิจส่วนตัว/อาชีพอิสระ
○ อื่นๆ ระบุ.....

๖. โรคประจำตัว

○ มี ระบุ.....
○ ไม่มี

๗. ระยะเวลาในการรักษา .....ปี

๘. พฤติกรรมการ
รับประทานยา

○ สม่ำเสมอ
○ ไม่สม่ำเสมอ

ส่วนที่ ๒ แบบประเมินการฟื้นหายทางจิตใจ (Mental Health Recovery Scale)

ไม่มีคำตอบที่ถูกหรือผิด กรุณาอ่านแต่ละประโยคอย่างรอบคอบ และโปรดระบุว่าท่านเห็นด้วยหรือไม่เห็นด้วยในระดับใด ขอให้ท่านทำเครื่องหมาย √ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุด โดยกำหนดค่าคะแนนดังนี้

๐	๑	๒	๓	๔
ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง

ข้อคำถาม		ค่าคะแนนความคิดเห็น				
		๐	๑	๒	๓	๔
๑	ฉันพยายามอย่างมากเพื่อการฟื้นหายจากภาวะซึมเศร้าที่ฉันเป็นอยู่					
๒						
๓						
๔						
๕						
๗						
๘						
๙						
๑๒						
๑๓						
๑๔	ฉันออกจากบ้านและเข้าร่วมกิจกรรมต่างๆที่ทำให้เพลิดเพลินทุกสัปดาห์					

ข้อความ		ค่าคะแนนความคิดเห็น				
		๑	๒	๓	๔	๕
๑๕	ฉันพยายามที่จะทำความรู้จักคนอื่นๆ					
๑๖						
๑๗						
๑๘						
๑๙						
๒๐						
๒๑						
๒๒						
๒๓						
๒๔						
๒๕						
๒๖						
๒๗						
๒๘						
๒๙						
๓๐						

ส่วนที่ ๓ แบบประเมินการมีเป้าหมายในชีวิต (Purpose in Life Scale)

ไม่มีคำตอบที่ถูกหรือผิด กรุณาอ่านแต่ละประโยคอย่างรอบคอบ และโปรดระบุว่าท่านเห็นด้วยหรือไม่เห็นด้วยในระดับใด ขอให้ท่านทำเครื่องหมาย √ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุด โดยกำหนดค่าคะแนนดังนี้

๑ ไม่เห็นด้วยอย่างยิ่ง **๒** ไม่เห็นด้วย **๓** ไม่แน่ใจ **๔** เห็นด้วย **๕** เห็นด้วยอย่างยิ่ง

ข้อ	ข้อความ	ค่าคะแนนความคิดเห็น				
		๑	๒	๓	๔	๕
๑	คนบางคนอาจใช้ชีวิตไปเรื่อยๆไม่มีจุดหมาย แต่ฉันไม่ใช่คนประเภทนั้น					
๒						
๓						
๔						
๕						
๖	ฉันไม่คิดหวังอะไรในอนาคตอีกต่อไปแล้ว					

ส่วนที่ ๔ แบบประเมินการรับรู้ความเข้มแข็งของตนเอง (Strength Self Efficacy Scale)

คำชี้แจง ข้อความต่อไปนี้เป็นคำอธิบายถึงทัศนคติ ความรู้สึก และพฤติกรรมที่สะท้อนถึงความหมายของ ความเข้มแข็งในตนเอง โปรดใช้นิยามความหมายต่างๆด้านล่างนี้ในการตอบแบบสอบถาม

การรับรู้ความเข้มแข็งในตนเอง คือ ระดับความเชื่อมั่นในความสามารถของบุคคล ที่จะนำความเข้มแข็งของตนเองมาประยุกต์ใช้ในด้านต่างๆ

ความเข้มแข็ง คือ พรสวรรค์ ความรู้และทักษะ ที่สามารถนำไปสู่การทำงานต่างๆที่มีประสิทธิภาพอย่างต่อเนื่อง

ไม่มีคำตอบที่ถูกหรือผิด กรุณาอ่านแต่ละประโยคอย่างรอบคอบ และโปรดระบุระดับคะแนน ๑-๑๐ คะแนน ที่ตรงกับความเป็นจริงเกี่ยวกับท่านมากที่สุด **โดยระดับคะแนน ๑ หมายถึง ตรงกับความเป็นจริงน้อยที่สุด ระดับคะแนน ๑๐ หมายถึง ตรงกับความเป็นจริงมากที่สุด**

	ท่านมั่นใจในความสามารถของท่านเกี่ยวกับความเข้มแข็งของตนเอง ในข้อคำถามต่อไปนี้ในระดับใด	**ระดับคะแนน (๑-๑๐ คะแนน)**
๑	ใช้ความเข้มแข็งในการทำงาน	
๒		
๓		
๔		
๕		
๖		
๗		
๘		
๙		
๑๐		
๑๑		
๑๒		
๑๓		
๑๔		
๑๕		
๑๖	การใช้ความเข้มแข็งของตนเองในด้านที่ตนมีความสามารถ	

ส่วนที่ ๕ แบบประเมินทักษะความคิดและการแก้ปัญหา (Resourcefulness Scale)

ไม่มีคำตอบที่ถูกหรือผิด กรุณาอ่านแต่ละประโยคอย่างรอบคอบ และโปรดระบุว่าท่านเห็นด้วยหรือไม่เห็นด้วยในระดับใด ขอให้ท่านทำเครื่องหมาย √ ลงในช่องที่ตรงกับพฤติกรรมของท่านมากที่สุด โดยกำหนดค่าคะแนนดังนี้

๐ ๑ ๒ ๓ ๔ ๕

ไม่เห็นด้วยอย่างยิ่ง ไม่เห็นด้วยมาก ไม่เห็นด้วยน้อย เห็นด้วยน้อย เห็นด้วยมาก เห็นด้วยอย่างยิ่ง

ข้อคำถาม		ค่าคะแนนความคิดเห็น					
		๐	๑	๒	๓	๔	๕
๑	ฉันพึ่งพาคนในครอบครัว/เพื่อนได้						
๒							
๓							
๔							
๕							
๖							
๗							
๘	ฉันมีความคิดใหม่ๆ เสมอ						

ส่วนที่ ๖ แบบประเมินการสนับสนุนทางสังคมแบบพหุมิติ (Multi-dimensional Scale Perceive Social Support)

ไม่มีคำตอบที่ถูกหรือผิด กรุณาอ่านแต่ละประโยคอย่างรอบคอบ และโปรดระบุว่าท่านเห็นด้วยหรือไม่เห็นด้วยในระดับใด โดยทำเครื่องหมาย √ ในช่องหมายเลขที่กำกับที่ตรงกับความเห็นของท่าน โดยกำหนดค่าคะแนนดังนี้

๑ ไม่เห็นด้วยอย่างยิ่ง **๒** ไม่เห็นด้วย **๓** เห็นด้วย **๔** เห็นด้วยอย่างยิ่ง

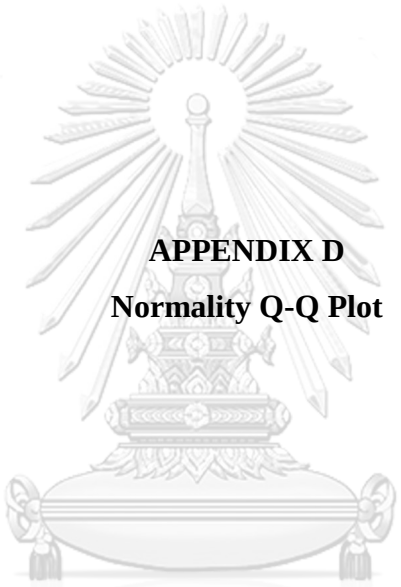
	ข้อความ	**ค่าคะแนน**			
		๑	**๒**	**๓**	**๔**
๑	ท่านมีคนสำคัญที่ให้กำลังใจเสมอเมื่อท่านต้องการ				
๒					
๓					
๔					
๕					
๖					
๗					
๘					
๙					
๑๐					
๑๑					
๑๒	ท่านสามารถปรึกษาปัญหากับเพื่อนๆได้				

ส่วนที่ ๗ แบบประเมินเพื่อคัดกรองปัญหาการดื่มสุรา

ไม่มีคำตอบที่ถูกหรือผิด ขอให้ท่านทำเครื่องหมาย √ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุด

1 ดื่มมาตรฐาน = เหล้าสี 1 แก้วขนาด 30 ซีซี = เบียร์ 1 แก้วขนาด 285 ซีซี = ไวน์ 1 แก้ว ขนาด 100 ซีซี

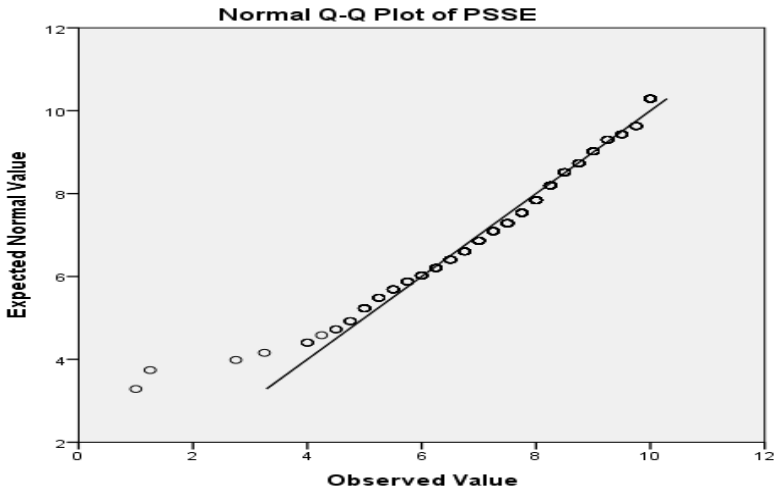
ข้อคำถาม	0 คะแนน	1 คะแนน	2 คะแนน	3 คะแนน	4 คะแนน
๑. คุณดื่มเครื่องดื่มแอลกอฮอล์บ่อยแค่ไหน?	ไม่เคยเลย	เดือนละครั้งหรือน้อยกว่า	2-4 ครั้งต่อเดือน	2-3 ครั้งต่อสัปดาห์	4 ครั้งต่อสัปดาห์หรือมากกว่า
๒. ในวันที่คุณดื่มตามปกตินั้น คุณดื่มกี่ดื่มมาตรฐาน	1 หรือ 2	3 หรือ 4	5 หรือ 6	7 ถึง 9	10 หรือมากกว่า
๓. คุณดื่ม 6 ดื่มมาตรฐาน หรือมากกว่าในคราวเดียวกันบ่อยแค่ไหน?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๔. ในช่วงปีที่แล้ว มีบ่อยครั้งแค่ไหนที่คุณพบว่า เมื่อคุณได้เริ่มต้นแล้ว คุณจะไม่สามารถหยุดดื่มได้เลย?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๕. ในช่วงปีที่แล้ว มีบ่อยครั้งแค่ไหนที่การดื่มของคุณเป็นสาเหตุทำให้คุณไม่สามารถทำสิ่งต่างๆ ที่ตามปกติแล้วคุณเคยทำได้มาก่อน?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๖. ในช่วงปีที่แล้ว มีบ่อยครั้งแค่ไหนที่คุณต้องการจะดื่มในตอนเช้าเพื่อให้คุณรู้สึกดีขึ้นหลังจากที่ได้ดื่มจัดมาก่อนหน้านี้?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๗. ในช่วงปีที่แล้ว มีบ่อยครั้งแค่ไหนที่คุณรู้สึกผิด หรือเกิดความรู้สึกเสียใจภายหลังการดื่มของคุณ?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๘. ในช่วงปีที่แล้ว มีบ่อยครั้งแค่ไหนที่การดื่มของคุณทำให้คุณไม่สามารถจะจำได้ว่าเกิดอะไรขึ้นบ้างในคืนที่ผ่านมา?	ไม่เคยเลย	น้อยกว่าเดือนละครั้ง	เดือนละครั้ง	สัปดาห์ละครั้ง	วันละครั้งหรือเกือบทุกวัน
๙. คุณหรือใครบางคนเคยได้รับบาดเจ็บจากการดื่มของคุณหรือไม่?	ไม่เคยเลย	เคย แต่ไม่ใช่เมื่อปีที่แล้ว	เคย ในช่วงปีที่แล้ว	-	-
๑๐. เคยมีเพื่อน ญาติพี่น้อง แพทย์หรือเจ้าหน้าที่สาธารณสุขอื่นๆ แสดงความห่วงใยเกี่ยวกับการดื่มของคุณหรือเคยแนะนำให้คุณลดการดื่มลงบ้างหรือไม่?	ไม่เคยเลย	เคย แต่ไม่ใช่เมื่อปีที่แล้ว	เคย ในช่วงปีที่แล้ว	-	-



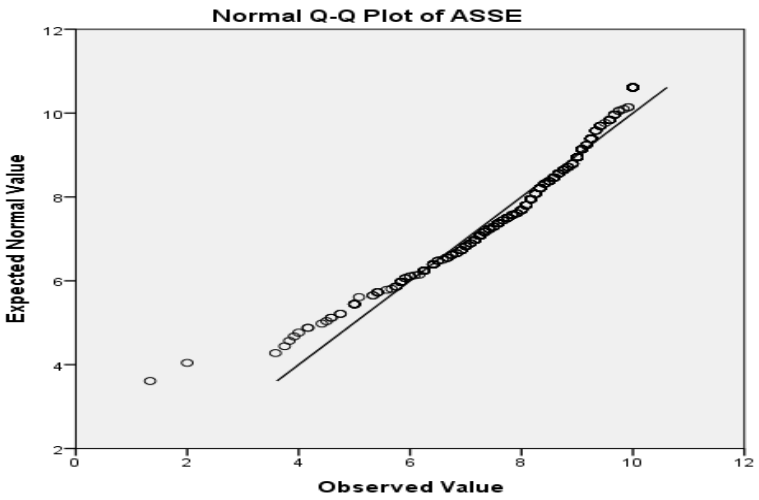
APPENDIX D

Normality Q-Q Plot

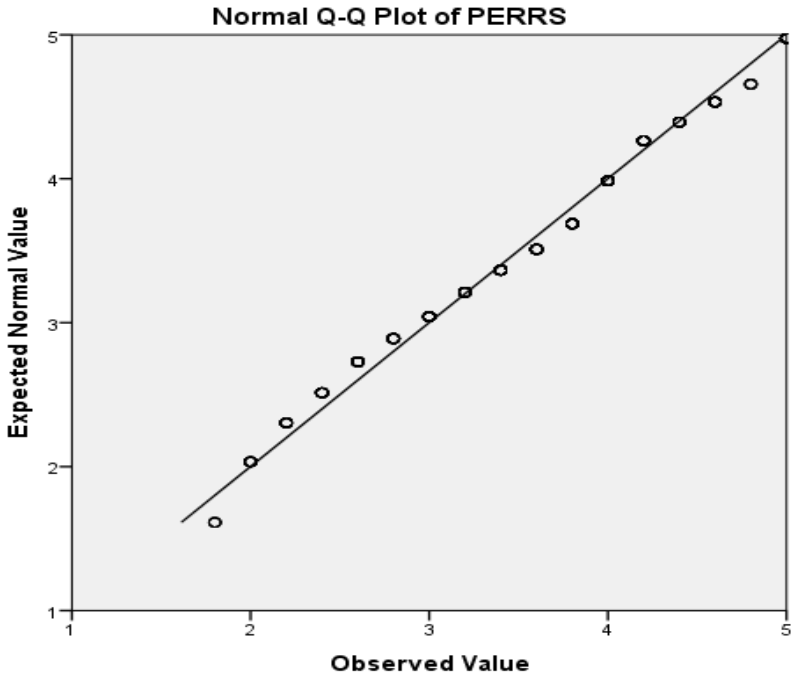
Normality Q-Q Plot Graph



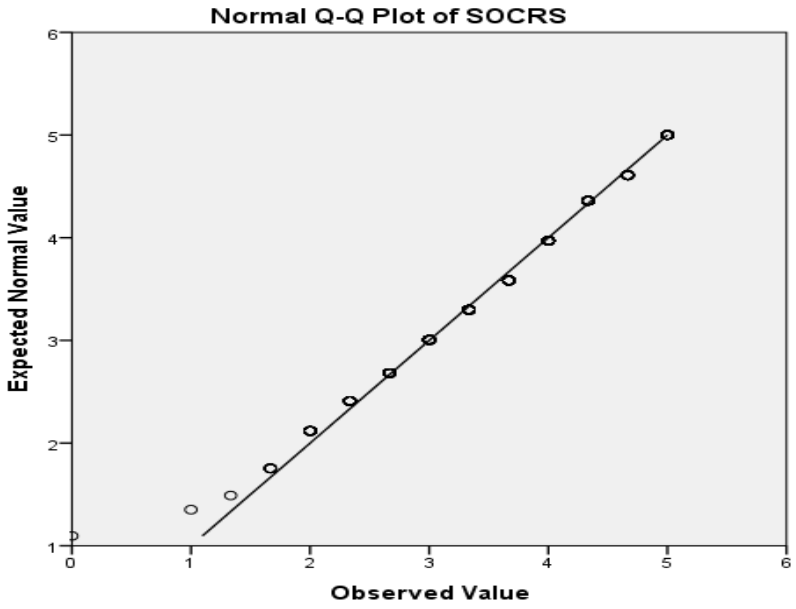
ภาพ 5.1 การกระจายของข้อมูลPSSE



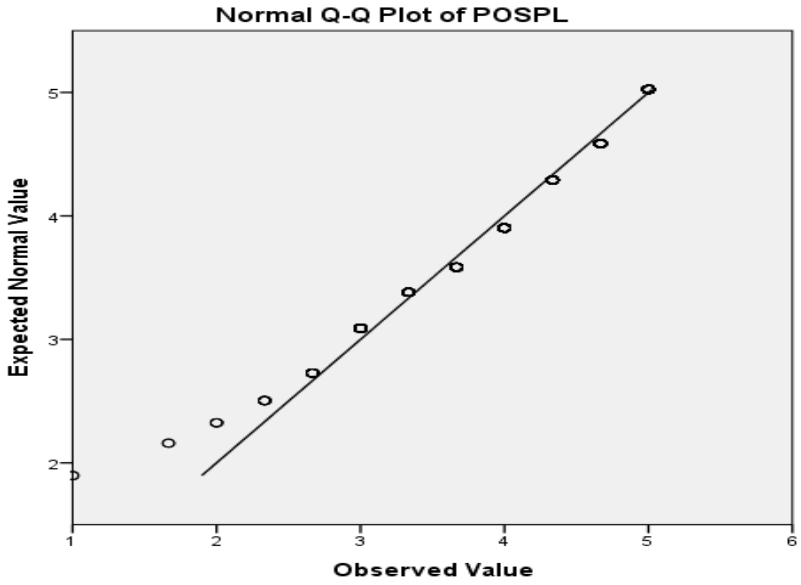
ภาพ 5.2 การกระจายของข้อมูล ASSE



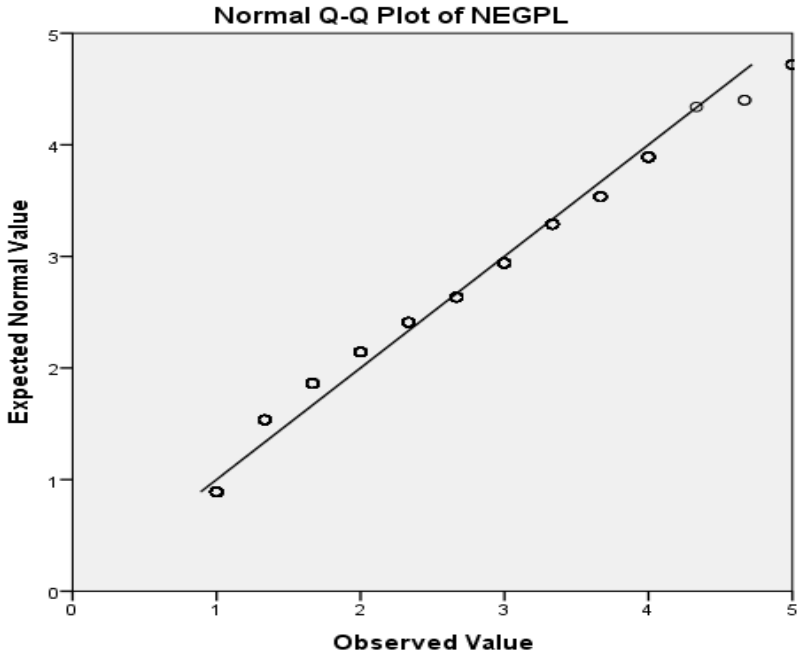
ภาพ 5.3 การกระจายของข้อมูลPERS



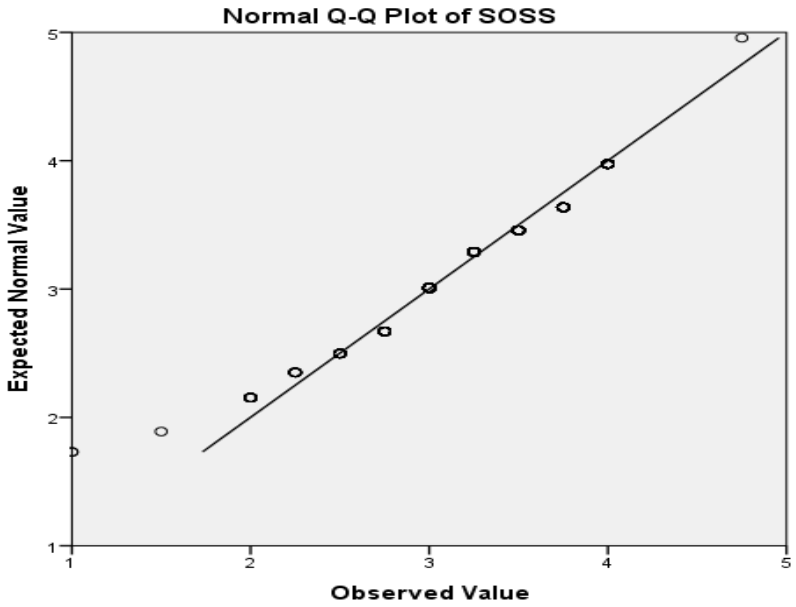
ภาพ 5.4 การกระจายของข้อมูล SOCRS



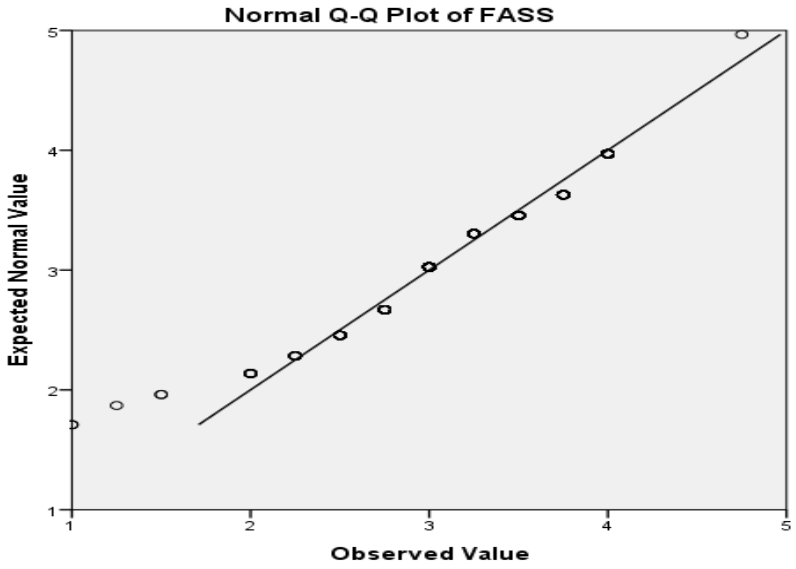
ภาพ 5.5 การกระจายของข้อมูลPOSPL



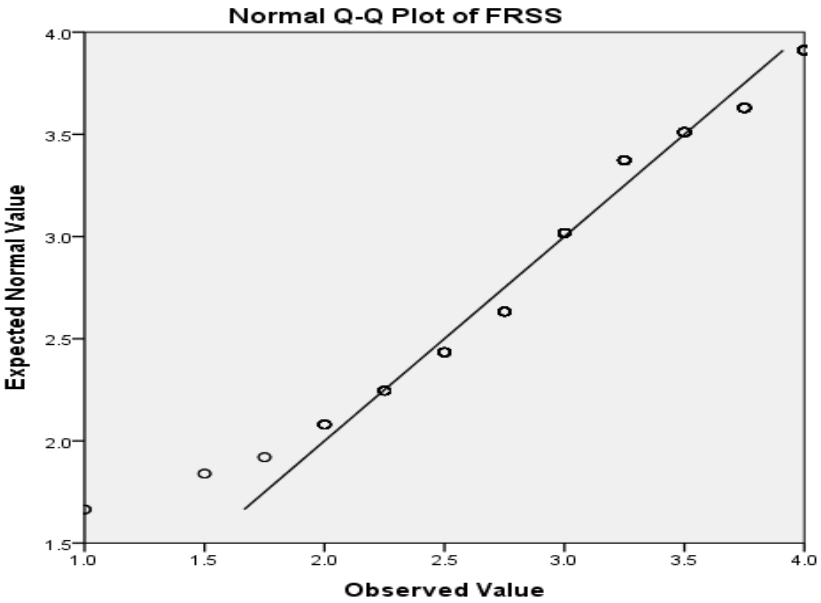
ภาพ 5.6 การกระจายของข้อมูล NEGPL



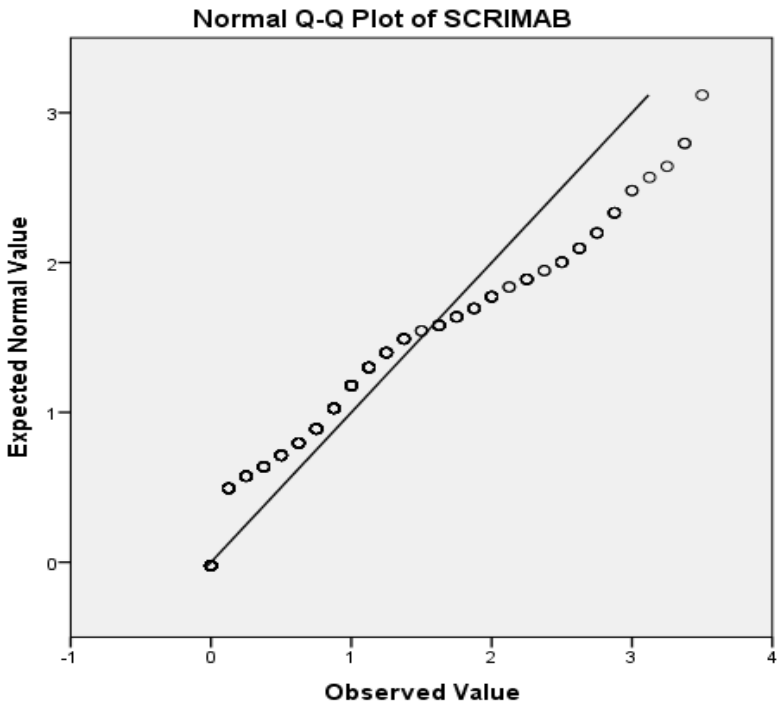
ภาพ 5.7 การกระจายของข้อมูล SOSS



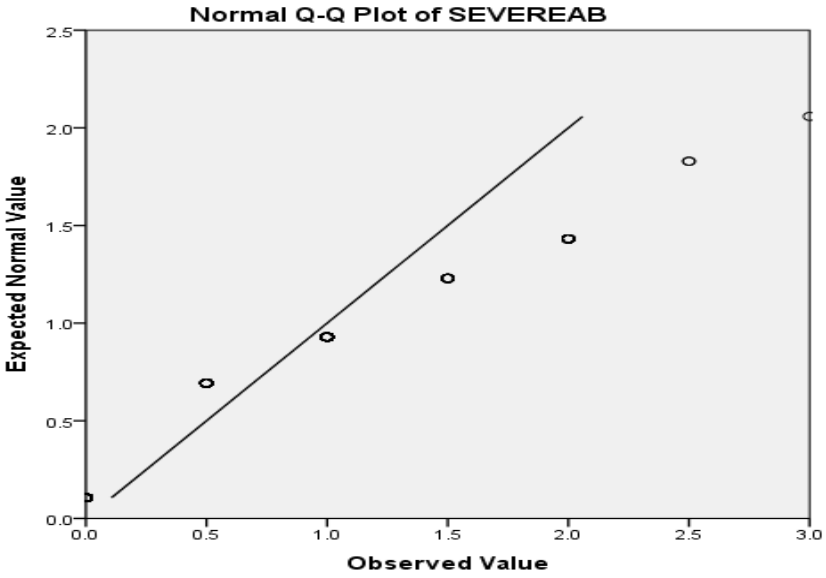
ภาพ 5.8 การกระจายของข้อมูล FASS



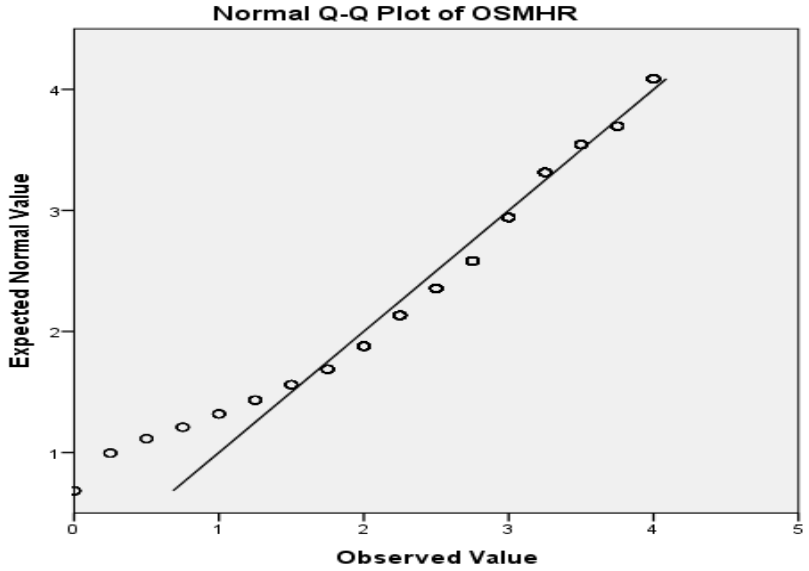
ภาพ 5.9 การกระจายของข้อมูล FRSS



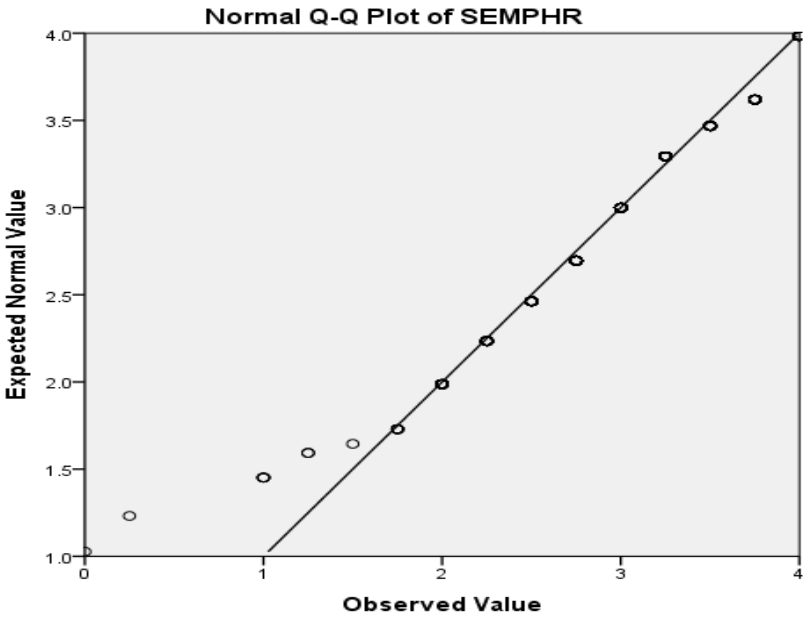
ภาพ 5.10 การกระจายของข้อมูล SCRIMAB



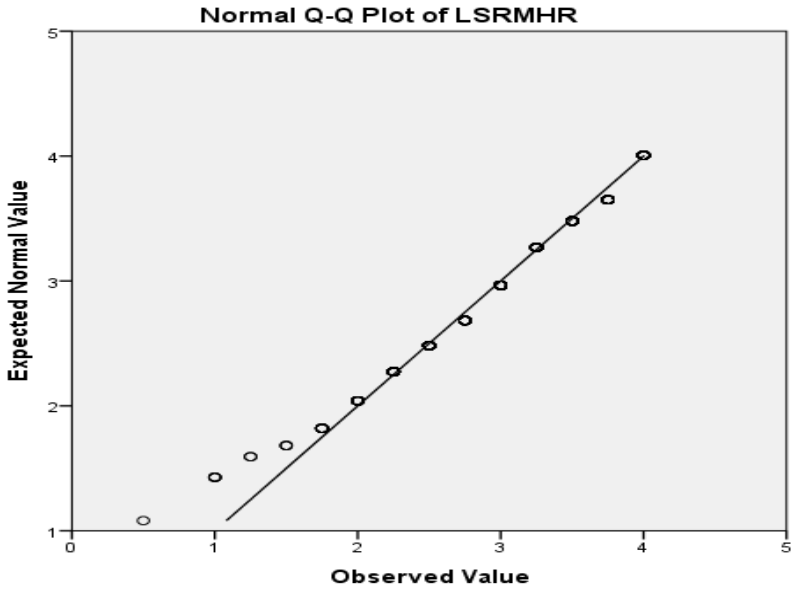
ภาพ 5.11 การกระจายของข้อมูล SEVEREAB



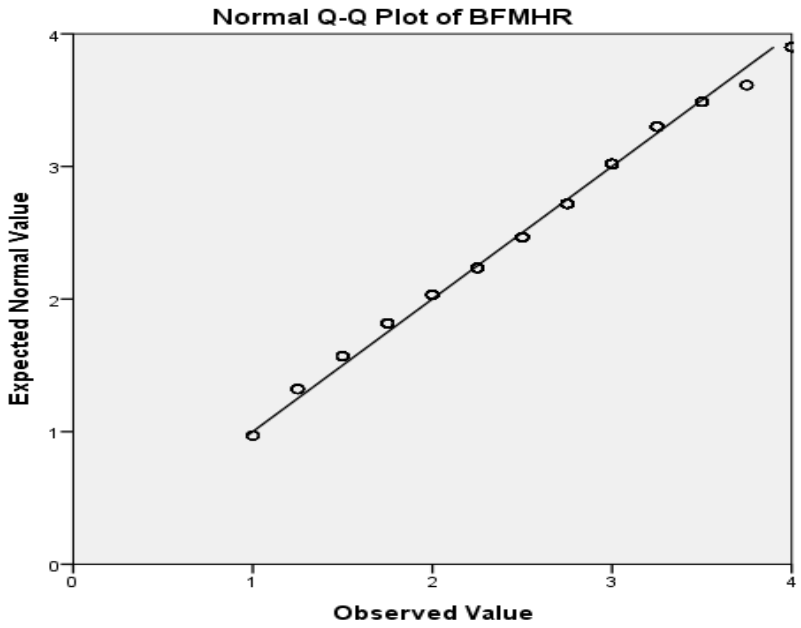
ภาพ 5.12 การกระจายของข้อมูล OSMHR



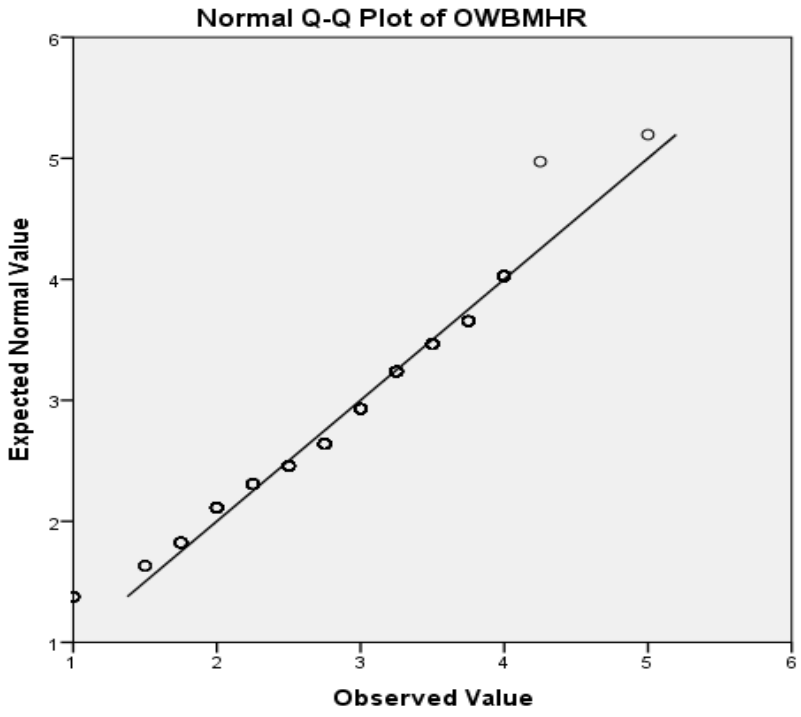
ภาพ 5.13 การกระจายของข้อมูล SEMPHR



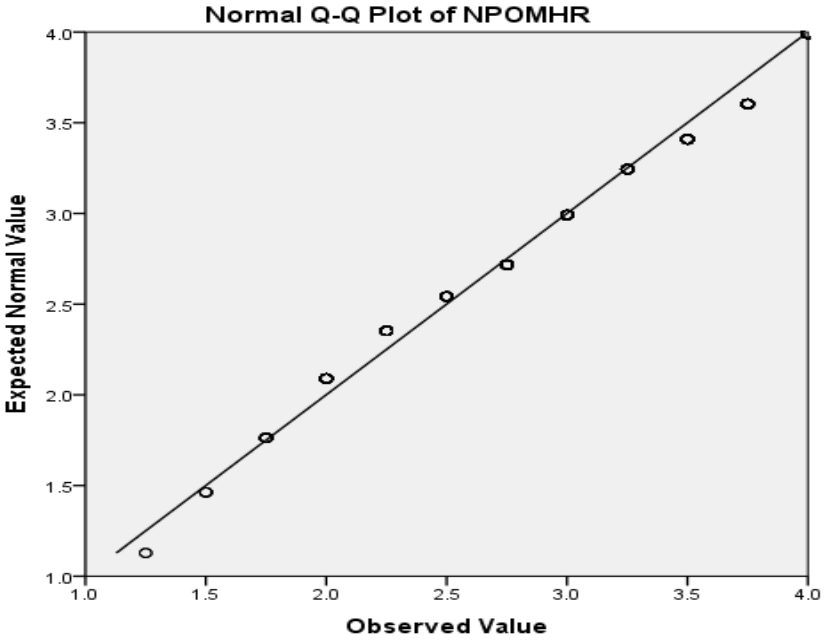
ภาพ 5.14 การกระจายของข้อมูล LSRMHR



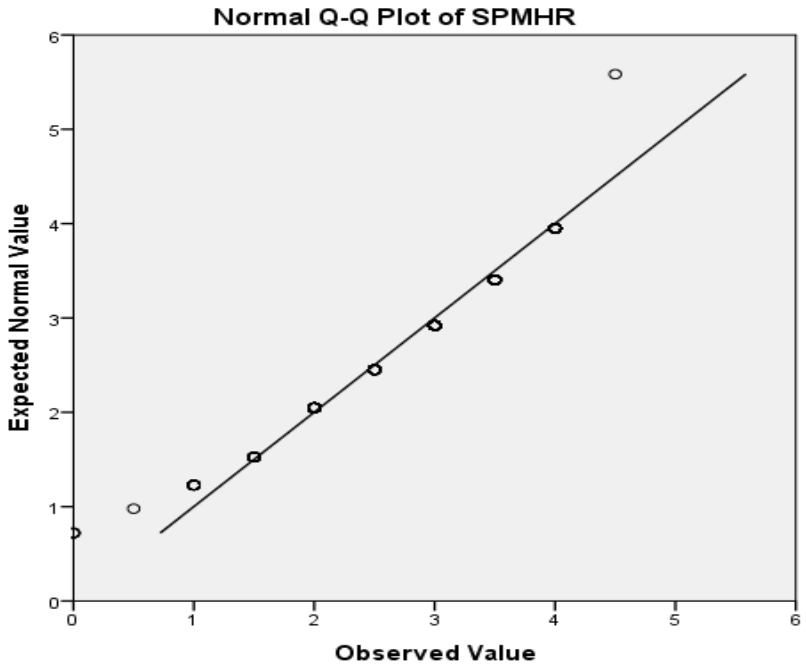
ภาพ 5.15 การกระจายของข้อมูล BFMHR



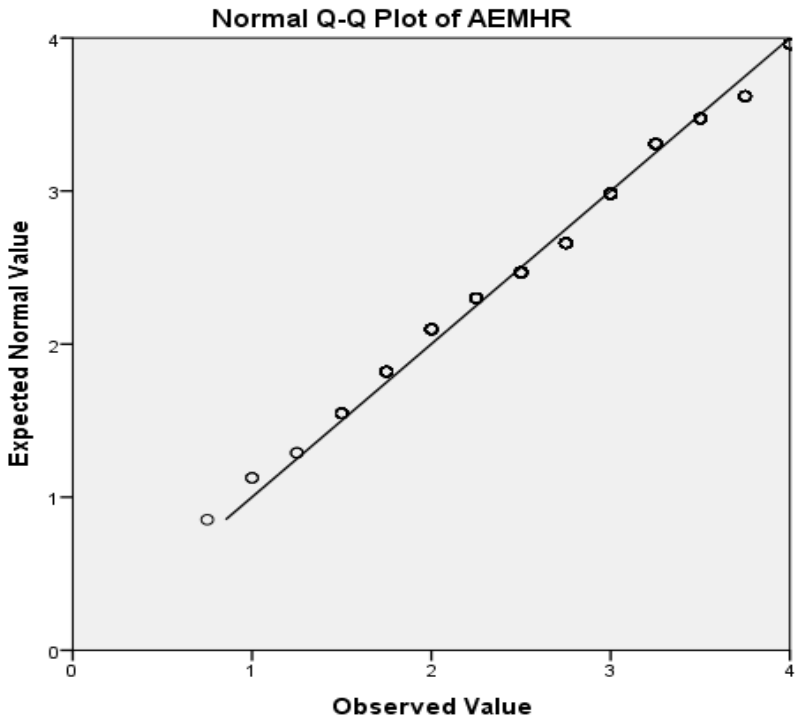
ภาพ 5.16 การกระจายของข้อมูล OWBMHR



ภาพ 5.17 การกระจายของข้อมูล NPOMHR

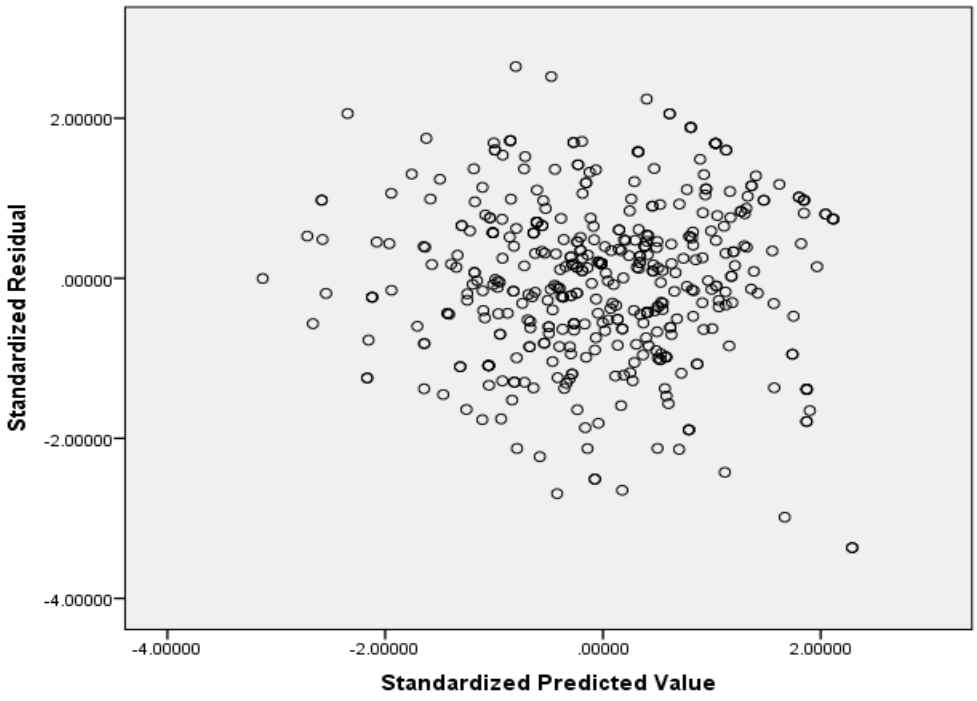


ภาพ 5.18 การกระจายของข้อมูล SPMHR

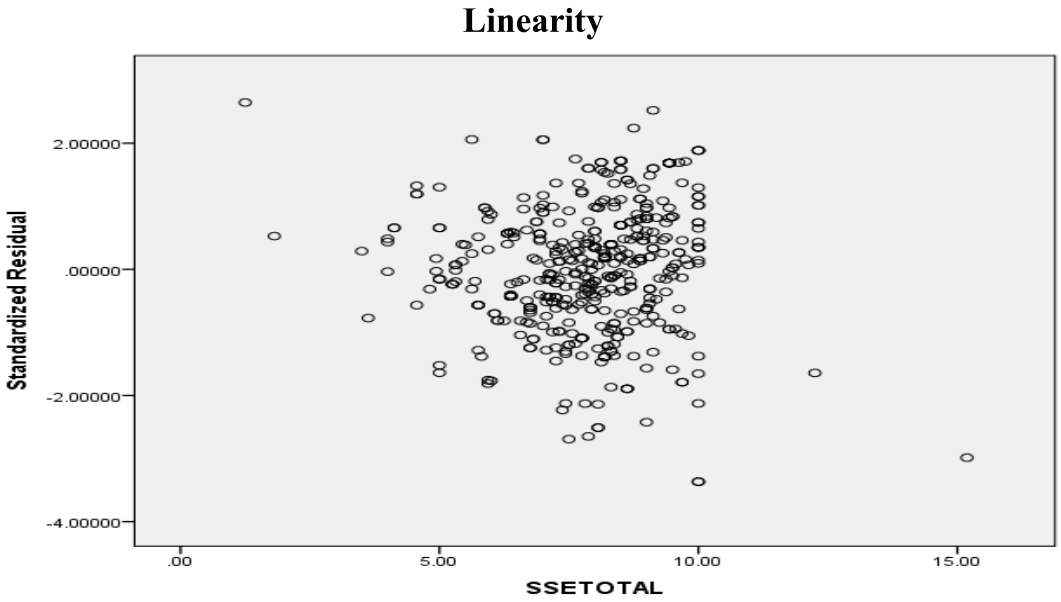


ภาพ 5.19 การกระจายของข้อมูล AEMHR

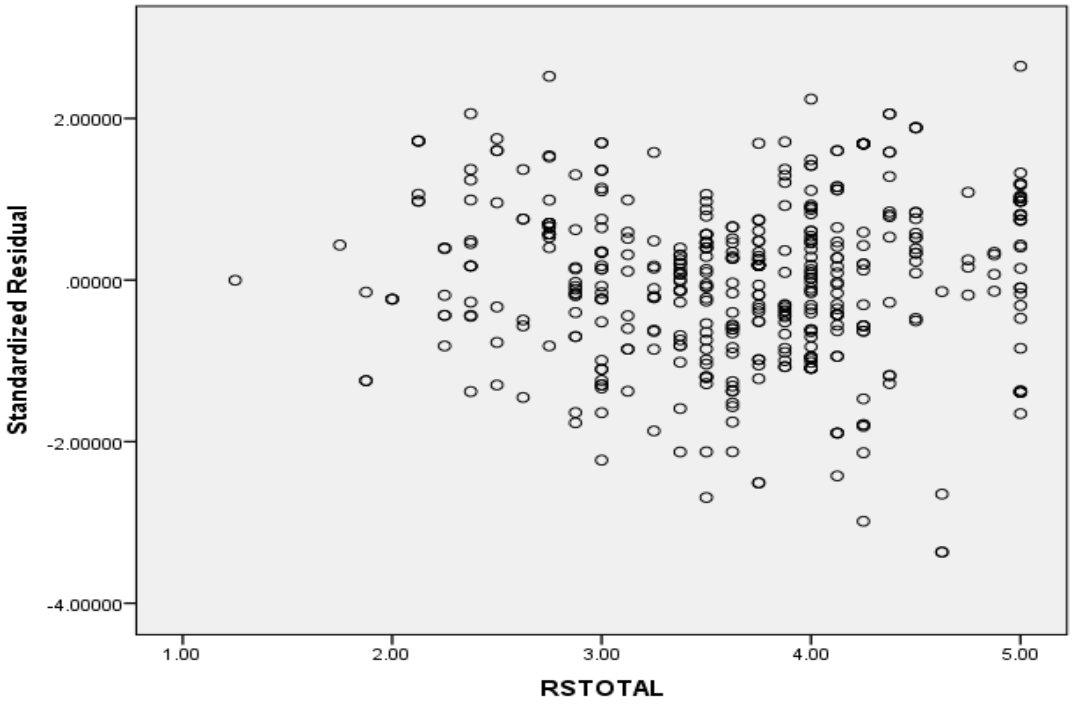
(Homoscedasticity)



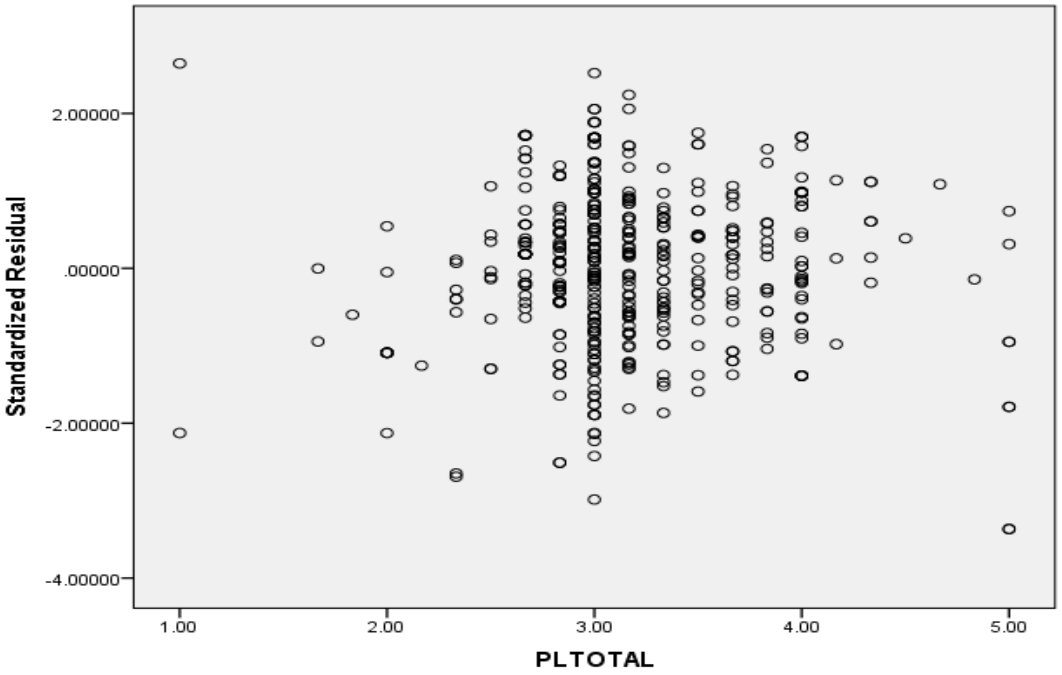
ภาพ 5.20 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) กับค่าพยากรณ์ (predicted value) โดยตัวแปรตามคือ MHR



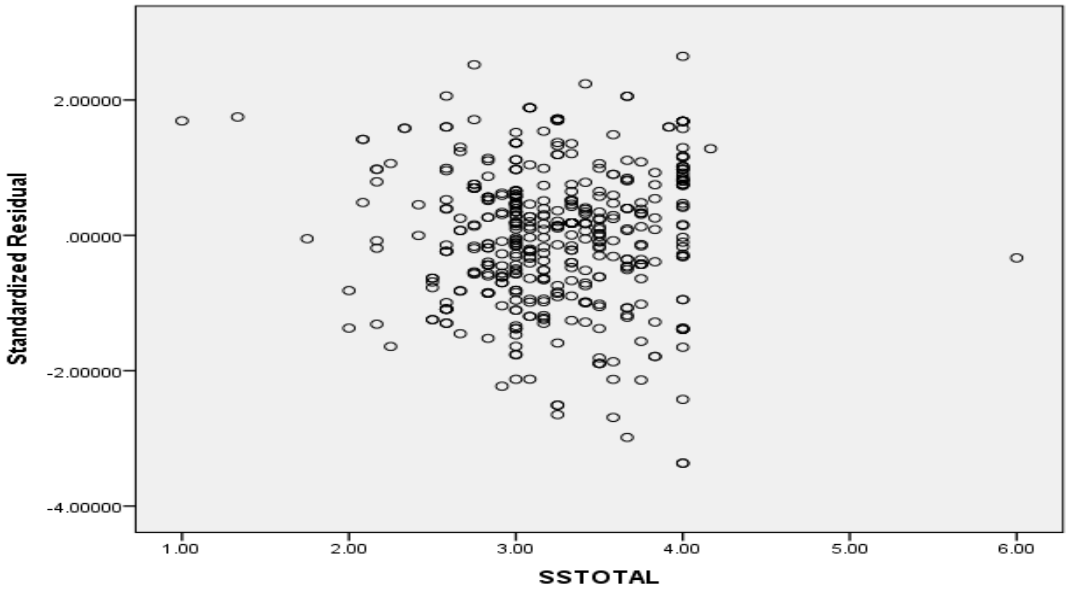
ภาพ 5.21 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) ของตัวแปรตาม MHR กับตัวแปรอิสระ SSE



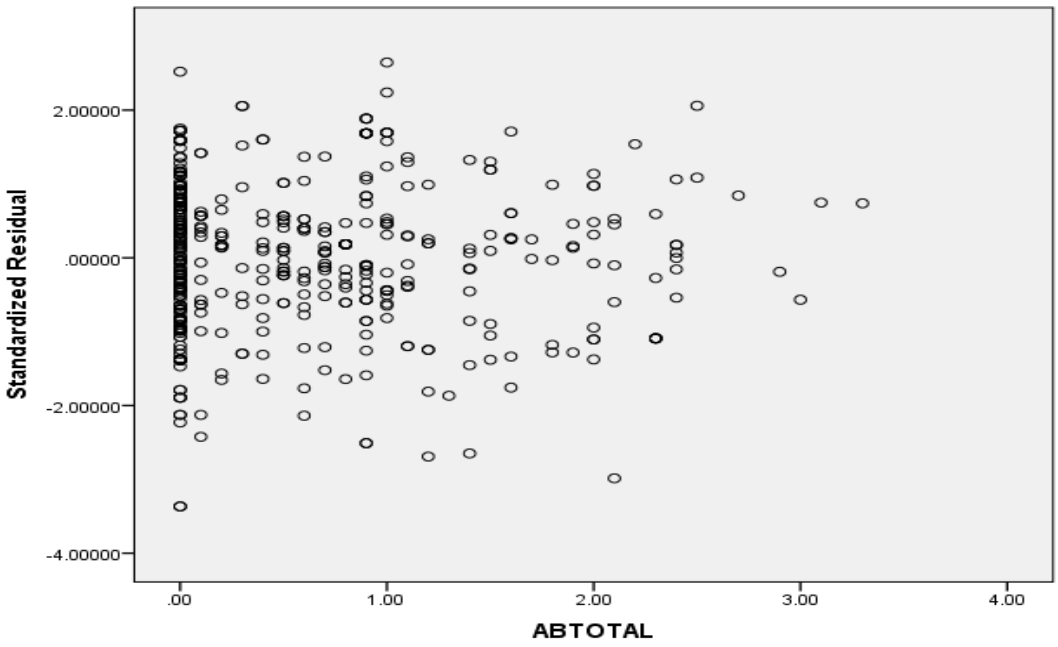
ภาพ 5.22 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) ของตัวแปรตาม MHR กับตัวแปรอิสระ RS



ภาพ 5.23 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) ของตัวแปรตาม MHR กับตัวแปรอิสระ **PL**



ภาพ 5.24 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) ของตัวแปรตาม MHR กับตัวแปรอิสระ **SS**



ภาพ 5.25 ความสัมพันธ์ระหว่างเศษที่เหลือ (residual value) ของตัวแปรตาม MHR กับตัวแปรอิสระ AB

Structural Model Equation Output

DATE: 7/14/2018
TIME: 10:09

L I S R E L 8.72

BY

Karl G. J”reskog & Dag S”rbom

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The following lines were read from file C:\Users\User\Desktop\modelrecov\modelrecovlast.ls8:

```
 SEM MHS MODEL
 DA NI = 19  NO =444 NG=1 MA=KM
 LA
 PSSE ASSE PERRS SOCRS POSPL NEGPL SOSS FASS FRSS SCRIMAB
SEVEREAB OSRECO SEMRECO LSRRECO BFRECO OWBRECO NPORECO SPRECO
AERECO
 KM
 1.000
 .627 1.000
 .367 .375 1.000
 .286 .288 .690 1.000
 .444 .447 .456 .341 1.000
 .119 .203 .394 .372 .335 1.000
 .365 .367 .504 .559 .423 .139 1.000
 .303 .297 .423 .502 .355 .371 .580 1.000
 .260 .398 .401 .508 .258 .328 .634 .630 1.000
 .395 .384 .134 .301 .208 .358 .202 .170 .149 1.000
 .374 .308 .335 .117 .195 .384 .388 .351 .313 .558 1.000
 .149 .106 .265 .252 .267 .342 .248 .230 .261 .159 .140 1.000
 .395 .390 .453 .308 .456 .199 .363 .299 .289 .186 .221 .422
1.000
 .400 .403 .444 .365 .517 .236 .394 .334 .294 .181 .158 .504
.756 1.000
 .369 .337 .414 .407 .410 .371 .429 .362 .411 .129 .364 .498
.591 .637 1.000
```

```
 .443 .421 .418 .317 .481 .168 .451 .336 .372 .238 .177 .226
.479 .422 .550 1.000
 .397 .388 .471 .362 .503 .183 .336 .274 .327 .208 .130 .264
.479 .566 .532 .479 1.000
 .274 .254 .344 .351 .303 .321 .304 .240 .279 .293 .196 .364
.320 .409 .412 .462 .538 1.000
 .398 .367 .734 .475 .489 .114 .421 .372 .413 .201 .135 .374
.411 .564 .555 .460 .413 .596 1.000
 ME
 7.7342 7.8393 3.6901 3.6014 4.0135 2.3514 3.2928 3.2860 3.0963
.6898 .3288 2.7641 3.0315 3.0310 2.7461 3.0118 3.0355 2.8885
2.9122
 SD
 1.48906 1.41545 .80169 .83891 .75510 1.02474 .55725 .56251
.53373 .81281 .57896 .86616 .67117 .65276 .70520 .73104 .68047
.90238 .68924
 SE
 12 13 14 15 16 17 18 19 1 2 3 4 5 6 7 8 9 10 11/
 MO NX=11 NY=8 NK=5 NE=1  GA=FI PS=SY TE=SY TD=SY
 FR LY(2,1) LY(3,1) LY(4,1) LY(5,1) LY(6,1) LY(7,1) LY(8,1))
LX(1,1) LX(2,1) LX(3,2)
 FR LX(4,2) LX(5,3) LX(6,3)  LX(7,4) LX(8,4) LX(9,4) LX(10,5)
LX(11,5)
 FR GA(1,1) GA(1,2) GA(1,3) GA(1,4) GA(1,5)
 FR TE(3,2) TE(7,8) TE(7,6) TE(5,3) TE(4,1) TE(7,5) TE(7,1)
TE(8,2) TE(8,6) TE(3,1)
 FR TE(2,1) TE(5,1) TE(7,3) TE(5,4)
 FR TD(7,6) TD(9,2) TD(9,8) TD(6,4) TD(11,4) TD(10,2) TD(10,1)
TD(3,2) TD(6,1) TE(8,5)
 FR TD(9,5) TD(3,1) TD(6,2) TD(3,9) TD(5,3)  TD(6,3)  TD(8,3)
TD(8,4)1  TD(8,6)  TD(10,3)  TD(10,4)  TD(10,6)
 FR TH(11,4) TH(3,7) TH(5,4) TH(6,7) TH(3,3) TH(3,4) TH(8,3)
TH(6,8)    TH(7,8) TH(10,8)  TH(11,7)  TH(8,7) TH(6,6) TH(6,4)
TH(7,6) TH(9,3) TH(10,4) TH(6,1)  TH(2,1) TH(5,6) TH(6,2)
TH(11,2) TH(4,2) TH(8,8)
 VA 1 LY(1,1)
 LE
 RECOVARY
 LK
 SSEALL  RSALL PLALL SSALL ALCAB
 PATH DIAGRAM
 OU SE TV EF SS RS FS SC MI AM AD=OFF

 SEM MHS MODEL

                          Number of Input Variables 19
                          Number of Y - Variables    8
                          Number of X - Variables   11
                          Number of ETA - Variables  1
                          Number of KSI - Variables  5
                          Number of Observations   390


 SEM MHS MODEL
```

Covariance Matrix

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	1.10					
SEMRECO	0.42	1.10				
LSRRECO	0.50	0.76	1.10			
BFRECO	0.50	0.59	0.64	1.10		
OWBRECO	0.23	0.48	0.42	0.55	1.10	
NPORECO	0.26	0.48	0.57	0.53	0.48	1.10
SPRECO	0.36	0.32	0.41	0.41	0.46	0.54
AERECO	0.37	0.41	0.56	0.56	0.46	0.41
PSSE	0.15	0.40	0.40	0.37	0.44	0.40
ASSE	0.11	0.39	0.40	0.34	0.42	0.39
PERRS	0.27	0.45	0.44	0.41	0.42	0.47
SOCRS	0.25	0.31	0.36	0.41	0.32	0.36
POSPL	0.27	0.46	0.52	0.41	0.48	0.50
NEGPL	0.34	0.20	0.24	0.37	0.17	0.18
SOSS	0.25	0.36	0.39	0.43	0.45	0.34
FASS	0.23	0.30	0.33	0.36	0.34	0.27
FRSS	0.26	0.29	0.29	0.41	0.37	0.33
SCRIMAB	0.16	0.19	0.18	0.13	0.24	0.21
SEVEREAB	0.14	0.22	0.16	0.36	0.18	0.13

Covariance Matrix

	SPRECO	AERECO	PSSE	ASSE	PERRS	SOCRS
SPRECO	1.10					
AERECO	0.60	1.10				
PSSE	0.27	0.40	1.10			
ASSE	0.25	0.37	0.63	1.10		
PERRS	0.34	0.73	0.37	0.38	1.10	
SOCRS	0.35	0.47	0.29	0.29	0.69	1.10
POSPL	0.30	0.49	0.44	0.45	0.46	0.34

NEGPL	0.32	0.11	0.12	0.20	0.39
0.37					
SOSS	0.30	0.42	0.36	0.37	0.50
0.56					
FASS	0.24	0.37	0.30	0.30	0.42
0.50					
FRSS	0.28	0.41	0.26	0.40	0.40
0.51					
SCRIMAB	0.29	0.20	0.40	0.38	0.13
0.30					
SEVEREAB	0.20	0.14	0.37	0.31	0.34
0.12					

Covariance Matrix

	POSPL	NEGPL	SOSS	FASS	FRSS
SCRIMAB					
	---	---	---	---	---

POSPL	1.10				
NEGPL	0.34	1.10			
SOSS	0.42	0.14	1.10		
FASS	0.35	0.37	0.58	1.10	
FRSS	0.26	0.33	0.63	0.63	1.10
SCRIMAB	0.21	0.36	0.20	0.17	0.15
1.10					
SEVEREAB	0.20	0.38	0.39	0.35	0.31
0.56					

Covariance Matrix

	SEVEREAB

SEVEREAB	1.10

SEM MHS MODEL

Parameter Specifications

LAMBDA-Y

	RECOVARY

OSRECO	0
SEMRECO	1
LSRRECO	2
BFRECO	3
OWBRECO	4
NPORECO	5
SPRECO	6
AERECO	7

LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	8	0	0	0	0
ASSE	9	0	0	0	0
PERRS	0	10	0	0	0
SOCRS	0	11	0	0	0
POSPL	0	0	12	0	0
NEGPL	0	0	13	0	0
SOSS	0	0	0	14	0
FASS	0	0	0	15	0
FRSS	0	0	0	16	0
SCRIMAB	0	0	0	0	17
SEVEREAB	0	0	0	0	18

GAMMA

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	19	20	21	22	23

PHI

	SSEALL	RSALL	PLALL	SSALL	ALCAB
SSEALL	0				
RSALL	24	0			
PLALL	25	26	0		
SSALL	27	28	29	0	
ALCAB	30	31	32	33	0

PSI

	RECOVARY
	34

THETA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	35					
SEMRECO	36	37				
LSRRECO	38	39	40			
BFRECO	41	0	0	42		
OWBRECO	43	0	44	45	46	
NPORECO	0	0	0	0	0	47
SPRECO	48	0	49	0	50	51
AERECO	0	53	0	0	0	54

THETA-EPS

	SPRECO	AERECO
SPRECO	52	
AERECO	55	56

THETA-DELTA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
PSSE	0	0	0	0	0	0
ASSE	0	0	0	0	0	0
PERRS	0	0	59	0	0	0
SOCRS	0	0	0	0	0	0
POSPL	0	0	0	65	0	0
NEGPL	0	0	0	0	0	0
SOSS	0	0	0	0	0	0
FASS	0	0	0	0	0	0
FRSS	0	0	0	0	0	0
SCRIMAB	0	0	0	0	0	0
SEVEREAB	0	0	0	83	0	0

THETA-DELTA-EPS

	SPRECO	AERECO
PSSE	0	0
ASSE	0	0
PERRS	60	0
SOCRS	0	0
POSPL	0	0
NEGPL	67	0
SOSS	0	0
FASS	0	0
FRSS	0	0
SCRIMAB	0	0
SEVEREAB	0	0

THETA-DELTA

	PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL

	PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
PSSE	57										
ASSE	0	58									
PERRS	61	62	63								
SOCRS	0	0	0	64							
POSPL	0	0	0	0	66						
NEGPL	68	69	0	70	0	71					
SOSS	0	0	0	0	0	72					
FASS	0	0	0	0	0	0					
FRSS	0	75	76	0	77	0					
SCRIMAB	80	81	0	0	0	0					
SEVEREAB	0	0	0	84	0	0					

THETA-DELTA

	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
SOSS	73				
FASS	0	74			
FRSS	0	78	79		
SCRIMAB	0	0	0	82	
SEVEREAB	0	0	0	0	85

SEM MHS MODEL

Number of Iterations =191

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	RECOVARY
OSRECO	1.00
SEMRECO	1.59
	(0.21)
	7.73
LSRRECO	1.82
	(0.22)
	8.16
BFRECO	1.77
	(0.22)
	8.02

OWBRECO	1.52
	(0.22)
	6.87
NPORECO	1.68
	(0.23)
	7.34
SPRECO	1.22
	(0.21)
	5.84
AERECO	1.95
	(0.25)
	7.67

LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	0.81	- -	- -	- -	- -
	(0.05)				
	15.48				
ASSE	0.75	- -	- -	- -	- -
	(0.05)				
	14.43				
PERRS	- -	0.91	- -	- -	- -
		(0.05)			
		19.79			
SOCRS	- -	0.75	- -	- -	- -
		(0.05)			
		15.35			
POSPL	- -	- -	0.83	- -	- -
			(0.06)		
			13.06		
NEGPL	- -	- -	0.45	- -	- -
			(0.06)		
			8.14		
SOSS	- -	- -	- -	0.86	- -
				(0.05)	
				17.64	
FASS	- -	- -	- -	0.75	- -
				(0.05)	
				15.16	
FRSS	- -	- -	- -	0.73	- -

				(0.05)	
				14.76	
SCRIMAB	- -	- -	- -	- -	0.20
					(0.16)
					3.24
SEVEREAB	- -	- -	- -	- -	3.72
					(2.86)
					3.30

GAMMA

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.38	0.24	0.18	0.15	-0.13
	(0.03)	(0.05)	(0.06)	(0.04)	(0.03)
	3.59	4.20	2.24	2.69	2.83

Covariance Matrix of ETA and KSI

	RECOVARY	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.18					
SSEALL	0.23	1.00				
RSALL	0.34	0.36	1.00			
PLALL	0.33	0.57	0.63	1.00		
SSALL	0.27	0.50	0.70	0.66	1.00	
ALCAB	0.00	0.14	0.10	0.01	0.12	1.00

PHI

	SSEALL	RSALL	PLALL	SSALL	ALCAB
SSEALL	1.00				
RSALL	0.36	1.00			
	(0.07)				
	5.24				
PLALL	0.57	0.63	1.00		
	(0.06)	(0.05)			
	8.77	11.54			
SSALL	0.50	0.70	0.66	1.00	
	(0.05)	(0.04)	(0.07)		
	9.33	17.57	10.11		
ALCAB	0.14	0.10	0.11	0.12	1.00
	(0.11)	(0.08)	(0.02)	(0.10)	

```
              3.24        3.19        3.58        3.20


         PSI

            RECOVARY
            --------
                0.03
              (0.01)
                2.95


         Squared Multiple Correlations for Structural Equations

            RECOVARY
            --------
                0.77


         THETA-EPS

              OSRECO     SEMRECO     LSRRECO      BFRECO     OWBRECO
NPORECO
            --------    --------    --------    --------    --------
--------
   OSRECO       0.91
               (0.07)
                13.64

  SEMRECO       0.14        0.65
               (0.04)      (0.05)
                 3.28       12.73

  LSRRECO       0.16        0.23        0.52
               (0.04)      (0.04)      (0.04)
                 4.14        6.13       12.11

   BFRECO       0.14        - -         - -         0.55
               (0.04)                                (0.04)
                 3.91                                12.66

  OWBRECO      -0.05        - -        -0.09        0.10        0.69
               (0.04)                  (0.03)      (0.03)      (0.05)
                -3.24                   -3.22        2.92       12.98

  NPORECO        - -         - -         - -         - -         - -
0.60

(0.05)

12.73

   SPRECO       0.03        - -         0.09        - -         0.19
0.20
               (0.03)                  (0.03)                  (0.03)
(0.04)
```

```
                3.78                    2.85                    5.55
4.63

   AERECO        - -      -0.12         - -         - -         - -
-0.17
                          (0.02)
(0.03)
                           5.25
5.49


         THETA-EPS

              SPRECO     AERECO
             --------   --------
   SPRECO       1.31
               (0.09)
                15.07

   AERECO       0.36       0.42
               (0.04)     (0.04)
                8.23      11.81


         Squared Multiple Correlations for Y - Variables

              OSRECO    SEMRECO    LSRRECO     BFRECO    OWBRECO
NPORECO
             --------   --------   --------   --------   --------
--------
                0.16       0.41       0.53       0.50       0.37
0.46

         Squared Multiple Correlations for Y - Variables

              SPRECO     AERECO
             --------   --------
                0.17       0.61

         THETA-DELTA-EPS

              OSRECO    SEMRECO    LSRRECO     BFRECO    OWBRECO
NPORECO
             --------   --------   --------   --------   --------
--------
     PSSE        - -        - -        - -        - -        - -
- -

     ASSE        - -        - -        - -        - -        - -
- -

    PERRS        - -        - -       0.09        - -        - -
- -
                                     (0.02)
                                      4.39
```

SOCRS	- -	- -	- -	- -	- -
- -					
POSPL	- -	- -	- -	0.12	- -
- -					
				(0.03)	
				4.05	
NEGPL	- -	- -	- -	- -	- -
- -					
SOSS	- -	- -	- -	- -	- -
- -					
FASS	- -	- -	- -	- -	- -
- -					
FRSS	- -	- -	- -	- -	- -
- -					
SCRIMAB	- -	- -	- -	- -	- -
- -					
SEVEREAB	- -	- -	- -	0.33	- -
- -					
				(0.03)	
				10.22	

THETA-DELTA-EPS

	SPRECO	AERECO
PSSE	- -	- -
ASSE	- -	- -
PERRS	0.16	- -
	(0.03)	
	5.21	
SOCRS	- -	- -
POSPL	- -	- -
NEGPL	0.45	- -
	(0.05)	
	10.02	
SOSS	- -	- -
FASS	- -	- -
FRSS	- -	- -

SCRIMAB	- -	- -
SEVEREAB	- -	- -

THETA-DELTA

	PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL
PSSE	0.41					
	(0.06)					
	7.18					
ASSE	- -	0.52				
		(0.06)				
		9.17				
PERRS	0.08	0.10	0.24			
	(0.04)	(0.04)	(0.04)			
	1.96	2.67	5.48			
SOCRS	- -	- -	- -	0.52		
				(0.05)		
				11.47		
POSPL	- -	- -	- -	- -	0.44	
					(0.08)	
					5.39	
NEGPL	-0.15	-0.09	- -	0.06	- -	0.90
	(0.04)	(0.04)		(0.03)		(0.07)
	-4.05	-2.33		1.92		13.47
SOSS	- -	- -	- -	- -	- -	-0.21
						(0.03)
						-6.11
FASS	- -	- -	- -	- -	- -	- -
FRSS	- -	0.11	0.08	- -	0.14	- -
		(0.03)	(0.02)		(0.03)	
		3.43	3.95		4.23	

SCRIMAB	0.31	0.33	- -	- -	- -
	(0.06)	(0.05)			
	5.52	6.08			
SEVEREAB	- -	- -	- -	0.43	- -
				(0.04)	
				10.04	

THETA-DELTA

	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
SOSS	0.42				
	(0.04)				
	9.46				
FASS	- -	0.53			
		(0.05)			
		11.16			
FRSS	- -	0.03	0.54		
		(0.03)	(0.05)		
		4.05	11.33		
SCRIMAB	- -	- -	- -	1.06	
				(0.10)	
				11.01	
SEVEREAB	- -	- -	- -	- -	12.22
					(21.29)
					3.57

Squared Multiple Correlations for X - Variables

PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL
0.61	0.52	0.78	0.52	0.61	0.19

Squared Multiple Correlations for X - Variables

SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
0.63	0.51	0.49	0.24	0.36

Goodness of Fit Statistics

Degrees of Freedom = 89

```
               Minimum Fit Function Chi-Square = 103.46 (P =
0.069)
        Normal Theory Weighted Least Squares Chi-Square = 103.46
(P=0.069)
               Estimated Non-centrality Parameter (NCP) = 19.81
            90 Percent Confidence Interval for NCP = (0.0 ;
48.84)

                        Minimum Fit Function Value = 0.23
                Population Discrepancy Function Value (F0) =
0.045
              90 Percent Confidence Interval for F0 = (0.0 ;
0.11)
             Root Mean Square Error of Approximation (RMSEA) =
0.027
            90 Percent Confidence Interval for RMSEA = (0.077 ;
0.036)
               P-Value for Test of Close Fit (RMSEA < 0.05) =
1.00

                  Expected Cross-Validation Index (ECVI) = 0.71
             90 Percent Confidence Interval for ECVI = (0.70 ;
0.79)
                        ECVI for Saturated Model = 0.85
                    ECVI for Independence Model = 25.02

    Chi-Square for Independence Model with 171 Degrees of Freedom
= 8094.98
                              Independence AIC = 8132.98
                                  Model AIC = 573.46
                                Saturated AIC = 380.00
                             Independence CAIC = 8227.34
                                  Model CAIC = 995.58
                                Saturated CAIC = 1323.57

                              Normed Fit Index (NFI) = 0.99
                          Non-Normed Fit Index (NNFI) = 1.00
                     Parsimony Normed Fit Index (PNFI) = 0.43
                        Comparative Fit Index (CFI) = 1.00
                        Incremental Fit Index (IFI) = 1.00
                         Relative Fit Index (RFI) = 0.98

                              Critical N (CN) = 316.36


                     Root Mean Square Residual (RMR) = 0.035
                           Standardized RMR = 0.035
                         Goodness of Fit Index (GFI) = 0.97
                   Adjusted Goodness of Fit Index (AGFI) = 0.96
                  Parsimony Goodness of Fit Index (PGFI) = 0.36

 SEM MHS MODEL

          Fitted Covariance Matrix
```

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	1.09					
SEMRECO	0.42	1.09				
LSRRECO	0.48	0.75	1.11			
BFRECO	0.45	0.50	0.57	1.11		
OWBRECO	0.22	0.43	0.40	0.58	1.10	
NPORECO	0.30	0.47	0.54	0.53	0.45	1.10
SPRECO	0.24	0.34	0.48	0.38	0.52	0.57
AERECO	0.35	0.43	0.63	0.61	0.52	0.41
PSSE	0.19	0.30	0.34	0.33	0.29	0.32
ASSE	0.17	0.28	0.32	0.31	0.26	0.29
PERRS	0.31	0.49	0.47	0.54	0.46	0.51
SOCRS	0.25	0.40	0.46	0.45	0.38	0.42
POSPL	0.28	0.44	0.50	0.37	0.42	0.47
NEGPL	0.15	0.24	0.28	0.27	0.23	0.25
SOSS	0.23	0.36	0.42	0.40	0.35	0.38
FASS	0.20	0.32	0.37	0.36	0.30	0.34
FRSS	0.19	0.31	0.35	0.34	0.29	0.33
SCRIMAB	0.00	0.00	0.00	0.00	0.00	0.00
SEVEREAB	0.00	-0.01	-0.01	0.33	-0.01	-0.01

Fitted Covariance Matrix

	SPRECO	AERECO	PSSE	ASSE	PERRS	SOCRS
SPRECO	1.58					
AERECO	0.78	1.10				
PSSE	0.23	0.37	1.07			
ASSE	0.21	0.34	0.61	1.08		
PERRS	0.21	0.60	0.34	0.35	1.07	
SOCRS	0.31	0.49	0.22	0.20	0.68	1.08
POSPL	0.34	0.54	0.38	0.35	0.47	0.39
NEGPL	0.64	0.29	0.05	0.10	0.26	0.27

```
     SOSS        0.28        0.44        0.34        0.32        0.55
0.45
     FASS        0.24        0.39        0.30        0.28        0.48
0.40
     FRSS        0.24        0.38        0.29        0.39        0.39
0.38
  SCRIMAB        0.00        0.00        0.33        0.35        0.02
0.01
 SEVEREAB        0.00       -0.01        0.43        0.40        0.34
-0.16

          Fitted Covariance Matrix

                POSPL       NEGPL        SOSS        FASS        FRSS
SCRIMAB
            --------    --------    --------    --------    --------
--------
    POSPL        1.13
    NEGPL        0.38        1.11
     SOSS        0.47        0.04        1.15
     FASS        0.41        0.23        0.64        1.10
     FRSS        0.26        0.22        0.62        0.58        1.07
  SCRIMAB        0.00        0.00        0.02        0.02        0.02
1.10
 SEVEREAB        0.03        0.02        0.39        0.34        0.33
0.73

          Fitted Covariance Matrix

             SEVEREAB
             --------
 SEVEREAB        1.59

          Fitted Residuals

                OSRECO     SEMRECO     LSRRECO      BFRECO     OWBRECO
NPORECO
            --------    --------    --------    --------    --------
--------
   OSRECO        0.01
  SEMRECO        0.00        0.01
  LSRRECO        0.02        0.01       -0.01
   BFRECO        0.04        0.09        0.06       -0.01
  OWBRECO        0.01        0.05        0.02       -0.03        0.00
  NPORECO       -0.03        0.01        0.02        0.00        0.03
0.00
   SPRECO        0.12       -0.02       -0.07        0.03       -0.05
-0.03
   AERECO        0.03       -0.02       -0.07       -0.06       -0.06
0.00
     PSSE       -0.04        0.10        0.06        0.04        0.16
0.08
     ASSE       -0.07        0.11        0.09        0.03        0.16
0.10
```

```
    PERRS       -0.04       -0.03       -0.02       -0.13       -0.05
-0.04
    SOCRS        0.00       -0.09       -0.09       -0.04       -0.06
-0.06
    POSPL       -0.01        0.02        0.01        0.04        0.06
0.04
    NEGPL        0.19       -0.04       -0.04        0.10       -0.06
-0.07
     SOSS        0.02        0.00       -0.02        0.02        0.10
-0.05
     FASS        0.03       -0.02       -0.03        0.01        0.03
-0.06
     FRSS        0.07       -0.02       -0.06        0.07        0.08
0.00
  SCRIMAB        0.16        0.19        0.18        0.13        0.24
0.21
 SEVEREAB        0.14        0.23        0.16        0.04        0.18
0.14

         Fitted Residuals

              SPRECO      AERECO       PSSE        ASSE       PERRS
SOCRS
            --------    --------    --------    --------    --------
--------
   SPRECO       -0.48
   AERECO       -0.19        0.00
     PSSE        0.04        0.03        0.03
     ASSE        0.04        0.03        0.02        0.02
    PERRS        0.13        0.14        0.02        0.02        0.03
    SOCRS        0.05       -0.01        0.07        0.09        0.01
0.02
    POSPL       -0.03       -0.05        0.06        0.09       -0.02
-0.05
    NEGPL       -0.32       -0.18        0.06        0.10        0.13
0.10
     SOSS        0.03       -0.02        0.02        0.05       -0.04
0.11
     FASS        0.00       -0.02        0.00        0.02       -0.06
0.11
     FRSS        0.04        0.04       -0.03        0.01        0.02
0.13
  SCRIMAB        0.29        0.20        0.06        0.04        0.12
0.29
 SEVEREAB        0.20        0.14       -0.05       -0.09        0.00
0.27

         Fitted Residuals

              POSPL       NEGPL        SOSS        FASS        FRSS
SCRIMAB
            --------    --------    --------    --------    --------
--------
    POSPL       -0.03
    NEGPL       -0.04       -0.01
```

```
     SOSS      -0.05       0.09      -0.05
     FASS      -0.06       0.15      -0.06       0.00
     FRSS       0.00       0.11       0.01       0.05       0.03
  SCRIMAB       0.21       0.36       0.18       0.15       0.13
0.00
 SEVEREAB       0.16       0.37       0.00       0.01      -0.02
-0.17
```

Fitted Residuals

	SEVEREAB
SEVEREAB	-0.49

Summary Statistics for Fitted Residuals

```
 Smallest Fitted Residual =   -0.49
   Median Fitted Residual =    0.02
  Largest Fitted Residual =    0.37
```

Stemleaf Plot

```
 - 4|98
 - 4|
 - 3|
 - 3|2
 - 2|
 - 2|
 - 1|987
 - 1|3
 - 0|99977776666666666555555555
 - 0|44444444333333332222222222111110000000000000000
   0|11111111111222222222222223333333333334444444444
   0|55556666667778899999
   1|000000111122333334444
   1|556666688899
   2|001134
   2|799
   3|
   3|67
```

Standardized Residuals

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	2.07					
SEMRECO	0.45	1.23				
LSRRECO	2.20	0.89	-1.99			
BFRECO	1.96	3.31	2.70	-0.93		
OWBRECO	1.31	1.65	1.61	-1.47	-0.13	
NPORECO	-0.99	0.20	0.92	0.12	0.90	

- -

SPRECO	3.18	-0.55	-2.95	0.74	-1.73	-1.14
AERECO	1.05	-1.11	-3.39	-2.74	-2.71	0.07
PSSE	-0.87	2.46	1.60	0.97	3.94	2.14
ASSE	-1.47	2.77	2.26	0.73	3.75	2.39
PERRS	-1.28	-1.24	-1.05	-5.55	-1.69	-1.66
SOCRS	0.03	-2.71	-3.10	-1.27	-1.85	-1.85
POSPL	-0.27	0.50	0.45	2.58	1.87	1.23
NEGPL	4.03	-1.05	-1.12	2.81	-1.50	-1.87
SOSS	0.45	0.01	-0.64	0.70	2.72	-1.30
FASS	0.65	-0.50	-0.87	0.15	0.78	-1.64
FRSS	1.50	-0.48	-1.62	1.82	1.94	0.04
SCRIMAB	2.86	3.35	3.23	2.31	4.27	3.73
SEVEREAB	2.30	4.12	3.20	0.82	3.24	2.53

Standardized Residuals

	SPRECO	AERECO	PSSE	ASSE	PERRS	SOCRS
SPRECO	-12.08					
AERECO	-8.93	0.54				
PSSE	0.83	0.96	2.14			
ASSE	0.75	0.78	1.17	1.29		
PERRS	3.92	6.48	1.12	1.14	2.58	
SOCRS	0.96	-0.50	2.60	2.75	0.93	6.09
POSPL	-0.77	-2.04	2.41	3.17	-1.16	-1.64
NEGPL	-8.00	-5.67	2.11	3.17	3.93	3.56
SOSS	0.49	-0.75	0.68	1.45	-2.33	3.90
FASS	-0.09	-0.56	0.00	0.44	-2.51	3.36
FRSS	0.80	1.05	-0.97	0.54	0.93	3.86
SCRIMAB	4.39	3.62	2.30	1.27	2.50	5.74
SEVEREAB	2.68	2.96	-1.50	-2.22	-0.01	6.87

Standardized Residuals

	POSPL	NEGPL	SOSS	FASS	FRSS	SCRIMAB
POSPL	-3.13					
NEGPL	-1.90	-0.27				
SOSS	-2.18	3.41	-4.99			
FASS	-2.18	3.58	-4.15	- -		
FRSS	-0.02	2.70	0.80	4.56	4.43	
SCRIMAB	3.66	6.39	3.93	3.21	2.80	-0.68
SEVEREAB	3.61	5.99	0.00	0.20	-0.36	-4.46

Standardized Residuals

	SEVEREAB
SEVEREAB	-7.49

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -12.08
Median Standardized Residual = 0.78
Largest Standardized Residual = 6.87

Stemleaf Plot

```
-12|1
-11|
-10|
- 9|
- 8|90
- 7|5
- 6|
- 5|760
- 4|51
- 3|4110
- 2|7775322200
- 1|99987776665555333221111000
- 0|99987766555543311000000000
  0|11222444555556777788888899999
  1|000011122233355667899
  2|011112333344555666777788889
  3|022222223344666677799999
  4|013446
  5|7
  6|01459
```

Largest Negative Standardized Residuals
Residual for SPRECO and LSRRECO -2.95
Residual for SPRECO and SPRECO -12.08
Residual for AERECO and LSRRECO -3.39
Residual for AERECO and BFRECO -2.74

```
Residual for   AERECO and  OWBRECO  -2.71
Residual for   AERECO and   SPRECO  -8.93
Residual for    PERRS and   BFRECO  -5.55
Residual for    SOCRS and  SEMRECO  -2.71
Residual for    SOCRS and  LSRRECO  -3.10
Residual for    POSPL and    POSPL  -3.13
Residual for    NEGPL and   SPRECO  -8.00
Residual for    NEGPL and   AERECO  -5.67
Residual for     SOSS and     SOSS  -4.99
Residual for     FASS and     SOSS  -4.15
Residual for SEVEREAB and  SCRIMAB  -4.46
Residual for SEVEREAB and SEVEREAB  -7.49
Largest Positive Standardized Residuals
Residual for   BFRECO and  SEMRECO   3.31
Residual for   BFRECO and  LSRRECO   2.70
Residual for   SPRECO and   OSRECO   3.18
Residual for     PSSE and  OWBRECO   3.94
Residual for     ASSE and  SEMRECO   2.77
Residual for     ASSE and  OWBRECO   3.75
Residual for    PERRS and   SPRECO   3.92
Residual for    PERRS and   AERECO   6.48
Residual for    PERRS and    PERRS   2.58
Residual for    SOCRS and     PSSE   2.60
Residual for    SOCRS and     ASSE   2.75
Residual for    SOCRS and    SOCRS   6.09
Residual for    POSPL and   BFRECO   2.58
Residual for    POSPL and     ASSE   3.17
Residual for    NEGPL and   OSRECO   4.03
Residual for    NEGPL and   BFRECO   2.81
Residual for    NEGPL and     ASSE   3.17
Residual for    NEGPL and    PERRS   3.93
Residual for    NEGPL and    SOCRS   3.56
Residual for     SOSS and  OWBRECO   2.72
Residual for     SOSS and    SOCRS   3.90
Residual for     SOSS and    NEGPL   3.41
Residual for     FASS and    SOCRS   3.36
Residual for     FASS and    NEGPL   3.58
Residual for     FRSS and    SOCRS   3.86
Residual for     FRSS and    NEGPL   2.70
Residual for     FRSS and     FASS   4.56
Residual for     FRSS and     FRSS   4.43
Residual for  SCRIMAB and   OSRECO   2.86
Residual for  SCRIMAB and  SEMRECO   3.35
Residual for  SCRIMAB and  LSRRECO   3.23
Residual for  SCRIMAB and  OWBRECO   4.27
Residual for  SCRIMAB and  NPORECO   3.73
Residual for  SCRIMAB and   SPRECO   4.39
Residual for  SCRIMAB and   AERECO   3.62
Residual for  SCRIMAB and    SOCRS   5.74
Residual for  SCRIMAB and    POSPL   3.66
Residual for  SCRIMAB and    NEGPL   6.39
Residual for  SCRIMAB and     SOSS   3.93
Residual for  SCRIMAB and     FASS   3.21
Residual for  SCRIMAB and     FRSS   2.80
Residual for SEVEREAB and  SEMRECO   4.12
```

```
Residual for SEVEREAB and  LSRRECO   3.20
Residual for SEVEREAB and  OWBRECO   3.24
Residual for SEVEREAB and   SPRECO   2.68
Residual for SEVEREAB and   AERECO   2.96
Residual for SEVEREAB and    SOCRS   6.87
Residual for SEVEREAB and    POSPL   3.61
Residual for SEVEREAB and    NEGPL   5.99
```

SEM MHS MODEL

Qplot of Standardized Residuals

```
3.5.............................................................
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 l   .                                        .          **xxx*xx
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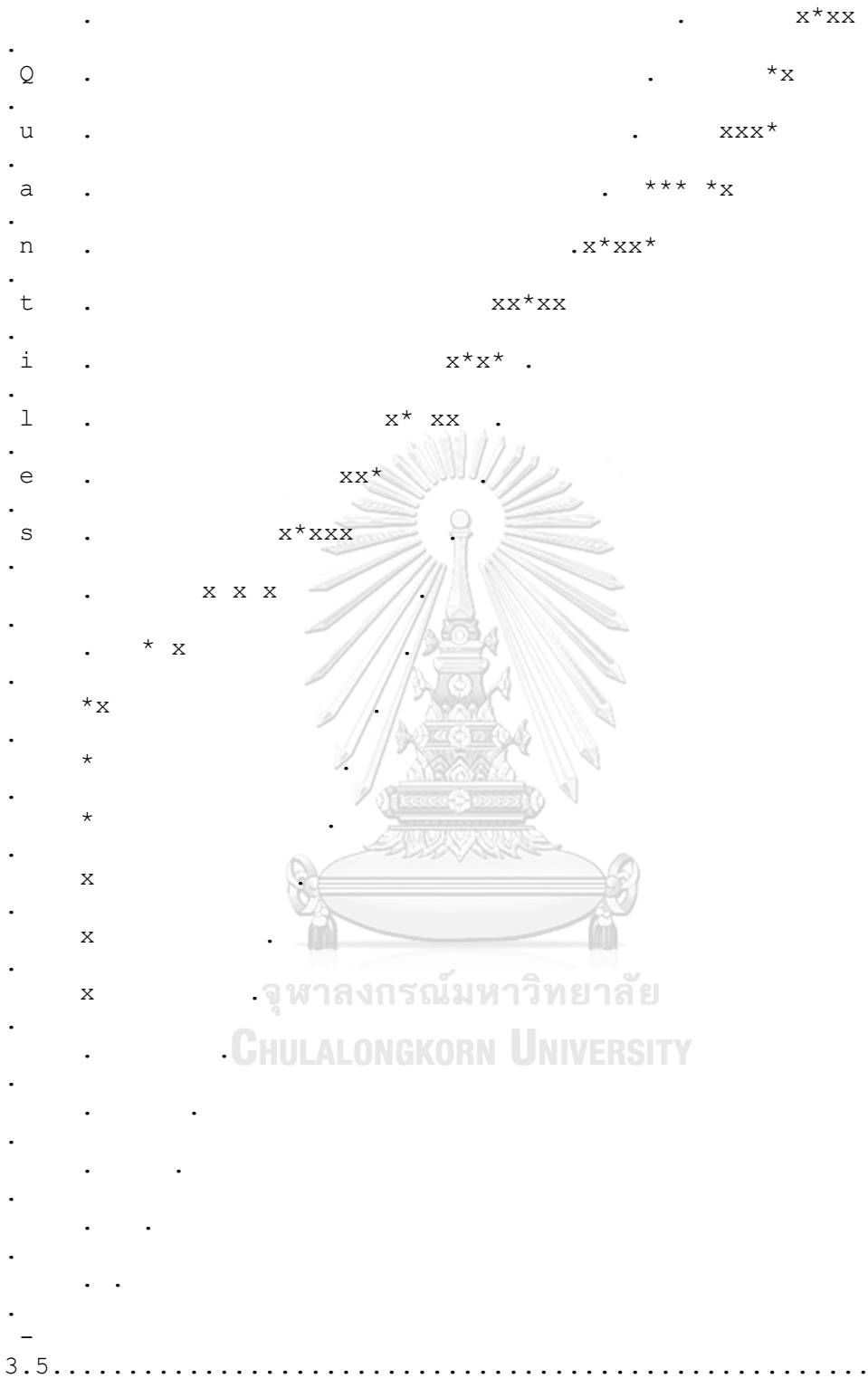

SEM MHS MODEL

Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-Y

Modification Indices for LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	- -	0.04	0.56	0.42	0.47
ASSE	- -	0.04	0.56	0.42	0.47
PERRS	0.51	- -	0.78	35.19	40.62
SOCRS	0.51	- -	0.78	35.19	40.52
POSPL	2.37	19.44	- -	24.94	0.59
NEGPL	2.37	19.44	- -	24.94	0.59
SOSS	0.12	0.45	0.69	- -	0.29
FASS	4.71	1.56	0.73	- -	5.87
FRSS	5.70	0.61	3.80	- -	5.86
SCRIMAB	29.50	16.46	27.58	29.04	- -
SEVEREAB	29.50	16.46	27.58	29.04	- -

Expected Change for LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	- -	0.02	-0.06	-0.06	0.01
ASSE	- -	-0.02	0.06	0.06	-0.01
PERRS	-0.27	- -	0.11	-0.68	-1.40
SOCRS	0.22	- -	-0.09	0.55	1.15
POSPL	0.21	-0.76	- -	-0.79	0.02
NEGPL	-0.12	0.41	- -	0.43	-0.01
SOSS	-0.02	0.08	-0.06	- -	-0.01
FASS	0.11	-0.10	-0.06	- -	0.02
FRSS	-0.15	0.07	0.15	- -	-0.02
SCRIMAB	0.46	0.26	0.30	0.39	- -
SEVEREAB	-8.75	-4.91	-5.70	-7.28	- -

Standardized Expected Change for LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	- -	0.02	-0.06	-0.06	0.01
ASSE	- -	-0.02	0.06	0.06	-0.01
PERRS	-0.27	- -	0.11	-0.68	-1.40
SOCRS	0.22	- -	-0.09	0.55	1.15
POSPL	0.21	-0.76	- -	-0.79	0.02
NEGPL	-0.12	0.41	- -	0.43	-0.01
SOSS	-0.02	0.08	-0.06	- -	-0.01
FASS	0.11	-0.10	-0.06	- -	0.02
FRSS	-0.15	0.07	0.15	- -	-0.02
SCRIMAB	0.46	0.26	0.30	0.39	- -
SEVEREAB	-8.75	-4.91	-5.70	-7.28	- -

Completely Standardized Expected Change for LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB

PSSE	- -	0.02	-0.06	-0.06	0.01
ASSE	- -	-0.02	0.06	0.05	-0.01
PERRS	-0.26	- -	0.11	-0.65	-1.36
SOCRS	0.21	- -	-0.09	0.53	1.10
POSPL	0.20	-0.71	- -	-0.75	0.01
NEGPL	-0.11	0.39	- -	0.41	-0.01
SOSS	-0.02	0.07	-0.06	- -	-0.01
FASS	0.11	-0.10	-0.06	- -	0.02
FRSS	-0.15	0.07	0.15	- -	-0.02
SCRIMAB	0.44	0.25	0.29	0.37	- -
SEVEREAB	-6.95	-3.90	-4.52	-5.78	- -

No Non-Zero Modification Indices for GAMMA

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for PSI

Modification Indices for THETA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	- -					
SEMRECO	- -	- -				
LSRRECO	- -	- -	- -			
BFRECO	- -	1.75	1.64	- -		
OWBRECO	- -	0.88	- -	- -	- -	
NPORECO	0.87	0.01	0.59	0.01	0.02	- -
SPRECO	- -	0.44	- -	0.49	- -	- -
AERECO	1.13	- -	3.21	0.07	- -	- -

Modification Indices for THETA-EPS

	SPRECO	AERECO
SPRECO	- -	
AERECO	- -	- -

Expected Change for THETA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
OSRECO	- -					
SEMRECO	- -	- -				
LSRRECO	- -	- -	- -			
BFRECO	- -	0.04	0.04	- -		
OWBRECO	- -	0.03	- -	- -	- -	

```
  NPORECO      -0.04        0.00        0.02        0.00        0.00
- -
   SPRECO        - -       -0.03         - -        0.03         - -
- -
   AERECO       0.04         - -       -0.06       -0.01         - -
- -
```

Expected Change for THETA-EPS

```
              SPRECO     AERECO
             --------   --------
   SPRECO        - -
   AERECO        - -         - -
```

Completely Standardized Expected Change for THETA-EPS

```
              OSRECO    SEMRECO    LSRRECO     BFRECO    OWBRECO
NPORECO
             --------   --------   --------   --------   --------
--------
   OSRECO        - -
  SEMRECO        - -         - -
  LSRRECO        - -         - -         - -
   BFRECO        - -        0.04        0.03         - -
  OWBRECO        - -        0.03         - -         - -         - -
  NPORECO      -0.03        0.00        0.02        0.00        0.00
- -
   SPRECO        - -       -0.02         - -        0.02         - -
- -
   AERECO       0.04         - -       -0.05       -0.01         - -
- -
```

Completely Standardized Expected Change for THETA-EPS

```
              SPRECO     AERECO
             --------   --------
   SPRECO        - -
   AERECO        - -         - -
```

Modification Indices for THETA-DELTA-EPS

```
              OSRECO    SEMRECO    LSRRECO     BFRECO    OWBRECO
NPORECO
             --------   --------   --------   --------   --------   -
-------
     PSSE       0.48       0.02       0.00       0.00       1.79
0.00
     ASSE        - -       0.25       2.13       0.03       1.00
0.00
    PERRS       0.62       0.35        - -        - -       0.41
1.39
    SOCRS       0.38       0.00       2.42       2.83       1.13
0.29
```

POSPL	0.56	0.25	0.12	- -	1.17
- -					
NEGPL	- -	- -	1.11	- -	0.57
- -					
SOSS	0.29	1.05	1.36	3.04	3.70
- -					
FASS	0.24	0.21	0.00	2.61	1.20
0.70					
FRSS	0.68	0.30	- -	1.02	0.27
0.22					
SCRIMAB	2.76	0.48	0.27	- -	2.08
0.86					
SEVEREAB	0.88	- -	1.48	- -	0.07
1.99					

Modification Indices for THETA-DELTA-EPS

	SPRECO	AERECO
PSSE	0.10	0.02
ASSE	0.68	2.65
PERRS	- -	- -
SOCRS	0.04	- -
POSPL	0.43	0.47
NEGPL	- -	- -
SOSS	1.10	- -
FASS	- -	- -
FRSS	1.96	3.28
SCRIMAB	0.05	- -
SEVEREAB	- -	0.30

Expected Change for THETA-DELTA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO
NPORECO					
PSSE	-0.02	0.00	0.00	0.00	0.04
0.00					
ASSE	- -	0.01	0.04	0.00	0.03
0.00					
PERRS	-0.02	-0.02	- -	- -	-0.02
0.03					
SOCRS	0.02	0.00	-0.04	0.05	-0.03
-0.01					
POSPL	-0.03	0.02	0.01	- -	0.04
- -					
NEGPL	- -	- -	0.03	- -	-0.03
- -					
SOSS	0.02	-0.03	0.03	0.04	0.06
- -					
FASS	0.02	0.01	0.00	-0.04	0.03
0.02					

FRSS	0.03	-0.02	- -	0.03	-0.02
0.01					
SCRIMAB	0.06	-0.02	-0.01	-0.08	0.05
0.03					
SEVEREAB	0.03	- -	-0.03	- -	-0.01
0.05					

Expected Change for THETA-DELTA-EPS

	SPRECO	AERECO
PSSE	-0.01	0.00
ASSE	-0.03	-0.04
PERRS	- -	- -
SOCRS	0.01	- -
POSPL	0.03	0.02
NEGPL	- -	- -
SOSS	0.03	- -
FASS	- -	- -
FRSS	0.05	0.05
SCRIMAB	0.01	- -
SEVEREAB	- -	-0.02

Completely Standardized Expected Change for THETA-DELTA-EPS

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
PSSE	-0.02	0.00	0.00	0.00	0.04	0.00
ASSE	- -	0.01	0.04	0.00	0.03	0.00
PERRS	-0.02	-0.01	- -	- -	-0.02	0.03
SOCRS	0.02	0.00	-0.04	0.04	-0.03	-0.01
POSPL	-0.03	0.01	0.01	- -	0.03	- -
NEGPL	- -	- -	0.03	- -	-0.03	- -
SOSS	0.02	-0.02	0.02	0.04	0.05	- -
FASS	0.02	0.01	0.00	-0.04	0.03	0.02
FRSS	0.03	-0.01	-0.06	0.02	-0.01	0.01
SCRIMAB	0.05	-0.02	- -	-0.07	0.04	0.03
SEVEREAB	0.03	0.05	-0.03	- -	-0.01	0.04

Completely Standardized Expected Change for THETA-DELTA-EPS

	SPRECO	AERECO
PSSE	-0.01	0.00
ASSE	-0.02	-0.04
PERRS	- -	- -
SOCRS	0.01	- -
POSPL	0.02	0.02
NEGPL	- -	- -
SOSS	0.03	- -
FASS	- -	- -
FRSS	0.04	0.04
SCRIMAB	0.01	- -
SEVEREAB	- -	-0.01

Modification Indices for THETA-DELTA

	PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL
PSSE	- -					
ASSE	- -	- -				
PERRS	- -	- -	- -			
SOCRS	0.16	0.16	- -	- -		
POSPL	0.48	0.48	- -	0.02	- -	- -
NEGPL	- -	- -	- -	- -	- -	- -
SOSS	0.16	0.40	0.20	3.87	0.12	- -
FASS	0.08	0.01	- -	- -	3.48	- -
FRSS	2.89	- -	- -	0.03	- -	0.64
SCRIMAB	- -	- -	- -	- -	2.22	- -
SEVEREAB	0.49	0.49	4.11	- -	1.27	1.66

Modification Indices for THETA-DELTA

	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
SOSS	- -				
FASS	1.16	- -			
FRSS	1.16	- -	- -		
SCRIMAB	5.48	2.96	0.40	- -	
SEVEREAB	0.58	5.97	5.35	- -	- -

Expected Change for THETA-DELTA

	PSSE	ASSE	PERRS	SOCRS	POSPL	NEGPL

```
     PSSE        - -
     ASSE        - -        - -
    PERRS        - -        - -        - -
    SOCRS       0.02      -0.02        - -        - -
    POSPL      -0.03       0.03       - -       -0.01        - -
    NEGPL        - -        - -       - -        - -        - -
- -
     SOSS       0.01       0.02       0.01       0.06      -0.01
- -
     FASS       0.01       0.00        - -       - -       -0.07
0.12
     FRSS      -0.06        - -        - -      -0.01        - -
0.03
 SCRIMAB        - -        - -        - -       - -        -0.06
- -
 SEVEREAB       0.04      -0.04       1.57        - -       0.08
-0.05
```

Expected Change for THETA-DELTA

	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB
SOSS	- -				
FASS	-0.05	- -			
FRSS	0.05	- -	- -		
SCRIMAB	0.07	-0.05	0.02	- -	
SEVEREAB	-0.03	0.07	-0.08	- -	- -

Completely Standardized Expected Change for THETA-DELTA

```
                PSSE       ASSE       PERRS      SOCRS      POSPL
NEGPL
            --------   --------   --------   --------   --------
--------
     PSSE        - -
     ASSE        - -        - -
    PERRS        - -        - -        - -
    SOCRS       0.02      -0.01        - -        - -
    POSPL      -0.03       0.02       - -       0.00        - -
    NEGPL        - -        - -       - -        - -        - -
- -
     SOSS       0.01       0.02       0.01       0.05      -0.01
- -
     FASS       0.01       0.00        - -       - -       -0.06
- -
     FRSS      -0.06        - -        - -      -0.01        - -
0.03
  SCRIMAB        - -        - -        - -       - -        -0.05
- -
 SEVEREAB       0.03      -0.03       1.21        - -       0.06
-0.04
```

Completely Standardized Expected Change for THETA-DELTA

	SOSS	FASS	FRSS	SCRIMAB	SEVEREAB

SOSS	- -				
FASS	-0.04	- -			
FRSS	0.04	- -	- -		
SCRIMAB	0.07	-0.05	0.02	- -	
SEVEREAB	-0.02	0.06	-0.06	- -	- -

Maximum Modification Index is 40.62 for Element (4, 5) of LAMDA X

SEM MHS MODEL

Factor Scores Regressions

ETA

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
RECOVARY	0.05	0.03	0.05	0.09	0.03	0.08

ETA

	SPRECO	AERECO	PSSE	ASSE	PERRS	SOCRS
RECOVARY	0.05	0.13	0.03	0.00	0.08	-0.04

ETA

	POSPL	NEGPL	SOSS	FASS	FRSS	SCRIMAB
RECOVARY	0.03	0.04	0.03	0.01	0.03	0.04

ETA

	SEVEREAB
RECOVARY	0.08

KSI

	OSRECO	SEMRECO	LSRRECO	BFRECO	OWBRECO	NPORECO
SSEALL	0.21	0.32	-0.15	-0.92	0.44	0.76

RSALL	0.03	0.04	0.14	-0.16	0.11
0.14					
PLALL	-0.05	0.00	0.04	0.25	-0.02
0.04					
SSALL	0.04	0.04	0.01	-0.19	0.09
0.14					
ALCAB	1.57	2.14	-0.80	-7.26	3.09
4.84					

KSI

	SPRECO	AERECO	PSSE	ASSE	PERRS
SOCRS					
SSEALL	-0.90	1.30	0.42	0.57	-1.60
0.94					
RSALL	-0.03	0.21	-0.11	-0.10	0.33
0.38					
PLALL	-0.07	0.07	0.12	0.02	0.13
-0.16					
SSALL	-0.17	0.23	0.03	-0.01	-0.14
0.21					
ALCAB	-5.15	8.20	-1.20	0.80	-10.02
7.25					

KSI

	POSPL	NEGPL	SOSS	FASS	FRSS
SCRIMAB					
SSEALL	-0.28	0.58	0.07	-0.12	-0.57
-1.17					
RSALL	0.05	-0.03	-0.05	-0.03	0.06
-0.18					
PLALL	0.43	0.18	0.14	0.03	0.16
0.12					
SSALL	0.05	0.17	0.34	0.17	0.15
-0.20					
ALCAB	-1.50	2.20	-1.05	-1.27	-3.42
-7.09					

KSI

	SEVEREAB
SSEALL	0.37
RSALL	0.38
PLALL	0.24
SSALL	0.31
ALCAB	-0.37

SEM MHS MODEL

Standardized Solution

LAMBDA-Y

	RECOVARY
OSRECO	0.42
SEMRECO	0.67
LSRRECO	0.77
BFRECO	0.75
OWBRECO	0.64
NPORECO	0.71
SPRECO	0.51
AERECO	0.82

LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	0.81	- -	- -	- -	- -
ASSE	0.75	- -	- -	- -	- -
PERRS	- -	0.91	- -	- -	- -
SOCRS	- -	0.75	- -	- -	- -
POSPL	- -	- -	0.83	- -	- -
NEGPL	- -	- -	0.45	- -	- -
SOSS	- -	- -	- -	0.86	- -
FASS	- -	- -	- -	0.75	- -
FRSS	- -	- -	- -	0.73	- -
SCRIMAB	- -	- -	- -	- -	0.20
SEVEREAB	- -	- -	- -	- -	3.72

GAMMA

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.18	0.56	0.42	-0.12	-0.07

Correlation Matrix of ETA and KSI

	RECOVARY	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	1.00					
SSEALL	0.55	1.00				
RSALL	0.80	0.36	1.00			
PLALL	0.79	0.57	0.63	1.00		
SSALL	0.63	0.50	0.70	0.66	1.00	
ALCAB	0.00	0.14	0.10	0.01	0.12	1.00

PSI

	RECOVARY

0.20

Regression Matrix ETA on KSI (Standardized)

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.64	0.56	0.42	0.28	-0.07

SEM MHS MODEL

Completely Standardized Solution

LAMBDA-Y

	RECOVARY
OSRECO	0.60
SEMRECO	0.64
LSRRECO	0.73
BFRECO	0.71
OWBRECO	0.61
NPORECO	0.67
SPRECO	0.64
AERECO	0.78

LAMBDA-X

	SSEALL	RSALL	PLALL	SSALL	ALCAB
PSSE	0.78	- -	- -	- -	- -
ASSE	0.72	- -	- -	- -	- -
PERRS	- -	0.88	- -	- -	- -
SOCRS	- -	0.72	- -	- -	- -
POSPL	- -	- -	0.78	- -	- -
NEGPL	- -	- -	0.73	- -	- -
SOSS	- -	- -	- -	0.80	- -
FASS	- -	- -	- -	0.72	- -
FRSS	- -	- -	- -	0.70	- -
SCRIMAB	- -	- -	- -	- -	0.59
SEVEREAB	- -	- -	- -	- -	0.75

GAMMA

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.18	0.56	0.42	-0.12	-0.07

Correlation Matrix of ETA and KSI

	RECOVARY	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	1.00					
SSEALL	0.55	1.00				

```
    RSALL       0.80       0.36       1.00
    PLALL       0.79       0.57       0.63       1.00
    SSALL       0.63       0.50       0.70       0.66       1.00
    ALCAB       0.00       0.14       0.10       0.01       0.12
1.00

         PSI

            RECOVARY
            --------
                0.20

         THETA-EPS

                OSRECO    SEMRECO    LSRRECO     BFRECO     OWBRECO
NPORECO
            --------   --------   --------   --------   --------
--------
   OSRECO       0.84
  SEMRECO       0.12       0.59
  LSRRECO       0.14       0.21       0.47
   BFRECO       0.13        - -        - -       0.50
  OWBRECO      -0.05        - -      -0.08       0.09       0.63
  NPORECO        - -        - -        - -        - -        - -
0.54
   SPRECO       0.02        - -       0.07        - -       0.14
0.15
   AERECO        - -      -0.11        - -        - -        - -
-0.15

         THETA-EPS

                SPRECO     AERECO
            --------   --------
   SPRECO       0.83
   AERECO       0.27       0.39

         THETA-DELTA-EPS

                OSRECO    SEMRECO    LSRRECO     BFRECO     OWBRECO
NPORECO
            --------   --------   --------   --------   --------
--------
     PSSE        - -        - -        - -        - -        - -
- -
     ASSE        - -        - -        - -        - -        - -
- -
    PERRS        - -        - -      -0.09        - -        - -
- -
    SOCRS        - -        - -        - -        - -        - -
- -
    POSPL        - -        - -        - -      -0.11        - -
- -
    NEGPL        - -        - -        - -        - -        - -
- -
```

```
     SOSS        - -         - -         - -         - -         - -
- -
     FASS        - -         - -         - -         - -         - -
- -
     FRSS        - -         - -         - -         - -         - -
- -
  SCRIMAB        - -         - -         - -         - -         - -
- -
 SEVEREAB        - -         - -         - -        0.25         - -
- -

         THETA-DELTA-EPS

              SPRECO      AERECO
             --------    --------
     PSSE        - -         - -
     ASSE        - -         - -
    PERRS      -0.13         - -
    SOCRS        - -         - -
    POSPL        - -         - -
    NEGPL       0.34         - -
     SOSS        - -         - -
     FASS        - -         - -
     FRSS        - -         - -
  SCRIMAB        - -         - -
 SEVEREAB        - -         - -

         THETA-DELTA

                PSSE        ASSE       PERRS       SOCRS       POSPL
NEGPL
            --------    --------    --------    --------    --------
--------
     PSSE       0.39
     ASSE        - -        0.48
    PERRS       0.07        0.10        0.22
    SOCRS        - -         - -         - -        0.48
    POSPL        - -         - -         - -         - -        0.39
    NEGPL       0.14        0.08         - -        0.05         - -
0.81
     SOSS        - -         - -         - -         - -         - -
0.19
     FASS        - -         - -         - -         - -         - -
- -
     FRSS        - -        0.11        0.08         - -        0.13
- -
  SCRIMAB       0.28        0.30         - -         - -         - -
- -
 SEVEREAB        - -         - -         - -       -0.33         - -
- -

         THETA-DELTA

                SOSS        FASS        FRSS     SCRIMAB    SEVEREAB
            --------    --------    --------    --------    --------
```

SOSS	0.37				
FASS	- -	0.49			
FRSS	- -	0.03	0.51		
SCRIMAB	- -	- -	- -	0.96	
SEVEREAB	- -	- -	- -	- -	-7.70

Regression Matrix ETA on KSI (Standardized)

	SSEALL	RSALL	PLALL	SSALL	ALCAB
RECOVARY	0.64	0.56	0.42	0.28	0.17

SEM MHS MODEL

Total and Indirect Effects

Total Effects of KSI on Y

	SSEALL	RSALL	PLALL	SSALL	ALCAB
OSRECO	0.08	0.24	0.18	0.05	-0.03
	(0.03)	(0.05)	(0.06)	(0.04)	(0.03)
	2.22	5.21	3.09	4.23	-3.10
SEMRECO	0.12	0.38	0.28	0.08	-0.05
	(0.05)	(0.06)	(0.09)	(0.07)	(0.04)
	2.29	6.25	3.27	4.24	-3.10
LSRRECO	0.14	0.43	0.32	0.09	-0.06
	(0.06)	(0.07)	(0.10)	(0.07)	(0.05)
	2.30	6.46	3.29	4.24	-3.10
BFRECO	0.14	0.42	0.31	0.09	-0.06
	(0.06)	(0.07)	(0.09)	(0.07)	(0.05)
	2.29	6.30	3.30	4.24	-3.10
OWBRECO	0.12	0.36	0.27	0.08	-0.05
	(0.05)	(0.06)	(0.08)	(0.06)	(0.04)
	2.28	6.14	3.25	4.24	-3.10
NPORECO	0.13	0.40	0.29	0.09	-0.05
	(0.06)	(0.06)	(0.09)	(0.07)	(0.05)
	2.29	6.35	3.29	4.24	-4.10
SPRECO	0.09	0.29	0.21	-0.06	-0.04
	(0.04)	(0.05)	(0.07)	(0.05)	(0.03)
	2.26	5.47	2.99	-3.23	-4.10
AERECO	0.15	0.46	0.34	-0.10	-0.06
	(0.06)	(0.07)	(0.10)	(0.08)	(0.05)
	2.30	6.56	3.31	-3.24	-4.10

SEM MHS MODEL

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on Y

	SSEALL	RSALL	PLALL	SSALL	ALCAB
OSRECO	0.18	0.24	0.18	0.15	-0.13
SEMRECO	0.12	0.38	0.28	0.18	-0.15
LSRRECO	0.14	0.43	0.32	0.19	-0.16
BFRECO	0.14	0.42	0.31	0.19	-0.16
OWBRECO	0.12	0.36	0.27	0.18	-0.15
NPORECO	0.13	0.40	0.29	0.19	-0.15
SPRECO	0.19	0.29	0.21	0.16	-0.14
AERECO	0.15	0.46	0.34	0.10	-0.16

Completely Standardized Total Effects of KSI on Y

	SSEALL	RSALL	PLALL	SSALL	ALCAB
OSRECO	0.07	0.23	0.17	0.15	-0.13
SEMRECO	0.12	0.36	0.27	0.18	-0.15
LSRRECO	0.13	0.41	0.30	0.19	-0.15
BFRECO	0.13	0.40	0.30	0.19	-0.15
OWBRECO	0.11	0.34	0.25	0.17	-0.14
NPORECO	0.12	0.38	0.28	0.18	-0.15
SPRECO	0.17	0.23	0.17	0.15	-0.13
AERECO	0.14	0.44	0.33	0.19	-0.16

Time used: 0.109 Seconds

APPENDIX E

Permission document for collecting data and ethical consideration

Permission document for collecting data and ethical consideration

เอกสารประกอบคำร้องขอเก็บข้อมูลวิจัยของแหล่งเก็บข้อมูล

๑. สำเนาประกาศนียบัตรการอบรมหลักสูตรแนวทางการปฏิบัติการวิจัยทางคลินิกที่ดี จากคณะอนุกรรมการจริยธรรมการทำวิจัยในคน มธ. ชุดที่ ๑ และหน่วยวิจัยทางคลินิก คณะแพทยศาสตร์

๒. สำเนาประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เรื่องการอนุมัติหัวข้อดุษฎีนิพนธ์ ครั้งที่ ๑๒/๒๕๕๗ ประกาศ ณ วันที่ ๒๑ กรกฎาคม ๒๕๖๑

๓. โครงร่างวิทยานิพนธ์ฉบับย่อ

๔. แบบสอบถามการวิจัย

๓.๑ แบบสอบถามข้อมูลส่วนบุคคล

๓.๒ แบบประเมินการฟื้นหายทางจิตใจ

๓.๓ แบบประเมินการมีเป้าหมายในชีวิต

๓.๔ แบบประเมินการรับรู้ความเข้มแข็งของตนอง

๓.๕ แบบประเมินแหล่งทักษะภายในตนเอง

๓.๖ แบบประเมินการสนับสนุนทางสังคมแบบพหุมิติ

๓.๗ แบบประเมินเพื่อคัดกรองปัญหาการดื่มสุรา

ลำดับ	แหล่งเก็บข้อมูล	จำนวนกลุ่มตัวอย่าง	ผู้อนุมัติ	ตำแหน่ง
1	โรงพยาบาลภูมิพล	90	พล.อ.ต.อภิชาติ พลอยสังวาลย์	ผอ. รพ. ภูมิ พล
2	โรงพยาบาลส่งเสริมสุขภาพตำบลสระกระโจม จ.สุพรรณบุรี	30	นางพเยาว์ มีดี	ผอ.รพ.ส่งเสริมสุขภาพตำบลสระกระโจม
3	โรงพยาบาลศรีนครินทร์ จ.ขอนแก่น	64	ศ.นพ.โกวิท คำพิทักษ์	หัวหน้านักวิจัยฯ รพ.ศรีนครินทร์
4	โรงพยาบาลนครราชสีมา	60	นายวิเชียร จันทรโณทัย	ผู้ว่าราชการจังหวัดนครราชสีมา
5	โรงพยาบาลชุมพร	60	นายณรงค์ พลละเอียด	ผู้ว่าราชการจังหวัดชุมพร
6	โรงพยาบาลสงขลา	60	นายแพทย์ศุภชัย ศุภพฤกษ์สกุล	ผอ.รพ.สงขลา
7	โรงพยาบาลหนองบัวลำภู	50	นายสมชาย เชื้อนานนท์	ผอ.รพ.หนองบัวลำภู
8	โรงพยาบาลส่งเสริมสุขภาพตำบลหนองแก จ.อุทัยธานี	30	นายสมคิด จูงวงษ์สุข	นายกองค์การบริหารส่วนตำบลหนองแก

ประกาศ
คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
เรื่อง การอนุมัติหัวข้อดุษฎีนิพนธ์นิพนธ์ ครั้งที่ 12/2557 ประจำปีการศึกษา 2557

นิสิตผู้ทำวิจัยและอาจารย์ที่ปรึกษาดุษฎีนิพนธ์

รหัสนิสิต	5577403936
ชื่อ-นามสกุล	พ.ต.หญิง นุสรา วรภัทราทร
สาขาวิชา	พยาบาลศาสตร์ (นานาชาติ)
ประธานกรรมการ	รองศาสตราจารย์ ดร. วราภรณ์ ชัยวัฒน์
อาจารย์ที่ปรึกษาหลัก	รองศาสตราจารย์ ดร. จินตนา ยูนิพันธุ์
อาจารย์ที่ปรึกษาร่วม	ผู้ช่วยศาสตราจารย์ ดร. สุนิดา ปรีชาวงษ์
กรรมการ	รองศาสตราจารย์ ร.ต.อ.หญิง ดร. ยุพิน อังสุโรจน์
กรรมการ	รองศาสตราจารย์ ดร. ศิริเดช สุชีวะ
กรรมการภายนอก	รองศาสตราจารย์ ดร. ยาใจ สิทธิมงคล
ชื่อหัวข้อดุษฎีนิพนธ์	โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่ป่วยด้วยโรคซึมเศร้า A CAUSAL MODEL OF RECOVERY AMONG PERSONS WITH MAJOR DEPRESSIVE DISORDER
ครั้งที่อนุมัติ	12/2557
ระดับ	ปริญญาเอก

จากมติคณะกรรมการบริหารคณะพยาบาลศาสตร์ ครั้งที่ 11/2558 วันที่ 21 กรกฎาคม 2558

ประกาศ ณ วันที่ 29 กรกฎาคม พ.ศ. 2558

สุรีพร ธนศิลป์

(รองศาสตราจารย์ ดร. สุรีพร ธนศิลป์)
คณบดีคณะพยาบาลศาสตร์

สำนักงานคณะอนุกรรมการจริยธรรมการวิจัยในคน
มหาวิทยาลัยธรรมศาสตร์ ชุดที่ 1 สาขาวิทยาศาสตร์
อาคารราชสุดา ชั้น 1 ภายในศูนย์วิจัยฯ ต.คลองหนึ่ง
อ.คลองหลวง จ.ปทุมธานี 12121

Documentary Proof of Ethical Clearance
Committee on Human Rights Related to Research Involving Human Subjects
Clinical Research Center, Faculty of Medicine, Thammasat university

Title of Project	A Causal Model of Recovery among Persons with Major Depressive Disorder
Principle researcher	Lt.Col. Nusra Vorapatratorn
Education Address	Faculty of Nursing, Chulalongkorn University
Protocol Number	ID 03-51-61
Date of Approval	January 12, 2018
Duration of Study	12 months

The aforementioned project has been reviewed and approved by the Committee on Human Rights Related to Research Involving Human Subjects, based on the Declaration of Helsinki.

Signature of Chairman
Committee on Human Rights Related to
Research Involving Human Subjects

.....
Assoc.Prof.Dr. Waipoj Chanvimalueng, M.D.

ที่ IRBRTA.1224/2559

คณะอนุกรรมการพิจารณาโครงการวิจัย กรมแพทย์ทหารบก
317 ถนนราชวิถี เขต ราชเทวี กรุงเทพฯ 10400

รหัสโครงการ: R127q/59

ชื่อโครงการวิจัย: โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่เจ็บป่วยด้วยโรคซึมเศร้า
[A Causal Model of Recovery among Persons with Major Depressive Disorder]

ชื่อผู้วิจัยหลัก: พันตรีหญิง นุสรา วรภัทราทร

สังกัดหน่วยงาน: คณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

สถานที่ทำการวิจัย: โรงพยาบาลพระมงกุฎเกล้า

เอกสารรับรอง:

(1) โครงร่างการวิจัยฉบับภาษาไทย	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(2) เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(3) หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(4) แบบสอบถามข้อมูลส่วนบุคคล	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(5) แบบประเมินการฟื้นหายทางจิตใจ	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(6) แบบประเมินการมีเป้าหมายในชีวิต	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(7) แบบประเมินการรับรู้ความเข้มแข็งของตนเอง	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(8) แบบประเมินการสนับสนุนทางสังคมแบบพหุมิติ	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(9) แบบประเมินเพื่อคัดกรองปัญหาการดื่มสุรา	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(10) ประวัติย่อ พ.ต.หญิง นุสรา วรภัทราทร	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559
(11) ประวัติย่อ รศ.ดร.จินตนา ยูนิพันธุ์	ฉบับที่ 1 วันที่ 25 ตุลาคม 2559

ขอรับรองว่าโครงการดังกล่าวข้างต้นได้ผ่านการพิจารณารับรองจากคณะอนุกรรมการพิจารณาโครงการวิจัย กรมแพทย์ทหารบก ว่าสอดคล้องกับปฏิญญาเฮลซิงกิ และแนวปฏิบัติ ICH GCP

วันที่รับรองด้านจริยธรรมของโครงร่างการวิจัย 15 พฤศจิกายน 2559
วันสิ้นสุดการรับรอง 14 พฤศจิกายน 2560
ความถี่ของการส่งรายงานความก้าวหน้าของการวิจัย รายงานความก้าวหน้าทุก 1 ปี

พลตรีหญิง เยาวนา ธนะพัฒน์
ประธานคณะอนุกรรมการพิจารณาโครงการวิจัย พบ.

พันเอก สหพล อนันต์นำเจริญ
เลขานุการคณะอนุกรรมการพิจารณาโครงการวิจัย พบ.

ที่ อน ๗๕๔๐๑/๑๒๕

ที่ทำการองค์การบริหารส่วนตำบล
หนองแก ๑๐๙ หมู่ ๖ ต.หนองแก
อ.เมือง จ.อุทัยธานี ๖๑๐๐๐

๒๐ เมษายน ๒๕๖๑

เรื่อง ตอบรับนิสิตเก็บข้อมูลวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึง ประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ลงวันที่ ๒๑ กรกฎาคม ๒๕๕๘

ตามอ้างถึง คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ได้ขอความอนุเคราะห์ให้นิสิตเก็บรวบรวมข้อมูลการวิจัย เรื่อง โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่ป่วยด้วยโรคซึมเศร้า (A Causal Model of Recovery Among Persons with Major Depressive Disorder) รายละเอียดแจ้งแล้วนั้น

ที่ทำการองค์การบริหารส่วนตำบลหนองแก ได้พิจารณาแล้ว ยินดีให้ พันโทหญิง นุสรา วรภัทราทร เข้าเก็บรวบรวมข้อมูลวิจัยได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

นาย
(สมคิด จูงวงษ์สุข)
นายกองค์การบริหารส่วนตำบลหนองแก

คณะอนุกรรมการจริยธรรมการทำวิจัยในคน มธ.ชุดที่ 1 และ หน่วยวิจัยทางคลินิก คณะแพทยศาสตร์

ขอมอบประกาศนียบัตรเพื่อแสดงว่า

นุสรา วรภัทราทร

ได้ผ่านการอบรมหลักสูตร GCP online training (Computer-based)

"แนวทางการปฏิบัติการวิจัยทางคลินิกที่ดี (ICH-GCP)"

ประกาศนียบัตรฉบับนี้มีผลตั้งแต่วันที่ 25 มิถุนายน 2560 ถึงวันที่ 25 มิถุนายน 2562

(รองศาสตราจารย์ นายแพทย์ไวพจน์ จันทร์วิเมลือง)
ประธานคณะอนุกรรมการจริยธรรมการทำวิจัยในคน มธ. ชุดที่ 1

(รองศาสตราจารย์ นายแพทย์สมบัติ มุ่งทวีพงษา)
รองคณบดีฝ่ายวิจัย

ที่ สพ ๕๓๔๐๑/ ๓๒๓๗

สำนักงานเทศบาลตำบลดอนเจดีย์
อ.ดอนเจดีย์ จ.สุพรรณบุรี๗๒๑๗๐
๓๐ พฤษภาคม ๒๕๖๑

เรื่อง ตอบรับนิสิตเก็บข้อมูลวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึง ประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ลงวันที่ ๒๑ กรกฎาคม ๒๕๕๘

ตามอ้างถึง คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ได้ขอความอนุเคราะห์ให้นิสิต เก็บรวบรวมข้อมูลการวิจัย เรื่อง โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่ป่วยด้วยโรคซึมเศร้า (A Causal Model of Recovery Among Persons with Major Depressive Disorder) ความละเอียดแจ้งแล้วนั้น

เทศบาลตำบลดอนเจดีย์ ได้พิจารณาแล้ว ยินดีให้ พ.ท.หญิง นุสรา วรภัทราทร เข้าเก็บรวบรวมข้อมูลวิจัยได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(นายจตุรงค์ อินทร์พรหม)
ปลัดเทศบาล ปฏิบัติราชการแทน
นายกเทศมนตรีตำบลดอนเจดีย์

ที่ - /๒๕๖๑

โรงพยาบาลศรีนครินทร์
๑๒๓ ถนนมิตรภาพ
อำเภอเมือง จังหวัดขอนแก่น
๔๐๐๐๒

๕ มิถุนายน ๒๕๖๑

เรื่อง ตอบรับนิสิตเก็บข้อมูลวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึง ประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ลงวันที่ ๒๑ กรกฎาคม ๒๕๕๘

ตามอ้างถึง คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ได้ขอความอนุเคราะห์ให้นิสิต เก็บรวบรวมข้อมูลการวิจัย เรื่อง โมเดลเชิงสาเหตุของการฟื้นหายของบุคคลที่ป่วยด้วยโรคซึมเศร้า (A Causal Model of Recovery Among Persons with Major Depressive Disorder) ความละเอียดแจ้งแล้วนั้น

โรงพยาบาลศรีนครินทร์ ได้พิจารณาแล้ว ยินดีให้ พ.ท.หญิง นุสรา วรภัทราทร เข้าเก็บรวบรวมข้อมูลวิจัยได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(ศาสตราจารย์นายแพทย์โกวิท คำพิทักษ์)
ตำแหน่งหัวหน้านักวิจัย ฯ

ที่ ตช ๐๐๒๔(สข).๑๓/๗๔๗๑

ตำรวจภูธรจังหวัดสงขลา
ถนนชลเจริญ ตำบลบ่อยาง
อำเภอเมืองสงขลา จังหวัดสงขลา
๙๐๐๐๐

๒๖ มิถุนายน ๒๕๖๑

เรื่อง ตอบรับนิสิตเก็บข้อมูลวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึง ประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ลงวันที่ ๒๑ กรกฎาคม ๒๕๕๘

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ตำรวจภูธรจังหวัดสงขลา ได้พิจารณาแล้ว ยินดีให้ พ.ท.หญิง นุสรา วรภัทราทร เข้าเก็บรวบรวมข้อมูลวิจัยได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

พันตำรวจเอกหญิง
(นพวรรณ ถิระวุฒิ)
ผู้กำกับการฝ่ายอำนวยการตำรวจภูธรจังหวัดสงขลา

ฝ่ายอำนวยการ
โทรศัพท์ ๐ ๗๔๓๒ ๒๑๘๓

ที่ สพ๐๘๓๒.๒/๑๑๓

รพ.สต.สระกระโจม
๙๒ ม.๔ ต..สระกระโจม
อ.ดอนเจดีย์ จ.สุพรรณบุรี
๗๒๒๕๐

๒๘ พฤษภาคม ๒๕๖๑

เรื่อง ตอบรับนิสิตเก็บข้อมูลวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึง ประกาศคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ลงวันที่ ๒๑ กรกฎาคม ๒๕๕๘

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โรงพยาบาลส่งเสริมสุขภาพตำบลสระกระโจม ได้พิจารณาแล้ว ยินดีให้ พ.ท.หญิง นุสรา วรภัทราพร เข้าเก็บรวบรวมข้อมูลวิจัยได้

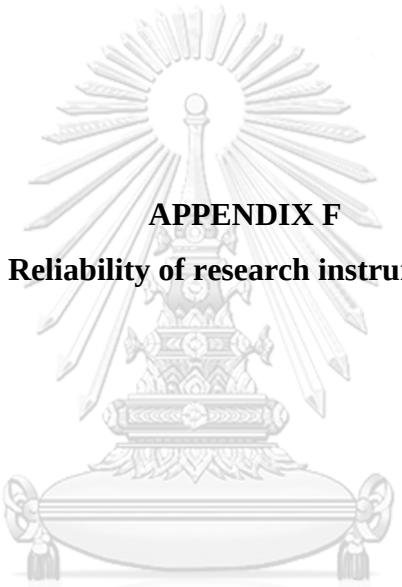
จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(นางพเยาว์ มีดี)
ผู้อำนวยการโรงพยาบาลส่งเสริมสุขภาพตำบลสระกระโจม

APPENDIX F

Reliability of research instruments



Reliability of research instruments

MHR

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.938	.942	30

P

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.717	.708	6

S

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.970	.971	16

R

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.883	.889	8

M

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.923	.923	12

A

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.916	.919	10

VITA

Lieutenant Colonel Nusra Vorapatratorn was born in 1979. She received a Bachelor of Nursing Science from The Royal Thai Army Nursing College (Mahidol University a joint institution, Bangkok, in 2000. She got a Master of Nursing Science (Mental health and Psychiatric Nursing), Chulalongkorn University in 2005. Nusra had 2 years of clinical experience in acute and chronic care nursing and 11 years of working as an instructor in the field of Mental Health and Psychiatric Nursing at The Royal Thai Army Nursing College. She attends study Philosophy Program in Nursing Science, Faculty of Nursing, Chulalongkorn University since 2012-2018.