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A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER ADULTSWITH KIDNEY FUNCTION DECLINE

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Burapha University

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A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER

ADULTSWITH KIDNEY FUNCTION DECLINE

NADA NGAMMOH

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The Dissertation of Nada Ngammoh has been approved by the examining committee to be partial fulfillment of the requirements for the Doctor of Philosophy in Nursing Science of Burapha University

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Successful aging provides a strategy emphasizing individuals' health promotion and adaptations; however, few studies explore the successful aging of older people experiencing kidney function decline. The objective of the study was to evaluate factors influencing successful aging. A total of 350 participants with chronic kidney disease receiving treatment at an outpatient clinic was recruited using simple random sampling. Data were collected by a package of questionnaires including Demographic Questionnaire, Successful Aging Inventory, Self-Transcendence Scale, CKD Self-Efficacy Questionnaire, Health Survey Short Form-12 version 2, Geriatric Depression Scale, Connor-Davidson Resilience Scale, and Life Orientation Test-Revised. Structural equation modeling by AMOS software was used to test the model.

The results showed that the final model of successful aging consisted of optimism, resilience, perception of health status, and self-transcendence, which together explained 84% of the total variance for successful aging. Optimism, resilience, perception of health status, and self-transcendence had both direct and indirect effects on successful aging.

These findings suggest that nurses should promote successful aging of older adults with kidney function decline through promoting optimism, resilience, self-transcendence, and perception of health status. Further, developing interventions based on these variables should promote successful aging among older adults with kidney function decline.

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Nada Ngammoh

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CHAPTER 1

INTRODUCTION

Statements and significance of the problems

An aging society has become a vital concern to healthcare systems globally. The proportion of the world's population 60 years of age and over will nearly double, from 12% to 22% from 2015 to 2050. It is estimated that 80% of the world's older population will be living in low- and middle-income countries in 2050 (World Health Organization [WHO], 2018). Thailand has the third most rapidly aging population in the world (HelpAge International, 2019). Approximately 17.45% of Thai people are 60 years or above. The current life expectancy of Thai men and women is 73.0 and 80.1 years, respectively (Institute for Population and Social Research, 2019). By 2040, the Thai aging population is expected to increase to 25% and will be 37% by 2050 (HelpAge International, 2019).

About 80% of older adults have at least one chronic disease and 77% have at least two diseases (National Council on Aging, 2018). Approximately 23% of deaths among older adults is from chronic disease (WHO, 2017) . Each chronic condition is associated with an increase in healthcare and social care costs (Picco et al., 2016). Older adults also encounter a deterioration in their health, such as hearing loss, cataracts, back pain, diabetes, osteoarthritis, depression, and dementia (WHO, 2018). Aging is a time of increased risk of becoming functionally dependent, losing one's autonomy, and physical changes (Hsu, 2015). Moreover, aging is associated with mental health and life transitions, such as retirement, the death of family members, and friends.

As people age, more social and healthcare services are needed in supporting older adults to live with dignity, independently, high quality of life, and security (Prutipinyo, 2015). For Thai policymakers, helping older adults to experience successful aging is becoming critical. Successful aging is one strategy that emphasizes health promotion and adaptation for older adults (Topaz, Troutman-Jordan, & MacKenzie, 2014). Promoting successful aging helps maintain their quality of life and happiness. Older adults learn coping and adaptation skills to remain physically,

psychologically, socially, and spiritually healthy aspects of older persons. With successful aging, older adults develop effective management skills of their chronic diseases and illnesses, expand their spirituality, enjoy a strong sense of meaning in life, gain greater life satisfaction, confront the prospect of death, and prepare for a peaceful death (Flood, 2005; Hutchinson & Nimrod, 2012; Topaz et al., 2014).

Successful aging is an important concept to promote a positive aging experience. The concept of successful aging was introduced by Rowe and Kahn (1997), who launched a new direction to advance high cognitive and physical functional capacity and active engagement with life for older adults. Initially, Rowe and Kahn (1997) focused on avoiding disease and disability among older people. Their idea sought to lower the probability of disease and disease-related disability and decrease or delay morbidity and mortality for older adults.

Phelan and Larson (2002) found that less than 5% of older adults reached successful aging based on Rowe and Kahn's criteria because most of the people still had multiple chronic diseases, disability, or loss of function (Bülow & Söderqvist, 2014). Hamid, Momtaz, and Ibrahim (2012) studied successful aging among older Malaysians and found that 13.8% of older adults met Rowe and Kahn's criteria; yet, older adults who did not meet the criteria often perceived themselves to be aging successfully (Cernin, Lysack, & Lichtenberg, 2011; Strawbridge, Wallhagen, & Cohen, 2002). When asked to define successful aging, older adults have identified objective domains of physical functioning and health but also subjective domains of acceptance, attitude, and well-being (Tate, Lah, & Cuddy, 2003; Troutman, Nies, & Mavellia, 2011; Von Faber et al., 2001), life satisfaction, ability to cope and adapt, and meaning in life (Cosco, Prina, Perales, Stephan, & Brayne, 2014; Flood, 2005). Those subjective domains counterbalance the physical declines experienced by older adults. Even when facing physical function decline, older adults with chronic illness perceive they have opportunities for successful aging (Young, Frick, & Phelan, 2009).

For Rowe and Kahn (1997), successful aging is about disability and illness. Common forms of disability for older people center mostly around difficulty with walking, hearing, and seeing. Romo et al. (2013) showed that older adults have at least two impairments in activities of daily living and instrumental activities of daily living, yet most of their study's participants felt they had aged successfully with

a late-life disability. Also, Liu Jr and Richardson (2012) found 84.9% of older adults with disabilities were satisfied with life. They achieved successful aging by using adaptation and coping strategies. Thus, successful aging for older adults with a disability involves subjective perspectives.

Several studies have found that older adults experience successful aging when facing chronic conditions. Hutchinson and Nimrod (2012) studied older adults with chronic health conditions and found that successful aging consists of four themes: drawing on existing resources for continuous involvement, setting leisure-based goals, using strategies to get more out of life, and living a meaningful life. Jenerette and Lauderdale (2008) found life review process was useful to gain insight into successful aging in person with sickle cell disease. Chard et al. (2016) found that older adults with diabetes evaluated their well-being by comparing themselves with the illnesses of friends and family; this motivated their social engagement and care for others. Marks (2018) found that older people with osteoarthritis could attain a successful aging outcome. Donnellan, Hevey, Hickey, and O'Neill (2012) found that stroke survivors used selection, optimization, and compensation strategies to respond to feelings of loss after stroke that, in turn, initiated functional ability and decreased their depressive symptoms for achieving successful aging. Southwell, Crockett, Burton, and Gullifer (2018) found chronic obstructive pulmonary disease [COPD] participants reported successful aging also by using selection, optimization, and compensation strategies to adapt to cope with ongoing functional decline. Y. M. Jang and Song (2017) found successful aging in COPD patients. Young et al. (2009) argued that successful aging can coexist with illnesses and functional limitations. Thus, older adults who have chronic diseases can achieve successful aging, and more specifically, older adults with kidney function decline [KFD] also may achieve successful aging.

Flood (2005) offers a view of successful aging, focusing on an individual's perspective that encompasses physical, functional, psychological, and spiritual domains. Solomon et al. (2018) studied adults living with HIV and found three factors that promote successful aging: accepting limitations, having a positive attitude, and engaging in meaningful activities. Vance, McGuinness, Musgrove, Orel, and Fazeli (2011) found older adults with HIV use personal control and life satisfaction to gain

successful aging. Moore et al. (2013) found resilience and optimism factors among HIV patients. H. K. Kim (2013) studied male elders in Korea and found that self-efficacy and self-esteem helps with successful aging. Watakakosol et al. (2013) interviewed 201 Thai older adults living in Bangkok and adjacent areas. They found that social engagement, family support, and mindfulness promote successful aging. Meteekul (2011) indicates the following six key themes are important to achieving successful aging: mindfulness, worthwhile activities engagement, self-pride, life satisfaction, positive family relationships, and good health. As reported in the literature, older adults use both subjective and objective domains to cope and adapt to their physical decline. This dissertation research selected the following factors that might promote successful aging in older adults with KFD as a chronic illness or disability.

Resilience is related to successful aging. It is a psychological resource that facilitates adaptation and is associated with the characteristics of successful aging (Lamond et al., 2008). For successful aging to occur, the changes experienced as part of aging must be accepted and addressed. Byun and Jung (2016) postulated that resilience is an important, influential factor and a much-needed personal characteristic for one's successful aging. Resilience may have direct and indirect effects on successful aging. Moore et al. (2015) interviewed 1,006 older adults and found that resilience is significantly associated with self-rated successful aging ($r = .41$, $p < .003$). Lamond et al. (2008) interviewed 1,395 community-dwelling older adults and found that resilience significantly correlates with self-rated successful aging ($r = .43$, $p < .001$). Nygren et al. (2005) found that resilience has indirect effects on successful aging through the concepts of self-transcendence ($r = .49$, $p < .01$) and depression ($\beta = -.34$. $p < .001$) (Resnick, Klinedinst, Yerges-Armstrong, Choi, & Dorsey, 2015).

Optimism is related to successful aging. It is a psychological characteristic that involves the expectation that events will resolve with the best possible outcome (Scheier & Carver, 1985). Optimism and a positive attitude can be integral in the transition from poor health to better health and integral to the experience of successful aging (Iwamasa & Iwasaki, 2011). Optimistic individuals may solve problems they are facing more quickly (Van Wagenen, Driskell, & Bradford, 2013). Optimism may have direct and indirect effects on successful aging. Flood (2007) and Troutman,

Nies, and Mavellia (2011) found that responses from the Black older adults (36.7%) focused on optimism. Solomon et al. (2018) found that participants' perspectives on successful aging might be understood in terms of staying positive. Leung, Moneta, and McBride-Chang (2005) reported that optimism among community-dwelling Chinese elderly predicts life satisfaction, which is an indicator of successful aging. Karademas (2006) found optimism predicts self-efficacy. Lamond et al. (2008) found that optimism is related to resilience among community-dwelling older women ($r = .44$, $p < .001$) and has indirect effects on successful aging through the concept of depression ($r = -.43$, $p < .001$) (Vollmann, Scharloo, Langguth, Kalkouskaya, & Salewski, 2014).

A patient's age is related to successful aging. Increasing age is associated with lower successful aging. Those in advanced age tend to have problems with physical health and cognitive function (Cherry et al., 2013). A person's age may have direct and indirect effects on successful aging. The young-old (in their 60s) may be better at successful aging; for those in their advanced years, successful aging drops dramatically (Depp & Jeste, 2006; Hank, 2011). Hamid et al. (2012) found younger groups have a higher percentage of successful aging than others. However, other researchers have reported the opposite findings (Martin, Palmer, Rock, Gelston, & Jeste, 2015). The latter has been explained that with advancing years, older people use the concept of self-transcendence to see life with a broader perspective, with meaningful and interpretation of past experiences to find life's satisfaction and meaning – all of which are indicators of successful aging (Braam, Bramsen, van Tilburg, van Der Ploeg, & Deeg, 2006; Lewin & Thomas, 2001).

Perception of health status is related to successful aging (Flood, 2005). Good perception of health status is important for older adults in reducing the risk of mortality and disability (Mendes de Leon, Glass, & Berkman, 2003; Wilkins, 2003). The perception of good health status is one factor in understanding how older adults manage their illness and their behavioral outcomes (Hagger & Orbell, 2003; Weinman, Petrie, Moss-Morris, & Horne, 1996). Perceived health status can have direct and indirect effects on successful aging. Thi Thu Trieu, Jullamate, and Piphatvanitcha (2016) found that perceived health status is related to successful aging ($r = .39$, $p < .001$). H. K. Kim (2013) reported that older adults' perceived health

status has indirect effects on successful aging through the concepts of depression ($r = -.54$, $p < .001$) and self-efficacy ($r = .26$, $p < .001$).

Depression is also related to successful aging (Kozar-Westman, Troutman-Jordan, & Nies, 2013). It is an important indicator of general well-being and mental health among older adults. Its presence is associated with increased healthcare utilization, risk of a major depressive disorder, suicide, and disability (Vahia et al., 2010). Older adults who have low levels of depressive symptoms can achieve better successful aging (Flood, 2005; Troutman, Nies, & Bentley, 2010). Depression may have direct and indirect effects on successful aging. Troutman et al. (2010) found that depression significantly correlates with successful aging ($r = -.43$, $p < .05$). H. Kim, Kim, and Byun (2015) found that depression has indirect effects on successful aging through the concept of self-transcendence ($r = -.33$, $p < .001$).

Self-efficacy to control KFD is also related to successful aging (Hyun Cha, Ju Seo, & Sok, 2012). Self-efficacy to control KFD is the confidence that older adults have in their ability to respond to or manage risk factors and prevent complications. Self-efficacy to control KFD drives changes in a person's behavior to overcome and follow a plan of behavior change, such as controlling blood pressure, eating a low salt and low protein diet, and adhering to taking multiple medications. The self-confidence to perform self-management behaviors can help to slow the progression of kidney function decline (Lin, Tsai, Lin, Hwang, & Chen, 2013). Older adults with higher self-efficacy are able to persevere and achieve successful aging (Tovel & Carmel, 2014). Tovel and Carmel (2014) found that self-efficacy is significantly related to successful aging ($r = .47$, $p < .01$). H. K. Kim (2013) reported that the relationship between self-efficacy and successful aging is strongly positive ($r = .66$, $p < .001$) but negatively correlated with depression ($r = -.55$, $p < .001$). Caprara, Alessandri, and Eisenberg (2012) reported that self-efficacy has indirect effects on the concept of self-transcendence ($r = .53$, $p < .01$).

Self-transcendence is an inherent late-life developmental trend toward a broadened worldview, beyond everyday realities and limitations, and is related to successful aging. It involves the transformation of one's perspective on self in relationships with others, to life, and a sense of connection to a spiritual dimension. (McCarthy & Bockweg, 2013; Reed, 2014). Self-transcendence, is a developmental

capacity, perhaps as a survival mechanism to confront serious life events, such as serious or chronic illness, disability, aging, family caregiving, loss of a loved one, career difficulties, and other life crises (Reed, 2014). Self-transcendence is evoked through such events and might enhance a person's sense of well-being by transforming losses and difficulties into healing experiences (Coward & Reed, 1996). The outcome of self-transcendence is well-being, life satisfaction, and a sense of meaning in life, which are indicators of successful aging (Reed, 2014). Self-transcendence has direct effects on successful aging. McCarthy, Ling, and Carini (2013) found that self-transcendence is an important variable in the pursuit of successful aging of older adults. Earlier, McCarthy (2009, 2011) reported that self-transcendence has a direct effect on successful aging ($\beta = .52$, $p = < .001$).

Currently, most health reports were indicated that many older adults tend to develop KFD as they age. It is estimated that after the age of 30 years, the glomerular filtration rate [GFR] progressively declines at an average rate of 8 ml/min/1.73 m^2/ decade (Coresh, Astor, Greene, Eknoyan, & Levey, 2003). KFD often develops slowly with few symptoms, and many people do not realize that they have it until the disease has advanced. About half of the population over 70 years old has an estimated GFR [eGFR] < 60 ml/min/1.73 m^2 (Aitken et al., 2014; National Kidney Foundation [NKF], 2017). Older age is a key predictor of KFD, and 11% of individuals over 65 years have creatinine levels that fall in stage 3 or worse (A. Levey et al., 2007). There is considered a significant age-related decline in kidney function (A. S. Levey, Inker, & Coresh, 2015). Furthermore, the kidneys of older people are more susceptible to nephrotoxic agents and drugs (Abdel-Kader & Palevsky, 2009).

Risk factors influencing KFD in older adults include modifiable and non-modifiable risk factors, such as hypertension, diabetes, obesity, proteinuria, hyperlipidemia, cardiovascular disease, glomerular and tubule interstitial disease, metabolic acidosis, and smoking (Bureau of Non-Communicable Disease, 2016; Ingsathit et al., 2009; Nitta, Okada, Yanai, & Takahashi, 2013; L. A. Stevens, Viswanathan, & Weiner, 2010). Modifiable nontraditional risk factors are the use of radiological contrast media, nephrotoxic herbs, antibiotics, NSAIDs, and hyperphosphatemia (Mallappallil, Friedman, Delano, McFarlane, & Salifu, 2014).

It may be more difficult for older adults with KFD to achieve successful aging. KFD impacts older adults on physical, psychological, emotional, spiritual, economic, and social aspects. KFD influences metabolic abnormalities in aging, such as chronic inflammation, protein-energy wasting, and oxidative stress. These biochemical changes manifest as the frailty phenotype, with a poor reserve and inadequate response to stressors (Walker, Wagner, & Tangri, 2014). Frail people are more likely to have poor physical and cognitive function and less ability to complete daily activities (C. B. Bowling, Sawyer, Campbell, Ahmed, & Allman, 2011). Older adults with KFD have ineffective management of disease and illness, insufficient coping abilities, and adaptation to health care, and dissatisfaction with life. These could negatively affect their quality of life (Soni, Weisbord, & Unruh, 2010).

People with KFD are at risk of developing or worsening pre-existing psychological illnesses. Older adults face KFD stressors that may affect their already poor emotional states of anxiety and depression and, thus, inhibit coping and adjustment (Christensen & Ehlers, 2002; Ok & Kutlu, 2019). Depression is the most significant psychological disorder among people with KFD. It has been found in 26.5% of all people with KFD. The presence of depression among complicates the treatment and increases the risk of developing new illnesses, and increases mortality (Palmer et al., 2013). When KFD progressively worsens, older people will experience loneliness, hopelessness, spiritual distress, and anger toward God.

The growing prevalence and progression of KFD in older adults have raised concerns about Thailand's capacity to manage its economic burden on the population, caregivers, and society. The direct and indirect costs of KFD are substantial and increase as the disease progresses (Wang, Vilme, Maciejewski, & Boulware, 2016). The higher costs associated with the treatment of the KFD population are largely due to higher rates and duration of comorbidity driven hospitalizations (Khan & Amedia Jr, 2008). In Thailand, KFD has economic burdens related to treatment, cost of dialysis, and other indirect costs of the patient and family (Ministry of Public Health, 2015). All of the above mentioned hinder successful aging.

Little is known, however, about successful aging in older adults with KFD in the Thai context. Most previously mentioned studies have been from Western countries, which could be problematic for the Thai context because the findings might

impose Western values on the notion of successful aging. For example, independence is considered a core indicator of successful aging in Western culture (Coleman & Iso-Ahola, 1993), whereas Asians are fundamentally interconnected with a sense of belongingness, reciprocity, empathy, and respect. Eastern cultures view the self as interdependent, that people are mutually responsible for one another, and individuals evaluate themselves based on their contributions to others (Torres, 2006; Yun & Lachman, 2006).

Furthermore, previous studies have found that there are direct and indirect effects between specific human factors and successful aging in older people. Less is known about those factors in the context of chronic illnesses. Many studies have focused on single factors related to successful aging rather than simultaneously focusing on the interrelations among multiple factors related to successful aging among older adults with KFD.

Therefore, based on empirical evidence found in reviewing the literature, variables in this dissertation research evaluated factors because of a stronger prediction of successful aging. These variables were viewed as likely to promote successful aging in the Thai context of older adults with KFD, namely resilience, optimism, patient's age, perception of health status, GFR decline, depression, self-efficacy to control KFD, and self-transcendence. It was believed that the results could benefit the future development of successful aging interventions.

Research objective

The objective of the dissertation research was to examine a hypothesized model depicting the causal relationships among patient's age, resilience, optimism, perception of health status, self-efficacy to control KFD, depression, GFR decline, self-transcendence, and successful aging among older adults with KFD.

Research hypotheses

This study aimed to test the following hypotheses:

1. Patient's age, GFR decline, perception of health status, optimism, resilience, depression, self-efficacy to control KFD, and self-transcendence would

have direct effects on successful aging.

2. Patient's age, GFR decline, perception of health status, optimism, resilience, depression, and self-efficacy to control KFD would have indirect effects on successful aging through depression, self-efficacy to control KFD, and self-transcendence.

Conceptual framework

The conceptual framework of this study was developed based on a review of literature. A study about successful aging is problematic because of a lack of consensus among disciplines on definitions and objective criteria for successful aging (Phelan & Larson, 2002). Incorporating older adults' own criteria for successful aging have not been adequately considered (A. Bowling & Dieppe, 2005; Phelan, Anderson, Lacroix, & Larson, 2004), particularly with approaches within the existential or spiritual domains (Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002).

Flood (2002, 2005) approaches successful aging as part of holistic care toward older adults and recognizes that, although they may have functional limitations or chronic disease, older adults may experience satisfaction with their ability to cope and adapt and find meaning in their lives. Flood (2002) defined successful aging as an individual's perception of a favorable outcome in adapting to the cumulative physiologic and functional alterations associated with the passage of time, while experiencing spiritual connectedness, and a sense of meaning and purpose in life. Not only is the physical being exposed to the passage of time, but one's mental and spiritual being is subjected to inevitable change.

Flood (2005) proposed two factors contributing to successful aging. Adaptation is an evolutionary or developmental process with an inherently positive outcome achieved through coping strategies used to adjust to or alter the environment. In response to stress, adaptive behaviors allow older adults to balance internal needs and external demands, to monitor and evaluate goals, to observe and learn from observation and experience, and to adopt behaviors to change either the environment or personal attitudes and actions (Poon, Gueldner, & Sprouse, 2003). Through adaptation, older adults enhance their ability to survive and thrive.

Adaptation to aging relies on three coping mechanisms that include functional performance mechanisms referred to as coping processes that encompass the ways that a person responds to the cumulative physiologic and functional changes that occurs over time (Flood, 2005). Decreasing physical strength, reducing speed, and natural wear and tear are inevitable in one's lifetime. A patient's age and GFR decline have direct and indirect effects on successful aging. The coping process is an output response to stimuli that fall within the physiologic-physical mode, such as perception of health status, self-efficacy to control KFD. Depression can have a direct and indirect effect on successful aging. However, different individuals respond to these changes in diverse ways.

Next, intrapsychic factors refer to the innate and enduring features of an individual's character that either enhance or impair one's ability to adapt to change or solve problems (Flood, 2005). Resilience and optimism, as intrapsychic factors, can have a direct and indirect effect on successful aging. Spirituality, as an intrapsychic factor, describes the person's views and behaviors that convey a sense of relatedness to a higher power or being. Spirituality is linked to common purposefulness because, by nature of being human, people are inherently spiritual (Flood, 2005). Exchanges occur among each of the foundational coping processes. Output processes can influence each other, in turn, affecting the next step.

The second factor contributing to successful aging is gerotranscendence. It is marked by a sudden shift from a materialistic and rational view of the world to a more cosmic viewpoint with greater acceptance of self and others, an increased selectivity of relationships and activities based on personal choices rather than expectations of others, a greater need for solitude, and a decreased fear of death (Tornstam, 2005). Gerotranscendence is described as emerging from the cognator subsystem because it is a shift to a person's meta-perspective involving perception and information-processing, learning, judgment, and emotion (Flood, 2005). From a review of the literature review, self-transcendence can have a direct positive effect on successful aging (McCarthy, 2009, 2011; McCarthy et al., 2013). Effective use of these coping mechanisms, which are interrelated, increases the likelihood of aging successfully. The hypothesized model showing the factors described above may be illustrated in the following figure.
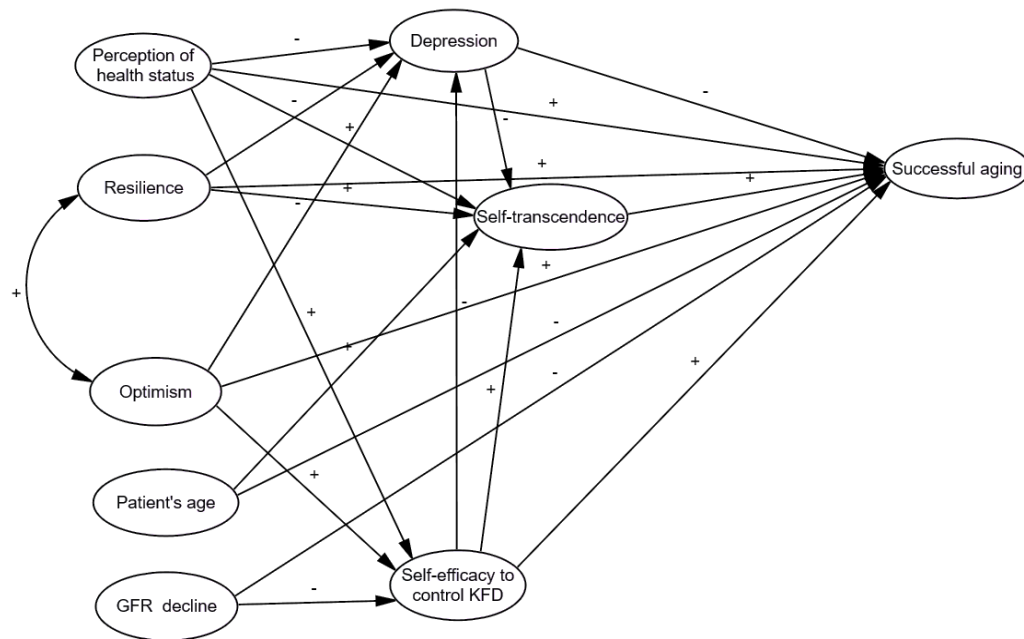
Figures 1 The hypothesized model of successful aging in older adults with KFD

Scope of the study

The research for this dissertation study collected data from people with chronic kidney disease 60 years of age and older who received services in the internal medicine clinics at Queen Savang Vadhana Memorial Hospital in Sri Racha District, Chon Buri Province, Thailand. The data were collected from October 2019 to January 2020.

Definition of terms

The following terms are defined:

Successful aging refers to older adults' perception of their health outcomes in adapting to the cumulative physiologic and functional alterations associated with the passage of time while experiencing spiritual connectedness, life satisfaction, and a sense of meaning and purpose in life. It was measured by the Successful Aging Inventory [SAI] (Troutman, Nies, Small, & Bates, 2011).

Self-transcendence refers to older adults' developmental capacity, perhaps as a survival mechanism to confront serious life events, such as severe or chronic illness, disability, aging, loss of a loved one, career difficulties, and other life crises. It

is the capacity to expand self-boundaries toward a mature and broadened perspective that helps a person discover or make meaning of life's experiences. It was measured by the Self-transcendence Scale [STS] (Reed, 1989).

Patient's age refers to the age in years of older adults with KFD, measured by the Demographic questionnaire.

Perception of health status refers to older adults' perception of their overall health given the severity of illness specific to their stage of KFD and its impact on physical, social, and psychological functioning. It was measured by the Health Survey Short Form-12 version 2 [SF-12v2] (Ware Jr, Kosinski, & Keller, 1996).

Self-efficacy to control KFD refers to older adults' confidence in the ability to respond or control risk factors, and manage or prevent complications that can delay KFD progression through a sense of autonomy, self-integration, seeking social support, and problem-solving. It was measured by the CKD Self-Efficacy [CKD-SE] questionnaire (Lin et al., 2012).

Depression refers to older adults' mental health problems that are characterized by hopelessness, dissatisfaction with life, apathy, and inattentiveness. It was measured by the Geriatric Depression Scale [GDS] (Sheikh & Yesavage, 1986).

Resilience refers to innate and enduring features of an individual's characteristic that either enhances or impairs one's ability to cope, adapt to change and solve problems, and return to a state of equilibrium after illness or hardship. It was measured by the Connor-Davidson Resilience Scale [CD-RISC] (Connor & Davidson, 2003 a).

Optimism refers to a mental attitude reflecting hopefulness and a belief in a successful or positive outcome. It was measured by the Life Orientation Test-Revised [LOT-R] (Scheier, Carver, & Bridges, 1994).

GFR decline refers to older adults' functional abnormality of the kidneys leading to worsening of kidney function. It was measured by eGFR values.

CHAPTER 2
LITERATURE REVIEWS

The literature review for the dissertation research is divided into three sections:

    1. Older adults with kidney function decline

       1.1 Overview of older adults

       1.2 Kidney function decline

    2. Successful aging

       2.1 Overview of successful aging

       2.2 Theoretical framework

    3. Factors influence successful aging

       3.1 Resilience

       3.2 Optimism

       3.3 Patient's age

       3.4 Perception of health status

       3.5 Glomerular filtration rate decline

       3.6 Depression

       3.7 Self-efficacy to control kidney function decline

       3.8 Self-transcendence

Older adults with kidney function decline

1. Overview of older adults

Globally, the number of older people is increasing rapidly. Between 2015 and 2050, the proportion of the world's population ≥ 60 years of age will nearly double, from 12% to 22%. The World Health Organization reports that in 2050, 80% of the world's older people will be living in low- and middle-income countries (WHO, 2018). The shifts in population will be dramatic, especially for developing countries. This is true for Thailand, which has the third most rapidly aging population in the world (HelpAge International, 2019). At present, approximately 17.45% of Thailand's total population are older adults. By 2040, the population over 60 is

expected to increase to 25%, and by 2050 it will be 37% (HelpAge International, 2019).

The criterion that defines an older adult differs among countries, due to the differences in geography, time, society, culture, and functional markers. In developed countries, people are considered to be older adults at 65 years of age. In many developing countries, a person is an older adult at 60. Older adults are often classified into three age groups: the young-old (60 - 69 years), middle-old (70 - 79 years), and oldest-old (≥ 80 years) (Samanta, 2016). Thailand uses the United Nations' designation of ≥ 60 years of age for defining the older population (WHO, 2010). The current life expectancy for Thai men and women is 73.0 and 80.1 years, respectively (Institute for Population and Social Research, 2019).

For aging people, health deterioration is unavoidable, such as hearing loss, cataracts, back pain, osteoarthritis, diabetes, depression, and dementia (WHO, 2018). In the U.S., about 80% of older adults have at least one chronic disease, and 77% have at least two diseases (National Council on Aging, 2018). The WHO reports that chronic illness is a cause of death for about 23% of people over 60 years (WHO, 2017). Each chronic condition is associated with increased healthcare and social care costs (Picco et al., 2016).

Aging is often conceptualized as a challenge to maintain a balance between the gains and losses of resources necessary to adapt to age-related change. It is a period in which there is an increased risk of becoming functionally dependent and losing one's autonomy secondary to psychological and physical changes brought about by the aging process and health issues (Hsu, 2015). Beyond biological changes, aging is associated with other life transitions, such as retirement and death of friends and family. Increasingly, however, people focus on aging successfully and how to maintain quality of life and happiness.

Aging is a natural, progressive, and inevitable biological process characterized by a gradual decline in cellular function and progressive structural changes to many organ systems. These anatomic and physiological changes delineate the process of senescence, a term that describes the predictable age-related alterations that occur naturally as opposed to those induced by diseases (Denic, Glassock, & Rule, 2016). In general, the rate of physiological decline is initially difficult to

perceive; however, after a certain age, it undergoes acceleration. Like other organ systems, the kidneys also go through the process of normal senescence, including both anatomical and physiological changes (Glassock & Rule, 2012). It is difficult to distinguish the two processes: inevitable organ-based senescence and disease-mediated structural and functional changes in older adults. Nevertheless, it is essential to emphasize that age-related diseases, when superimposed on normal senescence, may significantly alter the rate of functional decline, exhaust renal functional reserve, and predispose older adults to kidney injury (Rodriguez-Castro & Cordova, 2011).

2. Kidney function decline

2.1 Definition of kidney function decline

KFD refers to kidney damage evidenced by abnormal renal markers or a decreased glomerular filtration rate of < 60 ml/min/1.73 m^2 for at least three months. It is a medical diagnosis related to the description of KFD. Abnormal KFD renal markers are proteinuria, abnormal radiology, abnormal cells in the urine, or by renal pathology on biopsy. Whatever the underlying etiology, once the loss of nephrons and reduction of functional renal mass reach a certain point, the remaining nephrons begin a process of irreversible sclerosis that leads to a progressive decline in the GFR (A. S. Levey et al., 2003).

2.2 Classification of kidney function decline

Stages of KFD are measured by the GFR, which is the amount of blood the kidneys clear of waste products in one minute. Because this rate cannot be directly measured easily, current practice is to estimate it by applying a formula based on age, gender, and creatinine in the blood. The different stages of KFD form a continuum. The GFR can change through the first four stages of KFD severity, but once it reaches Stage 5, kidney function does not usually improve. The stages of KFD are classified as follows (Lamb, Levey, & Stevens, 2013; A. S. Levey et al., 2003; A. S. Levey et al., 2002).

Stage 1: Evidence of kidney damage but GFR is preserved (> 90 ml/min/ 1.73 m^2)

Stage 2: Mild kidney damage with GFR 60 - 89 ml/min/1.73 m^2

Stage 3a: Moderate kidney damage with GFR 45 - 59 ml/min/1.73 m^2

Stage 3b: Moderate kidney damage with GFR 30 - 44 ml/min/1.73 m^2

Stage 4: Severe kidney damage with GFR 15 - 29 ml/min/1.73 m^2

Stage 5: End-stage renal failure [ESRD] with GFR < 15 ml/min/1.73 m^2 In an update of its KFD classification, the U.S. National Kidney Foundation [NKF] has advised that GFR and albuminuria levels should be evaluated together, rather than separately, to improve prognostic accuracy in the assessment of KFD. More specifically, the guidelines recommend the inclusion of estimated GFR and albuminuria levels when determining risks for overall mortality, cardiovascular disease, end-stage renal failure, acute kidney injury, and the progression of KFD (A. S. Levey et al., 2002). This current dissertation research is focused on older adults who have an eGFR 15 - 60 ml/min/1.73 m^2.

2.3 Prevalence of kidney function decline

The evidence shows there are rising incidence and prevalence rates of kidney failure with poor outcomes in the United States (NKF, 2017). KFD has been found more prevalent in those over the age of 60 when compared to the rest of the general population (NKF, 2017). At least 50% of the nephrology patient populations are older adults with KFD. This percentage has been steadily increasing among older adults (Keith, Nichols, Gullion, Brown, & Smith, 2004). According to the U.S. Third National Health and Nutrition Examination Survey data, almost 40% of older adults ≥ 60 years of age have some degree of KFD (Coresh et al., 2003; Mallappallil et al., 2014). Recent estimates from Johns Hopkins University indicate that more than 50% of seniors over the age of 75 are believed to have KFD.

The prevalence of KFD in Thailand is staggering. Between 2007 and 2014, the proportion of the population with diabetes and hypertension nearly doubled, from 12.21% to 17.53% and 3.64% to 10.95%, respectively (Bureau of Non-Communicable Disease, 2016). The Thai SEEK study (Ingsathit et al., 2009) reported that 17.5% of the population, or about 8 million people, have KFD. Prevalence rates of KFD across stages 1 to 5 were 3.3%, 5.6%, 7.5%, 0.8%, and 0.3%, respectively. Risk factors associated with KFD were age, hypertension, and diabetes (Ingsathit et al., 2009).

2.4 The decline of kidney function in older adults

KFD often develops slowly with few symptoms, and many people are unaware they have it until the disease has advanced. It has been estimated that after

the age of 30, the GFR progressively declines at an average of 8 ml/min/1.73m^2/ decade (Coresh et al., 2003). A. Levey et al. (2007) reported that older age is a key predictor of KFD, that 11% of individuals > 65 years without hypertension or diabetes have creatinine levels that fall ≥ stage 3 of KFD (A. Levey et al., 2007). About half the population over 70 years have an estimated GFR < 60 ml/min/1.73 m^2 (Aitken et al., 2014; NKF, 2017). As the kidney's functional reserve declines, older adults are more susceptible to nephrotoxic agents and drugs (Abdel-Kader & Palevsky, 2009). Yet, there has been considerable debate about the significance of this age-related decline in kidney function (A. S. Levey et al., 2015; Phoon, 2012).

It is common for older adults to have disease-mediated structural and functional changes. Comorbidities are more often found in people with KFD compared with 20.1% of people without KFD include diabetes, ischemic heart disease, and stroke; 70.9% of people with KFD have hypertension (De Lusignan et al., 2009). One study in a community cohort of 10,184 older adults over a two-year follow-up found that those with diabetes mellitus had the greatest decline. Their GFRs were 2.1 and 2.7 ml/min/1.73 m^2 per year in women and men, respectively. Those without diabetes mellitus had GFRs of 0.8 and 1.4 ml/min/1.73 m^2 per year for women and men (Hemmelgarn et al., 2006). In summary, KFD with advancing age, producing physiological and pathological changes. The presence of comorbidities, such as diabetes mellitus, and hypertension, can accelerate the staging of KFD.

2.5 Kidney function decline relevant to physical function

Physical functional decline is proportionally related to the decrease in GFR. In a British cross-sectional study of community-dwelling adults > 75 years old, the strength of the association with measures of morbidity and functional impairment increased as eGFR fell (Roderick et al., 2007). For males with partial dependence on activities of daily living, the study classified eGFR into three categories: < 30, 30- 44, and 45 - 59 ml/min/1.73 m^2 compared to the reference eGFR > 60 ml/min/1.73 m^2. The respective odds ratios [OR] were 2.20, 1.60, and 1.00 times. For males with a lack of physical activity, the ORs were 2.20, 1.78, and 1.10 times. Similarly, for men who fell at home (more than twice in 6 months), the odds ratios were 2.04, 1.06, and 1.02 times, respectively, in the three eGFR categories.

Functional limitation in older adults with KFD eventually leads to physical disability that is proportional to the severity in the degree of renal function decline. Plantinga et al. (2011) examined three groups (i.e., no KFD, combined KFD stages 1 and 2, and stage 3) and found that the prevalence rates for difficulties in activities of daily living in older adults (age $\geq$ 65 years) across the groups were 17.6%, 24.7%, and 23.9%, respectively, compared to the rates of younger adults (age 20 - 64 years) that were 6.8%, 11.9% and 11.0%, respectively. Thus, older adults classified in the three progressive KFD stages showed greater difficulties in activities of daily living than younger adults without KFD (Plantinga et al., 2011).

The frailty in older adults is a multidimensional phenotype that reflects a decline in muscle mass, leading to a general decline in physical function and increased vulnerability to adverse outcomes of stress. The prevalence of frailty varies from 7% of people 65 -75 years old to 40% of those over 80 years (L. P. Fried et al., 2001). Among persons with moderate-to-severe KFD (eGFR< 45 ml/ min/1.73 m^2), 20.9% were frail. Wilhelm-Leen, Hall, Tamura, and Chertow (2009)found that the odds of frailty significantly increased among older adults with all stages of KFD. The reported that frailty was inversely related to the eGFR. Low eGFR less than 45 ml/min/1.73 m^2 has also been associated with poorer quality of life (Nitsch, Mann, Bulpitt, Roderick, & Fletcher, 2011).

KFD has increased the incidence of falls, osteoporosis, and fractures in older adults. In the Rancho Bernardo Study of 1,713 participants, with a mean age of 71.3 years, a significant linear association between creatinine clearance and hip bone mass density was found to produce an average annual bone loss of 0.6% (Jassal, von Muhlen, & Barrett-Connor, 2007). An increased rate of falls in people with KFD could be related to the reduced levels of 25-hydroxyvitamin D that lead to decreased quadriceps muscle strength (Boudville, Inderjeeth, Elder, & Glendenning, 2010). Dukas, Schacht, and Stähelin (2005) studied 5,313 older participants who had been treated for osteoporosis. Their creatinine clearance of < 65 ml/min/1.73 m^2 increased the risk of fall with hip, vertebral and radial fractures. Gallagher, Rapuri, and Smith (2007) studied 415 women 65 - 77 years old. Their low creatinine clearance of < 60 ml/min/1.73 m^2 predicted the number of falls compared with those with creatinine clearance at least 60 ml/min/1.73 m^2 ($p < .007$).

The impact of KFD on physical function is more severe than other chronic diseases, including lower short physical performance battery, lower grip strength, and slower gait speed (Hartmann et al., 2009). L. F. Fried et al. (2006) tested the strength and physical performance in a cohort of 2,235 participants over 70 years old without functional limitation at baseline. The researchers found that KFD (eGFR < 60 ml/min/ 1.73 m^2) was associated with functional limitations, such as difficulty in walking a quarter of a mile or climbing 10 steps.

In conclusion, functional decline is proportionally related to the decrease in GFR. GFR decrease leads to the incidence of falls, osteoporosis, and fractures in older adults. With a decreased reserve, individuals are more likely to have reduced physical function and less ability to undertake activities of daily living. The lack of independence may affect the quality of life in older adults.

2.6 Kidney function decline relevant to cognitive function

Cognitive impairment is clinically associated with a severe decline in kidney function. Ebersberg (2001 - 2003) followed 3,679 participants aged over 55 years for two years observing for cognitive impairment. Their kidney function was divided into three groups: eGFR ≥ 60, 45 - 59, and < 45 ml/min/1.73 m^2, respectively. After two years found new cognitive impairment developed at a rate of 5.8, 9.9, and 21.5%, respectively. Participants with moderate-to-severe kidney disease at baseline were more at risk of developing new cognitive impairment (OR = 2.14; 95% CI = 1.18 - 3.87; p < .01) (Etgen et al., 2009). In another study, Kurella et al. (2005) analyzed 3,034 older adults with chronic kidney disease for cognitive function at baseline and after 2 - 4 years of follow-up. They reported that cognitive impairment increased among participants who had eGFR < 45 ml/min/1.73 m^2 (2.43, 95% CI = 1.38-4.29) compared to those with eGFR 45-59 ml/min/1.73 m^2 (OR = 1.32, 95% CI = 1.03 -1.69). Yaffe et al. (2010) found that participants who had advanced KFD (eGFR < 30) were more likely to have clinically significant cognitive impairment than those with mild-to-moderate KFD (eGFR = 45 - 59 ml/min/1.73 m^2). Older adults with KFD have metabolic changes that may affect intelligence, memory, attention, and executive function (Tryc et al., 2011).

Thus, older adults who have decreased GFRs can experience cognitive impairment and should be screened for dementia. Borson, Scanlan, Brush, Vitaliano,

and Dokmak (2000) developed the Mini-Cog to measure cognitive impairment. The Mini-Cog score results are assigned to two categories: (a) possible abnormal cognitive function results (scores 0 - 2); and (b) normal cognitive function results (scores 3 - 5). The instrument is a useful tool for professionals working with older adults who have KFD.

2.7 Risk factors for kidney function decline in older adults

Risk factors of developing KFD include advancing age, hypertension, diabetes, obesity, proteinuria, hyperlipidemia, cardiovascular disease, glomerular and tubule interstitial disease, metabolic acidosis, smoking, history of kidney stones, radiological contrast, nephrotoxic herbs, NSAIDs, and antibiotics (Mallappallil et al., 2014; Nitta et al., 2013; L. A. Stevens et al., 2010). Diabetes and hypertension, however, are the most common causes of KFD (Ingsathit et al., 2009).

2.8 Signs and symptoms of kidney function decline

KFD is often called a "silent disease," as mostly there are no warning signs. In the early stages of the disease, people may not notice problems until the kidneys have lost up to 90% of their functioning (Kidney Health Australia, 2018). Significant damage to the kidneys can happen before people develop symptoms. In the late stages of KFD, when the kidneys have nearly failed, people might notice symptoms caused by waste and extra fluid building in the body (NKF, 2017). Signs and symptoms of reduced kidney function are changes in the frequency of urination; hematuria; swelling of the feet, ankles and legs; headache; high blood pressure; loss of appetite; tiredness; pain in kidney area; itching; muscle cramps; nausea and vomiting; sleep disturbance; and shortness of breath (Bureau of Non-Communicable Disease, 2016). These somatic symptoms interfere with a person's ability to perform activities of daily living.

2.9 Impact of kidney function decline in older adults

It is difficult for older adults to cope and adapt to KFD. The disease challenges the idea of successful aging because KFD significantly affects the psychological, physical, emotional, spiritual, economic, and social aspects of older adults. KFD accelerates the metabolic abnormalities of aging, such as protein-energy wasting, chronic inflammation, and oxidative stress. These biochemical changes manifest as the frailty phenotype, with a poor reserve and inadequate response to

stressors (Walker et al., 2014). With decreasing reserve, individuals are more likely to have reduced physical and cognitive function and less ability to complete daily activities and remain independent (C. B. Bowling et al., 2011; Khatri et al., 2009). Older adults with KFD have an ineffective ability to manage their disease and illness, inadequate coping abilities, and adaptation with health, and dissatisfaction with life. Each of these can negatively affect the quality of life and impaired well-being for older adults with KFD (Soni et al., 2010).

People with KFD are at risk of developing or worsening preexisting psychological illnesses. They face stressors that can affect their poor emotional states, such as adjusting to a strict dietary and experiencing a heavy burden of symptoms, such as pain, fatigue, and impaired well-being (Kimmel, 2002). Such restrictions can impact a person's illness beliefs and sense of personal control, leading to anxiety and depression, inhibited coping, and adjustment (Christensen & Ehlers, 2002; Ok & Kutlu, 2019). Depression is perhaps the most significant psychological disorder prevalent among people with KFD and affects 26.5% of all those coping with the disease. The presence of depression among people with KFD makes the treatment more complex because they have an increased risk of developing new illnesses and mortality (Palmer et al., 2013). As the disease progressively worsens, older adults will feel loneliness, hopelessness, spiritual distress, and anger at God. Those feelings affect successful aging.

The growing prevalence and progression of KFD in older adults have raised concerns about the capacity to manage the economic burden on this population, their caregivers, and society. The direct and indirect costs of KFD and end-stage renal disease are substantial and increase throughout the disease's progression (Wang et al., 2016). The costs associated with treatment are largely due to the aging population, the increasing prevalence rates of KFD and co-morbidities, and duration of comorbidity-driven hospitalizations (Khan & Amedia Jr, 2008). In Thailand, KFD had a significant economic impact on the national health budget in that from 5,247 and 6,318 million Thai baht were spent for treatment in 2015 and 2016, respectively. The cost of dialysis was 250,000 baht per person per year. This expense did not include loss of revenue and other indirect costs incurred by the person or family (Ministry of Public Health, 2015). Again, the economic burden on the person or

family may prevent successful aging.

    2.10 KFD management

    Using the general approach to medical management, the unique issues of KFD management in the older adults are emphasized. The goal of KFD management is to halt or retard disease progression. Interventions, which become critically necessary as the disease progresses, have been designed for each stage of KFD. In stages 1 and 2, the strategies require strict control of comorbidities, slow progression of the disease, reduce the risk of the effects of cardiovascular disease, and estimate the rate of the disease's progress. The strategy in stage 3 is to treat complications. To prepare for renal replacement therapy is the imminent strategy in stage 4 (A. S. Levey et al., 2003). In stage 5, known as end-stage renal disease, the decline in kidney function may no longer be sufficient to sustain life and, if untreated, the person will die. In this stage, either renal dialysis or a kidney transplant is required for survival (Lamb et al., 2013).

    In conclusion, older adults with KFD are faced with a complexity of physical, psychological, emotional, spiritual, economic, social changes, coping, adaptations, and other issues, making it very difficult for them to go through successful aging. Many older people with KFD has ineffective disease and illness management, inadequate coping abilities, depression and loneliness, hopelessness, spiritual distress, anger at God, and unhappiness with life; these are characteristics highly suggestive of unsuccessful aging (Flood, 2005). For this reason, medical management strategies to help older adults who have an eGFR between 15 - 60 ml/min/1.73 m^2 slow the disease's progression, prevent complications, decrease morbidity and mortality, improve longevity, will consequently extend their health and well-being. Therefore, it is imperative to find the factors that can help promote successful aging among older adults with KFD.

Successful aging

1. Overview of successful aging

The term "successful aging" emerged in the 1960s with Havighurst (1961) broadly defining it as the conditions under which both an individual and society maximize life satisfaction and happiness. Initially, successful aging, based on lifespan

development theory, was seen as the result of a lifelong developmental process of adaptation or growth resulting in life satisfaction (Baltes & Baltes, 1990). However, the groundbreaking MacArthur Study of Successful Aging (Rowe & Kahn, 1997), and a series of MacArthur Foundation studies, launched the idea of successful aging in a new direction, resulting in decreased or delayed morbidity and mortality. Rowe and Kahn (1997) defined successful aging as having three important components: "low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life" (p. 433). The focus on avoiding disease and disability is seen in their objective criteria for successful aging. Rowe and Kahn's model presents a challenge to the idea that old age is always a time of decline. Instead, the model gives a hopeful image of aging where, under the right circumstances, individuals can retain physical health, cognitive functioning, and social engagement.

The definitions of successful aging in Thai culture have been influenced by Rowe and Kahn's model. Charrurangsri, Un-Ob, Yodpet, and Ratana-Ubon (2014) defined successful aging as a process in which individuals who have good health and live reasonably independently, have sufficient income to not suffer financially, feel contentment with life, have an understanding family, participate in various social activities, gain social acceptance, and contribute to the society. Thanakwang, Soonthorndhada, and Mongkolprasoet (2012) defined successful aging as a state in which older adults have good physical and mental health, enthusiasm and physical flexibility, an ability to live happily within the family and the society, and feel happiness and satisfaction with pride in their past occupational success or the present success of their descendants. The latter definition was based on a subset of older adults who remained active and disease-free well into their later life; the criteria included a low risk of illness, good physical and cognitive function, and active engagement with life.

Although now widely employed, the paradigm of "successful aging" has been open to a range of criticisms (Martinson & Berridge, 2015). The chief limitation is that less than 5% of older adults qualify as successfully aging (McLaughlin, Jette, & Connell, 2012). A substantial proportion of older adults have multiple chronic diseases, disabilities, or loss of physical or mental function (Phelan & Larson, 2002).

The onset of illness and disability is an unavoidable part of the biological aging process (Bülow & Söderqvist, 2014). Moreover, factors in the spiritual domain, such as a sense of meaning, purpose in life, or connectedness to the sacred, are not considered in the definitions (Crowther et al., 2002; Sadler & Biggs, 2006). Understanding how older adults make sense of successful aging in the context of a chronic condition, disability, loss of function, and age-related changes gives voice to those who have to deal with the changes they are experiencing. Older adults who do not meet objective criteria for successful aging often perceive themselves to be aging successfully anyway (Cernin et al., 2011; Montross et al., 2006; Pruchno, Wilson-Genderson, & Cartwright, 2010; Strawbridge et al., 2002). When asked to define successful aging, they identify domains of physical functioning and health, but they also emphasize subjective domains that counterbalance physical decline, such as acceptance, attitude, adaptation, and emotional wellbeing (Lewis, 2011; Tate et al., 2003; Troutman, Nies, & Mavellia, 2011; Von Faber et al., 2001).

Other definitions of successful aging in chronic diseases have been offered. Baltes and Baltes (1990) defined it as individual development with three main components: selection, optimization, and compensation. Depp and Jeste (2006) operationally defined successful aging as a self-rating on the following components: disability/physical function, cognitive functioning, life satisfaction/well-being, social/productive engagement, presence of illness, longevity, self-rated health, personality, and environment/finances. Kahana and Kahana (2001) defined successful aging as possessing social and psychological resources with preventive and corrective adaptations, and gifted with mental, existential, and social well-being.

Kahana and Kahana (2001) also defined successful aging in HIV people as having achieved a certain quality of life outcome that includes attaining a well-adapted affective state (i.e., absence of depression and maintenance of high morale), finding meaning in life despite chronic illness, and sustaining valued activities and relationships, rather than on the attainment of physical health. They were the first to apply a theoretical model of successful aging to people living with HIV. Proactively engaging in these adaptations helps reduce stressors, reduce the impact of stressors, or directly enhance positive outcomes.

Flood (2002) defined successful aging as one's perception of a favorable

outcome in adapting to the cumulative physiologic and functional alterations associated with the passage of time while experiencing spiritual connectedness, a sense of meaning and purpose in life. The view of successful aging offered by Flood (2002, 2005) reflects nursing's unique perspective and values, including the importance of an individual's right to choose meaningful goals and priorities, based on personal and cultural values. It also represents a holistic, multidimensional viewpoint that encompasses physical, cognitive, psychosocial, and spiritual.

1.1 Subjective appraisals

The concept of successful aging lends itself to more than one interpretation. Two main perspectives exist. The first looks at successful aging as a state of being, a condition that can be objectively measured at a certain moment. The second views it as a process of continuous adaptation. Most theories have addressed successful aging objectively, using some set of predetermined criteria to ascertain successful agers. Little research has identified or considered how older adults themselves define successful aging (Phelan et al., 2004; Phelan & Larson, 2002; Strawbridge et al., 2002).

Using self-rated appraisals of successful aging and established criteria, several researchers have called for the addition of successful aging criteria generated by older adults' subjective measures. Strawbridge et al. (2002) reported a significant difference between the choice of self-ratings and ratings based on Rowe and Kahn's criteria (50.3% vs. 18.8%). Cernin et al. (2011) similarly found that 63% of African American older adults in their sample self-reported aging successfully compared with 30% who met the objective criteria by Rowe and Kahn. Phelan et al. (2004) also found that subjective meanings of successful aging differed from those of the published literature than from the multidimensional perceptions of older adults (which encompassed physical, functional, social, and psychological health) that have not been adequately represented in any successful aging model. Based on data from a Manitoba follow-up study, researchers found that laypersons' definitions may be relatively consistent over time and should be taken into account (Tate, Swift, & Bayomi, 2013).

Three studies reported that avoidance of disability or chronic physical illness was not predictive of subjective successful aging. Strawbridge et al. (2002) found that

functional status specifically was not predictive of subjective successful aging. Montross et al. (2006) similarly found that 92% of their sample viewed themselves as successfully aging, although the majority experienced disability and chronic physical illness. Romo et al. (2013) examined subjective rates of successful aging among an ethnically diverse sample of older adults with late-life disability, the majority of whom reported that they had aged successfully.

Self-perception is a crucial aspect of many theoretical conceptualizations of successful aging. Havighurst (1961), Ryff (1982), Baltes and Baltes (1990), and Flood (2005) viewed successful aging as an adaptive and coping process that results in older adults maintaining the perception of well-being, meaning, and purpose in life, and greater life satisfaction and ultimately, successful aging. The most commonly proposed definition of successful aging has been satisfaction with one's life (A. Bowling & Dieppe, 2005). From an initial approach with a purely biomedical perspective, the focus has been shifting towards a more holistic vision, attending to more subjective aspects of the aging process (Pruchno et al., 2010). Psychosocial models emphasize aspects like life satisfaction, well-being, social engagement, or personal resources (Cosco et al., 2014).

In conclusion, when using subjective appraisals, successful aging can still be considered to occur, even in the face of functional decline. Older people who maintain the subjective feelings of life satisfaction, well-being, and a sense of meaning in life by continuous coping and adaptation with health problems can achieve successful aging.

1.2 Successful aging with disabilities

Functional decline, disability, and frailty are common geriatric conditions Inouye, Studenski, Tinetti, and Kuchel (2007). Aging is associated with a 1% - 2% decline in functional ability per year. Frailty is found in 20% - 30% of the older adults over the age of 75 years and increases with advancing age. It has been associated with long-term adverse health-related outcomes, such as the increased risk of geriatric syndromes, disability, dependency, hospitalization, and mortality (Topinková, 2008).

The most common form of disabilities among older people is difficulty with walking, hearing, and seeing. Some individuals have reported more than one disability. Romo et al. (2013) stated for their study that older adults had at least two

impairments in activities of daily living and instrumental activities of daily living; still, most of these participants with a late-life disability felt they had aged successfully. Liu Jr and Richardson (2012) found that 84.9% of older adults with disabilities were satisfied with life. They achieved successful aging by using adaptation and coping strategies to align their perception of successful aging with their experiences. Thus, successful aging in the context of disability involves subjective criteria. Understanding how some older adults achieve successful aging while facing chronic conditions, age-related changes, and impairment will contribute to those who hopelessly deal with the changes.

1.3 Successful aging with a chronic illness

Old age is associated with a complexity of physical, psychological, spiritual, emotional, and societal changes and adaptations (Siegel, Raveis, & Karus, 1998). Many researchers have debated Rowe and Kahn's conceptualization (McLaughlin, Connell, Heeringa, Li, & Roberts, 2009). Concerns include the belief that the concept is narrowly conceived (Scheidt, Humpherys, & Yorgason, 1999) and does not sufficiently acknowledge the role that broad structural factors play in successful aging (Holstein & Minkler, 2003). McLaughlin et al. (2009) have suggested the need to modify the concept for broad public health purposes because there might be a need to highlight the importance of structural factors in enabling successful aging.

Understanding how individuals make sense of successful aging in the context of disability, chronic conditions, and age-related changes gives voice to those who have to deal with the changes they are experiencing. Recent reviews, chronic conditions seriously compromise the quality of life of older adults, often forcing them to give up their independence too soon. Adaptations may help older individuals deal with stressors related to chronic health conditions.

Hutchinson and Nimrod (2012) suggested four themes for adapting to chronic conditions: drawing on existing resources for continuous involvement, setting leisure-based goals, using strategies to get more out of life, and living a meaningful life. Jenerette and Lauderdale (2008) identified vulnerability factors, self-care management resources, and health outcomes in adults with sickle cell disease. The life review process of these adults was a useful means to gain insight into successful aging

with sickle cell disease. Older adults with diabetes evaluated their well-being by comparing themselves with the illnesses of friends and family (Chard et al., 2016). This process motivated social engagement and care for others. Marks (2018) reported that conditions, such as osteoarthritis, should not preclude an individual from attaining a successful aging outcome. Thus, older adults who have a severe chronic health condition, such as declining kidney function, can use adaptive mechanisms to achieve successful aging by setting a goal of life, having robust internal resources, and seeking social support.

Donnellan et al. (2012) found that stroke survivors used three types of adaptive strategies in response to loss of self-regulation after stroke: selection, optimization, and compensation [SOC]. In chronic illness, the SOC strategies help with an individual's initial health-related quality of life, functional ability, and decrease depressive symptoms. Older adults with COPD can optimize their capacity to perform high priority tasks using a range of pragmatic and instinctive responses to ongoing change, which became more and more conscious and deliberate over time.

Additionally, compensatory strategies, more traditionally associated with COPD management, have been used to reduce the impact of symptoms. The use of these strategies to physically and psychosocially adapt to COPD have shown how the people demonstrate resilience and use successful aging strategies to cope with ongoing functional decline (Southwell et al., 2018). The SOC strategy may have only significant indirect effects because of the effect of dyspnea symptoms on successful aging. Y. M. Jang and Song (2017) found that a coping strategy, social support, SOC strategies, and dyspnea symptoms explained 62% of the variance in successful aging Thus, this strategy focuses on understanding the personal cognitive adaptations which older people themselves use to age successfully.

In addition to using SOC strategies, older adults with chronic diseases can reach successful aging by accepting some limitations, staying positive, maintaining social supports, and engaging in meaningful activities (Solomon et al., 2018). Added to that list can be strategies that focus on mental health, cognitive efficiency, personal control, and life satisfaction (Vance et al., 2011). Moore et al. (2013) reported that resilience, optimism, and a sense of personal mastery create a stronger relationship with self-rated successful aging than the duration or severity of disease. Young et al.

(2009) postulated that successful aging might coexist with illnesses and functional limitations. This highlights to the importance of understanding their values, aspirations, and create patient-centered goals. From a research perspective, this information reinforces the importance of including the subjective experiences of older adults in developing successful aging criteria (Escota, O'Halloran, Powderly, & Presti, 2018; Uribe, 2015). Hence, while little is known about successful aging in older adults with CKD, it should be safe to infer that they could achieve successful aging if compensatory psychological and social mechanisms are used with a variety of adaptive strategies.

To move beyond the limited perspective that stresses disease and impairment, Young et al. (2009) postulated that successful aging may coexist with illnesses and functional limitations if compensatory psychological and social mechanisms are used. Wong (1989) proposed that personal meaning is the hidden dimension of successful aging because having a positive meaning and purpose in life, adds not only years to one's life but also adds life to one's years. Older people need to develop a positive attitude towards life to maintain life satisfaction in losses and illnesses (Wong, 1989). The challenge of successful aging is discovering positive meanings of life, even when one's physical health is failing. There is a necessity to address the needs of the frail elderly, the disabled, and the chronically ill and not view them as unsuccessful agers. Older adults need to look deeper and discover what enables one to triumph over prolong disability and illness. Thus, the secret to successful aging for the frail is in discovering the transcendental meaning of life.

2. Theoretical framework

The theoretical underpinnings of this dissertation research were both the Flood midrange theory of successful aging (Flood, 2005) and findings from the literature review. Researchers in previous studies have concluded that there are direct and indirect effects between patient's age, GFR decline, perception of health status, self-efficacy to control KFD, depression, resilience, optimism, and successful aging. Self-transcendence has a direct positive effect on successful aging.

Flood (2005) defined successful aging as "an individual's perception of a favorable outcome in adapting to the cumulative physiologic and functional alterations associated with the passage of time, while experiencing spiritual

connectedness, and a sense of meaning and purpose in life" (p. 36). Not only is the physical being exposed to the passage of time, but one's mental and spiritual being is subject to inevitable change as well. Thus, it is essential to study late-life approaches to maintain life satisfaction during the period of loss and illness. In the mid-range theory, Flood (2005) proposed that two main factors contribute to successful aging: adaptation and gerotranscendence.

2.1 Adaptation

Adaptation is a developmental process of adjusting to the environment by using coping strategies that lead to inherently positive outcomes. Adaptive behaviors allow older adults to balance external demands and internal needs; adopt behaviors to change either the personal attitudes, actions, and environment; monitor and evaluate goals; and learn from observation and experience (Poon et al., 2003). Adaptation is a dynamic balance between the person and situation through effective coping within four domains: role function, physiologic-physical, interdependence, and self-concept. Adaptation, specifically among older people, is the positive outcome of coping behaviors and self-regulation that allows older adults to cope and adjust effectively to the unique constraints and opportunities associated with aging. Adaptation to aging relies on three coping processes: functional performance mechanisms, intrapsychic factors, and spirituality (Flood, 2005).

2.1.1 Functional performance mechanisms refer to a coping process that encompasses the ways that a person responds to the cumulative physiologic and functional changes that occur over time. Decreasing physical strength, reducing speed, and bodily wear and tear are inevitable in one's lifetime. However, different individuals respond to these changes in diverse ways. Indicators of the functional performance mechanisms are output responses to stimuli that fall within the physiologic-physical domain of adaptation. Indicators of functional performance mechanisms are health promotion activities, physical health, and physical mobility (Flood, 2005; Topaz et al., 2014). Functional performance mechanisms are associated with a better quality of life that is better for people who have aged successfully (Guse & Masesar, 1999).

2.1.2 Intrapsychic factors refer to the innate and enduring features of an individual's character that either enhance or impair one's ability to adapt to change

or solve problems. Output responses that are indicative of intrapsychic factors lie within the self-concept and role function domains of adaptation. Interdependence is the close relationship between people aimed at satisfying their needs for affection, development, and resources to achieve relational integrity that can be influenced by the intrapsychic factors. This is because the character traits of the individual directly relate to that person's relationships with others. Indicators of intrapsychic factors are creativity, low levels of negativity, and personal control (Flood, 2005; Topaz et al., 2014).

          2.1.3 Spirituality describes the person's views and behaviors that convey a sense of relatedness to a greater power or being. Roy and Andrews (1999) states that through common purposefulness, all persons and earth are united in a common destiny, finding meaning in mutual relations with each other, the treated world, and a God-figure. Spirituality is therefore linked to common purposefulness because, by nature of being human, people are inherently spiritual. These output responses lie within the self-concept domain of adaptation. Indicators of spirituality are religiosity and a spiritual perspective (Flood, 2005; Topaz et al., 2014).

          Exchanges occur among each of the foundational coping processes. Output processes can influence each other, in turn, affecting the person. The exchanges among the three foundational coping processes determine whether the person experiences gerotranscendence, the next adaptive process in successful aging.

          2.2 Gerotranscendence

          Gerotranscendence is a more complex coping process in successful aging because whether someone gerotranscends is influenced by the foundational coping processes. Gerotranscendence occurs when there is a major shift in a person's worldview, by examining one's place in the world and in relation to others (Tornstam, 1996, 2005). Values are examined and may change from when they were younger. Responses that are reflective of gerotranscendence include a decreased death anxiety, engagement in meaningful activities, changes in relationships, self-acceptance, solitude, and wisdom. In Flood's theory (2005), survival, growth, and mastery can be achieved through the use of foundational coping processes. If these things happen, the person experiences gerotranscendence. Through gerotranscendence, the goals of personal and environmental transformation can occur.

Achieving a balanced integration of useful traits within the foundational coping processes is the initial adaptation of successful aging. People who use more creativity and higher degrees of personal control with lower levels of negative affectivity, will experience greater adaptation of functional performance and participate in health-promoting activities and maintain physical mobility. Physical health reciprocates with intrapsychic factors. A deeper spirituality comes when older people have more creativity, less negative affectivity, and greater personal control. A higher spiritual perspective and more religiosity can influence intrapsychic factors and the effectiveness of adaptation of functional performance mechanisms (Flood, 2005). A satisfactory integration of each of the foundational coping processes needs to be present for older adults to experience gerotranscendence. Gerotranscendence involves introspection and appraisal of one's life. Gerotranscendence leads to more meaning and purpose in life and greater life satisfaction, which are indicators of successful aging.

In a concept analysis of successful aging, Flood (2002) incorporated all four of nursing's domains of life: physical, functional, psychosocial, and spiritual. In the formal theory and definition of successful aging, Flood (2005) addressed a number of limitations attributed to Rowe and Kahn's (1997) view of successful aging. Flood's theory incorporates an individual's judgment of success based on personal values and priorities, as well as the universal need to cope with the cumulative physical, cognitive, and functional changes associated with aging. Concerns for health and function are part of the coping strategies. Outcomes in the spiritual or existential domain are represented by spiritual connectedness and a sense of meaning or purpose in life. Flood's definition of successful aging appears to offer a more comprehensive and holistic view that merges social scientists' concern for life satisfaction, well-being, purpose in life, adaptation and coping with medical concerns for health, and adds the spiritual domain as an integral factor in successful aging.

Flood's midrange theory of successful aging can guide nurses to enhance and promote successful aging among older adults who are experiencing KFD. The holistic nature of the theory and its dynamic processes offer nurses the opportunity to gain insight and understanding of the complexities of older adults with this health condition. The theory provides a structural form from which to gather information and

plan tailored interventions. Ultimately, the theory can have a meaningful impact on the life of older adults with declining kidney function, the possibility of successful aging, even for those with KFD. Flood's midrange theory of successful aging helped guide this dissertation research.

Factors influence successful aging

Variables in this dissertation research were selected because of empirical evidence linking them to successful aging and strongly suggestive of their ability to promote successful aging in the context of KFD. These variables were resilience, optimism, patient's age, perception of health status, GFR decline, depression, self-efficacy to control KFD, and self-transcendence

Resilience

Resilience is an innate and enduring feature of an individual's character that either enhances or impairs one's ability to adapt to change or solve problems. For older people, resilience has been described as flexibility and a type of adaptive capacity. Resilience is a psychological resource that facilitates adaptation and is associated with the characteristics of successful aging (Lamond et al., 2008). Rather than considering successful aging as a consequence of perfect health, it could be regarded as a reflection, at least in part, of resilience in the face of life's adversities. Resilience as a process is a compensatory response to difficulties or risks. Aging brings many forms of adversity, including the potential loss of loved ones, illness, and a decline in functional abilities. Byun and Jung (2016) postulated that resilience is an essential factor and a much-needed personal characteristic for successful aging.

A number of recent studies have supported the relationship between resilience and successful aging. Moore et al. (2015) interviewed 1,006 older adults and found that resilience was significantly associated with self-rated successful aging ($r = .41$, $p < .003$). Lamond et al. (2008) interviewed 1,395 community-dwelling at the San Diego Clinical Center of the Women's Health Initiative and found that resilience was significantly correlated with the components of successful aging, including well-being ($r = .49$, $p < .001$), optimism ($r = .44$, $p < .001$), and self-rated successful aging ($r = .43$, $p < .001$). Jeste et al. (2013) interviewed 1,006 community-dwelling older adults and found that the best multiple regression model accounted for

30% of the variance predicting self-rated successful aging included resilience, age, and depression. Other studies found that resilience had an indirect effect on successful aging through self-transcendence ($r = .49$, $p < .01$) (Nygren et al., 2005) and depression ($\beta = -.34$. $p < .001$) (Resnick et al., 2015). Therefore, resilience is one of the intrapsychic factors that older adults with declining kidney function can use as a powerful coping and adaptation strategy.

Optimism

Optimism is a psychological characteristic that involves the expectation that events will resolve with the best possible outcome. Optimism can be integral in the transition from poor to better health, possibly because it supports resilience. The presence of optimism is associated with the ability to manage later life adversity (Van Wagenen et al., 2013) and is integral to the experience of successful aging (Iwamasa & Iwasaki, 2011). Both optimists and pessimists encounter similar problems in their lives, but the former seems to overcome them more easily while the latter simply give up and fall into depression.

A number of recent studies support the relationship between optimism and successful aging. A secondary, qualitative analysis of data from two quantitative descriptive studies (Flood, 2007; Troutman, Nies, & Mavellia, 2011) found that 36.7% of the participants' responses focused on a positive state of mind. Participants expressed this theme in terms of a positive outlook on life, positive ways of relating to others, and positive responses to the limitations imposed by older adults (Troutman-Jordan & Staples, 2014). Solomon et al. (2018) found that participants' perspectives regarding successful aging might best be understood in terms of staying positive. In another study, optimism predicted life satisfaction directly, as an indicator of successful aging (Leung et al., 2005). For A. Bowling and Iliffe (2011), only optimism retained statistical significance in their final multiple regression model with biomedical/health, psychological, and social variables to predict successful aging. Karademas (2006) found optimism could predict self-efficacy. Lamond et al. (2008) found optimism was significantly correlated with resilience ($r = .44$, $p < .001$) and had indirect effects on successful aging through depression ($r = -.43$, $p < .001$) (Vollmann et al., 2014).

Optimistic people react differently to situations that arise in life. They take everything in stride as part of the whole. However, the reverse is true for people who have a negative approach to life. For them, life never looks up, and everything seems to be gloomy. Optimism appears to confer resilience to stressful life events (Finlay-Jones & Brown, 1981). What an individual expects from the future depends upon his approach towards life. Optimists always project themselves to achieve their target. This approach gives sufficient impetus to face the vagaries of life. On the other hand, pessimists lack energy and drive to fulfill the desired goal and always think about failure rather than success.

Patient's age

The extension of life expectancy was considered to be one of the major modern achievements of many countries, including Thailand. While aging has traditionally been viewed as a period of decline in physical, psychosocial and cognitive health, recent literature has shown that many older individuals consider themselves to be aging successfully (Gana, Bailly, Saada, Joulain, & Alaphilippe, 2012; Jeste et al., 2013; Montross et al., 2006). Self-rated successful aging may be a powerful indicator of well-being (Jeste et al., 2013; Li et al., 2006).

Increasing age has been associated with lower successful aging. The oldest age groups tended to have the worse physical health status (Cherry et al., 2013), everyday functioning, cognitive functioning, and productive involvement (Chou & Chi, 2002; Garfein & Herzog, 1995). (Hamid et al., 2012) interviewed 2,980 participants and found that age was significantly associated with successful aging. Being younger has been the most consistent predictor of successful aging (Depp & Jeste, 2006; Hank, 2011), indicating a dramatic drop in the rate of success with advancing age.

Conversely, some studies have found that the oldest-old group (75-99 years) reported higher levels of self-perceived successful aging than the young-old group (50-74 years) (Martin et al., 2015). The studies based on a more psychological approach have presented the capacity of very old individuals to overcome adversities and adapt to the challenges of advanced age. Araújo, Ribeiro, Teixeira, and Paúl (2016) examined different profiles of successful aging in a highly selected sample of individuals ≥ 100 years old from the population-based Oporto Centenarian Study.

Centenarians do not represent the prototype of successful aging. Nevertheless, self-ratings demonstrate that many of them feel successful, despite not being objectively measured as such. Those who were deemed to be successful agers presented higher values of self-efficacy, hope, and purpose in life. They used a transcendent view of life that enabled them to have a broader perspective with meaningful interpretations of past experiences. They found life satisfaction (Lewin & Thomas, 2001), feelings of coherence, and a meaning to life (Braam et al., 2006).

Perception of health status

The perception of health status is a subjective measure of overall health. An individual's self-assessment of health may include aspects that are difficult to capture clinically, such as incipient disease, disease severity, physiological and psychological reserves, and social function. Many researchers have described the meaning of perception of health status by referring to how people understand and make sense of their disease or disability. The perception of health status among people with medical conditions refers to how their specific beliefs about medicines and treatment can influence their adherence and treatment decisions (Petrie, Jago, & Devcich, 2007).

People with declining kidney function that leads to KFD are often confronted with physical and psychological problems, such as feelings of uncertainty about the stage of the disease. Individuals act and generate action plans to deal with their health problems according to their illness perceptions. Actions can vary across the severity of illnesses. Some individuals with eGFR between 15-60 ml/min/1.73 m^2 may see it as a minor condition, whereas others might view it as a severe condition. It may be very difficult to detect these differences in routine assessments. However, perceived health status is one factor in understanding how people will manage their illness and behavioral outcomes (Hagger & Orbell, 2003).

People with KFD differ from other diseases in their perceived health status because, typically, they are unaware of symptoms that signal an impending illness, so they believe they are healthy. They will learn of the severity of the disease and its likely impact on their physical, social, and psychological functioning from information given by health care providers. The beliefs of people with KFD will deeply influence the way they experience their disease, and how they will perform health promotion activities recommended by health care providers.

Several recent studies support the relationship between perceived health status and successful aging. Perceived health status positively and significantly correlated with successful aging among older adults ($r = .39$, $p < .001$) (Thi Thu Trieu et al., 2016). H. K. Kim (2013) studied 181 male older adults and found that perceived health status was positively correlated with successful aging ($r = .27$, $p < .001$). Perceived health status was negatively correlated with depression ($r = -.54$, $p < .001$) and positively correlated with self-efficacy ($r = .26$, $p < .001$) (H. K. Kim, 2013).

Perceived health has been often more effective than clinical measures for predicting help-seeking behaviors and health service use (Fleishman & Zuvekas, 2007). Good perception of health status is important for older adults and can be related to reduced risk of mortality (Wilkins, 2003), disability (Mendes de Leon et al., 2003), depression (Fiori, Antonucci, & Cortina, 2006; Glass, De Leon, Bassuk, & Berkman, 2006), and better cognitive health (Engelhardt, Buber, Skirbekk, & Prskawetz, 2010). Individuals, who perceived their health is good, feel easier to be able to cope with changes that occur with their bodies as they age and are able to deal with aging and promote successful aging (Flood, 2005). KFD is a chronic disease that can be controlled and made manageable through health promotion activities, dietary adherence, and symptom monitoring, thus preventing complications. Older adults with KFD that is well managed can feel positive about their health and link it to successful aging.

GFR decline

GFR decline is a structural or functional abnormality of the kidneys leading to slow and progressive worsening of kidney function that is typically irreversible. It is measured by the eGFR. The eGFR is the best measure of overall kidney function in health and disease. The normal level of eGFR varies according to age, sex, and body size (A. S. Levey et al., 2003). Older people have a lower eGFR, decreasing as age increases (Coresh et al., 2003). Around half of the population > 70 years of age now have an eGFR < 60 ml/min/1.73 m^2 (Aitken et al., 2014). A low eGFR, less than 45 ml/min/1.73 m^2, has been associated with a reduced quality of life (Nitsch et al., 2011) and may affect self-efficacy to control KFD. A decrease in GFR leads to a higher incidence of falls, osteoporosis, and fractures in older adults. Older adults with declining kidney function have a more reduced physical and cognitive function

and less ability to complete activities of daily living and remain independent (C. B. Bowling et al., 2011; Khatri et al., 2009). Hence, older adults with declining kidney function confront many complex health issues involving physical, psychological, emotional, spiritual, economic, and social aspect to their lives, which may prevent them from successfully aging without their own knowing.

Depression

People with depressive symptoms often experience higher rates of physical illness, greater functional disability, and higher health care resource utilization (Federal Interagency Forum on Aging, 2016). Flood (2005) stated that in the context of the theory of successful aging, the older adult who is aging successfully is less likely to have depressive symptoms if they are effectively using harmonious coping mechanisms (Flood, 2005; Kozar-Westman et al., 2013).

A number of recent studies support the relationship between depression and successful aging. Troutman et al. (2010) interviewed 100 community-dwelling Black older adults ≥ 65 years old in North Carolina who found that depression was significantly correlated with successful aging ($r = -.43$, $p < .05$). Kozar-Westman et al. (2013) interviewed 200 participants ≥ 65 years of age from eight assisted living communities in North Carolina. They reported that the Center for Epidemiologic Studies Depression Scale (CES-D) negatively correlated with the Successful Aging Inventory ($r = -.28$, $p < .05$) indicating that lower scores on depressive symptoms yielded higher scores on successful aging. A similar comparison between the middle-old and oldest-old participants revealed significant ($p < .002$) differences in mean CES-D scores; the oldest-old participants tended to have lower CES-D scores ($M = 10.94$) compared with the middle-old participants ($M = 15.65$). Moreover, older adults who had higher resilience, optimism, and self-transcendence had decreased levels of depression (Ellermann & Reed, 2001; I. S. Jang, 2004; Jeste et al., 2013; H. Kim et al., 2015; Yoon, 2006). Depression is an important indicator of general well-being and mental health among older adults. Therefore, depression should be examined and placed in a model of successful aging.

Self-efficacy to control KFD

Self-efficacy refers to people's beliefs about their capability to control the events affecting their lives. Self-efficacy is the ability to organize and execute the

courses of action required to manage prospective situations. It is concerned with judgment about what one can do with whatever skills one possesses and has a complex effect on task performance (Bandura, 1997). Self-efficacy is defined as a person's judgment of their capabilities to perform a certain activity to attain a desired outcome (Zulkosky, 2009). The WHO defines self-efficacy as the belief that individuals hold about their ability to act in a way that will influence the events that affect their lives; and self-efficacy determines how people will behave, feel, think and motivate themselves (Smith, Tang, & Nutbeam, 2006).

Accordingly, Bandura (1997) suggested that self-efficacy should be conceptualized in a situation-specific manner. Self-efficacy to control KFD in special situations will drive changes, especially in older people with an eGFR between 15-60 ml/min/1.73 m^2. Self-efficacy, or a sense of confidence, strengthens a person's ability to complete a day-to-day plan of intervention, such as controlling the blood pressure, eating a low salt and low protein diet, and taking multiple medications. Self-confidence is related to the level of autonomy that aids decision-making and performing self-management behaviors (Lin et al., 2013) that can help to slow the progression of kidney function decline in older adults. Self-efficacy is a target that contributes to successful aging in people with declining kidney function; it can predict better physical health and useful performance behaviors, and slow the progression of the disease.

A number of recent studies support the positive relationship between self-efficacy and successful aging. Hyun Cha et al. (2012) studied 305 Korean older adults ≥ 60 years of age. They concluded that the major predictors of successful aging of older Korean adults were self-efficacy, self-esteem, self-achievement, and interpersonal relationships. (H. K. Kim, 2013) found self-efficacy was positively correlated with successful aging ($r = .66, p < .01$). The three most powerful predictors of the degree of successful aging were self-efficacy, self-esteem, and interpersonal relationship with an explanatory power of 62.3% ($F = 98.42, p < .001$). Tovel and Carmel (2014) studied 262 older adult Israelis and found that successful aging was positively correlated with self-efficacy ($r = .47, p < .01$). Caprara et al. (2012) found that self-efficacy had indirect effects on self-transcendence ($r = .53, p < .01$). H. K. Kim (2013) found that self-efficacy negative correlated with depression

(r = -.55, p < .001). Self-efficacy, social support, and a proactive coping pattern of concrete planning positively predicted successful aging. Leary and Baumeister (2000) have described how low self-efficacy can result in negative life outcomes, such as unhappiness, loneliness, depression, and worsened recovery after illnesses, leading to poor successful aging.

To control KFD, self-efficacy has been identified as autonomy, self-integration, problem-solving, and seeking social support. Autonomy implies that people with KFD can make a decision and perform self-management tasks related to treatment planning and implementation. Self-integration describes that people should have the ability to integrate their illness and their self-care activities. Meanwhile, problem-solving explains how people encounter a variety of situations related to their health conditions. They should identify their knowledge and skills and should be able to practice what they have learned. Seeking social support describes coping with their chronic condition and the ability to seek help from significant others, such as friends, family members, and health care providers.

Similarly, people with KFD should be responsible for the daily management of their condition. They need to modify their lifestyle to slow the progression of the disease. Self-efficacy to control KFD indicates that older adults can shape their quality of life in the presence of a decline in health and functioning by using appropriate coping resources and coping patterns. It can help older adults acquire and maintain effective resources and coping skills for promoting successful aging.

Self-transcendence

Tornstam (2005) describes gerotranscendence as the final stage of a natural progression towards maturation and wisdom led to increased contemplation and solitude, both of which were integral to transcendence. It is a sudden, late-life shift in meta-perspective from a materialistic and rational view of the world to more mystical or cosmic perspective leading to a redefinition of time, space, life, death, and the self. Three dimensions included cosmic, self, and other were marked by greater acceptance of self and others; selectivity in relationships and activities; decreased concern for social roles and expectations; greater need for positive solitude and contemplation, and reduced fear of death. Life satisfaction was the outcome of gerotranscendence (Tornstam, 2005).

Self-transcendence is distinct from gerotranscendence. Reed (1991) defined self-transcendence as "the expansion of one's conceptual boundaries inwardly through introspective activities, outwardly through concerns about others' welfare, and temporally by integrating perceptions of one's past and future to enhance the present" (p. 71). It is the capacity to expand self-boundaries and to achieve broadened perspectives that help discover or make meaning of the experience (Reed, 2014). It is a developmental imperative, an innate human characteristic, much like other developmental processes. Reed (2014) described self-transcendence as the gradual development of a nonlinear process throughout middle- and old-age, rather than the sudden shift in perspective.

The development of self-transcendence perhaps is a survival mechanism to life events, such as severe or chronic illness, disability, family caregiving, loss of a loved one, aging process, career difficulties, and other life crises. It is evoked through such events and may enhance well-being by transforming failures and difficulties into healing experiences (Coward & Reed, 1996). Self-transcendence is expressed through various behaviors and perspectives, such as integrating the physical changes of aging, sharing wisdom with others, accepting death as a part of life, letting go of losses, having an interest in helping others and learning about the world, and finding spiritual meaning in life (Reed, 2014).

A number of recent studies support the relationship between self-transcendence and successful aging. McCarthy (2009) found that self-transcendence was a significant predictor of successful aging. In 2011, McCarthy explored successful aging in older adults who were dealing with chronic disease, functional limitations, and racial or socioeconomic disadvantages rather than healthy, high functioning older adults. Self-transcendence was significantly correlated with successful aging. The effect of self-transcendence ($\beta = .52$, $p < .001$) on successful aging was more than 2.5 times greater than the effect of proactive coping ($\beta = .20$, $p < .001$). Almost 92% of participants responded that they were aging successfully. In other studies, self-transcendence has been consistently associated with decreased depression ($r = -.33$, $p < .001$) (Ellermann & Reed, 2001; H. Kim et al., 2015) and positively associated with resilience, sense of coherence, purpose in life (Nygren et al., 2005), well-being and quality of life (McCarthy, Ling, Bowland, Hall, &

Connelly, 2015), and life satisfaction (Tornstam, 2005). Self-transcendence is an essential variable in the pursuit of successful aging, which needs further investigation (McCarthy et al., 2013).

The outcome of self-transcendence is well-being as evidenced by positive self-concept, life satisfaction, hopefulness, and a sense of meaning in life (Reed, 2014). Reed suggested selected factors that might promote the development of self-transcendence, including altruism, generativity, introspection, creativity, journaling, spirituality, lifelong learning, group therapy, meditation, and sharing wisdom with others. Self-transcendence is a holistic way of looking at old age and may be an important criterion for successful aging.

Many variables influence successful aging. Hence, examining the relationships among these variables with successful aging are necessary to plan health promotion projects to improve life quality in older adults with KFD.

Conclusion

Successful aging has been studied worldwide, but the number of studies specifically related to older adults with KFD is limited. Factors that influence successful aging are resilience, optimism, patient's age, perception of health status, GFR decline, depression, self-efficacy to control KFD, and self-transcendence. The Flood midrange theory of successful aging (Flood, 2005) and synthesis of the literature helped guide this dissertation research. Although the content presented in the review about successful aging is substantial, the evidence of what is the cause and effect among factors is limited. A few studies have reported direct and indirect effects between factors and successful aging in older adults in the context of a chronic condition, age-related changes, and disability (Hutchinson & Nimrod, 2012; McCarthy, 2011; Moore et al., 2013; Solomon et al., 2018). One study focused on single factors but did not simultaneously examine their interrelationships. Research to test a hypothesized model of successful aging behaviors among older adults with KFD was critically needed. The findings of this literature review helped in identifying, clarifying, and selecting the factors that might predict a successful aging model among older adults with KFD.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter addresses the research design, population and sample, research instruments, quality of measurement, protection of human rights, data collection, and data analysis.

Research design

A cross-sectional design, model testing, was used to evaluate factors that influence successful aging among older adults with KFD. This research design was considered the most suitable for this study for two reasons. First, a model testing design was appropriate for testing the accuracy of the hypothesized causal model. Second, the model could test the direct and indirect effects among the variables and help researchers and clinicians to understand the complex phenomenon (Burns & Grove, 2005).

Population and sample

The target population of the study was older adults with KFD who received services at the internal medicine clinics at Queen Savang Vadhana Memorial Hospital in Chon Buri Province, Thailand. The participants were recruited based on the following inclusion criteria:

1. Older adults with KFD who were $\geq$ 60 years of age;

2. Estimated glomerular filtration rate between 15 - 60 ml/min/1.73 m^2 for at least three months;

3. No cognitive impairment as determined by the Mini-Cog (the normal cognitive function is a score 3 - 5);

4. Able to communicate in the Thai language; and

5. No symptoms that could interfere with the person's ability to answer questionnaires, such as tiredness, headaches, dizziness, nausea, or vomiting

Sample size

For structural equation modeling, the suggested sample size is between 250 and 500 study participants to maintain the power of test and to obtain stable parameter estimates and standard errors (Schumacker & Lomax, 2010). Raykov and Widaman (1995) also recommend that the minimum sample size should be larger than the elements in the correlation matrix, with preferably 10 - 15 participants per estimated parameter. In this study, the hypothesized model contained 21 parameters. Therefore, a sample size of at least 315 participants was considered. However, to compensate for possible missing data or problems with data distribution, 350 older adults with KFD were selected.

Sampling technique

A simple random sampling technique was used to recruit older adults with KFD at Queen Savang Vadhana Memorial Hospital:

1. The researcher met with staff nurses in the hospital's internal medicine, nephrology, and diabetic clinics.

2. On days the researcher and research assistants [RAs] visited the clinics, they checked health records to identify Thai people ≥ 60 years old and who had eGFR 15 - 60 ml/min/1.73 m^2 for at least three months. Based on those results, they made a daily list of numbers associated with 15 - 30 names of older adults as potential participants who would be visiting the clinic(s) that day. Numbers were placed in a box for random selection.

3. The researcher randomly drew 7 - 12 numbers (names) from the box each day. Older adults were screened for possible cognitive impairment using the Mini-Cog. A score between 3 - 5 indicates normal cognitive function.

4. The researcher/research assistants randomly drew the numbers (names) until they reached 350 older adults without cognitive impairment. It took 80 days to reach the target sample size.

Context of setting

Queen Savang Vadhana Memorial Hospital is a hospital operated by the Thai Red Cross Society and located in Si Racha District, Chonburi Province, Thailand. At present, the 500-bed hospital provides comprehensive medical care with a high-quality management system in response to the needs of people who seek

treatment. With many specialists experienced in medical care, this hospital provides clinical services in medicine, surgery, orthopedics, pediatrics, obstetrics-gynecology, general practices, dermatology, ophthalmology, ENT, acupuncture, and dentistry.

In 2018, the number of chronic kidney disease patients seen in the outpatient clinics was 7,588. Chronic kidney disease was in the top five of diseases of people seen at the outpatient clinics. The people with chronic kidney disease who received treatment in the internal medicine clinics were at stage 2 - 5. The guideline for treating people with chronic kidney disease is to monitor their blood chemistry (BUN, Creatinine, eGFR) for 3 - 6 months. In the nephrology and diabetic clinics, older adults were treated who had eGFR 15 - 60 ml/min/1.73 m^2. The outpatient services are offered Monday through Friday from 7.00 a.m. - 4.00 p.m. The clinics see about 20 - 50 people with chronic kidney disease per day for services.

Research instruments

The following instruments were used in this study to measure characteristics of older adults with KFD and mental, psychosocial, and health status concepts:

1. Mini-Cog

The Mini-Cog is used to screen for cognitive impairment. Originally developed in English by Borson et al. (2000) and used with diverse American older adults, it was translated to Thai by Trongsakul, Lambert, Clark, Wongpakaran, and Cross (2015). The Mini-Cog consists of a memory test (the recall of three unrelated words - total three scores) and a very simple free-hand version of the clock drawing test (CDT; overall, two scores) included as a distractor for the memory task. Moreover, its diagnostic value is not influenced by education or language. It is evaluated in two categories: (a) possible abnormal cognitive function results (scores 0-2) and (b) normal cognitive function results (scores 3 - 5). It takes about three minutes to complete (Borson et al., 2000). The Mini-Cog Thai version has shown good interrater reliability (K = .80, $p < .001$, 95% CI = .50 - 1.00) (Trongsakul et al., 2015).

2. Demographic questionnaire

This instrument was developed by the researcher to collect a participant's

gender, age, education level, marital status, average monthly income, sufficiency of income, experiences with a life crisis or traumatizing event in the past two years, and comorbid conditions. The most recent eGFR was collected from the participant's health record.

3. Successful aging inventory [SAI]

Developed by (Troutman, Nies, Small, et al., 2011) in English, the 20-item SAI measures successful aging. It has four dimensions: functional performance, intrapsychic factors, spirituality, and gerotranscendence. Participants rate each item on a 5-point Likert-type scale with choices ranging from 0 "hardly ever/strongly disagree" to 4 "almost always/strongly agree." A summed score can range from 0 to 80. Higher scores indicate higher successful aging. Previous studies have demonstrated sound psychometric properties when used with community-dwelling older adults; the reliability of the total scale was .86 (Troutman, Nies, Small, et al., 2011). The SAI was translated into Thai by the researcher using the back-translation method (see below) after the instrument's owner granted permission.

4. Self-transcendence scale [STS]

Reed (1989) developed the 15-item STS to measure self-transcendence as a unidimensional concept. Older adults and adults facing end-of-life issues complete the 4-point rating scale with 1 "not at all" to 4 "very much." The summed score can ranges from 15 to 60, measuring the degree or level of transcendence. The higher scores indicate greater self-transcendence. It was translated into Thai language by Gasemgitvatana (1996) and has shown internal reliability coefficients of .80 - .93 (Gasemgitvatana, 1996; Reed, 1989).

5. CKD Self-efficacy [CKD-SE] questionnaire

The CKD-SE questionnaire was developed by Lin et al. (2012) to measure an individual's perception of their self-efficacy of control KFD. It was translated into the Thai version by Photharos, Wacharasin, and Duongpaeng (2018). It has 25 items with four subscales: autonomy, self-integration, problem-solving, and seeking social support. The response options ranged from no confidence (0) to the highest degree of confidence (10). The possible summed scores can range from 0 to 250 points, with higher scores indicating greater levels of self-efficacy or self-confidence. The scale's

reliability has been reported in two studies to be .94 and .95 (Lin et al., 2012; Photharos et al., 2018).

6. Health survey short form-12 version 2 [SF-12v2]

The SF-12v2 measures an individual's self-perception of health status. It was developed by Ware Jr et al. (1996) in English, to assess functional health and well-being from an individual's point of view, characterizing physical and mental-emotional well-being (Ware Jr et al., 1996). It contains 12 items derived from the original Health Survey SF-36 and includes eight dimensions: physical functioning, role participation with physical health problems (role physical), bodily pain, general health perceptions, vitality (energy/fatigue), social functioning, role participation with emotional health problems (role-emotional), and mental health. Participants respond on a 5-point rating scale. The negative worded statements (#1, 8, 9, and 10) items require reverse coding prior to scoring (1 = 5) (2 = 4) (3 = 3) (4 = 2) (5 = 1). Total scores can range from 12 to 56 with higher scores indicating a higher level of perceived health status. Ware Jr et al. (1996) reported reliability coefficients from .76 - .89.

7. Connor-Davidson resilience scale-10 Items [CD-RISC-10]

Originally developed by Connor and Davidson (2003 a), the CD-RISC measures resilience. The 25-item scale was revised to a 10-item scale (CD-RISC-10) that reflects a person's ability to tolerate experiences, such as change, personal problems, illness, pressure, failure, and painful feeling (item's examples: "Tend to bounce back after illness or hardship," and "Can stay focused under pressure"). Respondents rate items on a 5-point rating scale, rating from 0 for "not true at all" to 4 "true nearly all the time." Summed scores of the CD-RISC-10 can range from 0 to 40. A higher score indicates higher resilience. The CD-RISC-10 was translated into Thai by Imlimtharn (Connor & Davidson, 2003 b). Reliability coefficients from two previous studies were .87 and .88 (Connor & Davidson, 2003 a, 2003 b).

8. Geriatric depression scale [GDS]

Developed by Sheikh and Yesavage (1986), the GDS measures depression. It was modified to be more reliable and easier to complete by older people. Respondents answer "Yes" or "No" on each of the 15 items. The negatively worded items (#2, 3, 4, 6, 8, 9, 10, 12, 14, and 15) are scored with one point if the response is

"Yes." Similarly, positively worded items (#1, 5, 7, 11, and 13) are scored one point if the response is "No." The summed score of the GDS can range from 0 to 15. A higher score reflects more depressive symptoms. A cut off value of six is used as the threshold to discriminate individuals with and without depressive symptoms. The GDS is interpreted as follows: Scores 0 - 5 points = normal; scores 6 - 10 points = begin to have depression (should receive initial instruction); scores 11 - 15 points = have depression (should meet with a physician).

The GDS was translated into the Thai version by Wongpakaran and Wongpakaran (2012) and administered to 130 older people in the community. It showed good internal consistency of .85 and good construct validity.

9. Life orientation test - revised [LOT-R]

Developed by Scheier et al. (1994), the LOT-R measures optimism. It was translated into Thai by Lonhlam (2007). The LOT-R is a unidimensional self-report scale consisting of 10-items. There are positively worded statements (#1, 4, and 10) and negatively worded statements (#3, 7, and 9). The latter items require reverse coding prior to scoring (0 = 4) (1 = 3) (2 = 2) (3 = 1) (4 = 0). Although there are 10 items, only items #1, 3, 4, 7, 9, and 10 are used in scoring. Items #2, 5, 6, and 8 are "filler" items and not scored as part of the revised scale. Respondents rate on a 5-point Likert rating scale, from 0 "I disagree a lot" to 4 "I agree a lot." The summed score can range from 0 to 24. A higher score indicates increased optimism. Prior research has reported reliability coefficients of s .70 and .79 (Lonhlam, 2007; Scheier et al., 1994).

Quality of measurement

1. Validity

1.1 A back-translation method

The SAI was originally developed in English. After receiving permission from the developer, the researcher translated it into Thai using the back-translation method to ensure the validity (Brislin, 1970). The translation process followed a prescribed procedure:

1.1.1 The original English version was translated into Thai language by the first bilingual translator, who is Thai, with a background in gerontological

nursing.

1.1.2 The Thai version was translated independently back into the English language by a second bilingual translator who works in the area of medicine and who had not seen the original English version.

1.1.3 Three experts who were bilingual checked content validity and appropriateness of language by comparing the original English (E1), Thai version, and back-translated version (E2). Any discrepancies between the original English (E1) and the back-translated version (E2) were examined for revision in the Thai version until E2 was equivalent to original English (E1). The three-expert panel worked until they reached consensus that the Thai version was equivalent to the original version.

1.2 Content validity

The panel of experts verified that the Thai STS, CKD-SE questionnaire, SF-12v2, CD-RISC-10, LOT-R, and GDS were valid and standard instruments; therefore, further content validity procedures were omitted. The SAI was back-translated into the Thai language. Content validity was ensured by three experts.

2. Reliability

A pilot study was conducted to evaluate the reliability of instruments with 30 participants who had similarities to the sample. The coefficients of reliabilities of the instruments were SAI (.88), STS (.89), CKD-SE questionnaire (.94), SF-12v2 (.89), CD-RISC-10 (.91), LOT-R (.81), and GDS (.80).

For the full research study with 350 participants, coefficients for internal reliability were SAI (.89), CKD-SE questionnaire (.90), STS (.87), SF-12v2 (.88), CD-RISC-10 (.92), LOT-R (.82), and GDS (.80), indicating all of the instruments were acceptable.

Protection of human rights

Prior to data collection, approval to conduct the research was received by the Institutional Review Board [IRB] of the Faculty of Nursing, Burapha University (IRB #04-08-2562), and the Research Ethics Screening and Consideration Committee of Queen Savang Vadhana Memorial Hospital (IRB 042/ 2562). Eligible participants were informed that their participation was voluntary. They were also informed that

they had the right to refuse to participate in the study or withdraw from the study at any time without any effect on their treatment they received from the hospital. The researcher explained to them that their participation was beneficial to older adults who had KFD. Moreover, the study findings would be used as a possible future guideline of care for people with KFD. They were assured that the data collected would be kept strictly confidential, their names not saved, and that data were reported only in the aggregate for the purposes of the research. They were asked to sign informed consent forms before data collection began. The data will be destroyed after the completion of the study and publication.

Data collection

Data were collected as described below:

1. After obtaining IRB approvals, the researcher made appointments with the head nurse and nurses of the outpatient clinics to informed them of the research objectives, study procedures, need to access health records, and asked them for cooperation.

2. The researcher selected two RAs as data collectors. The RAs were registered nurses with over two years of experience in caring for older persons with CKD. The researcher trained the RAs in the following procedure:

2.1 The researcher met with the RAs and described the study's purpose, research procedures, criteria of sample selection, method to introduce themselves and how to explain the assessment form and data collection process to the participants, as well as the human rights protection.

2.2 The researcher described how to use the Mini-Cog for screening cognitive impairment of the participants.

2.3 Initially, the RAs observed the researcher in collecting data in the internal medicine clinics at the hospital. Any misunderstandings about data collection procedures were discussed and reviewed.

2.4 The RAs practiced data collection in the internal medicine clinic. The researcher observed them until they could collect data independently.

3. During follow-up visits, the researcher and RAs met older adults with KFD at the outpatient clinics. The researcher asked staff nurses to introduce the

researcher and RAs to older adults with KFD. After an introduction, the researcher invited older adults with KFD (on the list) to participate in the study and explained the objective of the study.

4. All participants who met the inclusion criteria were explained possible risks, benefits of research, research ethics regarding the protection of human subjects.

5. The participants who agreed to participate in the study were asked to sign consent forms.

6. Next, either before or after meeting physicians, the participants were interviewed in a private area where they felt comfortable. If any participant did not understand certain questions, the researcher/RAs clarified the question until they clearly understand. The process took about 45 - 60 minutes. For participants who could not read, the researcher or RAs read the questions to them.

7. After completing the interview, the researcher/RAs checked for missing items. If participants insisted on a no response, the researcher/RAs ended data collection.

Data analysis

The following data analytical procedures were conducted using IBM® SPSS® version 23 and the Amos version 23 software program:

1. Demographic characteristics of older persons with KFD were analyzed by descriptive statistics, including frequencies, percentages, means, and standard deviations.

2. The following statistical assumptions of SEM were assessed: Univariate outliers were examined for extreme value or high standardized scores (z-scores) on one or more variables (Tabachnick & Fidell, 2013). If z-scores are in excess of 3.29 or less than -3.29, they are considered outliers. The diagnostic method was assessed by examining the multivariate outliers with the Mahalanobis' distance, which measures the Chi-square distribution for each case. A range with a probability value of the chi-square statistic < .001 is considered an outlier (Tabachnick & Fidell, 2013). Multivariate normality was tested by examining skewness and kurtosis (Tabachnick & Fidell, 2013). The critical ratios should be between -1.96 and 1.96, indicating

a normal distribution (Hair Jr, Black, Babin, & Anderson, 2014; Tabachnick & Fidell, 2013). Pearson's correlation coefficients were examined for linear relationships between variables. Multicollinearity was evaluated using tolerance values, variance inflation factors [VIF], and Pearson's correlation coefficients. Tolerance values should be $> .20$ and VIFs should be < 4. Correlation coefficients should be $< .90$ (Tabachnick & Fidell, 2013).

　　　　3. The measurement model of latent variables was evaluated by confirmatory factor analysis [CFA] for construct validity using the IBM® SPSS® Amos program.

　　　　4. The SEM technique employed by Amos searches for direct and indirect effects among patient's age, resilience, optimism, perception of health status, GFR decline, self-efficacy to control KFD, depression, self-transcendence, and successful aging among older adults with KFD. The statistical significance level was set at $p < .05$ throughout the analyses.

　　　　Assessment of model fit was based on the following tests: Model Chi-square value (CMIN/$df \leq 2$), Goodness of Fit Index (GFI $\geq .90$), Adjusted Goodness of Fit Index (AGFI $\geq .90$), Normed Fit Index (NFI $\geq .90$), Comparative Fit Index (CFI $\geq .95$), and Root Mean Square Error of Approximation (RMSEA $< .05$) (Hair Jr et al., 2014; Schumacker & Lomax, 2010).

CHAPTER 4
RESULTS

This chapter presents the results of data analyses. The results of the dissertation research are written in three sections. The first section describes the characteristics of the participants. The second section presents the results of testing the multivariate analysis statistical assumptions of the data underlying the structural equation model. The last section describes model testing and model modification.

Participants' characteristics

A total of 350 older adults with KFD were recruited from the internal medicine clinics at the hospital's outpatient department. Their demographic characteristics are shown in Table 1. The participants' ages ranged from 60 to 103 years old ($M = 74.68$, $SD = 7.79$), ranging from the young-old to oldest old age groups (Samanta, 2016). Somewhat less than half (45.7%) were in the 70 to 79 years old age group and 28.3% were ≥ 80 years old. The majority (58.9%) of participants were female. More than half (60.8%) of the participants had completed an elementary education and a majority (51.7%) were married. About half (49.7%) earned a monthly income ≤ 5,000 baht, and 20.0% earned between 5,001 and 10,000 baht per month. Less than half (41.7%) the participants indicated their income was insufficient, moreover 31.4% reported they had sufficient income and could save money. The overwhelming majority (99.7%) of older adults had experienced a life crisis or trauma within the prior two years, mostly related to their own illness. Over two-thirds (68.9%) of the older adults were in stage 3 of their disease with comorbidities of hypertension (84.3%), diabetes mellitus (79.1%), and dyslipidemia (48.6%).

Tables 1   Demographic characteristics of the older adults with KFD ($n = 350$)

Demographic Characteristics	n	%
Gender		
Female	206	58.9
Male	144	41.1
Age (years) (M = 74.68, SD = 7.79)		
60-69 years old	91	26.0
70-79 years old	160	45.7
≥ 80 years old	99	28.3
Education level		
Illiteracy	24	6.9
Primary school	213	60.8
High school	65	18.6
Diploma	15	4.3
Bachelor's degree or higher	33	9.4
Marital status		
Married	181	51.7
Divorced/Separated/Widowed	157	44.9
Single	12	3.4
Income (baht per month)		
< 5,000	174	49.7
5,001-10,000	70	20.0
10,001-20,000	51	14.6
> 20,001 or higher	55	15.7

Tables 1 (continued)

Demographic Characteristics	n	%
Sufficiency of income		
Insufficient income	146	41.7
Sufficient income with savings	110	31.4
Sufficient income but with no savings	94	26.9
Experience with a life crisis or a traumatizing event		
in the past two years (more than one answer)		
Own illness	349	99.7
Illness of the beloved one	153	43.7
Loss of the beloved one	141	40.3
Stage of kidney function decline		
Stage 2 (eGFR 60)	26	7.4
Stage 3 (eGFR 30-59)	241	68.9
Stage 4 (eGFR 15-29)	83	23.7
Comorbidity conditions (more than one answer)		
Hypertension	295	84.3
Diabetes mellitus	277	79.1
Dyslipidemia	170	48.6
Other (e.g., congestive heart failure, gout, etc.)	162	46.3

Table 2 displays descriptive statistics of all variables in the successful aging model. Patient' s ages ranged from 60 to 103 years old (M = 74.68, SD = 7.79), classified as middle-old senior age group. Older adults with KFD in this study were in stage 3 (M = 41.42, SD = 13.96). They had high mean levels of their perception of health status (M = 44.74, SD = 6.92), high mean levels of optimism (M = 18.75, SD = 3.73), high means level of resilience (M = 33.89, SD = 5.71), and high mean levels of self-transcendence (M = 50.07, SD = 6.68). They had moderate mean levels of both self-efficacy to control KFD (M = 192.84, SD = 28.88) and successful aging (M = 63.69, SD = 9.86). They had low mean levels of depression (M = 2.62, SD = 1.48).

Tables 2   Descriptive statistics of study variables (n = 350)

Variables	Possible Range	Actual Range	M	SD
Patient's age	60-103	60-103	74.68	7.79
GFR decline	15-60	15-60	41.42	13.96
Perception of health status[1]	12-56	25-55	44.74	6.92
Optimism[2]	0-24	9-24	18.75	3.73
Depression[3]	0-15	0-8	2.62	1.48
Resilience[4]	0-40	18-40	33.89	5.71
Self-efficacy to control KFD[5]	0-250	117-250	192.84	28.88
Self-transcendence[6]	15-60	30-60	50.07	6.68
Successful aging[7]	0-80	37-80	63.69	9.86

[1] Health Survey Short Form-12 (SF-12v2), [2] Life Orientation Test-Revised (LOT-R), [3] Geriatric Depression Scale (GDS), [4] Connor-Davidson Resilience Scale-10 Items (CD-RISC-10), [5] CKD Self-Efficacy (CKD-SE) Questionnaire, [6] Self-Transcendence Scale (STS), [7] Successful Aging Inventory (SAI)

Statistical assumption tests for the SEM analysis

Before testing the SEM model, statistical assumptions were checked regarding multivariate analysis for the SEM. Hair Jr et al. (2014) suggests that outliers, normality, linearity, and multicollinearity should be tested prior to conducting SEM analysis. Assessing diagnostic tests helps reduce potential distortions and biases in the results that would affect parameter estimates for testing the hypothesized model (Schumacker & Lomax, 2010).

In the first step, univariate outliers were checked. Univariate outliers are cases with extreme value or high standardized scores (*z*-scores) on one or more variables (Tabachnick & Fidell, 2013). If *z*-scores are in excess of 3.29 or less than -3.29, they are outliers. There were six univariate outliers, including, patient's age (#208's *z*-score = 3.64) and depression (#318, 218, 219, 60, 143's *z*-scores = 3.64). The diagnostic method was assessed by examining the multivariate outliers with the Mahalanobis' distance, which measures the Chi-square distribution for each case. A range with a probability value of the chi-square statistic < .001 was considered an outlier (Tabachnick & Fidell, 2013). There were four outliers (#29, 309, 318, and 284) based on the Mahalanobis' distance. Three outliers had not been detected in earlier univariate analyses but appeared in the multivariate tests (Hair Jr et al., 2014). This suggested they were not unique on any single variable but were unique in combination with other variables. Therefore, four participants with multivariate outliers were eliminated from further analysis. Consequently, 346 cases were used to test for multivariate normal distribution, linearity, and multicollinearity.

Multivariate normality was tested by examining skewness and kurtosis (Tabachnick & Fidell, 2013). Asymmetric distribution of skewness and peakedness of kurtosis was zero, and the critical ratios were between -1.96 and 1.96, indicating a normal distribution (Hair Jr et al., 2014; Tabachnick & Fidell, 2013). The results showed that only the participant's age met both criteria of normal distribution. The other eight variables did not meet the requirements. Hair Jr, Black, Babin, and Anderson (2019) indicate that a problem exists if the skewness index is extremely skewed (value > 3) and kurtosis index is > 10. Absolute values of the kurtosis index > 20 indicate a more serious problem. No problems with skewness and kurtosis were detected for the nine variables, indicating they met the assumptions of normal

distributions. Pearson's correlation coefficients reflected linear relationships between variables (Table 3).

Multicollinearity was evaluated using tolerance values, variance inflation factors (VIF), and Pearson's correlation coefficients between variables (Table 3). Correlation coefficients between the predictors ranged from -.11 to .80, indicating no high correlations were detected ($\geq$ .90). Tolerance values ranged from .28 to .87, and VIF values ranged from 1.15 to 3.57. Tolerance values should be > .20 and VIFs should be < 4. Consequently, no evidence of multicollinearity was found among the study variables.

Tables 3 Correlation matrix of nine study variables ($n = 346$)

Variables	1	2	3	4	5	6	7	8
1. Patient's age	-							
2. GFR decline	.06							
3. Depression	-.02	-.19**						
4. Optimism	.24**	.14**	-.44**					
5. Resilience	.18**	.29**	-.48**	.64**				
6. Self-transcendence	.18**	.27**	-.48**	.60**	.80**			
7. Self-efficacy	.10	.21**	-.29**	.38**	.57**	.65**		
8. Perception of health	-.11*	.32**	-.47**	.40**	.59**	.55**	.43**	
9. Successful aging	.19**	.27**	-.43**	.63**	.78**	.78**	.55**	.55**

 * Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Note: See Table 2 for the names of the measurement instruments

Results of model testing

This study had seven models measuring optimism, resilience, perception of health status, self-efficacy to control KFD, depression, self-transcendence, and successful aging.

Measurement model

The IBM® SPSS® Amos version 23 software program was used to evaluate the measurement model. Table 4 displays the results.

Result of testing the hypothesized model

The hypothesized model consisted of five exogenous latent variables of resilience, optimism, patient's age, perception of health status, and GFR decline, and four endogenous latent variables, including depression, self-efficacy to control KFD, self-transcendence, and successful aging. However, the results of the hypothesized model testing showed that the model did not fit the data well: CMIN = 2704.22, df = 1279, p <.001, CMIN/df = 2.11, GFI = .76, AGFI = .73, NFI = .76, CFI = .86, and RMSEA = .06. The model explained 87% of the total variance.

Tables 4 Summary of measurement models of studied variables ($n = 346$)

Variables name	Instruments	Items	Factor loading	Fit Indices									Cronbach's alpha
				CMIN	df	p	CMIN/ df	GFI	AGFI	NFI	CFI	RMSEA	
Depression	GDS	15	.18-.95	4.97	2	.08	2.49	.99	.96	.92	.94	.06	.80
Optimism	LOT-R	10	.16-.83	4.54	6	.61	.76	1.00	.99	.99	1.00	.00	.82
Resilience	CD-RISC-10	10	.59-.85	30.64	28	.33	1.10	.98	.97	.99	1.00	.02	.92
Self-efficacy to control KFD	CKD-SE	25	.19-.79	.06	1	.81	.06	1.00	1.00	1.00	1.00	.00	.90
Perception of health status	SF-12v2	12	.40-.87	13.28	13	.43	1.02	.99	.97	.99	1.00	.01	.88
Self-transcendence	STS	15	.46-.81	131.31	68	.00	1.93	.95	.92	.94	.97	.05	.87
Successful aging	SAI	20	.26-.89	4.65	4	.33	1.16	1.00	.98	.99	1.00	.02	.89

Note: See Table 2 for the names of the measurement instruments

Figure 2 displays the direct and indirect effects between exogenous and endogenous variables in the hypothesized model. Four independent variables had a positive direct effect to successful aging: self-transcendence (β = .61, p < .001), optimism (β = .37, p < .01), perception of health status (β = .19, p < .001), and depression (β = .13, p < .05). Optimism had indirect effects on successful aging through (1) depression (β = -.08, p < .001), (2) depression and self-transcendence (β = .05, p < .001), and (3) self-efficacy to control KFD and self-transcendence (β = .11, p < .001). Participants' perception of their health status had indirect effects on successful aging through (1) depression (β = -.03, p < .01), (2) depression and self-transcendence (β = .02, p < .001), and (3) self-efficacy to control KFD and self-transcendence (β = .08, p < .001). Depression had a negative indirect effect on successful aging through self-transcendence (β = -.08, p < .001).
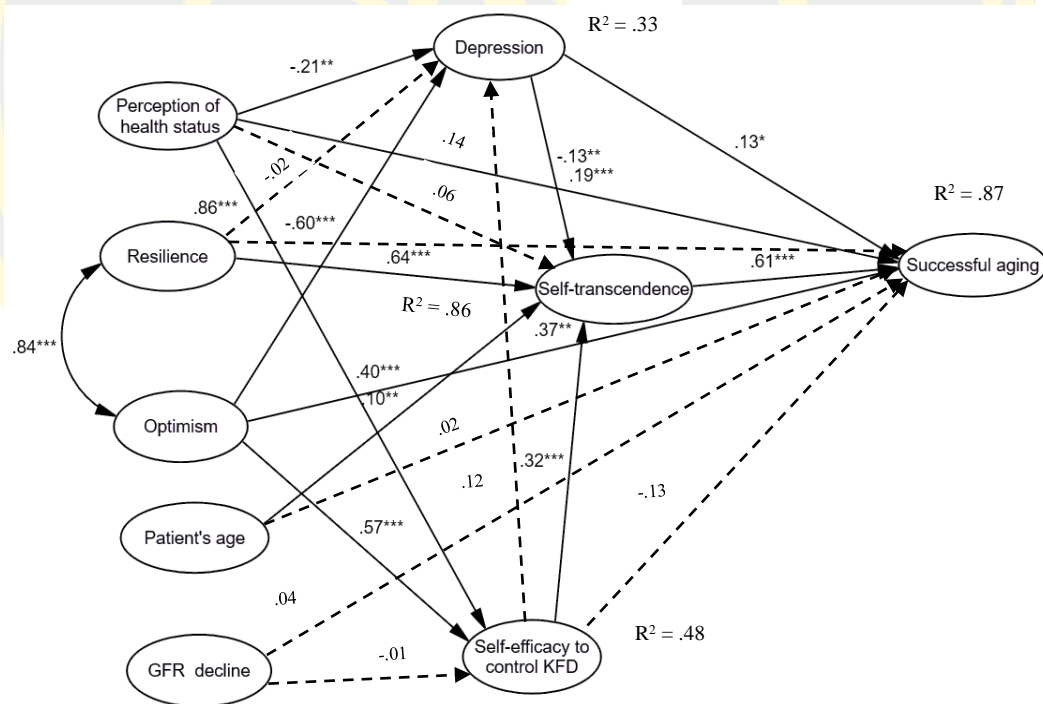
Figures 2 The hypothesized model of successful aging in older adults with KFD

Model modification

Model modification was used to improve model fit based on conceptualization and modification indices (Blunch, 2013; Schumacker & Lomax, 2010). Model trimming was used by deleting six parameters: two paths from self-

efficacy to control KFD and resilience to depression; three paths from patient's age, self-efficacy to control KFD, and GFR decline to successful aging; and one path from GFR decline to self-efficacy to control KFD.

Although the paths from resilience to successful aging and the perception of health status to self-transcendence in the hypothesized model were statistically not significant, they were retained because of substantial evidence in the literature that they are related to the construct of successful aging. The modification indices suggested adding paths between the following endogenous variables: a path from optimism to self-transcendence, correlational relationships between the perception of health status and optimism, and perception of health status and resilience. Next, the researcher removed the patient's age, GFR decline, self-efficacy control KFD, and depression variables because they were not statistically significant and had low standardized regression weights. Figure 3 displays the final model in which the data were a better fit: CMIN = 738.50, df = 725, p =.36, CMIN/ df = 1.02, GFI = .91, AGFI = .89, NFI = .92, CFI = 1.00, and RMSEA = .01. The model explained 84% of the total variance. The fit indices between the hypothesized and final models are compared in Table 5.
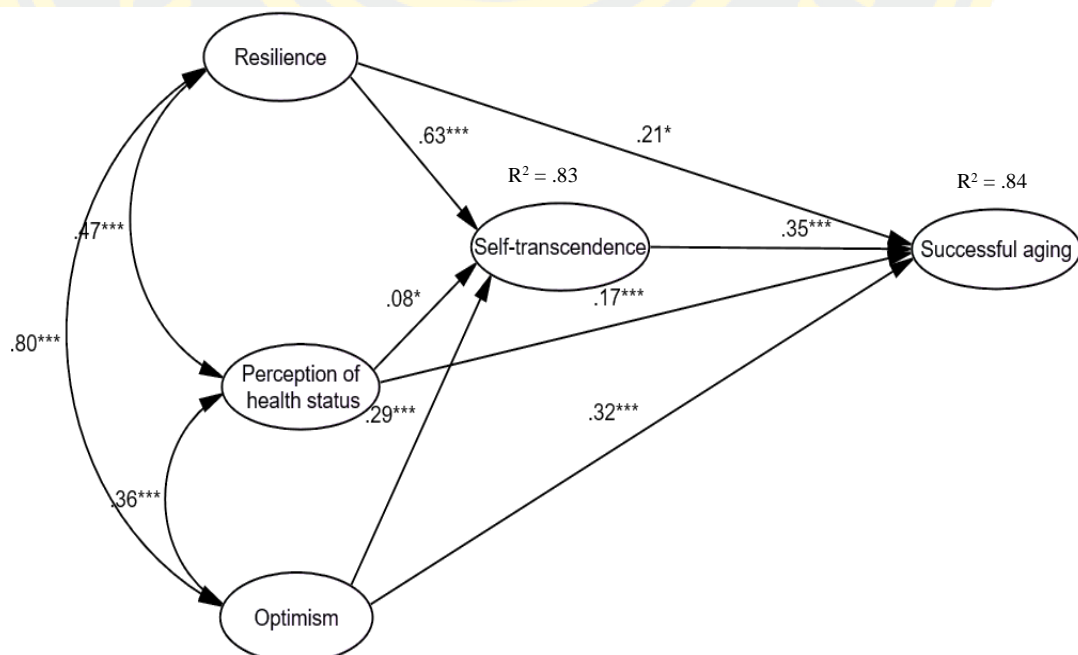
Figures 3 The final model of successful aging in older adults with KFD

Tables 5 A comparison of hypothesized model and final model ($n = 346$)

Model fit criterion	Indicators	Hypothesized model	Final model
CMIN	$p > .05$	$\chi^2 = 2704.22$	$\chi^2 = 738.50$
		$p < .001$ ($df = 1279$)	$p = .36$ ($df = 725$)
CMIN/ df	≤ 2	2.11	1.02
GFI	.90 - 1.00	.76	.91
AGFI	.90 - 1.00	.73	.89
NFI	.90 - 1.00	.76	.92
CFI	$\geq .95$	.86	1.00
RMSEA	$< .05$	.06	.01

The final model (Figure 3) indicated that there were direct and indirect effects among exogenous and endogenous variables. Four variables had positive direct effects on successful aging: self-transcendence ($\beta = .35$, $p < .001$), optimism ($\beta = .32$, $p < .001$), resilience ($\beta = .21$, $p < .05$), and perception of health status ($\beta = .17$, $p < .001$). Three variables had positive indirect effects on successful aging: resilience had a positive indirect effect through self-transcendence ($\beta = .22$, $p < .001$); optimism had a positive indirect effect through self-transcendence ($\beta = .10$, $p < .001$); and perception of health status had a positive indirect effect through self-transcendence ($\beta = .03$, $p < .001$). Additionally, self-transcendence was found to be a moderator between exogenous variables to successful aging model.

In summary, the results showed that the final model contained the four variables of optimism, resilience, perception of health status, and self-transcendence. They explained 84% of the total variance for successful aging among older adults with KFD. The total effects are shown in Table 6.

Tables 6 Direct, indirect, and total effects of four variables in the final model of successful aging among older adults with KFD ($n = 346$)

Variables	Direct effect	Indirect effect	Total effect
		Self-transcendence	
Resilience	.21	.22	.43
Optimism	.32	.10	.42
Perception of health status	.17	.03	.20
Self-transcendence	.35	-	.35

CHAPTER 5
CONCLUSION AND DISCUSSION

This chapter comprised of three parts. The first part presented the summary of the study. The second part was discussion of the research findings. The last part informed about limitations, strengths, and recommendations.

Summary of the study

The objective of this study was to examine the causal relationships between predictors and successful aging among older adults with KFD. This study used a cross-sectional, model testing, design. A simple random sampling technique was used to recruit participants at internal medicine clinics, OPD. Three hundred and fifty participants were recruited based on inclusion criteria: 1) older adults with KFD who were ≥ 60 years of age; 2) eGFR between 15 - 60 ml/min/1.73 m^2 for at least three months; 3) no cognitive impairment; 4) able to communicate in the Thai language; and 5) no symptoms that could interfere with the patient's ability to answer questionnaires. Eight questionnaires were used to collect data, including Demographic Questionnaire, Successful Aging Inventory, Self-Transcendence Scale, CKD Self-Efficacy Questionnaire, Health Survey Short Form-12 version 2, Connor-Davidson Resilience Scale, Life Orientation Test-Revised, and Geriatric Depression Scale. All instruments were back-translated from the original English to Thai version. The Cronbach's alpha ranged .80 - .94.

Majority of older adults with KFD were female (58.9%), mean age 74.68 years (SD = 7.79), age between 70 and 79 years old (45.7%). Half of them were married (51.7%), and 60.8 % completed elementary education, monthly incomes of less than 5,000 baht per month (49.7%). About 42% of the older adults had insufficient income, while 31.4% earned sufficient income with saving money. Most participants had chronic kidney disease stage 3 (68.9%). with comorbidities, including hypertension (84.3%), diabetes mellitus (79.1%), and dyslipidemia (48.6%). Majority of participants experience event of life crisis or trauma in past two years related to their own illness (99.7%), illness of the beloved one (43.7%), and loss of beloved one

(40.3).

The results found that hypothesized model of successful aging was not fit data well (CMIN = 2704.22, *df* = 1279, *p* <.001, CMIN/ *df* = 2.11, GFI = .76, AGFI = .73, NFI = .76, CFI = .86, and RMSEA = .06). Model modification was conducted to improve model fit based on conceptual constructs and analysis indices. The trimming process was conducted, then final model remained 4 variables including optimism, resilience, perception of health status, and self-transcendence. Total variance explained 84% for successful aging among older adults with KFD (CMIN = 738.50, *df* = 725, *p* =.36, CMIN/ *df* = 1.02, GFI = .91, AGFI = .89, NFI = .92, CFI = 1.00, and RMSEA = .01).

Furthermore, there were found direct and indirect effects among exogenous and endogenous variables on successful aging included self-transcendence (β = .35, *p* < .001), optimism (β = .32, *p* < .001), resilience (β = .21, *p* < .05), and perception of health status (β = .17, *p* < .001). It was found that resilience had a positive indirect effect on successful aging through self-transcendence (β = .22, *p* < .001); optimism had a positive indirect effect on successful aging through self-transcendence (β = .10, *p* < .001); and perception of health status had a positive indirect effect on successful aging through self-transcendence (β = .03, *p* < .001). Additionally, self-transcendence was found to be a moderator between optimism, resilience, perception of health status, and successful aging. The path of resilience through successful aging had the strongest effect (β = .43, *p* < .001).

Discussion of the research findings

Level of successful aging among older adults with KFD

Successful aging is often used to promote and manage health among older adults. However, many older people have obstacles to reach successful aging because they had chronic diseases and some barriers to reducing their ability to maintain a healthy lifestyle (Hernandez & Johnston, 2017).

Regarding this study's findings, older adults with KFD reported that they had a moderate level of successful aging (*M* = 63.69, *SD* = 9.86). This result might be related to the age of older adults who ranged from 60 to 103 years old (*M* = 74.68, *SD* = 7.79), abilities to perform activity of daily living without assistance (eating,

bathing, and dressing), and no signs and symptoms of chronic kidney disease. These participants still remained normal cognitive functions. In addition, older adults in this study had a high level of the perception of health status ($M = 44.74$, $SD = 6.92$). Older adults in this study were in chronic kidney disease stage 3 ($M = 41.42$, $SD = 13.96$) with slowly symptoms, participant's development might not notice any problems or suffer from chronic kidney disease. Therefore, their perception of health status might healthy and felt easier to cope with the changes to their bodies and feeling of successful aging, even though they had comorbidities.

The results of moderate level might be caused by education, incomes, and crisis in life. More than half of participants completed elementary education (60.8%) and reported insufficient income (41.7%). Furthermore, older adults had experience event of life crisis or trauma in the past two years related to their illness (99.7%), illness of the beloved one (43.7%), and loss of beloved one (40.3%). They think of beloved ones who have passed away and feel close to them, spend time in prayer or doing some kind of religious activity, and a relationship with God or some higher power was important to them to cope with life events. When increasing aged, they saw something different from the past, and they think life is meaningful and satisfied with life. The result is consistent with previous studies in that successful aging among older adults had a moderate level of successful aging (Howie, Troutman-Jordan, & Newman, 2014; Kozar-Westman et al., 2013; Troutman et al., 2010). Participants might adapt to disease progression and the impact of their decline of kidney and increasing age. Old age is a time of great opportunity for older adults capable of appraising their aging experience (Flood, 2005). Therefore, successful aging could be developed even in the face of functional decline, if older people can adapt to psychosocially (Marks, 2018; Solomon et al., 2018; Southwell et al., 2018; Young et al., 2009).

Factors influencing successful aging

There were four factors that influence successful aging in this study. Findings from this study showed that optimism, resilience, perception of health status, and self-transcendence had direct and indirect effects on successful aging. Additionally, self-transcendence was found to be a moderator between optimism, resilience, perception of health status, and successful aging model.

Direct effect on successful aging

Resilience was found influenced to successful aging. Resilience is patterns of adaptation in the face of biological, socioeconomic, and psychological risks. Older adults in this study might use psychologically resilient to exhibit for compensatory response-ability to cope, adapt to change, and deal with problems, handle unpleasant feelings, and not discouraged related to previous stressful life events such as death of beloved one. Their resilience might help them overcome adversity and return to normal levels of stressful situations.

This result was consistent with previous studies that had shown resilience was significantly associated with successful aging. For example, Byun and Jung (2016) found that resilience had a positive direct effect on successful aging ($\beta = .55$, $p < .001$). MacLeod, Musich, Hawkins, Alsgaard, and Wicker (2016) found that high resilience had also been significantly associated with positive outcomes, including successful aging. Jeste et al. (2013) found that increasing resilience effected on successful aging when older people had physical decline. Resilience was related to physical declines (Lamond et al., 2008). These might reveal that older adults could arrive at successful aging even with physical limitations and structural obstacles (Pruchno & Carr, 2017).

Optimism was found influenced to successful aging. If older adults have optimism, it will be easier to accept a variety of situations, especially in health problems. Optimism provided them to react to situations that arise in life and resolves the best possible activities. If older adults have positive thoughts, they will perform solutions to get positive outcomes. Therefore, optimism would make older adults easier to achieve successful aging.

This result was consistent with previous studies that had shown optimism had a positive direct effect on successful aging ($\beta = .17$, $p < .05$) (Umami, 2019). Troutman, Nies, and Mavellia (2011) found that most older adults (36.66 %) focused on a positive state of mind. Participants expressed a positive outlook on life, positive ways of relating to others, and positive responses to the limitations (Troutman-Jordan & Staples, 2014). Solomon et al. (2018) studied adults living with HIV and found having positive attitude factors that promote successful aging. Optimism can be integral in the transition of poor health to better health (Van Wagenen et al., 2013).

They will be able to think positively and be happier (Umami, 2019).

Perception of health status was found influenced to successful aging. If older adults have a good perception of health status, they feel more comfortable to be able to cope with the changes that have occurred to their bodies as they have aged and to deal with their aging and promote successful aging. With a high perception of health, they might control and manage themselves for health promotion activities, dietary adherence, and all preventive health practices. Most older adults who had eGFR between 15 - 60 ml/min/1.73 m^2, might see it as a minor condition. Therefore, the perception of health status has a significant influence on achieving successful aging.

This result was consistent with previous studies, Thi Thu Trieu et al. (2016) found that perceived health status is related to successful aging ($r = .39$, $p < .001$). H. K. Kim (2013) studied 181 male older adults and found that perceived health status was positively correlated with successful aging ($r = .27$, $p < .001$). Meng and D'arcy (2014) found that perceived better health was associated with successful aging. Perception of health status is one factor in understanding how patients manage their illness and their behavioral outcomes (Hagger & Orbell, 2003). A good perception of health status was necessary for older adults and reduced risk of mortality, disability, and depression (Fiori et al., 2006; Mendes de Leon et al., 2003; Wilkins, 2003). Older adults who have a high perception of health status felt more comfortable to be able to cope with the changes that occurred to their bodies as they had aged and to deal with their aging process and promote successful aging (Flood, 2005).

Self-transcendence was found influenced to successful aging. If older adults have self-transcendence, it will be easier to accept all the situations, especially in crisis such as loss of beloved ones, their illness, illness of beloved one, living alone, disability, aging process, career difficulties, problems in economic or financial issues, and other life crises challenges. A high level of self-transcendence would make older adults feel enjoying the pace of life, having hobbies, having an interest in helping others, learning about the world, and sharing wisdom. This would help them to arrive at successful aging easily.

This result was consistent with previous studies that had shown self-transcendence had a positive direct effect on successful aging (McCarthy, 2009, 2011; McCarthy et al., 2013). McCarthy (2011) reported that self-transcendence has a direct

effect on successful aging ($\beta = .52$, $p = < .001$). Self-transcendence includes a psycho-social-spiritual force toward personal maturity and enhances an individual's searching for new meaning, perspectives, and well-being and allows them to overcome ego concerns. Self-transcendence enhanced well-being by transforming failures and problems into healing experiences (Coward & Reed, 1996). Self-transcendence was associated with a higher quality of life and a lower degree of illness distress (Bean & Wagner, 2006). It is described as a vital resource for wellbeing in vulnerable older adults (Haugan, Rannestad, Hammervold, Garasen, & Espens, 2014; Nygren et al., 2005; Reed, 2014). Self-transcendence has also been reported to be of importance for successful aging.

Indirect effect on successful aging

The results found that resilience, optimism, and perception of health status had indirect effects on successful aging. Resilience was found indirect effect to successful aging through self-transcendence ($\beta = .22$, $p < .001$). Resilience positively significantly correlated with self-transcendence in older adults with KFD. Older adults in this study used resilience for compensatory response-ability to cope, adapt, and recover to a state of equilibrium after illness or hardship because aging brings many forms of adversity, including the potential loss of loved ones, disease, and a decline in functional abilities, but they had a high level of resilience. They might use self-transcendence to deal with life events, based on past and present experiences to change new perceptions and find purpose and meaning in life. If self-transcendence is presented, the effect of resilience to successful aging also increases. The previous study state self-transcendence facilitates turning difficulties and struggles in life into meaningful systems that support well-being (Fiske, 2019; Reed, 2014). Reed (2014) stated that in the face of adversity, older adults could change their meaning, reduce the level of danger caused, reduce their exposure to such events, reduce adverse reactions, and create opportunities to revert the effects of stress. Fontes and Neri (2015) found resilience is maintained during old age, thus providing a foundation for continuity of functioning and development through successful coping with deleterious effects of life's risks and adversities. Both of resilience and self-transcendence work together and would help older adults to arrive at successful aging easily.

Optimism was found indirect effect to successful aging through self-transcendence ($\beta = .10$, $p < .001$). Both optimism and self-transcendence affect successful aging. Self-transcendence exerts a strong and dominant influence on successful aging, but it is not so strong as to indicate an overlap with other variables. In the uncertain trajectory and progression of chronic kidney disease, self-transcendence might be more relevant to finding purpose and meaning in negative situations, than thinking in a positive way. Older adults with KFD who helped others or share wisdom might gain a sense of purpose and a future goal. It could be explained that older adults used optimism for adaptation to adverse events by their favorable future expectations. They also used self-transcendence for achieving successful aging. Viglund, Jonsén, Strandberg, Lundman, and Nygren (2014) found self-transcendence could deal with the negative effects of diseases, functional decline, and life crises among older adults. McCarthy and Bockweg (2013) found older adults had a high level of self-transcendence, they could find greater pleasure in small things, experience fewer every day materialistic concerns, exhibit increased emotional stability and a mindful, compassionate view of self, others, and the world (Reed, 2014). Older adults with KFD who have life events used self-transcendence relevant to finding purpose and meaning in life or spiritual meaning more than optimism to gained successful aging.

Perception of health status had a slightly positive indirect effect on successful aging through self-transcendence ($\beta = .03$, $p < .001$). Self-transcendence moderated the relationship between perception of health status and successful aging. Both perceptions of health status and self-transcendence affect successful aging. Individuals often recognize that KFD is a life-long illness, thus adjusting their thinking about the perception of health status. Self-transcendence might be more relevant to a psycho-social-spiritual force toward personal maturity and enhances older adult's searching for new perspectives in all situations than perception of health status. Although self-transcendence was decreasing the path to successful aging, older people with KFD still gained successful aging. It can be explained that self-transcendence might help mediate the impact of illness perceptions of older adults to find new perceived for taking care of health. Perceived health was often more effective than clinical measures for predicting help-seeking behaviors and health

service use (Fleishman & Zuvekas, 2007). Reed states that indicators for well-being are human perceptions of health and wellness (Fiske, 2019; Reed, 2014). Older adults with KFD might also be related to fighting spirit. Self-transcendent thoughts and behaviors are consistent with the drive to maximize the future, which might be expressed as realizing what is important in life. The meaning of the illness relevant to coping and adaptation more than the perception of health and could promote successful aging.

Conclusion

Successful aging is often the main goal for older adults, but sometimes older adults pay less attention to various important things to have in order to achieve successful aging. From literature reviews, the hypothesized were incomplete of eight factors into a successful aging model of older adults with KFD. However, the hypothesized model was not fit data well. Modification of model remained four factors, and total variance explained 84% for successful aging. The factors that influence successful aging included optimism, resilience, perception of health status, and self-transcendence. Self-transcendence was found to be a moderator between resilience, optimism, perception of health status, and successful aging in older adults with KFD. The indirect effect on successful aging was found in resilience, optimism, and perception of health status through self-transcendence.

Implications for Nursing

The result of this study provided an understanding of the factors influences successful aging in older adults with KFD. The finding would useful for nursing practice, nursing education, nursing research, and nursing administration as follows:

1. For nursing practice, nurses should use factors influencing successful aging to promote successful aging through improving optimism, self-transcendence, resilience, and enhance the positive perception of health status. Emphasis was placed on partnering with older adults and enabling them to involve actively in their health care.

2. For nursing education, nursing educators could utilize the new

knowledge by teaching nursing students about importance of successful aging to help older adults with KFD to promote health in the late-life. Nursing educators could use these results of the study to promote successful aging among older adults with KFD.

3. For nursing research, nurses can develop nursing interventions research based on these variables to promote successful aging among older adults with KFD.

4. For nursing administration, knowledge about successful aging is essential for our soon-to-be aging society. The results of this study can monitor and evaluate the quality of care to promote successful aging among older adults with KFD.

Limitation of the study

Limitation of this study was generalization because data collection was conducted in only one hospital. Therefore, the research results could not represent the whole older adults with KFD in Thailand, which limited the ability of generalization. Another limitation was the cross-sectional study design, which disapproved of the real causal relationships, and it was done at a single time point.

Furthermore, measurement might not fit to Thai culture. Successful Aging Inventory was developed in the Western context and some items did not specific to Thai culture (e.g., I enjoy doing creative new things or making things; I look forward to the future). This might affect to the results of this study.

Recommendations for future research

The results were useful for future research as follows:

1. Further research could recruit participants from different areas of Thailand at a national level. The results would represent successful aging of Thai context.

2. As successful aging tool, it would be useful to develop a successful aging tool to assess all aspects of successful aging in older adults with KFD more suitable to understand older adults who experienced chronic illness in Thai context.

3. The future study should develop intervention programs regarding resilience, optimism, self-transcendence, and perception of health status should be designed and researched to promote and enhance successful aging in older adults.

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APPENDICES

APPENDIX A

Institutional review board

Thesis Title   A Causal Model of Successful Aging among Older Adults with Kidney Function Decline

Name   Miss Nada Ngammoh
ID: 60810034
Doctor of Philosophy in Nursing Science (International Program)

Number of the IRB approval   04 – 08 – 2562

The Institutional Review Board (IRB) for graduate studies of Faculty of Nursing, Burapha University reviewed your submitted proposal. The contingencies have been addressed and the IRB **approves** the protocol. Work on this project may begin. This approval is for a period of one year from the date of this letter and will require continuation approval if the research project extends beyond **September 18th, 2020**.

If you make any changes to the protocol during the period of this approval, you must submit a revised protocol to the IRB committee for approval before implementing the changes.

Date of Approval   September 18th, 2019

Chintana Wacharasin, R.N., Ph.D.

Chairperson of the IRB
Faculty of Nursing, Burapha University, THAILAND

Tel.: 66-038-102823
Fax: 66-038-393476
E-Mail: naruemit@buu.ac.th

ฉบับที่ 042/2562

สภากาชาดไทย
The Thai Red Cross Society

หนังสือรายงานผลการพิจารณาจริยธรรมการวิจัย
โรงพยาบาลสมเด็จพระบรมราชเทวี ณ ศรีราชา

1. **ชื่อโครงการวิจัย:**   โมเดลความสัมพันธ์เชิงสาเหตุของการสูงวัยที่ประสบความสำเร็จในผู้สูงอายุที่มีการทำงาน
   ของไตลดลง

2. **ผู้วิจัยหลัก:**   นางสาวนฎา งามเหมาะ
   นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์
   คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

3. **ผลการพิจารณาของคณะกรรมการพิจารณาจริยธรรมงานวิจัย มีมติเห็นชอบ ดังนี้**
   (✓)   อนุมัติ (โดยไม่มีเงื่อนไข)
   (   )   อนุมัติโดยมีเงื่อนไข ให้ปรับปรุงแก้ไข
   (   )   รอการพิจารณาหรือยังไม่พิจารณา
   (   )   ไม่อนุมัติ

4. **วันที่ให้การรับรอง :**   1 1 ต.ค. 2562

ลงนาม...
(นายแพทย์สมเกียรติ บวรเสรีผไท)
ประธานคณะกรรมการพิจารณาจริยธรรมการวิจัย

ลงนาม...
(รองศาสตราจารย์ นายแพทย์โศภณ นภาธร)
ผู้ช่วยเลขาธิการสภากาชาดไทย และ
ผู้อำนวยการโรงพยาบาลสมเด็จพระบรมราชเทวี ณ ศรีราชา

APPENDIX B

Participant information and consent form

เอกสารชี้แจงผู้เข้าร่วมการวิจัย

การวิจัยเรื่อง   โมเดลความสัมพันธ์เชิงสาเหตุของการสูงวัยที่ประสบความสำเร็จในผู้สูงอายุที่มี
การทำงานของไตลดลง

รหัสจริยธรรมการวิจัย   04-08-2562

ชื่อผู้วิจัย   นางสาวนฎา งามเหมาะ

        การวิจัยครั้งนี้ทำขึ้นเพื่อ ประเมินความสัมพันธ์เชิงสาเหตุของการสูงวัยที่ประสบความ
สำเร็จในผู้สูงอายุที่มีการทำงานของไตลดลง

        ท่านได้รับเชิญให้เข้าร่วมการวิจัยครั้งนี้เนื่องจากท่านเป็นผู้ที่มีคุณสมบัติตรงกับการศึกษา
ครั้งนี้ คือ ท่านอายุ 60 ปีขึ้นไป มีค่าอัตราการกรองของไตระหว่าง 15-60 มล./นาที/1.73 ตรม. เป็น
เวลาอย่างน้อยสามเดือน ไม่มีความบกพร่องทางสติปัญญา สามารถสื่อสารภาษาไทยได้ ไม่มีอาการ
ที่อาจรบกวนความสามารถในการตอบแบบสอบถาม เช่น เหนื่อย ปวดศีรษะ เวียนศีรษะ คลื่นไส้
และอาเจียน ซึ่งท่านเป็นผู้ที่มีความสำคัญที่สุดในการให้ข้อมูลในครั้งนี้ การวิจัยนี้จะมีผู้เข้าร่วมการ
วิจัยทั้งสิ้นประมาณ 350 ราย จะเก็บรวบรวมข้อมูลในเดือน ตุลาคม พ.ศ. 2562 ถึงเดือน สิงหาคม
พ.ศ. 2563

        ผู้วิจัยจะทำการคัดกรองท่าน โดยใช้แบบประเมินภาวะสมองเสื่อม (Mini Cog) ใช้ประเมิน
ในผู้สูงอายุที่มีอายุตั้งแต่ 60 ปีขึ้นไป เพื่อคัดกรองเข้ามาเป็นกลุ่มตัวอย่าง เมื่อท่านเข้าร่วมการวิจัย
แล้ว สิ่งที่ท่านจะต้องปฏิบัติคือ ตอบแบบสอบถามตามความเป็นจริงด้วยตัวของท่านเอง หรือให้
ผู้วิจัยอ่านให้ฟังในกรณีที่ท่านมีปัญหาเรื่องสายตา เช่น ตาพร่ามัว มองไม่ชัด เจ็บตา เป็นต้น
แบบสอบถาม 1 ชุด มี 8 ตอน คือ 1) แบบสอบถามข้อมูลส่วนบุคคลของผู้สูงอายุ 2) แบบวัด
ผู้สูงอายุที่ประสบความสำเร็จ 3) แบบสอบถามเกี่ยวกับการมองโลกในแง่ดี 4) แบบวัดความเศร้าใน
ผู้สูงอายุ 5) แบบวัดความเข้มแข็งสร้างสรรค์ 6) แบบสอบถามภาวะเหนือตนเอง 7) แบบสอบถาม
สมรรถนะแห่งตน และ 8) แบบสอบถามภาวะสุขภาพ ซึ่งจะใช้เวลาทั้งสิ้นประมาณ 45-60 นาที
สัมภาษณ์ 1 ครั้ง และ ไม่มีการบันทึกเสียง

หากท่านเข้าร่วมการวิจัยครั้งนี้ ท่านจะมีความเสี่ยงในระดับต่ำ เนื่องจากเป็นการตอบแบบสอบถามและบันทึกข้อมูลตามแบบสอบถาม แต่อาจส่งผลให้ท่านรู้สึกอึดอัด ไม่สบายใจ เครียดกับบางคำถาม ท่านมีสิทธิ์ที่จะไม่ตอบคำถามเหล่านั้น หรือการตอบแบบสอบถามอาจทำให้ท่านเสียเวลา แต่ผู้วิจัยมีแนวทางในการป้องกันแก้ไข โดยผู้วิจัยจะสอบถามความพร้อมของท่านในการตอบแบบสอบถาม จัดหาสถานที่ที่มีความเป็นส่วนตัวและสามารถตอบแบบสอบถามได้อย่างอิสระ เพื่อลดความอึดอัดใจที่อาจเกิดขึ้นได้ ในระหว่างการตอบแบบสอบถาม หากท่านต้องการหยุดพัก ท่านสามารถหยุดพักได้ตลอดเวลา และจะเริ่มตอบแบบสอบถามใหม่เมื่อท่านพร้อม

ประโยชน์ของการวิจัยครั้งนี้อาจจะไม่ได้เป็นประโยชน์กับท่านโดยตรง แต่ผลการวิจัยจะเป็นข้อมูลพื้นฐานในการพัฒนาการดูแลผู้สูงอายุที่มีการทำงานของไตลดลง เพื่อชะลอระยะเวลาการเข้าสู่ระยะสุดท้ายของโรค จะช่วยลดค่าใช้จ่าย ค่ารักษาโรคไตเรื้อรังระยะสุดท้าย ป้องกันภาวะแทรกซ้อน และมีคุณภาพชีวิตที่ดี

การเข้าร่วมการวิจัยของท่านครั้งนี้เป็นไปด้วยความสมัครใจ ท่านมีสิทธิการเข้าร่วมโครงการวิจัยหรือถอนตัวออกจากโครงการวิจัยได้ตลอดเวลา โดยไม่มีผลกระทบใด ๆ ทั้งสิ้น และไม่ต้องแจ้งให้ผู้วิจัยทราบล่วงหน้า ผู้วิจัยจะเก็บรักษาข้อมูลของท่านโดยใช้รหัสตัวเลขแทนการระบุชื่อ ชั้น และสิ่งใด ๆ ที่อาจอ้างอิงหรือทราบได้ว่าข้อมูลนี้เป็นของท่าน ข้อมูลของท่านที่เป็นกระดาษแบบสอบถามจะถูกเก็บอย่างมิดชิด และปลอดภัยในตู้เก็บเอกสารและล็อคกุญแจตลอดเวลา สำหรับข้อมูลที่เก็บในคอมพิวเตอร์ของผู้วิจัยจะถูกใส่รหัสผ่าน ข้อมูลที่กล่าวมาทั้งหมดจะมีเพียงผู้วิจัยและอาจารย์ที่ปรึกษาเท่านั้นที่สามารถเข้าถึงข้อมูลได้ ผู้วิจัยจะรายงานผลการวิจัยและการเผยแพร่ผลการวิจัยในภาพรวม โดยไม่ระบุข้อมูลส่วนบุคคลของท่าน ดังนั้นผู้อ่านงานวิจัยจะทราบเฉพาะผลการวิจัยเท่านั้น สุดท้ายหลังจากผลการวิจัยได้รับการตีพิมพ์เผยแพร่ในวารสารเรียบร้อยแล้ว ข้อมูลทั้งหมดจะถูกทำลาย

หากท่านมีปัญหาหรือข้อสงสัยประการใด สามารถสอบถามได้โดยตรงจากผู้วิจัย ในวันทำการรวบรวมข้อมูล หรือสามารถติดต่อสอบถามเกี่ยวกับการวิจัยครั้งนี้ได้ตลอดเวลาที่ นางสาวนฎา งามเหมาะ หมายเลขโทรศัพท์ 081-523-8272 หรือที่ รศ. ดร.อาภรณ์ ดีนาน อาจารย์ที่ปรึกษาหลัก หมายเลขโทรศัพท์ 038-102-892

<div style="text-align: right">

นางสาวนฎา งามเหมาะ

ผู้วิจัย

</div>

หากท่านได้รับการปฏิบัติที่ไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงนี้ ท่านจะสามารถแจ้งให้
ประธานคณะกรรมการพิจารณาจริยธรรมฯ ทราบได้ที่ เลขานุการคณะกรรมการจริยธรรมฯ ฝ่ายวิจัย
คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา โทร. 038-102823

> ในเอกสารนี้อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามผู้วิจัยหรือผู้แทนให้
> ช่วยอธิบายจนกว่าจะเข้าใจดี ท่านอาจจะขอเอกสารนี้กลับไปที่บ้านเพื่ออ่านและทำความเข้าใจ
> หรือปรึกษาหารือกับญาติพี่น้อง เพื่อนสนิท แพทย์ประจำตัวของท่าน หรือผู้อื่นที่ท่านต้องการ
> ปรึกษา เพื่อช่วยในการตัดสินใจเข้าร่วมการวิจัยครั้งนี้

แบบสอบถมเลขที่....................

ใบยินยอมเข้าร่วมการวิจัย

   หัวข้อวิทยานิพนธ์   เรื่อง   โมเดลความสัมพันธ์เชิงสาเหตุของการสูงวัยที่ประสบ
ความสำเร็จ ในผู้สูงอายุที่มีการทำงานของไตลดลง

   วันให้คำยินยอม   วันที่ ....เดือน...............................พ.ศ. ....

   ก่อนที่จะลงนามในใบยินยอมเข้าร่วมการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัย ถึง
วัตถุประสงค์ของการวิจัย วิธีการวิจัย ประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียดและมีความ
เข้าใจในการวิจัยครั้งนี้ดีแล้ว ข้าพเจ้ายินดีเข้าร่วมโครงการวิจัยนี้ด้วยความสมัครใจ และข้าพเจ้ามี
สิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยนี้เมื่อใดก็ได้ และการบอกเลิกการเข้าร่วมการวิจัยนี้
จะไม่มีผลกระทบใด ๆ ต่อข้าพเจ้า

   ผู้วิจัยรับรองว่าจะตอบคำถามต่าง ๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ่อนเร้น
จนข้าพเจ้าพอใจ ข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าจะถูกเก็บเป็นความลับและจะเปิดเผยในภาพรวมที่
เป็นการสรุปผลการวิจัย

   ข้าพเจ้าได้อ่านข้อความข้างต้นแล้ว และมีความเข้าใจดีทุกประการ และได้ลงนามใน
ใบยินยอมนี้ ด้วยความเต็มใจ

       ลงนาม...ผู้ยินยอม

         (...)

       ลงนาม...พยาน

         (...)

       ลงนาม...ผู้วิจัย

         (...)

ข้าพเจ้าไม่สามารถอ่านหนังสือได้ แต่ผู้วิจัยได้อ่านข้อความในใบยินยอมนี้ให้ข้าพเจ้าฟัง จนข้าพเจ้าเข้าใจดีแล้ว ข้าพเจ้าจึงลงนามหรือประทับลายนิ้วหัวแม่มือของข้าพเจ้าในใบยินยอมนี้ ด้วยความเต็มใจ

ลงนาม...ผู้ยินยอม

(...)

ลงนาม...พยาน

(...)

ลงนาม...พยาน

(...)

ลงนาม...ผู้วิจัย

(...)
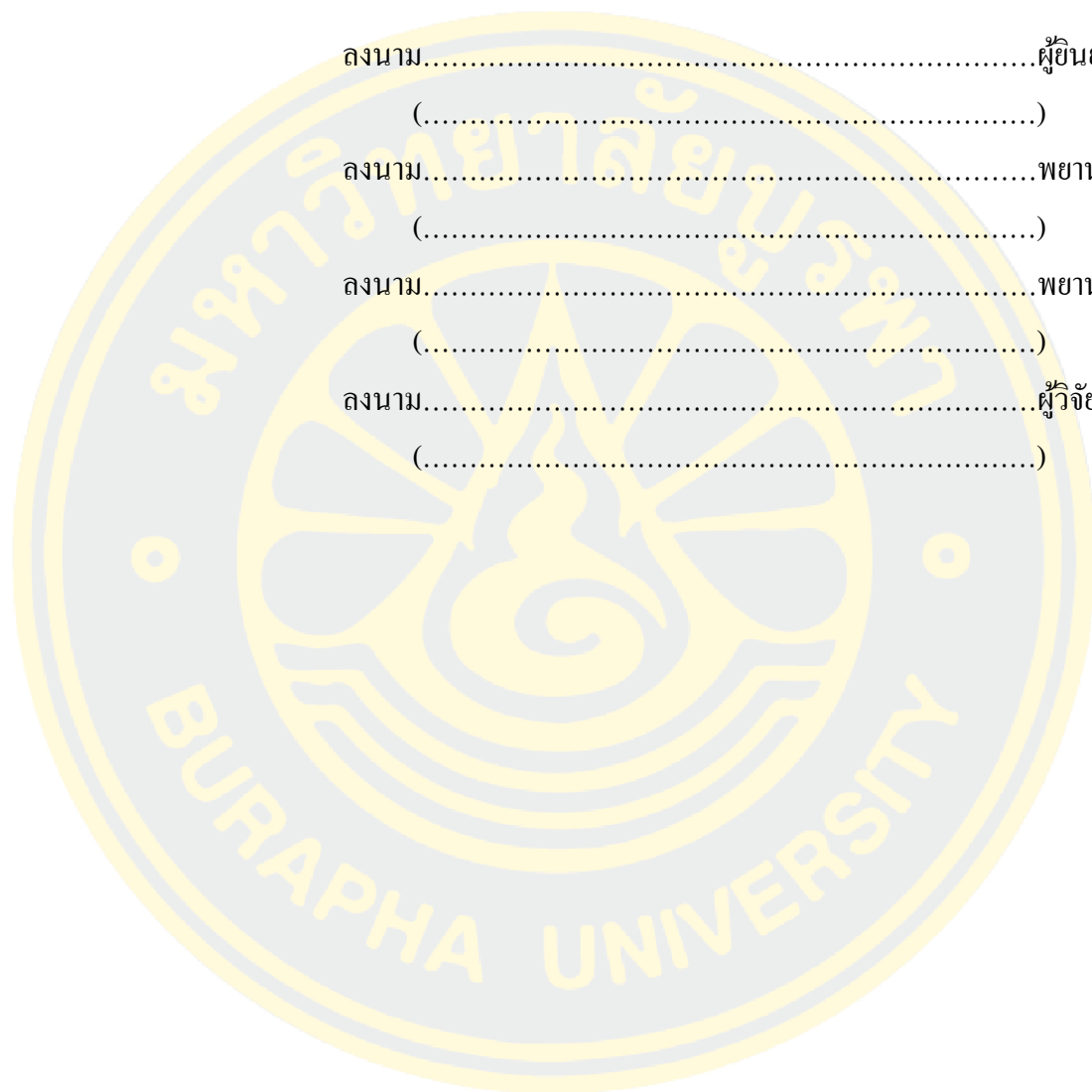
APPENDIX C

Questionnaires

เครื่องมือที่ใช้ในการคัดกรอง

แบบประเมินสมรรถภาพสมอง (Mini-Cog)

<u>**คำชี้แจง**</u> ใช้ประเมินภาวะสมองเสื่อมในผู้สูงอายุที่สามารถสื่อสารได้

วิธีการประเมิน
1. บอกสิ่งของ 3 อย่างที่ไม่สัมพันธ์กัน โดยผู้สูงอายุพูดทวนตามที่บอก (………………………) บอกให้ผู้สูงอายุจำไว้ให้ดี
2. ให้ผู้สูงอายุวาดหน้าปัดนาฬิกาเป็นรูปวงกลม และบอกเวลาที่เวลา ……… น.   **ถูกต้อง:** วาดหน้าปัดเป็นรูปวงกลม แสดงเวลา …. น. (ตำแหน่งตัวเลข เข็มสั้น เข็มยาวถูกต้อง)   **ไม่ถูกต้อง:** วาดไม่ได้ หรือไม่ครบถ้วน คะแนนเต็ม 2 คะแนน รวม ……………… คะแนน
3. ให้ผู้สูงอายุบอกสิ่งของ 3 อย่างที่บอกให้จำ ให้ 1 คะแนนเมื่อตอบสิ่งของได้ 1 อย่าง   คะแนนเต็ม 3 คะแนน รวม ……………… คะแนน

<u>**คำสั่ง**</u> ให้ท่านวาดนาฬิกา โดยหน้าปัดนาฬิกาเป็นรูปวงกลม และบอกเวลา ที่เวลา ………………..

<u>แบบสอบถามส่วนที่ 1</u> แบบสอบถามข้อมูลส่วนบุคคลของผู้สูงอายุ

<u>คำชี้แจง</u> โปรดเติมข้อความลงในช่องว่าง หรือใส่เครื่องหมาย (✔) ลงในช่องว่าง ( ) หน้าข้อความ
ตามความเป็นจริงเกี่ยวกับตัวท่าน

1. เพศ ( ) 1. ชาย   ( ) 2. หญิง

2. อายุ .... ปี ....เดือน

3. ค่า GFR........................ ml/min/1.73 m^2

4. ระดับการศึกษาที่จบสูงสุด

    ( ) 1. ไม่ได้เรียนหนังสือ   ( ) 2. ประถมศึกษา

    ( ) 3. มัธยมศึกษาตอนต้น   ( ) 4. มัธยมศึกษาตอนปลาย/ ปวช.

    ( ) 5. อนุปริญญา/ ปวส.   ( ) 6. ปริญญาตรีหรือสูงกว่าปริญญาตรี

5. สถานภาพสมรส

    ( ) 1. โสด   ( ) 2. สมรส

    ( ) 3. แยกกันอยู่/ อย่าร้าง   ( ) 4. ม่าย

6. รายได้เฉลี่ยต่อเดือนของท่านในปัจจุบัน

    ( ) 1. ไม่เกิน 2,000 บาท   ( ) 2. 2,001-5,000 บาท

    ( ) 3. 5,001-10,000 บาท   ( ) 4. 10,001-20,000 บาท

    ( ) 5. 20,001 บาทขึ้นไป

7. รายได้เพียงพอกับค่าใช้จ่ายต่อเดือน

    ( ) 1. พอใช้มีเงินเก็บ   ( ) 2. พอใช้ไม่มีเงินเก็บ

    ( ) 3. ไม่พอใช้

8. ประสบการณ์เกี่ยวกับภาวะวิกฤตในชีวิต หรือเหตุการณ์ที่ทำให้ตนเองรู้สึกว่าได้รับการ
กระทบกระเทือนต่อจิตใจในช่วง 2 ปีที่ผ่านมา (ตอบได้มากกว่า 1 ข้อ)

    ( ) 1. การสูญเสียบุคคลอันเป็นที่รัก

    ( ) 2. การเจ็บป่วยของตนเอง

    ( ) 3. การเจ็บป่วยของบุคคลอันเป็นที่รัก

    ( ) 4. อื่น ๆ ระบุ...

9. โรคประจำตัว (ตอบได้มากกว่า 1 ข้อ)

    ( ) 1. โรคไต   ( ) 2. โรคความดันโลหิตสูง

    ( ) 3. โรคเบาหวาน   ( ) 4. โรคประจำตัวอื่นๆ ระบุ........................

แบบสอบถามส่วนที่ 2 แบบวัดผู้สูงอายุที่ประสบความสำเร็จ

คำชี้แจง โปรดอ่านข้อความอย่างละเอียด แล้วทำเครื่องหมายวงกลม ◯ ลงในคำตอบที่ตรงกับความรู้สึกของท่านมากที่สุด ซึ่งไม่มีคำตอบที่ถูกหรือผิด คำถามมีทั้งหมด 20 ข้อ ซึ่งคำตอบมีให้เลือก 5 คำตอบ คือ

ไม่เห็นด้วยอย่างยิ่ง (0)	หมายถึง	ข้อความประโยคนั้น<u>ไม่ตรงกับ</u>ความรู้สึกของท่านเลย
ไม่เห็นด้วย (1)	หมายถึง	ข้อความประโยคนั้น<u>ไม่ตรงกับ</u>ความรู้สึกของท่านบ่อยครั้ง
เห็นด้วยกับไม่เห็นด้วยพอๆ กัน (2)	หมายถึง	ข้อความประโยคนั้นตรงกับความรู้สึกของท่านเพียงครึ่งเดียว
เห็นด้วย (3)	หมายถึง	ข้อความประโยคนั้นตรงกับความรู้สึกของท่านบ่อยครั้ง
เห็นด้วยอย่างยิ่ง (4)	หมายถึง	ข้อความประโยคนั้นตรงกับความรู้สึกของท่านมากที่สุด

ข้อ	คำถาม	ระดับความคิดเห็น				
		ไม่เห็นด้วยอย่างยิ่ง (0)	ไม่เห็นด้วย (1)	เห็นด้วยกับไม่เห็นด้วยพอ ๆ กัน (2)	เห็นด้วย (3)	เห็นด้วยอย่างยิ่ง (4)
1.	ฉันสามารถจัดการงานบ้านและดูแลตัวเองได้ (รับประทานอาหาร อาบน้ำ แต่งตัว)	0	1	2	3	4
2.	ฉันยอมรับการเปลี่ยนแปลงทางร่างกายที่เกิดขึ้นตามวัย	0	1	2	3	4
-	……………………………………...	0	1	2	3	4
-	……………………………………...	0	1	2	3	4
-	……………………………………...	0	1	2	3	4
-	……………………………………...	0	1	2	3	4
19.	ฉันรู้สึกว่าตนเองมีคุณค่า และทำประโยชน์ให้แก่ผู้อื่น สังคม และโลก	0	1	2	3	4
20.	การเป็นผู้สูงอายุอย่างที่ฉันเป็นอยู่ในปัจจุบันนี้นับว่าดีหรือดีกว่าที่ฉันคิดไว้	0	1	2	3	4

<u>แบบสอบถามส่วนที่ 3</u> แบบสอบถามเกี่ยวกับการมองโลกในแง่ดี

<u>**คำชี้แจง**</u> ขอให้ท่านประเมินตนเองว่า ตัวท่านมีลักษณะตรงกับข้อความต่อไปนี้มากน้อยเพียงใด
โดยทำเครื่องหมาย (✔) ลงในช่องคำตอบ ที่ตรงกับตัวท่านมากที่สุด คำถามมีทั้งหมด 10 ข้อ ซึ่ง
คำตอบมีให้เลือก 5 คำตอบ คือ

ไม่เห็นด้วยอย่างยิ่ง (0) หมายถึง ข้อความประโยคนั้น<u>**ไม่ตรงกับ**</u>ความรู้สึกของท่านเลย
ไม่เห็นด้วย (1) หมายถึง ข้อความประโยคนั้น<u>**ไม่ตรงกับ**</u>ความรู้สึกของท่านบ่อยครั้ง
เห็นด้วยกับไม่เห็นด้วย หมายถึง ข้อความประโยคนั้นตรงกับความรู้สึกของท่านเพียงครั้ง
พอๆ กัน (2)   เดียว
เห็นด้วย (3) หมายถึง ข้อความประโยคนั้นตรงกับความรู้สึกของท่านบ่อยครั้ง
เห็นด้วยอย่างยิ่ง (4) หมายถึง ข้อความประโยคนั้นตรงกับความรู้สึกของท่านมากที่สุด

ข้อ	คำถาม	ระดับความคิดเห็น				
		0	1	2	3	4
1.	ในสถานการณ์ที่มีความไม่แน่นอน ท่านมักคาดหวังสิ่งที่ดีแม้ว่าต้องเจอปัญหา หรืออุปสรรค					
2.	…………………………………………………					
3.	…………………………………………………					
4.	แม้ว่าต้องเจอปัญหาหรืออุปสรรค ท่านจะมองอนาคตในทางที่ดี					
5.	…………………………………………………					
6.	…………………………………………………					
7.	…………………………………………………					
8.	…………………………………………………					
9.	…………………………………………………					
10.	ในภาพรวม ท่านมักคาดหวังว่าจะมีสิ่งดี ๆ เกิดขึ้นกับท่านมากกว่าสิ่งที่ไม่ดี					

<u>แบบสอบถามส่วนที่ 4</u> แบบวัดความเศร้าในผู้สูงอายุ

<u>คำชี้แจง</u> แบบวัดนี้สำหรับให้**ผู้สูงอายุตอบด้วยตัวเอง** เป็นแบบวัดมาตรฐานซึ่งใช้ได้กับผู้สูงอายุทั้ง
ในและต่างประเทศ โดยให้ผู้สูงอายุเลือกคำตอบของคำถามแต่ละข้อ หากไม่แน่ใจให้ตัดสินใจเลือก
โดยอิงจากความรู้สึกส่วนใหญ่

โปรดทำเครื่องหมาย (✓) ในช่องที่ตรงกับความรู้สึกของคุณ <u>ใน 1 สัปดาห์ที่ผ่านมา</u>

ข้อ	คำถาม	คำตอบ	
		ใช่	**ไม่ใช่**
1.	โดยทั่วไปแล้วคุณพึงพอใจกับชีวิตตัวเองหรือไม่		
2.	คุณทำกิจกรรมน้อยลง หรือสนใจสิ่งต่าง ๆ น้อยลง หรือไม่		
3.	…………………………………………………………………		
4.	…………………………………………………………………		
5.	…………………………………………………………………		
6.	…………………………………………………………………		
7.	…………………………………………………………………		
8.	…………………………………………………………………		
9.	…………………………………………………………………		
10.	…………………………………………………………………		
11.	…………………………………………………………………		
12.	…………………………………………………………………		
13.	…………………………………………………………………		
14.	คุณรู้สึกหมดหวังกับสิ่งที่กำลังเผชิญหรือไม่		
15.	คุณคิดว่าคนอื่น ๆ ดีกว่าคุณ หรือไม่		
	รวม	_____/15	

<u>แบบสอบถามส่วนที่ 5</u> แบบวัดความเข้มแข็งสร้างสรรค์

<u>**คำชี้แจง**</u> กรุณาใส่เครื่องหมาย **(X)** ลงในช่อง ◯ หลังข้อความที่ระบุไว้ว่าตรงกับความเป็นจริงที่เกี่ยวกับตัวท่านมากน้อยเพียงใด <u>**ในช่วง 1 เดือนที่ผ่านมา**</u> หากสถานการณ์ดังกล่าวไม่ได้เกิดขึ้นในช่วงระยะเวลานี้ ให้ท่านประเมินความรู้สึกของท่านว่าน่าจะรู้สึกอย่างไร

ข้อ	สถานการณ์ที่เกิดขึ้น	ระดับความคิดเห็น				
		ไม่จริงเลย (0)	จริงน้อยมาก (1)	จริงบางครั้ง (2)	จริงบ่อยครั้ง (3)	จริงเกือบทั้งหมด (4)
1.	ฉันสามารถปรับตัวได้เมื่อมีการเปลี่ยนแปลงเกิดขึ้น	O 0	O 1	O 2	O 3	O 4
2.	ฉันสามารถรับมือกับสิ่งต่าง ๆ ที่เข้ามาในเส้นทางชีวิตของฉัน	O 0	O 1	O 2	O 3	O 4
3.	………………………………………	O 0	O 1	O 2	O 3	O 4
4.	………………………………………	O 0	O 1	O 2	O 3	O 4
5.	………………………………………	O 0	O 1	O 2	O 3	O 4
6.	………………………………………	O 0	O 1	O 2	O 3	O 4
7.	………………………………………	O 0	O 1	O 2	O 3	O 4
8.	………………………………………	O 0	O 1	O 2	O 3	O 4
9.	………………………………………	O 0	O 1	O 2	O 3	O 4
10.	ฉันสามารถจัดการกับความรู้สึกไม่สบอารมณ์ หรือปวดร้าวใจได้ เช่น เสียใจ หวาดกลัว และ โกรธ	O 0	O 1	O 2	O 3	O 4

<u>**แบบสอบถามส่วนที่ 6 แบบสอบถามภาวะเหนือตนเอง**</u>

<u>**คำชี้แจง**</u> โปรดอ่านข้อความต่อไปนี้แล้วพิจารณาว่าในแต่ละข้อเป็นประสบการณ์ หรือความเป็น
จริง ที่เกิดขึ้นกับท่านมากน้อยเพียงใด คำตอบแต่ละข้อจะไม่มีผิดหรือถูก ขอให้ท่านตอบว่า
<u>**ในช่วงเวลานี้ของชีวิต ท่านมีความคิดเห็นเกี่ยวกับตัวท่านอย่างไร**</u> โดยทำเครื่องหมาย ◯ ลง
ในช่องที่ตรงกับความรู้สึกของท่านมากที่สุด คำถามมีทั้งหมด 15 ข้อ ซึ่งคำตอบมีให้เลือก 4 คำตอบ
โดยคำตอบจะถือเกณฑ์ดังนี้

ไม่เคยเลย	หมายถึง	ท่านไม่มีความคิดเห็น หรือความรู้สึกตามข้อความนั้นเลย
น้อยมาก	หมายถึง	ท่านมีความคิดเห็น หรือความรู้สึกตามข้อความนั้นเป็นครั้งคราว หรือนาน ๆ ครั้ง
ค่อนข้างมาก	หมายถึง	ท่านมีความคิดเห็นหรือความรู้สึกตามข้อความนั้นบ่อยครั้ง
มากที่สุด	หมายถึง	ท่านมีความคิดเห็นหรือความรู้สึกตามข้อความนั้นอยู่เสมอ เป็นประจำ หรือเกิดขึ้นตลอดเวลา

ข้อ	ข้อความ	ไม่เคยเลย (1)	น้อยมาก (2)	ค่อนข้างมาก (3)	มากที่สุด (4)
1.	ฉันมีงานอดิเรก หรือสิ่งที่น่าสนใจอื่น ๆ ทำ ซึ่งทำให้ฉันเพลิดเพลินได้	1	2	3	4
2.	……………………………………………	1	2	3	4
3.	……………………………………………	1	2	3	4
4.	……………………………………………	1	2	3	4
5.	……………………………………………	1	2	3	4
6.	……………………………………………	1	2	3	4
-	……………………………………………	1	2	3	4
-	……………………………………………	1	2	3	4
-	……………………………………………	1	2	3	4
14.	ฉันพึงพอใจกับการดำเนินชีวิตของฉัน	1	2	3	4
15.	ฉันปล่อยวางกับความหลังหรือสิ่งเก่า ๆ ที่ฉันเคยผิดพลาดหรือไม่สมหวัง	1	2	3	4

แบบสอบถามส่วนที่ 7 แบบสอบถามสมรรถนะแห่งตน

กรุณาเลือกคำตอบตามระดับความมั่นใจของท่านจากคะแนน 0-10 ที่มีต่อการกระทำใน แต่ละข้อ ให้ตรงกับสถานการณ์ของท่านตอนนี้มากที่สุด ตัวเลขที่ท่านตอบนั้นไม่มีถูกหรือผิด ขอเพียงแต่ ท่านตอบด้วยความรู้สึกของท่านจริง ๆ

ตัวเลขน้อย หมายถึง ท่านไม่มีความมั่นใจว่าท่านจะสามารถทำได้

ตัวเลขมาก หมายถึง ท่านมีความมั่นใจว่าท่านจะสามารถทำได้สูงตามลำดับ

ไม่มั่นใจว่า ตนเองทำได้										เชื่อมั่นว่า ตนเองทำได้มาก
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

1. ฉันมั่นใจว่าฉันไม่รู้สึกลำบากใจที่จะบอกกับผู้อื่นว่าฉันเป็นโรคไตเรื้อรัง	☐
…………………………………………………………………………………	☐
…………………………………………………………………………………	☐
…………………………………………………………………………………	☐
…………………………………………………………………………………	☐
14. ฉันมั่นใจว่าฉันสามารถบอกกับครอบครัวและ/หรือเพื่อนฝูง เกี่ยวกับแผนการรักษาโรคไตเรื้อรังของฉัน (เช่น การควบคุมอาหารและการใช้ยารักษาโรค เป็นต้น) เพื่อจะได้รับการช่วยเหลือจากพวกเขา………………………………………………	☐
…………………………………………………………………………………	☐
…………………………………………………………………………………	☐
…………………………………………………………………………………	☐
24. ฉันมั่นใจว่าฉันจะเลือกเข้าร่วมกิจกรรมทางสังคมที่ไม่ส่งผลต่อการควบคุมโรคไตเรื้อรังของฉัน เช่น การร่วมงานแต่งงาน หรือการสังสรรค์ต่าง ๆ	☐
25. ฉันมั่นใจว่าฉันสามารถแสวงหาความช่วยเหลือจากครอบครัวหรือเพื่อนฝูงเมื่อใดก็ตามที่ฉันรู้สึกคับข้องใจ หรือท้อแท้กับโรคไตเรื้อรังของฉัน	☐

<u>แบบสอบถามส่วนที่ 8</u> แบบสอบถามภาวะสุขภาพ SF-12 (version 2)

<u>**คำชี้แจง**</u> โปรดเลือกตัวเลือกที่แสดงถึงภาวะสุขภาพของท่าน **<u>(ที่ย้อนไปเมื่อ 4 สัปดาห์ก่อน)</u>** โดยใส่
เครื่องหมาย **(X)** ในหน้าข้อคำตอบแต่ละข้อ ที่ตรงกับความรู้สึกนึกคิดของท่านมากที่สุด

1. โดยทั่ว ๆ ไปท่านสามารถพูดได้ว่าสุขภาพของท่านเป็นอย่างไร

....................ดีที่สุด   (1)

....................ดีมาก   (2)

....................ดี   (3)

....................พอใช้   (4)

....................แย่   (5)

**เรื่องต่อไปนี้เป็นเรื่องเกี่ยวกับกิจกรรมที่ท่านทำในแต่ละวัน ท่านคิดว่าสุขภาพของท่านเป็นปัญหา/
อุปสรรคในการทำกิจกรรมของท่านหรือไม่ ถ้าใช่มากน้อยแค่ไหน**

2. การทำกิจกรรมที่ใช้แรงปานกลาง เช่น การย้ายโต๊ะ การกวาดพื้น การทำสวน การปั่นจักรยาน
หรือการว่ายน้ำ

....................ใช่เป็นปัญหา/ อุปสรรคอย่างมาก   (1)

....................ใช่เป็นปัญหา/ อุปสรรคเพียงเล็กน้อย   (2)

....................ไม่เป็นปัญหา/ อุปสรรค   (3)

....

....

....

....

12. ในช่วง 1 เดือนที่ผ่านมา บ่อยแค่ไหนที่ท่านรู้สึกว่าปัญหาทางสุขภาพ หรือปัญหาทางอารมณ์
เป็นอุปสรรคขัดขวางการทำกิจกรรมทางสังคมของท่าน เช่น การไปเยี่ยมเพื่อน หรือญาติสนิท เป็น
ต้น

....................ตลอดเวลา   (1)

....................เป็นส่วนใหญ่   (2)

....................เป็นบางครั้ง   (3)

....................นาน ๆ ครั้ง   (4)

....................หรือไม่เคยเลย   (5)

APPENDIX D

Permission instruments

CKD Self-Efficacy Questionnaire

บันทึกข้อความ

ส่วนงาน มหาวิทยาลัยบูรพา บัณฑิตวิทยาลัย โทร. ๒๗๐๐ ต่อ ๗๐๕, ๗๐๗

ที่ อว ๘๑๓๗/๐๓๔๑ วันที่ ๒๗ สิงหาคม พ.ศ. ๒๕๖๒

เรื่อง อนุญาตให้ใช้เครื่องมือวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์

อ้างถึงหนังสือที่ อว ๘๑๐๖/๑๕๔๗ ลงวันที่ ๑๓ สิงหาคม พ.ศ. ๒๕๖๒ เรื่อง ขออนุญาต
ใช้เครื่องมือวิจัย โดยนางสาวนฎา งามเหมาะ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์
(นานาชาติ) ดำเนินการทำวิจัยเรื่อง "A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER
ADULTS WITH KIDNEY FUNCTION DECLINE" ได้ขออนุญาตใช้เครื่องมือวิจัย เรื่อง "A STRUCTURAL
WQUATION MODEL OF SELF-MANAGEMENT BEHAVIORS AMONG PATIENTS WITH EARLY
STAGES OF CHRONIC KIDNEY DISEASE" จากวิทยานิพนธ์ของคุณนุชรินทร์ โพธารส พ.ศ. ๒๕๖๐

ในการนี้เพื่อให้การดำเนินงานวิจัยในเรื่องดังกล่าวสามารถดำเนินต่อไปได้ บัณฑิตวิทยาลัย
มหาวิทยาลัยบูรพา จึงอนุญาตให้นางสาวนฎา งามเหมาะ สามารถนำเครื่องมือวิจัยมาใช้ได้ โดยให้อ้างอิง
วิทยานิพนธ์ของนิสิตดังกล่าวด้วย

จึงเรียนมาเพื่อโปรดทราบและดำเนินการต่อไปด้วย

(รองศาสตราจารย์ ดร.นุจรี ไชยมงคล)
คณบดีบัณฑิตวิทยาลัย ปฏิบัติการแทน
ผู้รักษาการแทนอธิการบดีมหาวิทยาลัยบูรพา

เรียน คณบดี

ด้วย บัณฑิตวิทยาลัย อนุญาตให้ นางสาวนฎา งามเหมาะ นิสิตหลักสูตรปรัชญาดุษฎี
บัณฑิต สาขาวิชาพยาบาลศาสตร์ (นานาชาติ) สามารถนำเครื่องมือวิจัยของคุณนุชรินทร์ โพธารส
พ.ศ. ๒๕๖๐ มาใช้ได้ โดยให้อ้างอิงวิทยานิพนธ์ของนิสิตฯ ดังกล่าวด้วย จึงเรียนมาเพื่อ
๑. โปรดทราบ
๒. เห็นควรสำเนาแจ้ง นางสาวพรรณนิภา งานฝ่ายบัณฑิต ทราบเพื่อแจ้งนิสิต
ทราบเพื่อปฏิบัติด้วย

อำไพ ๓๐ ส.ค.๖๒

M Gmail

Permission request for using the CKD Self-Efficacy instrument
3 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>   6 สิงหาคม 2562 14
ถึง: chiuchu@kmu.edu.tw

August 6, 2019
Dear Associate Professor Dr. Chiu-Chu Lin

Subject: Permission request for using the CKD Self-Efficacy instrument

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at the Faculty of Nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among older adults with kidney function decline". My major advisor is Associate Professor Dr. Aporn Deenan.

I have "self-efficacy to control CKD" is an independent variable and decide to use the CKD Self-Efficacy [CKD-SE] instrument in this study.

With this respect, I would like to ask for your permission to use this instrument. Any suggestions, please fill free to let me know. I would be appreciated. I am looking forward to hearing from you soon.

Best Regards,
Ms. Nada Ngammoh
E-mail: tukkatan@gmail.com

--
Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Chiu-Chu Lin <kmulcc@gmail.com>   7 สิงหาคม 2562 10:
ถึง: tukkatan@gmail.com, 高醫護理系林秋菊老師研究室 <kmun330@gmail.com>

Hi Dear Ms. Nada Ngammoh
Greetings!
I am pleased that you are interested in the **Chronic Kidney Disease Self-Efficacy Instrument-25 (CKD-SE-25)** we developed.
Would you mind telling me about your academic background and what study you are planning to use the **Chronic Kidney Disease Self-Efficacy Instrument-25 (CKD-SE-25)** .
Attached please find the material you need. I authorize you to use this instrument. However, I would remind you that please be sure to cite the reference when you report the study results.

I wish you well in your work and your studies.

Best regards,
Chiu-Chu

Chiu-Chu Lin, PhD RN
Professor,
School of Nursing, Kaohsiung Medical University, Taiwan
http://www.kmu.edu.tw/
Email address: chiuchu@kmu.edu.tw

Mini-Cog

นฎา งามเหมาะ <tukkatan@gmail.com

Re: Mini-Cog Permission Form

2 ข้อความ

Soo Borson <soo.borson@gmail.com>   9 สิงหาคม 2562 06:
ถึง: tukkatan@gmail.com

Permission granted. Be aware that clock drawing may not be a valid test in non-literate individuals.

Soo Borson MD
Professor (Emerita), University of Washington
Dementia Care Research and Consulting

On Mon, Aug 5, 2019 at 9:00 PM Ms. Nada Ngammoh, (Phd. student) <wordpress@mini-cog.com> wrote:
From: Ms. Nada Ngammoh, (Phd. student) <tukkatan@gmail.com>
Institution: Faculty of Nursing, Burapha University
Country: Thailand
State:

Study Title:
A causal model of successful aging among older adults with kidney function decline

Study Objectives:
To evaluate the causal relationships between patient's age, kidney function decline, perception of health status, self-efficacy to control CKD, depression, resilience, optimism, self-transcendence, and successful aging among older adults with CKD.

-All participants will be screened by the Mini-Cog

Source of Funding:
NO

Name of PI:
NO

--
This e-mail was sent from a contact form on Mini-Cog (http://mini-cog.com)

นฎา งามเหมาะ <tukkatan@gmail.com>   9 สิงหาคม 2562 08:5
ถึง: Soo Borson <soo.borson@gmail.com>

Thank you for your kindness

Best Regards,
Ms. Nada Ngammoh

Ms. Nada Ngammoh

ในวันที่ ศ. 9 ส.ค. 2019 เวลา 06:02 Soo Borson <soo.borson@gmail.com> เขียนว่า:
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

--
Nada Ngammoh, MSN, RN

Geriatric Depression Scale

M Gmail

นฎา งามเหมาะ <tukkatan@gmail.co

Permission request of using Geriatric Depression Scale (GDS-15)
3 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>
ถึง: yesavage@stanford.edu

6 สิงหาคม 2562 12

August 6, 2019
To: Dr. Yesavage

Subject: Permission request of using Geriatric Depression Scale (GDS-15)

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at the Faculty of Nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among older adults with kidney function decline ". My major advisor is Associate Professor Dr. Aporn Deenan. I have depression is an independent variable and decide to use the Geriatric Depression Scale (GDS-15) in this study.

With this respect, I would like to ask for your permission to use this instrument. Any suggestions, please fill free to let me know. I would be appreciated. I am looking forward to hearing from you soon.

Best Regards,
Ms. Nada Ngammoh
E-mail: tukkatan@gmail.com
--
Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Jerome A Yesavage <yesavage@stanford.edu>
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

6 สิงหาคม 2562 20:

Scale is public. Good luck.

[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

นฎา งามเหมาะ <tukkatan@gmail.com>
ถึง: Jerome A Yesavage <yesavage@stanford.edu>

6 สิงหาคม 2562 22:(

Thank you very much

Best Regards,

Ms. Nada Ngammoh

ในวันที่ อ. 6 ส.ค. 2019 เวลา 20:34 Jerome A Yesavage <yesavage@stanford.edu> เขียนว่า:
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

Successful Aging Inventory

Permission request of using the instrument and translated to Thai language
10 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>   31 พฤษภาคม 2562 12
ถึง: meredithtroutman@uncc.edu

May 31, 2019

Dear Associate Professor Dr. Troutman-Jordan,

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at Faculty of nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among older adults with chronic kidney disease". I read your article about successful aging and I admired your work very much. I used   a successful aging for variable in this study. I think that it might appropriate to my topic. I'm very interested in your tool named "The Successful Aging Inventory (SAI)".

Therefore, I would like to ask your permission to use this tool and translated to Thai language.

I trust that your tool will be greatly benefited to this older adult research in Thailand which will become a causal model for healthcare providers and help older adults for aged successfully.

If you have any questions, please kindly contact me at tukkatan@gmail.com. I would like to thank you in advance for your kindness and any of your attention given to this request is greatly appreciated.

Best Regards,

Nada Ngammoh

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Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Meredith Troutman-Jordan <MeredithTroutman@uncc.edu>   1 มิถุนายน 2562 06:5
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

Thank you for your interest, Nada. You are certainly welcome to use the SAI. I only ask that you share your findings with me, so I can add to the inormation I collect about psychometric properties of the instrument. Please let me know what you need/how I can help.

Life Orientation Test-Revised

M Gmail

นฎา งามเหมาะ <tukkatan@gmail.c

Permission request for using the Life Orientation Test (LOT-R)
4 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>   6 สิงหาคม 2562
ถึง: scheier@cmu.edu

August 6, 2019
To: Professor Scheier, M. F.

Subject: Permission request for using the Life Orientation Test (LOT-R)

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at the Faculty of Nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among olde adults with kidney function decline ". My major advisor is Associate Professor Dr. Aporn Deenan. I have optimism is an independent variable and decide to use the Life Orientation Test (LOT-R) in this study.

With this respect, I would like to ask for your permission to use this instrument. Any suggestions, please fill free to let me know. I would be appreciated. I am looking forward to hearing from you soor

Best Regards,
Ms. Nada Ngammoh
E-mail: tukkatan@gmail.com

--
Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Michael Scheier <scheier@andrew.cmu.edu>   6 สิงหาคม 2562 22
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

I apologize for this automated reply. Thank you for your interest in our work. You have my permission to use any of the scales that I have helped to develop for your research and/or teaching purposes. I do not charge for the use of these scales. I only ask that you reference the scales you use appropriately in all publications. Note that I only send permission approval electronically, so I will not be sending a follow-up letter authorizing the use of a scale through regular mail.

If you wish to use a measure for a purpose other than teaching or research, you should also contact the copyright holder, the publisher of the journal in which the measure was published.

Information concerning the measure you are asking about can be found at the website below. Questions about reliability, validity, norms, and other aspects of

psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales.

I do not track attempts to translate the scales into different languages, so I have no information to offer about that. You are free to develop your own translation if you would like to do that. Again, just be sure to cite the original scale appropriately in publications.

Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

If questions remain, do not hesitate to contact me. Good luck in your work.

http://www.cmu.edu/dietrich/psychology/people/core-training-faculty/scheier-michael.html

--
Michael F. Scheier, Ph.D.
Professor of Psychology
Walter van Dyke Bingham Professor of
Personality and Health Psychology

Department of Psychology
Baker Hall 335-F
Carnegie Mellon University
Pittsburgh, PA 15213

Voice: 412-268-3791
FAX: 412-268-2798
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

นฎา งามเหมาะ <tukkatan@gmail.com>   7 สิงหาคม 2562 00:5
ถึง: Michael Scheier <scheier@andrew.cmu.edu>

Thank you for your kindness

Best Regards,
Ms. Nada Ngammoh

ในวันที่ อ. 6 ส.ค. 2019 เวลา 22:19 Michael Scheier <scheier@andrew.cmu.edu> เขียนว่า:
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]
[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

Self-Transcendence Scale

M Gmail   นฎา งามเหมาะ <tukkatan@gmail.co

Permission request for using the Self-Transcendence Scale (STS)
3 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>   6 สิงหาคม 2562 13
ถึง: preed@email.arizona.edu

August 6, 2019
To: Professor Reed, P. G.

Subject: Permission request for using the Self-Transcendence Scale (STS)

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at the Faculty of Nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among older adults with kidney function decline ". My major advisor is Associate Professor Dr. Aporn Deenan. I have self-transcendence is an independent variable and decide to use the Self-Transcendence Scale (STS) in this study.

With this respect, I would like to ask for your permission to use this instrument. Any suggestions, please fill free to let me know. I would be appreciated. I am looking forward to hearing from you soon.

Best Regards,
Ms. Nada Ngammoh
E-mail: tukkatan@gmail.com

--
Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Reed, Pamela G - (preed) <preed@email.arizona.edu>   6 สิงหาคม 2562 23:
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

Dear Ms. Nada Ngammoh,

Thank you for your interest in my self-transcendence work. You are most welcome and have my permission to use the STS in your interesting doctoral research. I sent along some information about the instrument, but a more recent literature review will provide recent references in which the instrument has been used. You do not have to send me the Request Form, as I've given you permission in this email.
In addition, here is some brief background on self-transcendence:

****

Background on Self-Transcendence Theory
My self-transcendence theory originated in part from my knowledge of the basic developmental nature of human beings and its relevance to well-being, and in the belief that nursing is not only a human science, but a developmental science, that is, one that addresses the inner capacity of human beings for health, well-being, and continued development.

The original purpose of the theory was to enhance knowledge about what contributes to well-being in later adulthood, but now the instrument (and theory for those interested) are used in individuals across the lifespan, and all health/illness experiences, to include adolescents and young adults. The theory is applicable to many contexts of healthcare, from well to dying patients, and from understanding what promotes well-being in patients to the study of nurses and other care providers who work with ill individuals.

The term, self-transcendence, refers to an expansion of self-boundaries --- not just outward, but inward as well. It does not refer to a transcendence of oneself or the world (implying a detachment from others) but rather the term refers to a transcendence of perceived boundaries or narrow kinds of thinking that can limit one's potential. Note that this theoretical perspective of self-transcendence is distinct from Maslow's view of self-transcendence as a detachment of self from others and the world. Instead, my concept and its measurement are based on a view of self-transcendence as a transcendence of self-boundaries such that one is more connected with self, others, nature, and something greater than self.

****

Very best wishes in your doctoral studies and planned research with older adults who have kidney function decline.

Sincerely,

Pamela G. Reed, PhD, RN, FAAN

Professor

The University of Arizona College of Nursing
Tucson, AZ, USA

preed@email.arizona.edu

From: นฎา งามเหมาะ <tukkatan@gmail.com>
Sent: Monday, August 5, 2019 11:30:56 PM
To: Reed, Pamela G - (preed) <preed@email.arizona.edu>
Subject: Permission request for using the Self-Transcendence Scale (STS)

[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

📄 STS 2018.pdf
114K

นฎา งามเหมาะ <tukkatan@gmail.com>   7 สิงหาคม 2562 00:3(
ถึง: "Reed, Pamela G - (preed)" <preed@email.arizona.edu>

Thank you for your kindness, I will try my best

Best Regards,
Ms. Nada Ngammoh

ในวันที่ อ. 6 ส.ค. 2019 เวลา 23:53 Reed, Pamela G - (preed) <preed@email.arizona.edu> เขียนว่า:

Connor-Davidson Resilience Scale

M Gmail

Permission request for using the Connor-Davidson Resilience Scale
5 ข้อความ

นฎา งามเหมาะ <tukkatan@gmail.com>
ถึง: mail@cd-risc.com

6 สิงหาคม 2562 13:

August 6, 2019
Dear Professor Davidson JRT

Subject: Permission request for using the Connor-Davidson Resilience Scale (CD-RISC-10)

My name is Ms. Nada Ngammoh and I'm a doctoral nursing candidate at the Faculty of Nursing, Burapha University, Thailand. My dissertation title is "A causal model of successful aging among older adults with kidney function decline ". My major advisor is Associate Professor Dr. Aporn Deenan. I have resilience is an independent variable and decide to use the Connor-Davidson Resilience Scale (CD-RISC-10) in this study.

With this respect, I would like to ask for your permission to use this instrument. Any suggestions, please fill free to let me know. I would be appreciated. I am looking forward to hearing from you soon.

Best Regards,
Ms. Nada Ngammoh
E-mail: tukkatan@gmail.com

--
Nada Ngammoh, MSN, RN
Ph.D. candidate,
Faculty of Nursing,
Burapha University
Thailand 20131

Jonathan Davidson, M.D. <jonathan.davidson@duke.edu>
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

6 สิงหาคม 2562 19:

Dear Nada:

Thank you for your inquiry. If you can kindly complete and return the two forms, with payment of the $10 student-rate fee, the Thai RISC-10 will be duly sent.

Sincerely,

Jonathan Davidson

From: นฎา งามเหมาะ <tukkatan@gmail.com>
Sent: Tuesday, August 6, 2019 2:50 AM
To: mail@cd-risc.com <mail@cd-risc.com>
Subject: Permission request for using the Connor-Davidson Resilience Scale

Gmail - Permission request for using the Connor-Davidson Resilience Scale

payment.jpg.png
146K

Jonathan Davidson, M.D. <jonathan.davidson@duke.edu>
ถึง: นฎา งามเหมาะ <tukkatan@gmail.com>

8 สิงหาคม 2562 20:

Dear Nada:

Thank you for your payment. It is with pleasure that I enclose the RISC-10 and manual.
Please let me know if you have further questions.

Sincerely,

Jonathan Davidson

From: นฎา งามเหมาะ <tukkatan@gmail.com>
Sent: Thursday, August 8, 2019 5:43 AM
To: Jonathan Davidson, M.D. <jonathan.davidson@duke.edu>
Subject: Re: Permission request for using the Connor-Davidson Resilience Scale

[ข้อความที่เกี่ยวข้องถูกซ่อนไว้]

เอกสารแนบ 2 ฉบับ

aRISC Manual 06-01-19_F.pdf
3680K

CD-RISC-10 Thai 03-09-13.pdf
69K

Health Survey Short Form-12 version 2

APPENDIX B

OPTUM™　　LICENSE AGREEMENT - DETAILS

Licensee: Burapha University Nada Ngammoh 169 Long-Hard Bangsaen Road Tambon Saensook, Amphur Muang Chon Buri, 20131	License Number: QM050587 Amendment to: N/A Study Term: 09/30/19 to 08/30/20 Master License Term: N/A

Approved Purpose A causal model of successful aging among older adults with kidney function decline.	Study Name: Student Thesis/Dissertatio Protocol: Govt. ID: Study Type: Clients Reference:

Licensed Surveys (Modes) and Services:

Item	Description	Mode of Admin	Quant
SS505	PRO CoRE Annual Licensing Fee Up to the maximun number of Participants below		
ES0170	SF-12v2, Self-Reported, 4-Week Recall	Paper	

Approved Languages:
Thailand (Thai)

IS0170	SF-12v2 Interviewer Script	Interview Script	

Approved Languages:
Thailand (Thai)

ADM012	Patient Enrolled Annually	3
ADMINS	Administrations (350 x 1) round to nearest 100	4
SS517	Keys to score the SF-12v2	4
SS805	Keys to Recover Missing Scores	4
SS806	Data Quality Evaluation Report	4
IT0105	Timepoints	
EM126	SF-12v2 User's Manual 3rd Ed.	

Approved Languages:

APPENDIX E

Committee and translator

Committee and translator

1. Assistant Professor Dr. Choochart Wong-Anuchit

   Psychiatric and Mental Health Nursing Division, Faculty of Nursing,

   Mahasarakham University

2. Assistant Professor Dr. Naiyana Piphatvanitcha

   Department of Gerontological Nursing, Faculty of Nursing, Burapha University

3. Suwattana Kumsuk Ph.D., RN.

   Department of Community Health Nursing, Boromarajonani College of Nursing,

   Nakhon Lampang

4. Samoraphop Banharak Ph.D., RN.

   Department of Gerontological Nursing, Faculty of Nursing, Khon Kaen University

5. Tany Thaniyavarn, M.D.

   Medical Instructor, Department of Medicine, Brigham and Women's Hospital,

   Harvard Medical School, Boston, MA

ที่ อว ๘๑๐๖/๐๕๗๖

มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์
๑๖๙ ถนนลงหาดบางแสน ตำบลแสนสุข
อำเภอเมือง จังหวัดชลบุรี ๒๐๑๓๑

๑๖ สิงหาคม ๒๕๖๒

เรื่อง ขออนุญาตเชิญบุคลากรในสังกัดเป็นผู้ทรงคุณวุฒิในการแปลเครื่องมือเพื่อการวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยขอนแก่น

สิ่งที่ส่งมาด้วย   เครื่องมือที่ใช้ในการวิจัย

       ด้วย นางสาวนภา งามเหมาะ รหัสประจำตัว ๖๐๘๑๐๐๓๔ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต
สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครง
ดุษฎีนิพนธ์ เรื่อง "A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER ADULTS WITH
KIDNEY FUNCTION DECLINE" โดยมี รองศาสตราจารย์ ดร.อาภรณ์ ดีนาน เป็นประธานกรรมการควบคุม
ดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือเพื่อการเก็บรวบรวมข้อมูล

       เนื่องจาก อาจารย์ ดร.สมรภพ บรรหารักษ์ บุคลากรในสังกัดของท่านเป็นผู้มีความเชี่ยวชาญ และ
ประสบการณ์สูง ในการนี้ คณะฯ จึงขอเรียนเชิญเป็นผู้ทรงคุณวุฒิในการแปลเครื่องมือเพื่อการวิจัยจาก
ภาษาอังกฤษเป็นภาษาไทยของนิสิต จำนวน ๑ เครื่องมือ คือ Successful Aging Inventory (SAI) ทั้งนี้ หาก
ท่านมีปัญหาหรือต้องการข้อมูลเพิ่มเติม โปรดติดต่อผู้วิจัยได้ที่ โทร ๐๘ ๑๕๒๓ ๘๒๗๒

       จึงเรียนมาเพื่อโปรดพิจารณาอนุญาตด้วย จะเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.นิสากร กรุงไกรเพชร)
รองคณบดีฝ่ายวิชาการ รักษาการแทน
คณบดีคณะพยาบาลศาสตร์ ปฏิบัติการแทน
ผู้รักษาการแทน อธิการบดีมหาวิทยาลัยบูรพา

งานบริการการศึกษา (บัณฑิตศึกษา) กลุ่มงานการบริการการศึกษาและวิเทศสัมพันธ์
โทรศัพท์ (๐๓๘) ๑๐๒๘๓๖, ๑๐๒๘๐๘
โทรสาร (๐๓๘) ๓๙๓๔๗๖
สำเนาเรียน อาจารย์ ดร.สมรภพ บรรหารักษ์

Office of the International Strategic Affairs
Faculty of Nursing, Burapha University
169 Longhaad Bangsaen Rd., Chon Buri, THAILAND 20131
Tel : +66-38102 808 Fax: +66-3839 3476

MHESI 8106/ 0522

August 30th, 2019

Tany Thaniyavarn, M.D.
Brigham and Women's Hospital
Harvard University
PBB Clinic 3, Pulmonary and Critical Care Division
75 Francis Street,
Boston, MA 02115, USA

Subject: Invitation to be the translator of research instruments

To Tany Thaniyavarn, M.D.

Ms. Nada Ngammoh is a PhD candidate at Faculty of Nursing, Burapha University, Thailand.
Presently, she is in the process of preparing instruments to be used for her research entitled
"A causal model of successful aging among older adults with kidney function decline" under
the supervision of Associate Professor Dr. Aporn Deenan.

In this regard, I am writing to invite you who have an expertise and experience in this field
to kindly translate her research questionnaires from Thai language to English language .
The name of research questionnaire is Successful Again Inventory (SAI).

Your kind cooperation for this matter will be highly appreciated. Further information needed
please contact Ms. Nada Ngammoh at tukkatan@gmail.com.

Yours sincerely,

Pornchai Jullamate, RN, Ph.D.
Assistant Professor & Dean
Faculty of Nursing, Burapha University
Chon Buri, 20131, THAILAND
E-mail: pornchai@buu.ac.th
Tel: 66 38 102 809
Fax: 66 38 393 476

ที่ อว ๘๑๐๖/๐๕๗๑

มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์
๑๖๙ ถนนลงหาดบางแสน ตำบลแสนสุข
อำเภอเมือง จังหวัดชลบุรี ๒๐๑๓๑

๙ กันยายน ๒๕๖๒

เรื่อง ขออนุญาตเชิญบุคลากรในสังกัดเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน ผู้อำนวยการวิทยาลัยพยาบาลบรมราชชนนี นครลำปาง

      ด้วย นางสาวนฎา งามเหมาะ รหัสประจำตัว ๖๐๘๑๐๐๓๔ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต
สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครง
ดุษฎีนิพนธ์ เรื่อง "A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER ADULTS WITH
KIDNEY FUNCTION DECLINE" โดยมี รองศาสตราจารย์ ดร.อาภรณ์ ดีนาน เป็นประธานกรรมการควบคุม
ดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย

      เนื่องจาก อาจารย์ ดร.สุวัฒนา คำสุข บุคลากรในสังกัดของท่านเป็นผู้มีความเชี่ยวชาญเกี่ยวกับการ
วิจัยดังกล่าวอย่างดียิ่ง ในการนี้ คณะฯ จึงขออนุญาตเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของ
เครื่องมือการวิจัยของนิสิต

      จึงเรียนมาเพื่อโปรดพิจารณาอนุญาตด้วย จะเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์ ปฏิบัติการแทน
ผู้รักษาการแทนอธิการบดีมหาวิทยาลัยบูรพา

งานบริการการศึกษา (บัณฑิตศึกษา)
โทรศัพท์ (๐๓๘) ๑๐๒๘๓๖, ๑๐๒๘๗๕
โทรสาร (๐๓๘) ๓๓๓๔๗๖
สำเนาเรียน อาจารย์ ดร.สุวัฒนา คำสุข

ที่ อว ๘๑๐๖/๐๕๙๐

มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์
๑๖๙ ถนนลงหาดบางแสน ตำบลแสนสุข
อำเภอเมือง จังหวัดชลบุรี ๒๐๑๓๑

๙ กันยายน ๒๕๖๒

เรื่อง ขออนุญาตเชิญบุคลากรในสังกัดเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยมหาสารคาม

         ด้วย นางสาวนฎา งามเหมาะ รหัสประจำตัว ๖๐๘๑๐๐๓๔ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต
สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครง
ดุษฎีนิพนธ์ เรื่อง "A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER ADULTS WITH
KIDNEY FUNCTION DECLINE" โดยมี รองศาสตราจารย์ ดร.อาภรณ์ ดีนาน เป็นประธานกรรมการควบคุม
ดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย

         เนื่องจาก ผู้ช่วยศาสตราจารย์ ดร.ชูชาติ วงศ์อนุชิต บุคลากรในสังกัดของท่านเป็นผู้มีความ
เชี่ยวชาญเกี่ยวกับการวิจัยดังกล่าวอย่างดียิ่ง ในการนี้ คณะฯ จึงขออนุญาตเชิญเป็นผู้ตรวจสอบความตรง
ตามเนื้อหาของเครื่องมือการวิจัยของนิสิต

         จึงเรียนมาเพื่อโปรดพิจารณาอนุญาตด้วย จะเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์ ปฏิบัติการแทน
ผู้รักษาการแทนอธิการบดีมหาวิทยาลัยบูรพา

งานบริการการศึกษา (บัณฑิตศึกษา)
โทรศัพท์ (๐๓๘) ๑๐๒๘๓๖, ๑๐๒๘๗๕
โทรสาร (๐๓๘) ๓๙๓๔๗๖
สำเนาเรียน ผู้ช่วยศาสตราจารย์ ดร.ชูชาติ วงศ์อนุชิต

บันทึกข้อความ

ส่วนงาน มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์ งานบริการการศึกษา (บัณฑิตศึกษา) โทร ๒๘๓๖

ที่ อว ๘๑๐๖/ ๑๗๒๘   **วันที่** ๙ กันยายน พ.ศ. ๒๕๖๒

เรื่อง ขอเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.นัยนา พิพัฒน์วณิชชา

        ด้วย นางสาวนภา งามเหมาะ รหัสประจำตัว ๖๐๘๑๐๐๓๔ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครง ดุษฎีนิพนธ์ เรื่อง "A CAUSAL MODEL OF SUCCESSFUL AGING AMONG OLDER ADULTS WITH KIDNEY FUNCTION DECLINE" โดยมี รองศาสตราจารย์ ดร.อาภรณ์ ดีนาน เป็นประธานกรรมการควบคุม ดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย

        เนื่องจากท่านเป็นผู้มีความเชี่ยวชาญเกี่ยวกับการวิจัยดังกล่าวอย่างดียิ่ง ในการนี้ คณะฯ จึงขอ เชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัยของนิสิต

        จึงเรียนมาเพื่อโปรดพิจารณาเป็นผู้ตรวจสอบฯ ดังกล่าวด้วย จะเป็นพระคุณยิ่ง

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์

APPENDIX F

Evaluation of assumptions

Evaluation of assumptions

Tables 7 Test of missing data in the study variables ($n = 350$)

Variables	Cases					
	Valid		Missing		Total	
	n	*%*	*n*	*%*	*n*	*%*
Patient's age	350	100.0%	0	0.0%	350	100.0%
GFR decline	350	100.0%	0	0.0%	350	100.0%
Successful aging	350	100.0%	0	0.0%	350	100.0%
Optimism	350	100.0%	0	0.0%	350	100.0%
Resilience	350	100.0%	0	0.0%	350	100.0%
Self-transcendence	350	100.0%	0	0.0%	350	100.0%
Self-efficacy to control KFD	350	100.0%	0	0.0%	350	100.0%
Perception of health status	350	100.0%	0	0.0%	350	100.0%
Depression	350	100.0%	0	0.0%	350	100.0%

The results showed that there were no missing data.

Tables 8 Test of outliers by Z-score in the study variables ($n = 350$)

Variables	*n*	Minimum	Maximum	Conclusion
Patient's age	350	-1.90	3.64	Outlier
GFR decline	350	-1.89	1.33	No outlier
Successful aging	350	-2.71	1.65	No outlier
Optimism	350	-2.61	1.41	No outlier
Resilience	350	-2.78	1.07	No outlier
Self-transcendence	350	-3.00	1.49	No outlier
Self-efficacy to control KFD	350	-2.85	1.98	No outlier
Perception of health status	350	-3.28	1.48	No outlier
Depression	350	-1.77	3.64	Outlier

If Z-score of each variable < -3.29 or > +3.29 = outlier

The results showed that there were six univariate outliers, including patient's age (no. 208 had z-scores was 3.64) and depression (no. 318, 218, 219, 60, and 143 had z-scores was 3.64). Then, take note of six univariate outliers to see in the next step of multivariate assessments.

Tables 9 Test of multivariate outliers of the study variables ($n = 350$)

	n	Minimum	Maximum
Probability of mah_1	350	.000	.997
Valid N (listwise)	350		

Tables 10 Test of multivariate outliers of study variables after eliminated ($n = 346$)

	n	Minimum	Maximum
Probability of mah_2	346	.002	.997
Valid N (listwise)	346		

Test by the probability of Mahalanobis (Probability of mah_1) $< .001$, found that four outliers, including no. 29 = .000, 309 = .000, 318 = .000, and no. 284 = .000. Therefore, it eliminated 4 cases of multivariate outliers from raw data. Consequently, 346 cases used to test the distribution of normality, linearity, and multicollinearity.

Tables 11 Test of normality of the study variables ($n = 346$)

Variables	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Patient's age	.228	.131	-.140	.261
GFR decline	-.411	.131	-1.005	.261
Depression	1.129	.131	2.100	.261
Optimism	-.459	.131	-.662	.261
Resilience	-.823	.131	-.304	.261
Self-transcendence	-.681	.131	-.263	.261
Self-efficacy to control KFD	-.479	.131	-.072	.261
Perception of health status	-.882	.131	.091	.261
Successful aging	-.596	.131	-.392	.261

Hair et al. (2019) indicated that if skew index > 3, described as extremely skewed and kurtosis index > 10, have a problem and absolute values of kurtosis index > 20 indicated a more serious one. Normality can have severe effects in small samples (fewer than 50 cases), but the impact effectively diminishes when sample sizes reach 200 cases or more (Kline, 2016). This study had sample sizes of 346 cases that tend to reduce the detrimental effects of non-normality (Hair et al., 2014).

Tables 12 Testing for multicollinearity of the study variables ($n = 346$)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-3.92	4.28		-.92	.36		
Patient's age	.06	.04	.05	1.44	.15	.86	1.17
GFR decline	.02	.02	.03	.82	.42	.87	1.15
Depression	.19	.25	.03	.74	.46	.67	1.48
Optimism	.39	.11	.15	3.63	.00	.53	1.89
Resilience	.55	.10	.31	5.66	.00	.29	3.46
Self-transcendence	.55	.08	.37	6.52	.00	.28	3.57
Self-efficacy	.01	.01	.03	.67	.51	.56	1.78
Perception of health status	.15	.06	.11	2.65	.01	.53	1.89

a. Dependent Variable: Successful aging

The test results showed that a tolerance value had a range from .28 to .87 that no tolerance values less than .20, and VIF values had ranged from 1.15 to 3.57, which no higher than 4. Consequently, no evidence of multicollinearity had found among the study variables**.**

APPENDIX G

The measurement model assessment

<center>**Measurement model**</center>

1. The measurement model of successful aging

The seven following models were tested in this study. In the first model, the measurement model of successful aging consists of 5 observed variables, including function performance mechanism [FPM], intrapsychic factors [IPF], spirituality [SPT], gerotranscendence [GTS], and purposefulness/ life satisfaction [PFLS]. The results of the EFA, as presented in Figure 4.
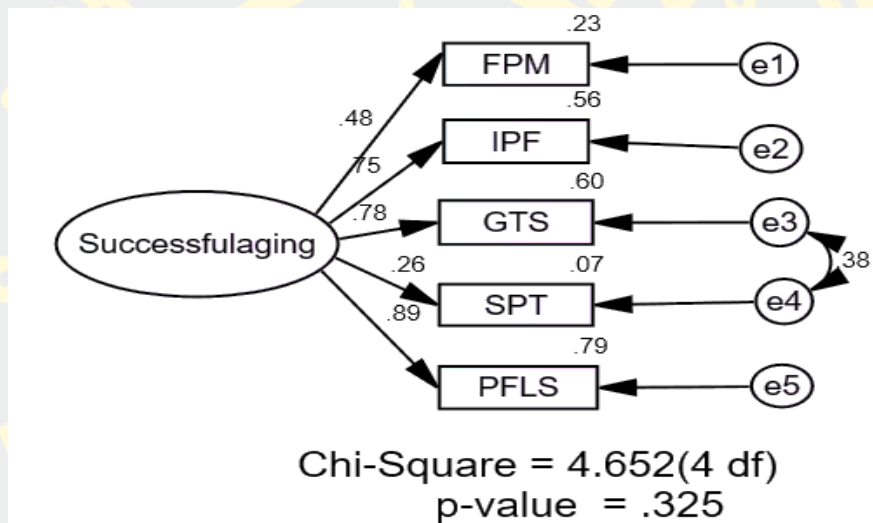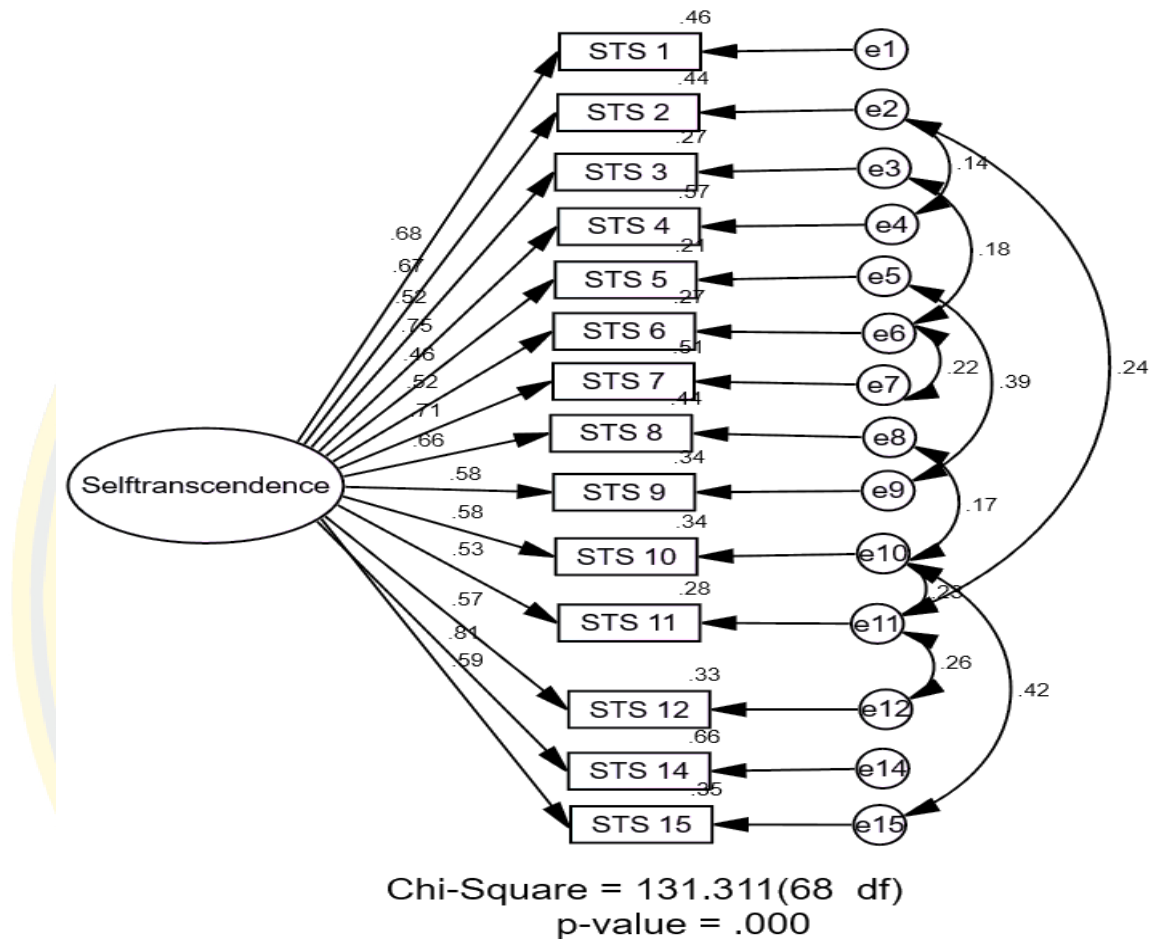

Figures 4 The measurement model of successful aging

2. The measurement model of self-transcendence

The measurement model of self-transcendence consists of 15 observe variables including STS 1 = having hobbies or interests can enjoy; STS 2 = accepting myself as I grow older; STS 3 = being involved with other people or my community when possible; STS 4 = adjusting well to my present life situation; STS 5 = adjusting to changes in my physical abilities; STS 6 = sharing my wisdom or experience with others; STS 7 = finding meaning in my past experiences; STS 8 = helping others in some way; STS 9 = having an ongoing interest in learning; STS 10 = able to move beyond some things that once seemed so important; STS 11 = accepting death as a part of life; STS 12 = finding meaning in my spiritual beliefs; STS 13 = letting

others help me when I may need it; STS 14 = enjoying my pace of life, and STS 15 = letting go of past regrets. The results of EFA, as presented in Figure 5.

Figures 5 The measurement model of self-transcendence
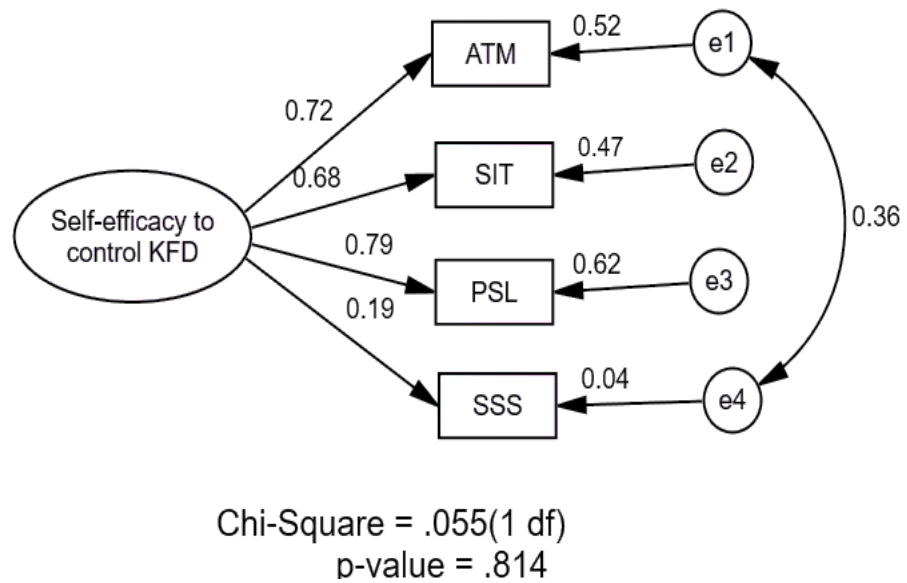
3. The measurement model of optimism

The measurement model of optimism consists of 6 observe variables including LOTR 1 = In uncertain times; I usually expect the best; LOTR 3 = If something can go wrong for me, it will; LOTR 4 = I'm always optimistic about my future; LOTR 7 = I hardly ever expect things to go my way; LOTR 9 = I rarely count on good things happening to me; and LOTR 10 = Overall, I expect more good things to happen to me than bad. The results of EFA, as presented in Figure 6.
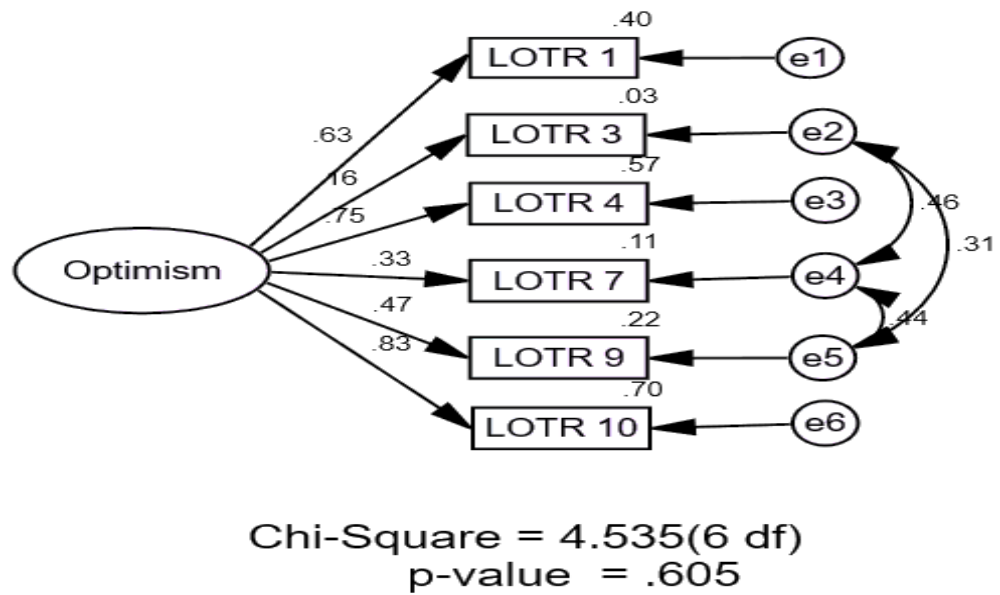
Figures 6 The measurement model of optimism

## 4. The measurement model of self-efficacy to control KFD

The measurement model of self-efficacy to control KFD consists of 4 observed variables, including autonomy [ATM], self-integration [SIT], problem-solving [PSL], seeking social support [SSS]. The results of EFA, as presented in Figure 7.

Figures 7 The measurement model of self-efficacy to control KFD
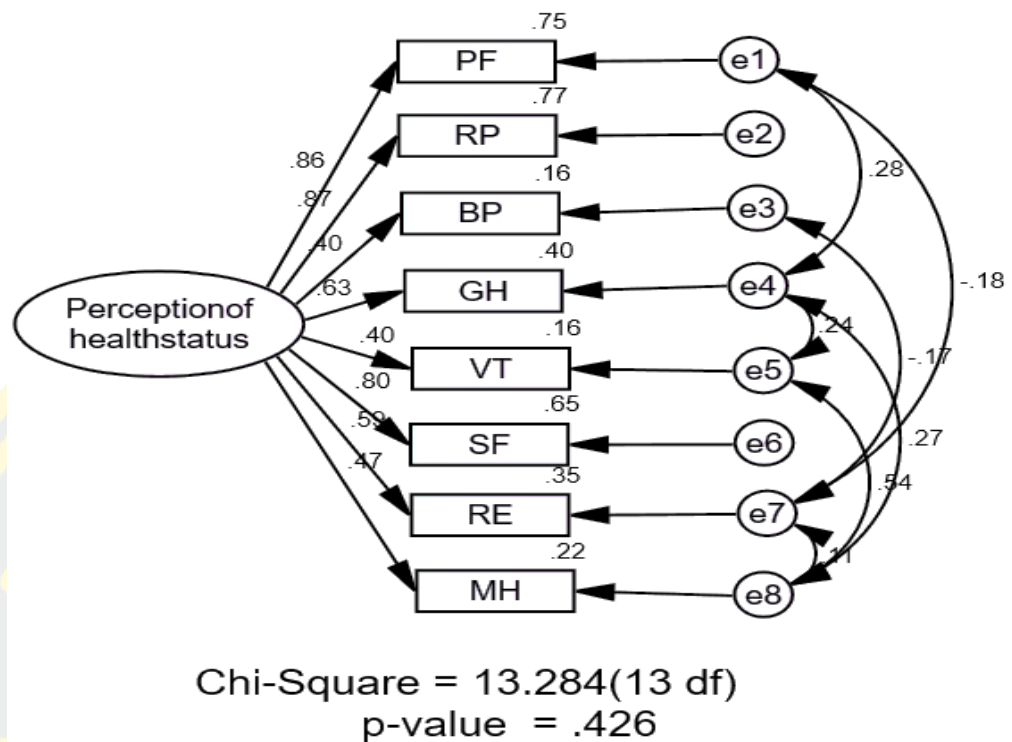
5. The measurement model of resilience

The measurement model of resilience consists of 10 observe variables including CDRISC 1 = able to adapt to change; CDRISC 2 = can deal with whatever comes; CDRISC 3 = tries to see humorous side of problems; CDRISC 4 = coping with stress can strengthen me; CDRISC 5 = tends to bounce back after illness or hardship; CDRISC 6 = can achieve goals despite obstacles; CDRISC 7 = can stay focused under pressure; CDRISC 8 = not easily discouraged by failure; CDRISC 9 = thinks of self as a strong person; and CDRISC 10 = can handle unpleasant feelings. The results of EFA, as presented in Figure 8.
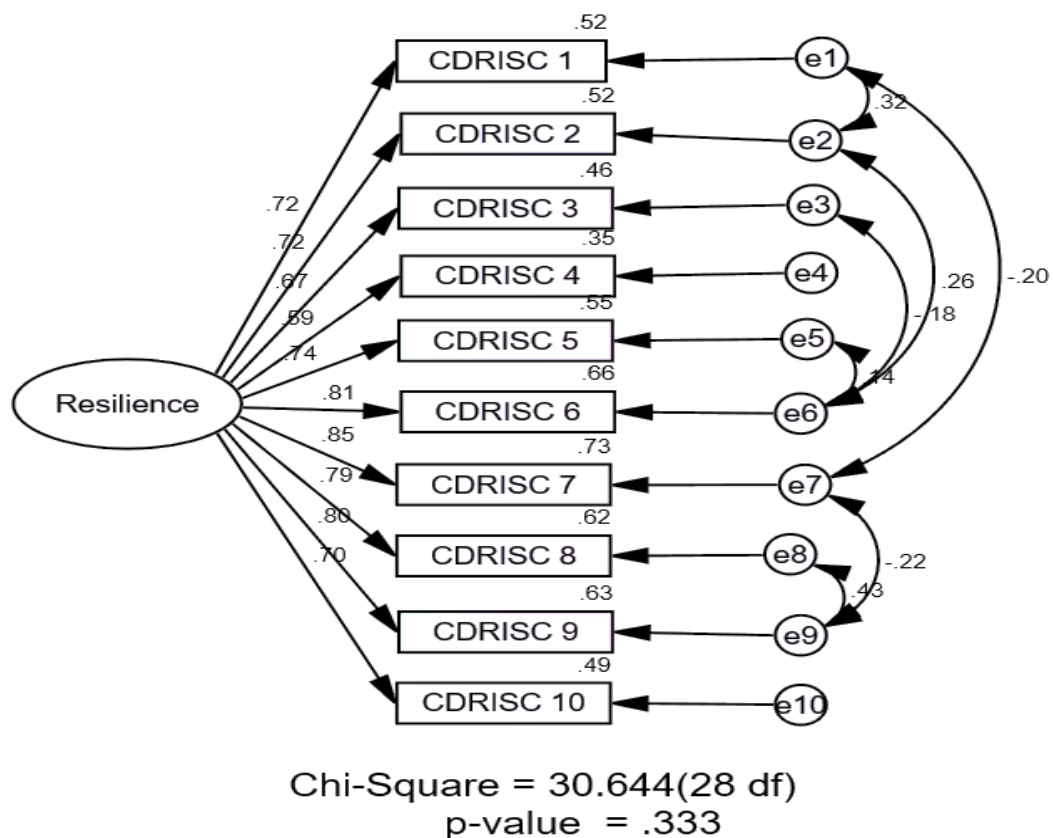
Figures 8 The measurement model of resilience

6. The measurement model of perception of health status

The measurement model of perception of health status consists of 8 observe variables including physical functioning [PF], role physical [RP], bodily pain [BP], general health [GH], vitality [VT], social functioning [SF], role emotional [RE], and mental health [MH]. The results of the EFA presented in Figure 9.

Figures 9 The measurement model of perception of health status

7. The measurement model of depression

The measurement model did not fit the data well (CMIN = 380.81, df = 90, p =.00, CMIN/df = 4.23, GFI = .87, AGFI =.82, NFI = .44, CFI = .50, and RMSEA = .10). Next, the researcher ran exploratory factor analysis. Kaiser-Meyer-Olkin statistic (KMO = .66) and Bartlett's test of sphericity ($\chi2$ = 669.52, df = 105, p = .000) indicated that factor analysis was appropriate for these items. The results showed five factors had eigenvalues over one (2.68, 1.60, 1.47, 1.29, and 1.14, respectively). Thus, the researcher decided to select a 4-factor solution because it was the most conceptually interpretable. Also, the total variances explained was 47.00%.

After analyzing EFA, the researcher removed 1 item, including prefer staying home to going out (GDS 9) because these items did not conceptually match the other items of the scale. Finally, the measurement model of depression consists of four subscales with fourteen items; hopelessness [HLN], dissatisfaction [DSF], apathy [APT], and inattentiveness [INT]. The results of the EFA, as presented in Table 13.

Tables 13 Final factor loadings of depression ($n = 346$)

	Component			
	Hopelessness	Dissatisfaction	Apathy	Inattentive
GDS 8	.738			
GDS 14	.700			
GDS 12	.525			
GDS 3	.462			
GDS 1		.801		
GDS 11		.701		
GDS 7		.593		
GDS 6		.325		
GDS 13			-.810	
GDS 2			.781	
GDS 4			.520	
GDS 5				.795
GDS 10				.553
GDS 15				.371

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 5 iterations.
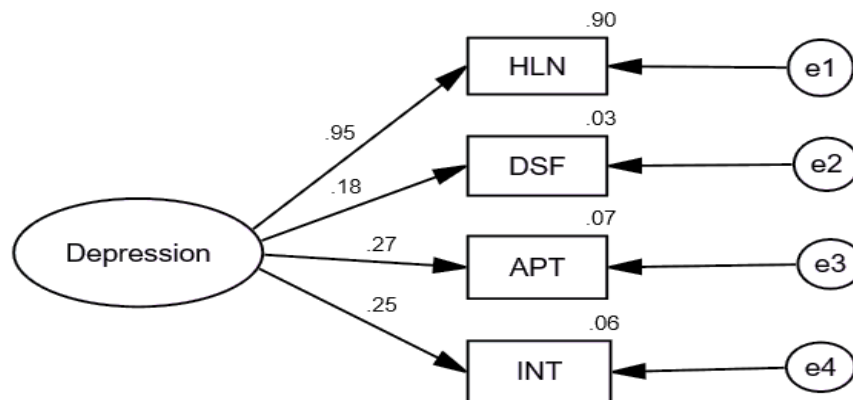
Figures 10 The measurement model of depression

All 4 subscales had positive standardized factor loading ranging from .18 to .95. Final measurement model fit the data well (CMIN = 4.97, df = 2, p =.08, CMIN/df = 2.49, GFI = .99, AGFI = .96, NFI = .92, CFI = .94, and RMSEA = .06).

BIOGRAPHY

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