MIXED METHOD INQUIRY ON SECURE ATTACHMENT AND ITS CAUSALITY IN CAREGIVERS OF OLDER ADULTS LIVING AT HOME

BY

MISS ONUMA KAEWKERD

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

THE DOCTOR OF PHILOSOPHY (NURSING SCIENCE)

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was approved as partial fulfillment of the requirements for
the degree of doctor of philosophy (nursing science)
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ABSTRACT

Secure attachment in informal caregivers is important for the care of older adults at home. Caregivers who have secure attachments can effectively provide care for older adults. Most older adults need someone to care for them for a long period with the promotion of aging in place policy. This study used a sequential explanatory mixed methods design. The data collection period was from December 23, 2019 - April 23, 2020. There were 2 phases of the study.

Phase 1: The quantitative study aimed to identify the factors predicting secure attachment in caregivers of older adults living at home using a cross-sectional study. The sample random sampling technique was employed, and 140 participants who were informal caregivers of older adults living at home (n = 140) were selected. The research instruments were 1) the questionnaire on personal information; 2) the measurement of caregivers' satisfaction; 3) the measurement of caregivers' empathy; 4) the measurement of caregivers' health status and 5) the measurement of caregivers' attachment. Five experts in the field considered all measurements. The reliabilities of four measurements were verified by applying Cronbach's alpha coefficient, which were 0.83,0.70, 0.82 and 0.74. The results revealed that caregivers' health status can be considered the strongest predictor ($\beta = .362$, $t = 5.208$, $p < .001$***) of the secure attachment, followed by caregivers' satisfaction, gender (female), and caregivers'

empathy. These predictor variables were accounted for 42.0% of the variance of in secure attachment among informal caregivers.

Phase 2: The qualitative study aimed to gain an in-depth understanding of caregivers' perceptions. Ten participants were included in this phase. The results revealed 2 themes. Theme 1 was the meaning of secure attachment, which included: 1) providing good care and 2) connection with older adults. Theme 2 was the factors affecting secure attachment included sub themes, including 1) gender: being female affected secure attachment; 2) caregivers' satisfaction affected secure attachment; 3) caregivers' empathy affected secure attachment and 4) caregivers' health status affected secure attachment.

For suggestions, health care teams, and nurses should promote good health status in caregivers caring for older adults in order to help informal caregivers to have security and effectively help older adults.

Keywords: Mixed method, Predictor factors, Secure attachment, Caregivers, Older adults

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Miss Onuma Kaewkerd

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LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
GEN	Gender
OCCU	Occupation
ECO1	Sufficient income, but not enough for savings
ECO2	Sufficient income for savings
TS	Caregivers' satisfaction
TEM	Caregivers' empathy
TH	Caregivers' health status
TIME1	Length of time spent providing care = 8-14 hours/day
TIME2	Length of time spent providing care = 15-21 hours/day
TIME3	Length of time spent providing care = 22-24 hours
TSE	Secure attachment style of informal caregivers

CHAPTER 1

INTRODUCTION

1.1 Background and Significance

An older adult is defined as an individual who is aged 60 and over (Ministry of Public Health, Thailand, 2012; Prasartkul, 2013, 2014). The increase in the older population is a global trend. Advances in medical technology and the impact of decreasing fertility and mortality rates have led to increased longevity for Thai people. Importantly, there are factors that can be directly attributed to increasing the numbers of older adults.Statistically, Thailand's older adult population has grown from 7.2 million in 2010 with a current projection of 11 million by 2020 (World Health Organization [WHO], 2015). Thailand ranks just after Singapore regarding having an aging society. According to the trend, in 2021, older adults will outnumber children (Kasemsup et al., 2016). Consequently, the size of the population group aged 60 years and over is expected to be larger than the number of children and adolescents under 15 years of age. Based on Thailand's population estimated from 2015, Thailand is considered an "aging society," and will become an aged society (Artsanthia & Pomthong, 2018). Aging causes deterioration. Cconsequently, all older adults have increased physical, mental, and psychosocial health problems, such as chronic diseases or disabilities, loss of a spouse and children or family members, retirement and reduced income (Lee et al., 2016). In Thailand, there are many established long term care systems, for example, there are nursing homes for older adults and there are services that send staff to perform home care. The government has increased expenditures on these services. In most households, the caregivers of older adults are relatives. Some have to quit their jobs, and many of them hire foreign workers to take care of their older adults. This is a large, burdensome issue for families to bear, and solutions are needed. Nowadays, the trend is for Thai families to switch from an extended family to a single-family living situation. Each family has fewer children. Women have to work outside the home more, and parents rely less on their children. Domestic caregivers or servants are also more difficult to find. Therefore, caregivers

are important for older adults in Thai society (Artsanthia & Pomthong, 2018; Jones et al., 2011). Moreover, it should be further noted that the majority of older Thai adults face psychosocial, mental, and physical heath issues, including acute illnesses, loss of loved ones, diminishing income, chronic illnesses, impairments/disabilities, and retirement (Lee et al., 2016). Therefore, older adults need someone to help. They also need reliable caregivers who are mature and have stable mental health to take care of them at home before they pass away. Additionally, reliable people for older adults tend to be the people who older adults have a close relationship with and feel comfortable asking for supports and are able to sustain strong long-term relationships (Pinijvicha, 2015).

Attachment style is a perception of self and others. In addition, it is the way a person forms relationship with others (Pinijvicha, 2015; Tantong, 2005). There is still no clear evidence about how to connect caregivers with older adults to provide long-term care for the older population.Having a secure feeling of attachment between caregiver and care-receiver is important to better understand successful relationships. Therefore, determining the factors affecting the attachment bond of unpaid caregivers or informal caregivers is important. Attachment style between them is also important. The concept of attachment style expressed by Bartholomew and Horowitz (1991) is based on the following types of attachments; (a) security attachment style, or secure attachment, which refers to attachments characterized by positive perceptions of self and others, or a sense of self-worth, affection, recognition, and approval; (b) preoccupied attachment style, which refers to where one person has negative “self-perception” and the other’s is positive, consequently they feel anxious about the relationship; (c) dismissing attachment style, which refers to situations characterized positive thoughts about the self but negative thoughts about others and (d) fearful attachment style mischaracterized by a negative image of self and others, such as feelings of continual unworthiness and the belief that others are unreliable. The last style tends to cause people to refuse assistance from others. Caregivers may have a superficial relationship because of anticipation of disappointment, leading to a fearful attachment style related to negative views of self and others, thus leading them to avoid having a relationship because they fear rejection.

Personality types and attachment styles are important to relationship experiences among caregivers and older adults. Many studies have focused on secure attachment type and noted the significance of good relationships among caregivers and older adults (Imthanavanich, 2002; Tantong, 2005; Wongpakaran et al., 2011). The secure attachment of caregivers in caring for people is important because it makes caregivers feel comfortable, flexible and autonomous, and increase self-esteem, leading to feeling secure to have contact with other persons, especially older adults under their care (Cicirelli, 2010; Jeramaz, 1999).

The aging population in the northeastern region of Thailand where aging residents are confronted with a large number of barriers to older adult health and well-being, is rapidly growing. Thus, the promotion of healthy aging requires aging in place (Manasatchakun et al., 2017). Interestingly, aging in place has been the goal of many policymakers and academics in an attempt to understand and promote healthy aging. Therefore, aging in place is a key issue in supporting older adults' enhanced independence and well-being. At the same time, redefining health and social policies for older adults also requires support. Similarly, aging in place policies focus on supporting older adults to live in their own homes and community settings for increased quality of life, activities and independence. Normally, living at home of older adults will maintain a warm and good relationship with their family members. Based on this policy, caregivers are the key persons who help support older adults to be able to live well in their homes and decrease the number of older adults residing in nursing homes. Thus, aging in place results in better health outcomes than institutionalization in nursing homes (Coleman et al., 2016; Sixsmith et al., 2014; Hillcoat-Nalletamby & Ogg, 2014; Tice et al., 2010; Eiamkanchanalai et al., 2017; Kane, 2017; Knodel, et al, 2015; Tao & McRoy, 2015). Well-being in older adults can generally be seen when older adults have a sense of attachment, a sense of connection, a sense of security and familiarity, a stable sense of identity, a sense of independence, and a sense of autonomy (Wiles et al., 2012).

In Thailand, older adult population is categorized by Thailand's ADL scale (Ministry of Public Health, Thailand, 2012) which includes the following three types of older adults: bedridden older adults, home-bound older adults, and socially-

well older adults, which can be further categorized as: totally dependent older adults, inter-dependent older adults, and independent older adults.

Bedridden older adults primarily refer to the people who are bedridden to their bed — or a hospital bed — due to a severe illness until they recover. Very old people may also be bedridden because of weakness or pain. Home-bound older adults refer to the individuals who are unable, or have extreme difficulty, going outside of their residence. Homebound older adults can be assessed by asking participants how often they have done activities outside their house. This status will be recognized when older adults are able to go out and have activities outside once a week or less. Another type of older adults are socially-well older adults, which is often referred to as social wellness. The quality of life among older people who are still engaged in their group Is significantly higher as a result of active social networking, and they typically have better physical health than those who are not engaged in the group.

Most older adults require caregivers, either formal (paid) or informal (unpaid) caregivers (Oliveiral & Pedreira, 2012). If older adults do not have caregivers, they may be residing in nursing homes. Thus, caregivers are important people for assisting older adults at home. Furthermore, caregivers face the daunting challenge of overcoming problems (Prasatkul, 2013). The population of older adults living alone increased from 6 percent to 9 percent from 2002 to 2014 (Prasartkul, 2014). Caregivers are the target group associated with older adults who are aging in place because secure emotional intelligence, emotional management, and personality are important in the exploration of relationships between caregivers and older adults. Moreover, caregivers who have security type relationships can adapt to burdens better (Goleman, 2002; Kaewkerd et al., 2018).

There are many types of caregivers of older adults. For example, formal caregivers are paid caregivers such as care workers, whereas informal caregivers are generally family members who are not paid for providing care. An unpaid caregiver or informal caregiver is a person involved in assisting others with activities of daily living and medical tasks without receiving payment, such as a spouse, a partner, a family member, a relative, a friend, or a neighbor. Primary informal caregivers are usually wives or spouses while secondary informal caregivers are usually daughters. Most caregivers are women because women tend to have more emotional attachment

and internal motivation to provide care (Prasartkul, 2014; Pope et al., 2012). However, unpaid caregivers for older adults have to face numerous major problems and experience many burdens arising from providing care. In the Thai context, older adults in Thailand require care and financial support from their children (Adhikari et al., 2011). In Thailand, and other Asian countries, there is an obligation for relatives to take care of older adults due to cultural values and filial responsibility (Wang et al., 2012).

The majority of aging people in the north region. Older people in the upper northeastern region of Thailand is the fifth ranking of older of Thailand of Thailand (Department of Provincial Administration, 2017), accounted for 17.30%.They are poor and residing in a nursing home, which is expensive. As a result, caregivers in this region play an important role in providing care for older adult family members at home to reduce cost. In terms of family culture and lifestyle of the upper northeastern region, a study about family relationships in rural areas in the upper northeastern region of Thailand pointed out that active older adults can be encountered in several generation familial relationships accompanied by lifestyles with the main roles, such as house keeping, doing gardening, looking after their grandchildren, being undertaken by aging or older adults. The upper northeastern region is rapidly changing into an aging society and having the same culture and lifestyle. The impact from dependency of the population is that there is not enough welfare from the government to support the elderly at home. The informal caregivers who are living at the same house with the older adults have the main role in caring for older adults.

Therefore, secure attachment style caregivers are important in providing long-term care and supporting for older adults at home (Hornboonherm et al., 2009; Nantsupawat et al., 2010). The study also pointed out that these caregivers felt that their support to continue caring for their older adults was secure. However, as the number of children who were insecure about their future decreased, the number of older adults living alone or with spouses increased. Most children in the three generations respected their elders, which led to aging in place. It is also important that they saw caregiving is an inevitable part of caring with love, compassion, filial affection, and encouragement provided by the immediate and extended families of the caregivers. Consequently, caregivers, particularly informal caregivers, who are family members, may face several problems or burdens in caring for their older adult relatives.

The secure attachment of caregivers is important to providing long-term care for older adults at home because caregivers feeling secure leads to confidence, high self-esteem, and autonomy. Therefore, secure attachment style caregivers can promote good relationships and successfully contribute to older adults living at home with improved quality of life (Harrefors et al., 2009; Oliveiral & Pedreira, 2012). However, the effects of the secure attachment of caregivers in caring for older recipients need to be explored.

No previous studies on the secure attachment of caregivers of older adult family members in Thailand could be found. There were also no study reports focusing on caregivers of older adults, and there were few studies about other related dimensions, such as attachment styles in students (Khodabakhsh, 2012; Pinijvicha, 2015; Tantong, 2015). However, a study was conducted on the attachment styles affecting individual conflict management behaviors among Thai workers. There was also a study that was conducted to take a closer look at the correlations among the following: 1) self-esteem; 2) romantic relationships; 3) attachment style (secure, preoccupied, afraid, or dismissive) and 4) attachment dimension (anxiety and avoidance). The determinants mentioned above included length, status, and satisfaction in relationships among Thai young people (Siriwarasai, 1993; Sriyothin & Maneesri, 2016; Wongpakaran et al., 2011). In Thailand, there is inadequate knowledge about the secure attachment of caregivers of older adults. Many studies have focused on couples or married relationships, children, and students. Therefore, the study of secure attachment of the adults who care for older family members needs to be explored. Researchers need more knowledge about secure attachment in adults to promote the relationships between caregivers and older family members at home. The limitation of the prior studies also included a lack of variables associated with the secure attachment of the caregivers caring for older adults in Thailand. To address this literature gap, this study will focus on a mixed method inquiry of secure attachment in the caregivers of older adults living at home.

According to the literature review, there are many factors affecting the secure attachment personality among unpaid-caregivers caring for older adults living at home, including gender, occupation, economic status, length of time spent providing care, satisfaction, empathy, and caregivers' health status (Donprapeng,

2006; Eiamkanchanalai et al., 2017; Eisenberg, 2000; Hunhaboon, 2008; Kao, 2003; Kim & Waite, 2014; Lee & Waite, 2010; Makmee, 2016; Nantsupawat et al., 2010; National Alliance for Caregiving & American Association of Retired Persons [AARP], 2009; Pewnil & Isarabhakdi, 2013; Pinijvicha, 2015; Sauter; 1996; Steadman et al., 2007; Stolz et al., 2004; Suvansri, 2008; Tao & McRoy, 2015). A good quality relationship with the family caregivers results in good satisfaction of un-paid caregivers, or secure caregivers, making older adults living at home feel warm. Hence, relationship quality among caregivers and older adults is important in their later life (Ayalon & Roziner, 2016). Caregivers who are satisfied with caring for older adults will not feel that caring for older adults is a burden (Bai, 2017; Coleman et al., 2016; Knodel & Chayovan, 2008; Siranee et al., 2016). Importantly, secure attachment style is essential for caregivers. Caregiving for partners, parents, children, and significant others can be a stressful experience and has been associated with psychosocial problems and poorer physical health. To support caregivers, understanding the factors associated with secure attachment of caregivers and the selected factors will help to promote caregivers in terms of flexibility and adaptation to care for their older adults.

Therefore, finding the factors and designing the strategies to support both caregivers and older adult care recipients at home are important for Thailand as it transits into an aging society (Eiamkanchanalai et al., 2017). Moreover, when both caregivers and care recipients perceive reciprocity, in these relationships, it may help maintain caregiving. To determine the effects of a caregiving relationship, longitudinal studies are required. Furthermore, observation of the relationship quality in caregiving is essential because such observation can affect decisions made in or to continue, providing care. However, it is important to understand the predictors for the secure attachment of caregivers and more deeply explore the attachment relationships among caregivers caring for older adults, as well as the main meanings of caregiving security, such as the strength of commitment to the caregiving relationships and the bonds of attachment, which promote aging in place.

Consequently, the researcher would build an understanding of the selected factors associated with secure attachment, based on the experiences of the caregivers caring for older adults, through the sharing of their opinions, experiences, and

perspectives. For this reason, both quantitative and qualitative approaches were combined for the research design of this study. The answers from the qualitative part would be integrated and more precisely explained by the quantitative part.

1.2 Philosophy inquiry

According to positivists, knowledge is universal, even absolute. On the contrary, constructivists posit the existence of something beyond fixed knowledge, whereas pragmatists suggest that knowledge within the realm of the non-positivist thought processes might be erroneous. Thus, positivists prefer using quantitative approaches to define reality. In contrast, constructivists prefer to employ qualitative approaches to interpret the phenomena studied. Meanwhile, pragmatists embrace mixed methods approaches which aim at avoiding any of the perceived shortcomings in the views posited by the positivist or constructivist perspectives (Guba, 1989; Johnson & Onwuegbuzie, 2004; Subedi, 2016). The researcher will use a quantitative method, followed by a qualitative approach to present the following paradigm.

Creswell and Clark (2011) explained the philosophy behind sequential explanatory design, where researchers use a postpositivist orientation to study the quantitative aspects of an issue. Then, for the qualitative aspects, various perspectives and in-depth – descriptions are used to create constructivist assumptions.

1.3 Research questions

1.What are the predictors of secure attachment in caregivers of older adults living at home?

2.What/how are the perceptions of caregivers that are related to secure attachment in caring for older adults living at home?

1.4 Research objectives

1. To identify the factors predicting secure attachment in caregivers of older adults living at home

2. To gain an in-depth understanding of the perceptions of caregivers who care for older adults living at home related to secure attachment.

1.5 Scope of Study

The dissertation aimed to identify the factors predicting secure attachment in caregivers of older adults living at home and gain an in-depth understanding of the perceptions of caregivers who care for older adults living at home related to secure attachment. The population were informal caregivers living in northeastern region of Thailand, including Nakhon Phanom Province, Loei Province, Sakon Nakhon Province and Nong Khai province.The data was collected from 23 December 2019 to 14 February 2020.

1.6 Research hypotheses

1.6.1 Caregiver characteristics, namely, gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers' empathy and caregivers' health status correlate with secure attachment in caregivers of older adults living at home.

1.6.2 Caregiver characteristics, namely, gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers' empathy and caregivers' health status explain secure attachment in caregivers of older adults living at home.

1.7 Operational definitions

1.7.1 Caregivers

Caregivers were defined as informal (unpaid) caregivers who had been providing care for an older adult at home (homebound or socially-well older adults) for at least three years, aged at least 18 years living in the northeastern region of Thailand.

1.7.2 Older adults living at home

Older adults living at home were defined as the persons aged 60 years or above who were homebound or socially-well older adults (classified by ADL) living in the upper northeastern region of Thailand.

1.7.3 Secure attachment

Secure attachment was defined as a caregiver's degree of connection and self -perception and perception of others, including secure style, dismissing style, preoccupied style and fearful style. Secure attachment was measured by Parapob's (2003) Attachment Style Questionnaire based on Bartholomew's Model of Attachment.

1.7.4 Gender

Gender was defined as the participant's self-identification of sex as male or female.

1.7.5 Occupation

Occupation was defined as a self-identification of the job characteristics. In this study, it would mean whether the informal healthcare giver was a professional or non-professional health care provider.

1.7.6 Economic status

Economic status was defined as the financial standing of caregivers related to having enough money for savings or not having enough money for savings.

1.7.7 Length of time spent providing care

Length of time spent providing care was defined as the number of hours per day that caregivers spent in caring for older adults. Length of time spent providing care of caregivers was classified into 4 categories, 1-6 hours per day, 7-12 hours per day, 13- 18 hours per day and 19-24 hours per day.

1.7.8 Caregivers' satisfaction

Caregivers' satisfaction was defined as the assessment of good feelings with own life as a whole and having a life that is close to the expected life. The caregivers were satisfied with life and seeing the importance of life and did not change their life from the original. The caregivers were satisfied with the experience that had passed into life and feeling happy and proud of themselves with everyday life. These aspects of caregivers' satisfaction would be measured by Satisfaction Scale (Chamsuk, 2013).

1.7.9 Caregivers' empathy

Caregivers' empathy was defined as caregivers' ability to understand and sense other people's emotions, thoughts, happiness, and difficulties. The empathy component was divided into 2 subcomponents: 1) affective empathy, which was the ability to experience another person'semotions, and 2) cognitive empathy, which was the ability to understand another person's perspectives and emotions by perceiving a situation from their frame of reference. This would be measured by applying the Thai version of the Basic Empathy Scale (Makmee, 2016).

1.7.10 Caregivers' health status

Caregivers' health status was defined as caregivers' perception of physical health, including physical pain and ability to perform daily activities (ADL), perceived independence/self-reliance, perceived ability to perform personal daily routines, perceived ability to work, perceived freedom from dependence on medications or other medical treatment, which could be measured by applied from Quality of Life Questionnaire (WHOQOL) constructed by the Thai Ministry of Public Health (Suanprung Psychiatric Hospital, Department of Mental Health, Ministry of Public Health, 2018).

1.8 Conceptual framework

According to Bowlby (Bowlby, 1988), early childhood experiences are the building blocks for developing cognitive relationships occurring later in life. In

truth, early childhood relationships serve as the foundation of subsequent development in childhood and into adulthood. Therefore, it can be concluded that secure attachments, or relationships, enable children to build self-reliance and trust in the people around them. Hence, children who have secure relationships, or attachments, tend to exhibit positive expectations for themselves and other people, in addition to living their lives confidently. Secure attachments further enable children to enjoy comfort and a high level of security (Bowlby, 1988). Moreover, children find security in a figure of attachment when they feel afraid or threatened. Thus, children rely upon this foundation of security in curiosity-led exploration and learning once the fear, or threats, they face have been eliminated, or at least relieved to a certain degree. In Thailand, most previous studies have been aimed at recognizing correlations between individual attachment or relationship styles and empathy. In a study, 450 subjects, who were undergraduate students at Chulalongkorn University, were selected for data collection using self-rating questionnaires. According to the findings, attachment, or relationship styles, were statistically and significantly associated with empathy.

Moreover, secure attachments, or relationships, have positive correlation with affective and cognitive empathy. According to other findings from the above-mentioned study, the presence of pre-occupied attachment or relationship, had a positive relationship with affective empathy. On the contrary, dismissive attachment was negatively correlated with affective empathy, while fearful attachment was found to be negatively correlated with cognitive empathy. The above study identified the characteristics of individual attachment styles in relation to two aspects of empathy and empathy development. At the same time, another study found that higher levels of anxious parental attachment correlated with increased relationship intimacy when adolescents had higher levels of anxious attachment (Chow et al., 2017).

Theoretically, these attachment models are considered to be more or less stable mental representations of attachment that will predictably determine a person's manner of responding to attachment-related situations and stimuli. Secure attachment styles correspond with greater intimacy, relationship interdependence, commitment, trust, and satisfaction in loving relationships.

Security in attachment theory is defined as a sense of self-worth with high degrees of trust and love. It can be concluded that Bartholomew's model of adult attachment has the potential for using as a good conceptual framework which aims at gaining an understanding of the diverse methods for coping with the aging process. Because autonomy is the main thrust of Bartholomew's description of a dismissive attachment style (Bartholomew & Horowitz, 1991), it appears that it may become a crucial issue as people grow older. In this study, Bartholomew's Attachment Theory (1991) was used with regard to the following components of attachment: (a) security-style, reflected by positive perceptions of self and others, or the sense of self-worth, affection, recognition and approval; (b) preoccupation-style, reflected by a negatively perceived self-image, but positive perceptions of others, such as having no sense of self-worth but positive perceptions about other people; (c) fearful-avoidance style, reflected by a negative image of self and others, such as feelings of continual unworthiness and the belief that others are unreliable; and (d) dismissive avoidance style, meaning a person with a positive view of self, but a negative view of others, such as feelings of worthiness and unworthiness toward others.

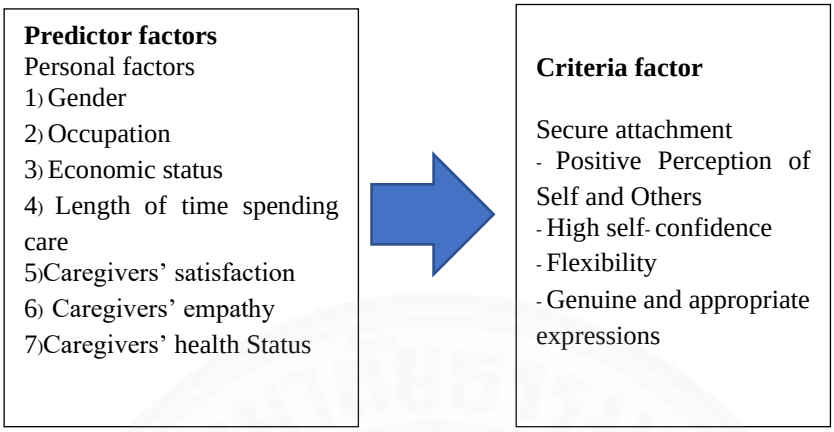
Inadequate studies reported variables of causual relationship among gender, occupation, economic status, length of time spent providing care, satisfaction, empathy, and caregivers' health status affecting secure attachment in caregivers of older adults living at home. (1) Gender: According to a study in Taiwan on the roles of gender and cultural variances between caregivers from western and eastern cultures, they were reflected in both responsibility and decision making about providing care for older adults, particularly concerning the issue of whether or not to place an older adult family member in an assisted living facility or convalescent home. Based on the findings, the working hours of male caregivers was more predictive, whereas secure attachment in relationships with older adults was more predictive, than gender among female caregivers (Kao, 2003). (2) Ocupation of caregivers: The occupation of informal caregivers, specifically whether or not they are a professional health care provider, has been found to have a positive relationship with older adults (Tao & McRoy, 2015). In this study, the researcher distinguished all job identifications of informal caregivers. (3) Economic status: Economic status can result in different outcomes for caregivers, which can also lead to placement of older

adults at home (Kao, 2003). In terms of length of time spent caring, family caregivers need to achieve caring in groups with friends and other family members so they can have a respite when desired. They also need to have experience handling things such as negative emotions, burdens, stress, and anxiety that they will experience while caring for older adults at home (Stolz et al., 2004). The hours spent in caring per week significantly affects the relationship in terms of caregiver activity and health (Lyons, 1999). (4) Satisfaction: The satisfaction of family caregivers tends to influence relationships and secure styles that are important in the later lives of older adults (Ayalon & Roziner, 2016). Caregivers who are satisfied with caring for older adults will not feel that caring for older adults is a burden (Bai, 2017; Coleman et al., 2016; Knodel & Chayovan, 2008; Siranee et al., 2016). (5) Empathy: It is the ability to sense the emotions of others and to respond with concern, kindness, capacity for adaptation, and care about others' suffering or the emotions of older adults (Makmee, 2016; Eisenberg, 2000; Stern & Cassidy, 2018). Many studies have discovered positive correlation between attachment and empathy (Pinijvicha, 2015; Wei et al., 2011). Caregivers' health status involves the physical, mental, psychosocial, and spiritual aspects concerning the importance of burdens in caring for older adults (Kim et al., 2018). (6) Secure attachment: It is related to the subjective well-being of caregivers (Ramos & Lopez, 2017). In particular, secure attachment styles correspond with greater intimacy, relationship interdependence, commitment, trust, and satisfaction in loving relationships. In this study, the researcher used the WHOQOL and separate physical, psychological, social, and environmental domains (MHD, 2018). Undoubtedly, older adults need to feel secure in later life. Interestingly, according to the Experience of Close Relationship Questionnaire based on Bartholomew Model's Attachment Theory, all of these variables can predict secure attachment, especially the relationship of caregivers with older adults living at home in the northeastern region of Thailand, which is composed of 20 provinces.

This framework is based on the review of the literature and the application of Bowlby's attachment theory to secure attachment, which has been adapted into a Thai version by Parapob (2003) based on Griffin & Bartholomew's Attachment Theory Model and Attachment Style Questionnaire (See Figure 1.1).

Figure 1.1

Conceptual Framework



Note. The conceptual framework of the study is based on the literature review and applied from Bartholomew Model's Attachment Theory (1991).

CHAPTER 2

REVIEW OF LITERATURE

This chapter reviewed the literature and critical synthesis, including attachment theory, synthesis of the factors affecting secure attachment among caregivers of older adults, discussion about the gap in the knowledge base, and linked these to caring science. Moreover, caregivers' experiences in caring for older adults were also reviewed, as little was known about the factors predicting secure attachment in informal caregivers caring for their older adults living at home.

1.1 Attachment theory

Bartholomew's model of attachment theory was used in this study. Bowlby's attachment theory (Bartholomew& Horowitz, 1991) stated that attachment is internalized in children with concern to certain aspects of their daily interactions and formative experiences with primary caretakers. As a result, children develop prototypic ways of relating to others. The theory postulates the formation of internal working models of self and others that become increasingly resistant to change as the individual ages are formed through the regular interactions between the child and his or her primary attachment figure(s) during the first years of life. This theory, therefore, consideres mental representations and predicts personal characteristics related to events or situations.

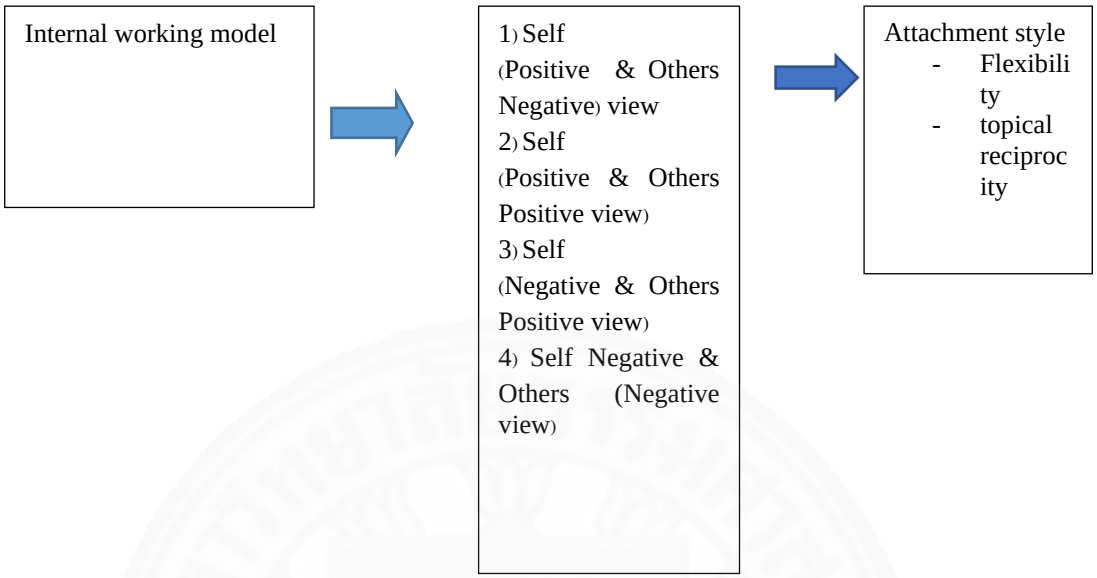
In 1999, Jeramaz conducted a study on elderly fathers and adult children entitled, "Attachment Style, Ego Integrity and Relationship Quality in Late Life. This study used the attachment interview installment style developed by Bartholomew and Horowitz. Moreover, the researcher studied attachment styles in adults through the elderly. Eriskon (Jeramaz, 1999) suggested that high levels of ego integrity promoted positive psychosocial functioning and improved the relationship quality between fathers and adult children. Some subsequent studies applied this theory in adults and elderly attachment styles. These studies revealed that direct

relationships between adult attachment states of mind and attachment dimensions were associated with the quality of a relationship (Goldner, 2017; Pickard & Nelson-Becker, 2011). Cicirelli (2010) studied attachment in old age by using attachment styles. According to the findings, the attachment style was most frequently needed in caregivers, and the elderly was the aspect of adaptation. Most caregivers of the elderly can adapt to environments, resulting in secure attachment styles. As a consequence, these attachments helped internalized expectations, rules and perceptions of self and others, as well as environments and relationships. In addition, attachment theorists proposed that these internalized working models become the filters through which we view the world throughout our lifespan. Therefore, these cognitive working models are exhibited in behavioral patterns known as attachment styles. Hypothetically speaking, the above manifestations can be the predictors of the personal expectations, emotions, defenses, and relational behavior in every interpersonal relationship, despite the fact that the theory states no assumption, or prerequisite, that internal working models are stagnant throughout life (Bartholomew & Shaver, 1998).

According to Bartholomew's model, there are four categories of attachment, each with two levels for a person's self-image (positive and negative as love and support) and two levels for a person's image of others (positive and negative). More importantly, an individual's perception of self refers to whether a person feels worthy of affection and support (positive) or not (negative), whereas the conditions related to trustworthiness and availability (positive) and rejection and unreliability (negative) comprise the person's conception of others. Consequently, when the conceptions of self and others are combined, there is a four-category framework as shown in Figure 2.1

Figure 2.1

A Combination of Conceptions of Self and Others



Note. A combination of conceptions of self and others based on Bartholomew and Horowitz (1991)

Attachment theory can help researchers understand healthcare provider behavior. Attachment styles can also describe caregivers who care for the elderly in terms of differences in coping behaviors, self-care, or elderly-provider relationships. Moreover, attachment style, in the form of the Experience of Close Relationship Scale, can explain the way caregivers form relationships and connect with other significant persons (Brenk-Franz et al., 2018). Significantly, the relationship quality between family caregivers and care recipients is essential because a good relationship quality can contribute to positive outcomes for both parties (Siranee et al., 2016). Such relationships are characterized by love, caring, and affirmation that a person is valued and understood. In the future, most of the elderly will also require caregivers due to degeneration of their physical, psychosocial, and mental functions. Generally, the elderly need to live in their homes in order to receive warmth and affection from family members, whereas caring for the elderly at home involves long-term care. The perception of self and others is related to the relationship (Khodabakhsh, 2012; Parapob, 2003). Thus, positive relationships between care recipients and caregivers are very important. As caring for elderly people involves continuous care, security

and good relationship quality are essential for caregivers to effectively and continuously take care of their elderly, even in troublesome situations (Siranee et. Al, 2016). Moreover, keeping the elderly at home with warmth and good relationship quality is needed.

Adult attachment styles can be evaluated using the Experience in Close Relationship Scale (ECR), even though the ECR contains 36 items and can be difficult to apply to certain research designs (Wongpakarun &Wongpakarun, 2012; Wei et al., 2011). A study of the relationship between the life satisfaction of adolescents with different attachment styles by Hanhaboon (2008) mentioned that securely based (ffection theory) people were close to someone they love and met their requirements or needs. As a result, this study showed that secure personalities among men and women led to relational dependency, binding contracts, trust, and greater satisfaction (Hanhaboon, 2008).

2.2 Review of Relevant Research

Research regarding the measures of secure attachment was reviewed in the following section. The studies targeting the major indicators affecting secure attachment among caregivers of older adults living at home were also reviewed.

Review Variables

Model 1 (Equation 1) was personal factors (gender, occupation and economic status).

Model 2 (Equation 2) was caregivers' satisfaction.

Model 3 (Equation 3) was caregivers' empathy.

Model 4 (Equation 4) was length of time spent providing care for older adults.

Model 5 (Equation 5) was caregivers' health status.

2.2.1 Research regarding knowledge about the predictors of secure attachment (see Table 2.1)

Table 2.1

The Relevant Independent Variables can be Predictors of Secure attachment.

Research	Findings	Predictors
Kao (2003)	According to a study in Taiwan on the roles of gender and cultural variances between caregivers from western and eastern cultures, these factors were reflected in both responsibility and decision making about providing care for the elderly, particularly concerning the issue of whether or not to place elderly family members in assisted living facilities or convalescent homes. Based on the findings, the working hours of the male caregivers were more predictive whereas secure attachment in relationships with the elderly was more predictive than gender among female caregivers.	Gender (model 1)
Prasartkul, (2014) and Pope et al. (2012)	Most of the caregivers were women because women tended to have more emotional attachment and internal motivation to provide care.	Gender (model 1)
Consedine and Fiori (2009)	Men were found to report a higher degree of fearful avoidance attachment style. At the same time, security was found to be the predictive factor of contentment and engagement, while a dismissive style was found to be correlated with less embarrassment and fear, but a higher degree of engagement.	Gender (model 1)
Tao and McRoy	The occupation of informal caregivers, specifically whether or not they were professional health care	Occupation (model 1)

Research	Findings	Predictors
(2015)	providers, had been found to have a positive relationship with the outcomes among older adults.	
Kao (2003)	Economic status can result in different outcomes for caregivers, which can further lead to placement of the elderly at home.	Economic status (model 1)
Tao and McRoy (2015)	The occupation of informal caregivers, specifically whether or not they were a professional health care provider, had been found to have a positive relationship with the outcomes among older adults.	Occupation (model 1)
Stolz et al. (2004)	The family caregivers needed to achieve caring in groups with friends and desired to have respite. They also needed to have experiences with negative emotions, burden, stress and anxiety during the time spent caring for elderly people at home.	Time spent caring (model 4)
Lyons (1999)	The hours spent in caring per week significantly affect the relationship in terms of caregiver activity and health.	Time spent caring (model 4)
Ayalon and Roziner (2016)	The satisfaction of family caregivers tended to result in relationships and secure styles important in the later lives of the elderly.	Caregivers' satisfaction (model 2)
Siranee et al. (2016)	Caregivers who were satisfied with caring for older adults would not feel that caring for older adults was a burden.	Caregivers' satisfaction (model 2)
Pinijvicha (2015)	Empathy had been defined as the capacity to understand the minds of others as cognitive and affective empathy. It was the ability to sense the emotions of others and respond with concern, kindness, capacity for adaptation and care about others' suffering or the emotions of elderly people. Secure attachment style positively affected both	Caregivers' empathy (model 3)

Research	Findings	Predictors
	affective (r = .22, p < .01) and cognitive empathy (r = .29, p < .01).	
Kim et al. (2018) and Ramos and Lopez (2017)	Caregiver health status involved physical, mental, psychosocial and spiritual aspects concerning the importance of burden in caring for the elderly. Secure attachment was related to subjective well-being.	Caregivers' health status (model 5)
Ahnert et al. (2006)	In 2006, Ahnert and colleagues conducted a meta-analysis on the security of relationships between children and nonparental care professionals. The objective of the study was to determine the factors predicting child safety-care in 40 prior studies. The author investigated articles from all databases. The measurements in this study were the Strange Situation (SS) which was used in 11 studies, (Ainsworth et al., 1978) and the AQS (Waters, 1995; Waters & Deane, 1985) which was used in 27 studies, and two studies, which included both the Strange Situation (SS) and the Attachment Q-Set (AQS). The findings showed that age, gender and parental SES were significantly associated with the security of attachment. Regarding childcare history, children with discontinuous childcare had negative associations with secure attachment. (r = -.32, CI -.37 to -.27), but there was no significant association within those with continuous childcare (r = .08, CI -.06 to.02). In addition, the security of attachment to care providers among children with continuous childcare was significantly correlated with post-entry	Gender (model 1)

Research	Findings	Predictors
	period (r = 5.28, CI.11 to -.45, p<.001), but not those with discontinuous childcare (r = 5.04, CI -.10 to.18, p<.01).	
Pinijvicha (2015)	Pinijvicha (2015) focused the study on the relationship between the four attachment styles and two empathy components (affective and cognitive empathy). The study sample was 450 undergraduate students from Chulalongkorn University in Thailand. A descriptive design using Pearson product coefficients and multiple regression was used. Empathy was surveyed using the Basic Empathy Scale (BES) Thai version, developed by Suvansri (2008) and Attachment Style Questionnaire (Parapob, 2003) developed based on the Albany Measure of Attachment Styles. Another measurement was the Relationship Style Questionnaire (RSQ). They found that gender affected attachment and empathy. Males scored significantly higher in empathy than females (p < .01) in preoccupied attachment (t = 2.607), and fearful attachment relationship styles (t = 2.652). Secure attachment style had positive effects on both affective (r = .22, p < .01) and cognitive empathy (r = .29, p < .01).	Gender (model 1) Caregivers' empathy (model 3)

2.2.1.1 Quantitative Research

1) Liu (2015) investigated 92 American parents adopting children from China to explore the variables associated with secure attachment and indiscriminate friendliness in Chinese children taken to the U. S. The surveys were completed by 92 adoptive parents when children were 80 months old. A self-reported instrument was used for the measurement. The results showed that secure attachment

and indiscriminate friendliness were dependent variables, whereas age when adopted, pre-adoption institutionalization experiences, time spent with adoptive parents, and adoptive parents' parenting styles were independent variables. The study examined the relationship between the listed independent variables and the two dependent variables. The variables of secure attachment assessment test and adapted version of the Attachment Q-Sort (adapted by Chisholm et al., 1995) were employed to measure secure attachment in this study. The measurement was self-reported by the parents. Statistical results answered the hypotheses permissive parent related to the high score of secure attachment significantly at .01. The foster children who had a positive experience of children were not significant with secure attachment ($p = .09$). However, positive institutionalization experience of foster children was associated with a low level of indiscriminate friendliness ($p < .05$). The limitations of this design included that the measurement being a self-reported instrument and limitations of social desirability, as well as the fact mono-method bias might be introduced. The participants of the study were strictly parents with Chinese adoptees in the United States. Therefore, the generalizability of the findings of the study might be affected with regard to adoptive families with children adopted from countries of origin other than China. Another limitation was that it was difficult for adoptive parents to recall things which happened a long time before answering the questions. This study should be used, not just a single self-reported instrument, to decrease bias.

2) Ereky-Stevens and colleagues (2018) conducted a study to determine factors developing attachment relationships between toddlers and their caregivers throughout the transition from individual home care to out-of-home childcare. The participants were 104 children (aged 10–33 months) in 71 Viennese childcare centers in Vienna, Austria. Confirmatory factor analysis (CFA) (Descriptive study) was employed. Secure attachment was assessed at three-time points using the Attachment Q-Sort. The results showed that girls and children with caregivers who scored highly in group-related measures of sensitivity, had higher secure attachment scores. Yet, the security attachment of children was not predicted by dyadic sensitivity.

There were the following concerns regarding the limitations of this report. First of all, different approaches were used in measuring group-related

and dyadic sensitivity. For example, real-live observations were applied to measure group-related sensitivity during of one morning with the participants that measured each measurement point, whereas videotaped and observations were applied assessing dyadic sensitivity that lasted an hour at each measurement point. Secondly, the participants were in different stages of child development. Thirdly, this study had taken place in a culture with generous maternity regulations that children entered childcare centers relatively late and had relatively high-quality care centers. This study emphasized secure attachment of children with caregivers, so further study should focus on all ages of attachment relationships.

3) Ahnert et al. Performed a meta-analysis (2006) on the security of children's relationships with nonparental care providers. The study aimed to determine the factors predicting the security of child – care providers in 40 prior studies. The author investigated articles from all databases. The measurements in this study were the Strange Situation (SS) which was used in 11 studies, (Ainsworth et al., 1978) and the AQS (Waters, 1995; Waters & Deane, 1985) which was used in 27 studies, and two studies which included both the Strange Situation (SS) and the Attachment Q-Set (AQS).

The findings showed that age, gender, and parental SES were significantly associated with the security of attachment. Regarding childcare history, children with discontinuous childcare had negative associations with secure attachment. (r = -.32, CI - .37 to -.27), but there was no significant association within those with continuous childcare (r = .08, CI -.06 to.02). In addition, the security of attachment to care providers among children with continuous childcare was significantly correlated with post-entry period (r = 5.28, CI.11 to -.45, $p < .001$), but not those with discontinuous childcare (r = 5.04, CI -.10 to.18, $p < .01$). Age, gender, and parental SES were significantly correlated with the security of attachment. Further study should test for more variables that can predict secure attachment.

4) During the transition to kindergarten, Munz and Wilson (2017) conducted a study of caregiver confirmation and child secure attachment. The sample consisted of 50 dyads of carers-children. The findings showed that predictors, including story question immediate task and caregivers' nonverbal acceptance, were significantly related to child secure attachment (r = .29, p = .046). Verbal acceptance,

child secure attachment, and the relationship between acceptance in the child's statements of concern and child secure attachment were statistically significant in the expected direction ($r = .14$ and $r = .23$). Intermediate level of education accepted by words and body language and confidence in children was related to education level. Variables were assessed using the 90-item Attachment Q-Sort measure (Waters, 1995). Acceptance in caregivers can promote secure attachment in children.

5) Turan et al. (2011) reported that loved ones having their wishes for end-of-life care and secure attachment predicted the surrogate decision makers of caregiver. Insecure attachment patterns were associated with lower accuracy in the stressful task of predicting the wishes for end-of-life care of their loved ones. The design was an interventional study. The samples were 81 dyads of caregivers and older care receivers at a community-based medical clinic. The measurement was the Experiences in Close Relationships (Brennan et al., 1998) with 36 items. Surrogates' gender, age, ethnicity, and religiosity were unrelated to accuracy, but surrogates' education level was related to accuracy ($r = .25$, $p < .05$). However, when entered into a multiple regression with education, the surrogates' attachment was associated with avoidance ($\beta = -.27$, $t = -.2.54$, $p < .05$) and attachment-related anxiety ($\beta = -.23$, $t = -.2.25$, $p < .05$) predicted their accuracy. Additionally, education was also a significant factor ($\beta = -.18$, $t = 1.74$, $p = .09$). The type of insecure attachment of surrogates was less accurate in predicting end-of-life health. Importantly, even though surrogates' attachment-related anxiety was associated with lower accuracy of wishes for end-of-life care of patients, it was associated with higher accuracy in the non-stressful task of predicting their everyday living conditions. Also, surrogates' attachment-related anxiety was a significant predictor ($\beta = -.25$, $t = -2.16$, $p < .05$). Accuracy was related to secure attachment with regard to their loved ones' end-of-life health care wishes.

6) Quiroga and Hamilton-Giachritis (2017) studied the critical role of the micro caregiving environment and associated factors of attachment styles in alternative care settings. The aim of a cross-sectional study utilizing a mixed methods approach was to examine the relationship between different attachment styles and associated factors among two groups of children living in Alternative Care (AC), Chile. The sample included 57 children in residential homes (RC) or in Foster

Care (FC) in Chile. There were 5 measurements measuring the variables, including attachment story completion task (ASCT), motivations to foster inventory (MFPI) (Yates et al., 1997), revised adult attachment scale, observation for measurement of the environment (Caldwell & Bradley, 1984), and Caregiver-Child Social/Emotional and relationship rating scale (CCSERRS) (Mc Call et al., 2010).

The results showed that the quality of attachments was established by children while in AC was directly affected by factors relating to caring (ffection, commitment, and sensitiveness). Therefore, a healthy relationship can be developed only in a high-quality environment with a limited number of children per caregiver and with adequate learning opportunities and stimulation rates. The quality of the attachment of children living in AC was directly impacted by affection, engagement, and sensitivity.

7) A cross-sectional study was conducted in the American Cancer Society's Quality of Life Survey in the United States by Kim et al. (2008) to study adult attachment among cancer caregivers among (154 husbands and 160 wives). Three measures were the indicators of the caregiver's psychological adjustment: benefit finding in the cancer caregiving experience, life satisfaction, and depressive symptoms (the Measure of Attachment Qualities, MAQ; Carver, 1997). Using structural equation modeling, the results found that secure attachment was positively influenced by autonomous motivations of finding benefits of caregiving among spouse caregivers. Also, attachment anxiety was related to interjected motives for caregiving and more depression. Among husband caregivers, less depression and fewer interjected motives were related to lower life satisfaction and more depression. Among wife caregivers, autonomous motives were related to greater benefit finding.

The limitation of this study was that definitive causal interpretations and type of cancer were not explored. Additionally, the internal consistency of the measures for attachment avoidance and external caregiving motives being at the lower end of the conventionally acceptable range and generalizability of the findings was compromised because the study only included white and educated persons. Adult attachment was important for caring in the psychological domain of cancer caregivers, but other aspects and domains should be further studied.

8) Ormiston (2011) studied the role of secure attachment and mindfulness in relation to satisfaction and responses to relationship conflicts. The objective of the study was to examine the potential interaction between mindfulness and secure attachment in predicting responses to relationship conflicts. It also aimed to examine the potential interaction between secure attachment and mindfulness. Three hundred participants were included in this descriptive correlational study. The setting was in community organizations. The measures included the followi ng: 1) the Experiences in Close Relationships-Revised (ECR-R: Fraley et al., 2000), 2) the Relationship Questionnaire (RQ: Bartholomew & Horowrtz, 1991), 3) the Mindful Attention Awareness Scale (MAAS: Brown & Ryan, 2003), 4) the Kansas Marital Satisfaction Scale (KMSS: Schumm et al, 1986), and 5) the Rahim Organization Conflict Inventory-II (ROCI-II: Rahim, 1983). The findings showed that secure attachment and mindfulness were associated with relationship satisfaction. However, when they were examined together, secure attachment was a stronger predictor of relationship satisfaction than mindfulness. Analysis did not support the mediation of secure attachment and relationship satisfaction by responses to conflict. However, secure attachment and responses to the conflict were both strong independent predictors of relationship satisfaction. The results also revealed that both secure attachment and mindfulness were associated with responses to conflict. Regarding limitations, this study could be affected by selection bias related to inclusion selection criteria concerning age, relationship status, and sexual orientation of the sample than previous research on mindfulness and relationships. In conclusion, secure attachment was a stronger predictor of relationship satisfaction than mindfulness, but only in the group of participants in this study. The relationship between secure attachment and relationship satisfaction should be tested in other types of relationships.

9) Waters and team (2000) conducted a cross-sectional study focusing on the stability of secure attachment in adolescence and early adulthood. The study attempted to establish a connection between factors and secure and insecure attachment among infants and mothers. Sixty white middle-class infants at 12 months of age from newspaper birth announcements in Minneapolis and St. Paul, Minnesota (USA) were assessed. Then, 20 years later, 50 participants (21 males and 29 females) were contacted and recruited in the study. Using multiple regression

analyses, the results were presented as 1) how likely were subjects with secure and insecure childhood relationships to change attachment classification, 2) how likely were mothers with secure and insecure childhood relationships to change attachment classification, and 3) how likely were infants whose mothers had stressful life events to change attachment classification between initial recruitment and follow-up. This study focused on infants and mothers who had secure and insecure attachment styles, but it was inadequate to explain the factors affecting caregivers who care for their older family members. Research provided inadequate assessments of other variables for secure attachment in adult attachment style.

10) Pinijvicha (2015) conducted a study focusing on the relationship between the four styles of attachment and the two components of empathy (affective and cognitive empathy). The study sample was 450 undergraduate students from Chulalongkorn University in Thailand and a descriptive design using Pearson product coefficients and multiple regression was employed. Empathy was measured using the Basic Empathy Scale (BES) Thai version, developed by Suvansri (2008) and Attachment Style Questionnaire (Parapob, 2003) developed based on the Albany Measure of Attachment Styles. Another measurement was the Relationship Style Questionnaire (RSQ). It was found that gender affected attachment and empathy. Males scored significantly higher in empathy than females ($p < .01$) in preoccupied attachment and fearful attachment relationship styles. Secure attachment style positively affected both affective ($r = .22$, $p < .01$) and cognitive empathy ($r = .29$, $p < .01$).

The main limitation of the study was its limited emphasis on the relationship between the styles of attachment and empathy. Another limitation of the study was that the researcher limited the relationship between empathy and a psycho-social factor through the lens of attachment theory that could partially predict empathy. Gender and empathy were associated with secure styles, but only in students, and the results cannot be generalized to other subjects.

2.2.1.2 Qualitative Research

1) Nantsupawat et al. (2010) used a qualitative design with

58 older informants and 45 family members from 44 different family structures. The study explored the relationship of family roles and the meaning of healthy, or active, aging among rural Northeastern Thai residents. Data were collected through participant observations and in-depth interviews. The researchers analyzed the data using content analysis. The results revealed four kinds of relationships within families, including one-generation, two-generation, three-generation, and four generation patterns of living, and two predominant roles, namely earning a living and instructing children/grandchildren. The variables (economy, good health, and positive environments) affected secure family relationships. For further study, the researcher should explore how to promote family relationships more thoroughly.

2) Karantzas et al. (2018) conducted a retrospective study of aged care. The purpose of their review was to examine familial aged care. Despite the role of attachment in later- life, caregiving remained unclear, resulting in the review of the qualitative articles on aged care. The study design was a systematic review of papers (Qualitative synthesis) on attachment and various outcomes related to familial aged care within the previous five years. The sample included 11 articles which met the criteria for qualitative synthesis. The results showed that attachment anxiety was associated with having a mental health problem and attachment insecurity with a more controlling manner of caregiving. Few studies conducted with caregivers found that attachment insecurity was associated with greater self-regulation of dementia symptoms and a lower sense of secure attachment.

Attachment theory can be explained as the degree, style, and state of attachments. A number of studies explored the concept of attachment in relation to the provision of care for the elderly. Moreover, the studies frequently exaggerated attachments or bonds with similar, yet diverse, ideologies, examples of which include warmth, multi-generation unity and intimacy (Karantzas, Romano & Lee, 2018). According to Bowlby, the core dimensions of attachment are not only cognitive and behavioral, but also emotional, e.g. love, security, and comfort. In the proposed study, therefore, the researcher would like to present attachment theory as the main framework, which aimed at facilitating comprehending the multiple, diverse dimensions of caregiving among family caregivers of aging or elderly people. The researcher would also like to assert that the physical and mental health of caregivers

and care recipients is imperative. Undoubtedly, the provision of care for an aging or elderly family member is complex, difficult, and tiresome due to the need to meet caregiving needs and reconcile oneself to the frailty and unavoidable mortality of a beloved family member, involving a wide spectrum of emotions, including comfort, security, and love (Karantzas et al, 2018). Cicirelli (2010) stated that attachment relationships in old age need to be investigated. The attachment of caregiver signals comes from love and God. Elderly networks can fulfill the attachment styles of the elderly.

Some studies of attachment style were conducted in the field of psychology, in many populations, in relation with secure attachment in couples, children, and students (Pinijvicha, 2015; Sriyothin & Maneesri1, 2016). However, no studies were conducted on secure attachment in caregivers of the elderly. Songsemsawa et.al. (2013) studied effects of attachment styles on work-life balance. It was found that anxious attachment style can predict work and interfere with life ($p<.05$). Wachirodom, 2006 studied attachment styles and conflict resolutions of vocation students/ correlation. The results revealed that vocational students with preoccupied and fearful attachment styles used more conflict than those with secure and dismissing attachment styles. Tantong (2005) studied interpersonal attraction and attachment style: self-similarity complementary, and secure attachment. They found that secure individuals did not rate fearful partners as more attractive than secure, preoccupied, and dismissive partners ($p<.05$).

Several international studies explored attachment styles and secure attachment in multiple dimensions of the human lifespan. The factors predicting secure attachment in caregivers caring for their older family members were not addressed in this research, so the study conducted to fill this gap was needed.

2.3 Discussion of the Gap in Knowledge

Upon reviewing previously developed variables, it has become clear that earlier variables and tools are not adequate to predict the factors affecting secure attachment in caregivers caring for their older adults at home. The previously studies about secure attachment included many variables, namely, persons, gender,

occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers' empathy, and caregivers' health status, which were not adequate to predict the factors affecting secure attachment in caregivers caring for their older adults at home (Kim et al., 2018; Liu,2015; Nantsupawat et al., 2010; Paulson et al., 2017; Pinijvicha, 2015; Tao & McRoy, 2015; Wei et al., 2011). Therefore, this study would like to find out the predictors related to secure attachment in caregivers caring for their older adults at home.

CHAPTER 3

RESEARCH METHODOLOGY

A sequential explanatory mixed methods design consisted of 2 phases. Phase 1 was a quantitative design using a cros-sectional study. Quantitative design was used to identify the factors predicting secure attachment in caregivers of older adults living at home. The researcher analyzed quantitative data from informal caregivers of older adults living at home (n = 140). In Phase 2, a qualitative design was used to gain an in-depth understanding of caregivers' perceptions with secure attachment while caring for older adults living at home. Moreover, the qualitative data refined and explained the statistical findings by exploring the informal caregivers' perceptions more deeply.

3.1 Research Design

A sequential explanatory mixed method design was used to study the factors predicting secure attachment and explain caregivers' perception secure attachment in caregivers of older adults living at home.

3.2 Research Questions

1) What are the predictors of secure attachment in caregivers of older adults living at home?

2) What/how are the perceptions of caregivers that are related to secure attachment in caring for older adults living at home?

3.3 Ethical Considerations

The study was approved by the Ethical Review Sub-Committee Board for Human Research Involving Sciences, Thammasat University, No. 3, on 21 November 2019, and the project number was 140/2562 to protect the rights of the research participants in the study.

3.4 Phase 1: A cross-sectional study (Quantitative Design)

The researcher studied the factors predicting secure attachment in caregivers of older adults living at home by using a cross-sectional study design to find out the prominent predictors related to the secure attachment of caregivers.

3.4.1 Population and Settings

Caregivers were people aged 18 years and over who were the primary persons serving as informal (unpaid) caregivers taking care of older adults living at home (home-bound) and those who were socially-well. They had stayed with the older adults for at least three years. Bowlby (1988) explained that the period at which a bond occurs is between 6 months and 2-3 years as follows. 1) The older adults under caring of informal caregivers were either home-bound or self-reliant. The older adults were divided into to two groups. Group 1 included older adults who were self-reliant (independent) and able to help others in the community and society (socially-well group) with the total ADL scores of 12 points or above. Group 2 comprised older adults who were self-reliant (independent) and somewhat able to help others (home-bound group) with the total ADL scores ranging from 5 to 11 points. 2) The participants only included informal caregivers (unpaid caregivers) in rural and urban areas of the 11 provinces of the upper northeastern region of Thailand: Kalasin, Khon Kaen, Nakhon Phanom, Maha Sarakham, Mukdahan, Roi Et, Sakon Nakhon, Nong Khai, Nong Bua Lam Phu, Udon Thani, and Loei.

In terms of setting, the participants were informal caregivers in Nakhon Phanom, Sakon Nakhon, Nong Khai, and Loei living in the area of Tambon Health Promotion Hospital for each province.

3.4.2 Inclusion Criteria

1. Caregivers included informal caregivers such as siblings or spouses (unpaid-informal caregivers) who had taken care of the older adults for at least three years.

2. Caregivers must complete the Attachment Style Questionnaire by Parapob (2003) based on Bartholomew Model's Attachment to determine their

attachment style. Caregivers must live in the same house with the older adult(s) under their care for at least three years.

3. Caregivers must be able to communicate fluently in the Thai language.

4. Caregivers included: 1) those who got high secure scores, 2) both female and male informal caregivers, 3) informal caregivers aged 18 years old and over, 4) those living in Loei Province, Sakon Nakhon Province, Nakhon Phanom Province, Nong Khai Province 5) those having consciousness and being able to communicate, 6) those willing to participate in the research and 7) informal caregivers of bed-bound and social-bound older adults.

3.4.3 Exclusion criteria

The following persons were excluded from the study.

1. Caregivers who need to withdraw from the study due to things such as illness, death, or a personal reason

3.4.4 Sampling Procedures

The study took place in the upper northeastern region of Thailand, composed of 20 provinces. More specifically, it was conducted in 11 upper northeastern region provinces, namely Kalasin, Khon Kaen, Nakhon Phanom, Maha Sarakham, Mukdahan, Roi Et, Sakon Nakhon, Nong Khai, Nong Bua Lam Phu, Udon Thani, and Loei, rather than in the lower northeastern region provinces, including Chaiyaphum, Nakhon Ratchasima, Buri Ram, Yasothon, Si Sa Ket, Surin, Amnat Charoen, Ubon Ratchathani, and Bueng Kan. Probability sampling concept was employed to select the samples by using multi-stage random sampling and stratified random sampling based on the proportion of the population size. The qualifications of the samples must meet the inclusion criteria.

Step 1: Sampling without replacement: 4 provinces were selected from 11 provinces. It had been determined that sample clusters from a minimum of 25 percent of the 11 provinces were required. Thus, 4 provinces were selected (Gray, 1972). At this step, the researcher used a random sampling method to select the provinces.

Step 2: Sampling without replacement was employed to select 1 Tambon Health Promoting Hospital from each province.

Step 3: The informal caregivers aged 18 years and over were randomly selected according to the population proportion. Approximately 15-20 males and 15-20 females were randomly selected. For example, at the first Tambon Health Promoting, 1,550 male samples were divided by 15 and equal to 103. So, the name lists of number 1, 103, 206, 309… and so on were selected until 15-20 people were obtained. The selection of female samples was done the same. However, the samples' qualifications must meet the inclusion criteria. The rest included the caregivers of bed-bound and social-bound older adults living together for at least 3 years. If not, they were skipped, and others were selected instead until obtaining the sample size as specified in Table 3.1.

Table 3.1: *Number of population and samples classified by districts, provinces and Tambon Health Promoting Hospital*

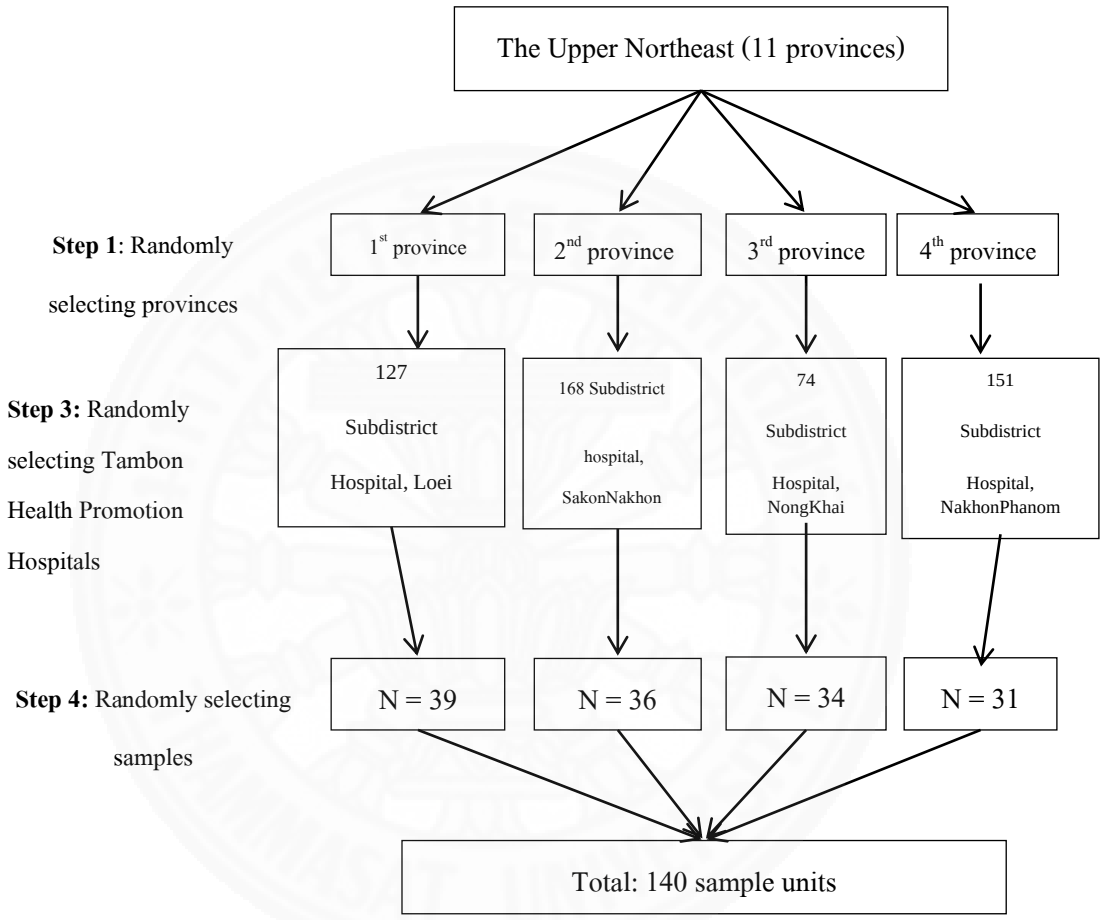
No.	Province	Tambon Health Promotion Hospital	Seleted No of Tambon Health Promotion Hospital	Population aged 18 years and over (person) in 1 Tambon Health Promoting Hospital	Males aged 18 years and over	Females aged 18 years and over	Samples (people)
1	Loei	127	1	2,348	1,154	1,194	39
2	Sakon Nakhon	168	1	3,053	1,511	1,542	36
3	Nong Khai	74	1	5,859	2,785	3,074	34
4	Nakhon Phanom	151	1	3,461	1,738	1,723	31
Total							140

The random sampling technique was used to choose Tambon Health Promoting Hospital. In each village, the researcher asked for volunteers to participate in this study and complete the questionnaires to categorize which of the four types of attachment styles (Secure, Preoccupied, Fearful and Dismissive) based on their relationship with the older adult they care for. Then, the Multi-Stage Random

Sampling method was used for selecting the participants from each village as shown in Figure 3.1.

Figure 3.1

Multi-stage Random Sampling Procedures



3.4.5 Sample Size

The samples were informal caregivers in the upper northeastern region of Thailand. The sample size was determined by using the G * Power 3 (Faul et al., 2007) program. The effect size was determined at 0.15 by the Medium of Squared multiple correlation, referring to the size of the medium influence (midium) at the statistical significance level of 0.05. The Power of test was 0.80 (Hair, 2010). There were 7 predictors as subjected by 112 people. To prevent for data missing, the researcher added more participants to 140 people.

3.4.6 Data Collection

The proposal was approved by the Ethics Review Sub-Committee for Research Involving Human Research Subjects of Thammasat University, No. 3 (Faculty of Health Sciences and Science and Technology) to protect the rights of the research participants in the study. The researcher used ramdom sampling without replacement and selected the informants using multi-stage random sampling method from the provinces (a total of 4 out of the 11 provinces were randomly selected (Gray, 1972). Finally, the number of caregivers aged at least 18 years old was randomed.

Next, the researcher asked for permission in advance before randomly selected the participants for this program through the Provincial Public Health Offices in each of the four selected provinces. The researcher randomly selected the caregivers of older adults requiring caregiving. Candidates who expressed the willingness to take part in the research project were requested to sign the informed consent forms after they expressed the understanding of their role as a participant in the project. The questionnaire responses remained anonymous as the researcher would conduct coding and complete all questionnaires. After completing the survey, the researcher stored the questionnaires at a secure location accessible only by the researcher.

3.4.7 Measurements

3.4.7.1 Personal information

A demographic questionnaire was developed by the researcher. The sociodemographic variables consisted of gender, occupation, economic status, and length of time spent providing care per day.

3.4.7.2 Caregivers' satisfaction

Caregivers' satisfaction was measured by Satisfaction Scale (Chamsuk, 2013). The scores collected by this instrument are continuous scores, and 3-point Likert items are used in this measurement with three possible answers with a value ranging from 0 to 2, yielding potential scores of 0 to 21. The participants selected either very satisfied (3 points), moderately satisfied (2 point), or very dissatisfied (1 point). High scores indicate high satisfaction as follows.

Mean scores of 1.00-1.66 indicate poor satisfaction.

Mean scores of 1.67-2.33 indicate moderate satisfaction.

Mean scores of 2.34-3.00 indicate good satisfaction.

3.4.7.3. Caregivers' empathy

Caregivers' empathy was measured by the Basic Empathy Scale (Thai version) constructed by Makmee (2016) based on Eisenberg (2000). The scores are continuous. The instrument consists of 35 items and the participants have to choose the answers based on a 3-point Likert scale. The scores range from no empathy (1 point) to high empathy (3 points). High scores indicate high empathy in informal caregivers. In this table, there are 18 negative statements: Item No. 2,3,5,6,8,9,11, 20,21,22,23,26,27,29,30,31,32,35 and there are 17 positive statements: Item No. 1,4,7,10,12-19,24,25,28,33,34. Scores range from 35-105 points:

Mean scores of 1.00-1.66 indicate poor empathy.

Mean scores of 1.67-2.33 indicate moderate empathy.

Mean scores of 2.34-3.00 indicate good empathy.

3.4.7.4. Caregivers' health status

Caregivers' health status was measured using Physical domain of the Thai version of the World Health Organization's Quality of life questionnaire's (WHOQOL) of the Ministry of Public Health (Suanprung Psychiatric Hospital, 2018). The WHOQOL's measurement scale for physical domain uses 3-point Lkert scale and consists of 7 items (items; 2, 3, 4, 10, 11, 12, 24). The reliability based on Cronbach's alpha coefficient was 0.84, and its validity was 0.65 (Suanprung Psychiatric Hospital, 2018). High scores indicate high perceieved health.

Mean scores of 1.00-1.66 indicate poor health status.

Mean scores of 1.67-2.33 indicate moderate health status.

Mean scores of 2.34-3.00 indicate good health status.

3.4.7.5 Secure attachment style

Secure attachment was measured by Parapob's (2003) Attachment Style Questionnaire which is based on Bartholomew's Model of Attachment. There are 38 items in the measurement based on four attachment styles, including secure style (11 items), preoccupied style (12 items), dismissing style (8 items), and fearful style (7 items) and the Cronbach's alphas were .73, .71, .70 and .74, respectively (Pinijvicha, 2015). The total scores are presented in continuous

scores. The participants have to select score from a 7-Likert scale of each item based on their agreement with the statements as follows.

Score of -3	indicates strongly disagree.
Score of -2	indicates disagree.
Score of -1	indicates slightly disagree.
Score of 0	indicates cannot make a decision.
Score of 1	indicates slightly agree.
Score of 2	indicates agree.
Score of 3	indicates strongly agree.

Regarding the interpretation of scores, the mean score in each domain was used, and each participant's potential score range for each item was -3 to 3. The researcher calculated the mean score for all domains. If each domain (secure, dismissing, preoccupied and fearful) gets a high score related to secure attachment style and this mean score of secure style is higher than others styles that person will be included in the research project. The dependent variable is the mean of the secure style score.

3.4.8 Quality of Measurements

3.4.8.1 Content validity

The IOC scores (Index of Item-Objective Congruence) from the following five experts were used and a value of at least 0.5 was considered acceptable. It included 1) one psychiatrist (medical doctor), 2) three nurses providing care for older adults and 3) one experts in statistics.

3.4.8.2 Reliability

After the content validity had been verified by the five experts, the questionnaires were piloted with 30 informal caregivers to determine consistency and clarity. Cronbach's coefficient was used for the analysis and a value of at least 0.7 was deemed acceptable. Four instruments were the assessment forms of caregivers' satisfaction, caregivers' empathy, caregivers' health status, and caregivers' attachment. The reliabilities were verified by applying Cronbach's alpha coefficient, which were 0.83 (caregivers' satisfaction), 0.70 (caregivers' empathy), and 0.82 (caregivers' health status), and 0.74 (caregivers' attachment) respectively.

3.4.9 Quantitative Data Analysis

The researcher used SPSS version 22.0 (Statistic Package for Social Science) to analyze the data. The statistics used in this study were as follows.

3.4.9.1 Demographic Data

Basic statistics, including frequency, percentage, mean and standard deviation were used for the analysis, and SPSS for Windows was used to analyze the data. The independent variables, including gender, level of education, occupation, and economic status were analyzed using frequency, percentage, mean and standard deviation. Other independent variables, including, length of time spent providing care, caregivers' satisfaction, caregivers'empathy and caregivers'caregiver health status were analyzed using mean and standard deviation.

3.4.9.2 Correlation between variables

Pearson's correlation was used to find out the correlations of relationship quality among caregivers and older adults. The variables were gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers' empathy, caregivers' health status, and secure attachment. In terms of the variables, no interval and ratio scales were changed to dummy variables before using correlation coefficiency (Pearson's correlation).

3.4.9.3 Predictive values of variables

Hirachical Regression was used to examine the predictors of relationship quality by selected factors, including gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction and caregivers' empathy, caregivers' health status, and secure attachment. The researcher used Multiple Regression to find out the predictors. The statistical assumptions were examined because inferential statistics generally involve specific assumptions requiring evaluation before analysis can be performed. Nevertheless, it should be noted that the assumptions were subject to change depending on the statistical analysis results.

1) Assumptions of the Hirachical Regression Analysis (Hair, 2010)

Normality: This occurs when the degree of sampling distribution meets the criteria for normal distribution.

Linearity: This happens when the set independent variables are found to be strongly correlated with a particular group of other independent variables and multicollinearity occurs. Tolerance employs collinearity and multicollinearity. Therefore, when multicollinearity is low, it can indicate high probability of an independent variable to predict the related dependent.

Homoscedasticity: Many statistics packages test the homoscedasticity of univariates, such as the Levene Test in SPSS. Each of the metric variables are tested across the non-metric variables as independent variables in the data set.

2) Independence of error term (Hair et al., 2010)

It is assumed that each predicted value in a regression is independent. If the residual, or error, is dependent, the pattern should exhibit randomness and appear quite similar to a null plot of the residual.

The development of the interview guidelines was based on the factors with the first and the second scores related to their ability to predict secure attachment among caregivers of older adults living at home.

Preliminary agreement test of hierarchical regression analysis: Before hierarchical regression analysis was administered, the researcher had conducted preliminary agreement test and the results were as follows.

First preliminary agreement: The samples in this study were randomly selected. Multistage random sampling method was employed for sample selection, which was in accordance with the preliminary agreement.

Second preliminary agreement: The data had normal distribution. The researcher tested the data distribution by Komogorov-Smirnov test. The results showed that all variables did not have normal distribution with statistical significance at $\alpha = 0.05$ ($p < .05$), which violated the preliminary agreement. Then the researcher tested the normal distribution of unstandardized residual using Komogorov-Smirnov test. It was found that unstandardized residual did not have normal distribution with statistical significance at $\alpha = .05$ ($p < .05$), which also violated the preliminary agreement. Therefore, the researcher performed data

transformation by using the square root transformation (Krataithong, 1999) of the dependent variables. From the test of the distribution of unstandardized residual, the data had normal distribution, which was in accordance with the preliminary agreement.

Third preliminary agreement: The independent variables and the dependent variable had a linear relationship. The researcher tested it by creating a scatter plot graph between the independent variables and the dependent variable, assigning the Y axis as the dependent variable, which was the secure attachment pattern of caregivers and the X axis as the independent variables. It was found that the graph had straight line. It means that all independent variables had a linear relationship with the secure attachment pattern of caregivers, which was in accordance with the preliminary agreement.

Fourth preliminary agreement: The variance of the dependent variable for all values of the sum of the independent variables must be in homoscedasticity. It can be tested by creating a graph between the dependent variable on the X axis and the standard variable on the Y axis. It was found that the predictive equation line was tilted from the bottom left corner to the top right corner. This means that the variance of the dependent variable for all values of the sum of the independent variables was in homoscedasticity, which was in accordance with the preliminary agreement.

Fifth preliminary agreement: The unstandardized residual must not have autocorrelation. From the Model Summary Table, Durbin-Watson was 2.080. It can be concluded that $DL \leq D \leq DU$. This violated preliminary agreement that Durbin-Watson must be between 1.50 -2.50. The researcher then tested it by creating a graph between the unstandardized residual on the Y axis and the independent variables on the X axis. The test revealed that the graph had straight line without direction. Or, the distribution of unstandardized residual was not systematic (Kaiyawan, 2014) . So, the unstandardized residual had no relation to each other, which was in accordance with the preliminary agreement.

Sixth preliminary agreement: All independent variables must not have multicollinearity. The researcher tested it by considering Variance Inflation Factor (VIF) or Tolerance in Coefficients Table. If VIF is low (less than 10)

and Tolerance is higher (greater than 0.2). It means that the independent variables did not have multicollinearity (Howell, 2013). The results showed that VIF was less than 10 (the highest = 1.813) and Tolerance was greater than 0.2 (the lowest =.551). This means that all independent variables did not have multicollinearity, which was in accordance with the preliminary agreement.

3.5 Phase 2: The caregivers' perceptions about secure attachment (Qualitative Descriptive Design)

The researcher explored the perceptions of caregivers caring for older adults living at home by using a qualitative descriptive design to gain a better understanding of the most frequent prominent predictors related to the secure attachment of caregivers.

3.5.1 Participants

The participants were selected by purposive sampling method from the subjects in Phase 1 of this study who met the following **inclusion criteria.**

3.5.1.1 Caregivers (unpaid caregivers) who were the participants in Phase1
of this study and met criteria and got high scores of secure attachment

3.5.1.2 Caregivers willing to volunteer to participate in in-depth interviews

There were 10 participants, composed of informal caregivers caring for older adults from Phase 1 of the study. This study proposed that an estimated sample size of 10-20 participants was needed for qualitative interviews to achieve data saturation and reach informational redundancy (Lincoln & Guba, 1985; Strauss & Corbin, 1990).

The researcher used a qualitative descriptive design because deep understanding of the perceptions of caregivers caring for older adults living at home must be explored. Moreover, the researcher gained a better understanding of the most frequent prominent predictors related to the secure attachment of caregivers.

3.5.2 Recruitment

The researcher asked each potential participant about their willingness to be interviewed, topics the caregivers may find uncomfortable to discuss, and improved understanding of the factors predicting secure attachment. The researcher contacted the key persons (Gatekeepers) at the provincial health divisions in the four chosen provinces. Then, the key persons (Gatekeepers) from each village in the district accompanied the researcher to meet the participants with the informal caregivers and conducted in-depth-interviews in the areas the caregivers may find comfortable to talk about. Permission for audio recording and note taking had been obtained before the interviews were conducted.

3.5.3 Data Collection

3.5.3.1 The instruments used in the quanlitative phase were used to construct the interview guidelines for the in-depth interviews with caregivers which aimed at gaining a better understanding of secure attachment based on the factors with the highest scores indicating they could be the predictors of secure attachment.

3.5.3.2 The above-mentioned interview guidelines were adopted for the study and used with the participants. The interview guidelines were constructed based on the variables with the highest scores indicating that they were capable of predicting secure attachment. The instrument consisted of semi-structured interview questions. The questions were used to ask the participants about their perception and understanding of secure attachment in informal caregivers caring for older family members in the older adult's home.

3.5.3.3 The interview guidelines were approved by five experts for appropriate language, accuracy, and completeness.

3.5.3.4 Before conducting the interviews, all of the participants were informed about the informed consent form. After permission had been received, the researcher recorded the interviews and asked the participants or caregivers to recall their experiences with secure attachment using the interview guideline questions. This was repeated until the interviews from 10 participants were obtained, or data saturation was achieved. The interviews took approximately 30-50 minutes each and were conducted in the private homes of the caregivers.

3.5.3.5 Every day after the in-depth interviews were completed, verbatim transcription was administered by the researcher personally.

3.5.3.6 The researcher asked the caregivers to verify the accuracy of the transcripts.

3.5.3.7 Confidentiality was a primary concern when researching secure attachment among caregivers caring for older adults. The researcher transcribed all the audio-recorded interviews personally and deleted the recordings after the completion of the study. Also, code numbers were used to represent the respondents, not their names. Other information regarding the addresses of the caregivers/recipients and the interview site was also deleted. All data were kept strictly confidential.

3.5.3.8 Before conducting the interviews, the researcher built rapport with the participants using conversation as the primary means of access. After each interview, field notes were taken and completed.

3.5.3.9 Next, the data were analyzed. Furthermore, the data were destroyed after the completion of the study.

3.5.4 Trustworthiness

In the qualitative approach, the researcher tested the instruments for content validity and reliability based on the following four dimensions: credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985).

3.5.4.1 Credibility should indicate the focus of the research and refer to confidence in the data's quality and context for data collection. In this study, the researcher triangulated data as follows: 1) using three methods, including observation, and in-depth interviews; 2) developing specific measurements for recording and interviewing; and 3) applying appropriate conceptual frameworks, practices, research data, research articles, research papers, and academic texts. The processes of analysis should address the intended focus, which was the selection of participants with rich experiences who were capable of answering the research questions and representing caregivers in the upper northeastern region of Thailand with regarded to the phenomena which were the focus of the study. Also, member checking was used in cedibility.

3.5.4.2 Dependability is the consistency and repeatability of the findings. Audit trail, peer review and dissertation committee audit were the strategies used to establish dependability in this study (Lincoln & Guba, 1985). Also, three peer-bebriefing was used in transcribing verbatim and themes.

3.5.4.3 Confirmability is the objectivity of the findings and ensures that the findings have been shaped by the participants' views, rather than researcher bias. Audit trail and clarifying researcher bias were strategies for establishing confirmability in this study (Lincoln & Guba, 1985). Practicing reflexivity to reveal any underlying assumptions and biases was performed to clarify any researcher bias. Reflexivity was a process of reflecting on emergent themes in the data and checking these observations against the researcher's perceptions and preconceptions (Mills, 2006).

3.5.4.4 Transferability is the feasibility of applying the research findings to other contexts. If another study determines that the same themes as the present study's findings have explained the phenomenon, or transferred to another context, the findings should be deemed applicable to the findings of other research contexts.

3.5.5 Qualitative Data Analysis

Colaizzi's method (Standing, 2009) based on Husserlian Phenomenology was used for data analysis in qualitative descriptive study. Based on Husserlian Phenomenology, this study focused on understanding the essence of informal caregivers' phenomena and perceptions of how they give meaning to the participants' experiences. This method consisted of the following seven processes.

3.5.5.1 The researcher read the verbatim transcripts, all data from the

informal caregivers, and field noted several times to ensure that they can understand and explain (make sense of) the important phenomena.

3.5.5.2 The researcher retrieved important keywords or sentences

related to the meanings of the experiences of informal caregivers regarding the experiences of caring for an older family member by underlining or highlighting those words or important statements.

3.5.5.3 The researcher utilized these important words or sentences (coding) to define the meaning in each sentence.

3.5.5.4 The researcher used these important words or sentences (coding) to define the meaning of the experience to develop a group of issues (Themes).

3.5.5.5 The researcher used the results of the analysis to write the report and explain clearly the phenomena of the informal caregivers' experiences. In this process, the researcher eliminated unnecessary or unrelated information or topics.

3.5.5.6 The researcher examined the accuracy of the assessment of the phenomenon by member checking to ensure if it was correct in relation to the data or verbatim transcripts. In this step, the researcher selected two key informants who were informal caregivers and had them review the researchers' writing to ensure if it accurately reflected their experiences.

3.5.5.7 The researcher then corrected the information based on the participants' input to verify accuracy and then interpreted the coding, categories, and themes to generate a complete conclusion.

The researcher analyzed the information and data according to the aforementioned analysis steps of Colaizzi's method (Standing, 2009) based on Husserlian Phenomenology. Analysis of the individual data sets and the data was undertaken to summarize the data and develop the themes which were teased out of the data until it was determined that data saturation was reached.

3.5.6 Integration of the data

A single mixed method design study mixed both quantitative and qualitative data into one study to answer the questions related to the research problems more completely (Creswell, 2009). The integration of quantitative and qualitative phase was connected to interpret and report the data. Answering the research questions required studying qualitative themes about their ability to explain the quantitative results. Then the qualitative findings could be integrated with the quantitative findings to answer the questions using quality inferences (Cresswell, 2009; Creswell & Clark, 2011). The data from quantitative and qualitative would be analyzed by side-by side comparison.

For the comparison of the results, side by side and joint display were used. Firstly, it was to merge a side by side comparison. The results of quantitative and qualitative were presented in the discussion or the summary table. Then the presentation became the means for conveying the merge results (see Table 3.1).

In terms of joint display (Cresswell, 2009; Creswell & Clark, 2011), it was the figure or the table containing both quantitative and qualitative data so that the two sources of data could be directly compared. It was to create a category/theme display in merged data analysis arraying the qualitative themes derived from the qualitative analysis with quantitative categorical or continuous data from items or variables from quantitative statistic results.

Table 3.2

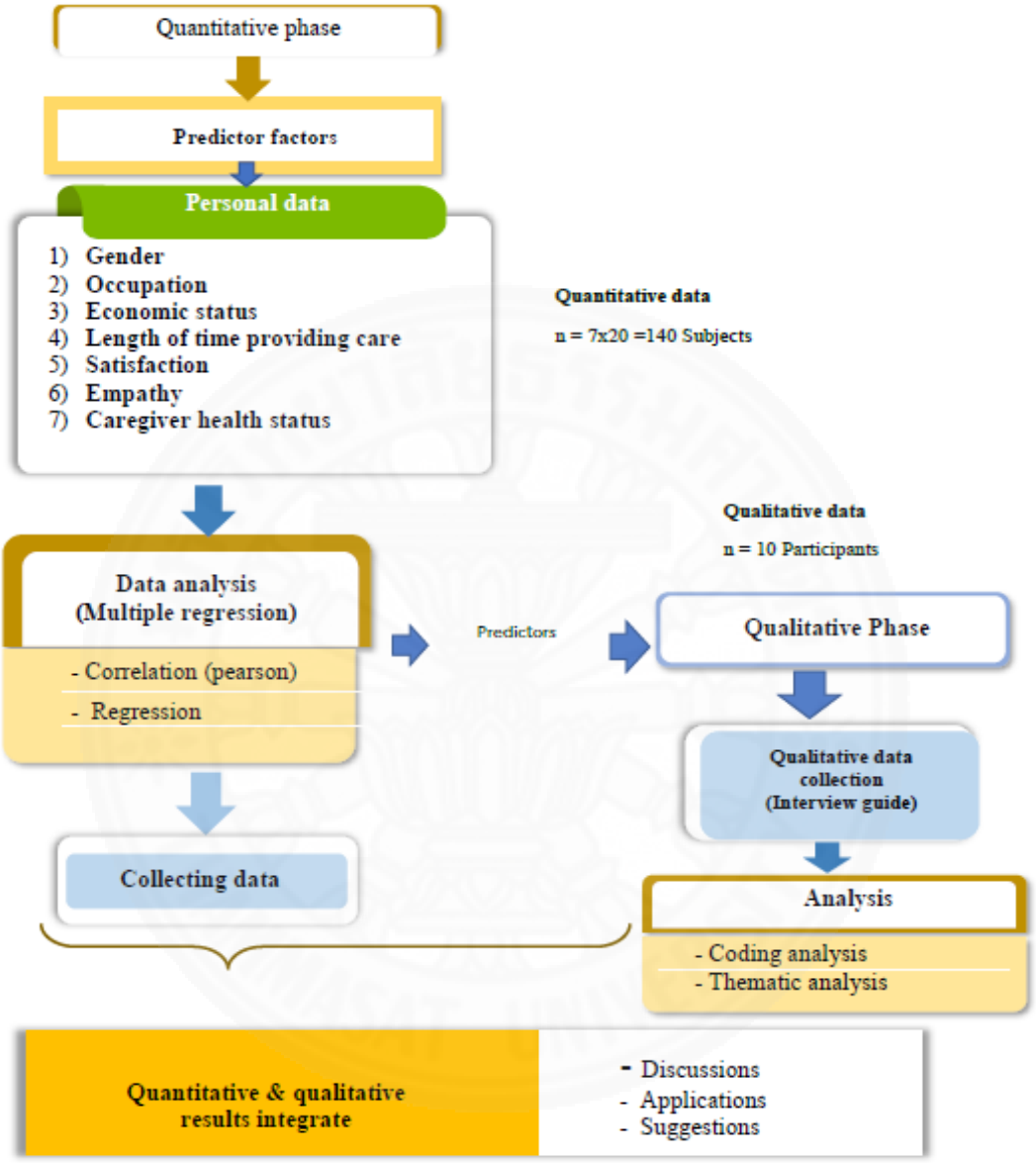
Presenting of Joint Display Set Categories by Themes for the Comparison of the Results

	Qualitative themes		
	Predictor 1/ Theme 1	Predictor 2/ Theme 2	Predictor 3/ Theme 3
Dimension	N=	N=	N=
quantitative	N=	N=	N=
categories	N=	N=	N=

For the interpretation, Cresswell and Clark (2011) stated that it was to interpret the findings from data of both quantitative and qualitative research and summarize them together and refer to a large population which was called meta-inference. The findings should be interpreted in a manner that was combined regardless of the results of the data analysis. Both types were consistent or conflicting. In the time phase, sequential to define research questions can be provided (see Figure 3.2).

Figure 3.2

Sequential Explanatory Mixed Method Design



The researchers presented images of the quantitative and qualitative results with statistics. The theme of the joint display was the comparison of the participants' images to improve the interpretation of the research results. Also, a qualitative approach could complete the results.

CHAPTER 4

RESULTS AND DISCUSSION

This was mixed method research with the aims of identifying the factors predicting secure attachment in caregivers of older adults living at home and gaining in-depth understanding about the perceptions of caregivers providing care for older adults living at home in relation to secure attachment. The data was collected from 23 December 2019 to 23 April 2020.

In the first phase of the study, the cross-sectional method was employed to study the factors of gender, occupation, economic status, length of time spent providing care for older adults, caregivers' satisfaction, caregivers' empathy and caregivers' health status in predicting secure attachment in 140 caregivers of older adults living at home in communities in Nakhon Phanom Province, Loei Province, Sakon Nakhon Province and Nong Khai province. The quantitative data was collected from 23 December 2019 to February 16, 2020.

4.1 Phase 1: Findings of the cross-sectional study (quantitative design)

This phase aimed to identify the factors predicting secure attachment in caregivers of older adults living at home. There were 3 parts of findings as follows.

4.1.1 Personal information of caregivers

The results of the analysis of the personal information of caregivers of older adults using descriptive statistics revealed that most of the samples were males, accounted for 56.43% (n = 79). They were non-healthcare professionals, accounted for 51.43% (n= 72). They mostly had sufficient income, but not enough for savings, accounted for 70.00% (n=98). The length of time spent providing care for older adults was 1-6 hours per day, accounted for 32.86% (n =46) as presented in Table 4.1.

Table 4.1

Number and Percentage of the Samples Classified by Demographic Characteristics, namely Gender, Occupation, Economic status, Length of Time Spent Providing Care for Older Adults (n = 140)

Personal information	Number	Percentage
Gender		
Male	79	56.43
Female	61	43.57
Occupation		
Non-healthcare professionals	72	51.43
Healthcare professionals	68	48.57
Economic status		
Sufficient income for savings	17	12.14
Sufficient income but not enough for savings	98	70.00
Insufficient income	25	17.86
Length of time spent providing care		
1-6 hours per day	46	32.86
7-12 hours per day	29	20.72
13-18 hours per day	26	18.56
19-24 hours per day	39	27.86
Provinces		
Loei	39	27.86
Sakon Nakhon	36	25.71
Nong Khai	34	24.29
Nakhon Phanom	31	22.14

4.1.2 Secure attachment, caregivers'satisfaction, caregivers'empathy, and caregivers'health status of caregivers.

Mean and standard deviation of the samples classified by the total scores of secure attachment, satisfaction, empathy, and health status of caregivers are presented in Table 4.3.

Table 4.2

Mean and Standard Deviation of the Samples Classified by Each Item of Attachment style

Attachment style	*M*	*SD*
Secure (Secure attachment)	5.98	0.50
Dismissing	4.33	0.95
Preoccupied	4.59	0.86
Fearful	3.40	1.14

According to the finding on the mean and standard deviation of secure attachment classified by each item and overall, the item with the highest score was "I am very happy with my current life" ($\overline{X}$ =6.50, S.D. =.58). For the mean and standard deviation of the sample classified by each item and overall dismissing, the item with the highest score was "Self-help is very important to me" ($\overline{X}$ = 6.13, S.D.=1.42). As for the mean and standard deviation of the samples classified by each item and overall for preoccupied, the item with the highest score was, "My life is good, when I am with a loved one who gives me affection" ($\overline{X}$ = 6.20, S.D.= 1.41). According to the mean and standard deviation of the samples classified by each item and overall for fearful attachment, the item with the highest score was " Thinking about creating a relationship is safer than creating a relationship in real life" ($\overline{X}$ =3.74, S.D.=1.97) as shown in Table 4.3.

Table 4.3

Mean and Standard Deviation of the Samples Classified by Item of Satisfaction, Empathy, and Health Status of Caregivers.

Variables	*M*	*SD*	Interpretation
Caregivers' satisfaction	2.27	0.45	Moderate
Caregivers' empathy	2.20	0.13	Moderate
Caregivers' health status	2.47	0.30	Good

For the mean and standard deviation of the samples classified by each item and overall caregivers' satisfaction, the item with the highest score was "I recognize my own value". The mean score was at a high level ($\overline{X}$ =2.43, S.D. =.64). As for the mean and standard deviation of the samples classified by each item and overall caregivers'empathy, the item with the highest score was "I feel happy, when the elderly I care for are bright and cheerful" ($\overline{X}$ =2.90, S.D. =.09). For the mean and standard deviation of the samples classified by each item and overall caregivers' health status, the item with the highest score of was "You can perform daily activities well" ($\overline{X}$ =2.65, S.D. =.49).

4.1.3 Predictive factors of secure attachment

For the analysis of the ability of the personal factors, including gender, occupation, economic status, caregivers' satisfaction, caregivers' empathy, length of time spent providing care for older adults and caregivers' health status in predicting the secure attachment pattern in caregivers of older adults living at home (using hierarchical regression analysis, the variables were entered into the equation in order according to the theories and the study of factors related to the pattern of secure attachment in the older adults living at home in the northeastern region of Thailand). In this study, the researcher developed the research conceptual framework based on the literature review. The variables were classified according to the research

framework into 4 groups: 1) personal factors (gender, occupation and economic status), 2) caregivers' satisfaction, 3) caregivers' empathy, 4) length of time spent providing care for older adults, and 5) caregivers'health status. The Pearson's product correlation with secure attachment (n=140) was shown in Table 4.4 and 4.5.

Table 4.4

Pearson's Product Correlation with Secure Attachment (n=140)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Gender (GEN)-Female	-										
2. Occupation (OCCU)	-.011	-									
- Healthcare professionals											
3. Economic status	.062	.120	-								
Sufficient income but not enough for savings (ECO1)											
4. sufficient income for savings (ECO2)	-.135	.075	-.568**	-							
5. Caregivers' satisfaction (TS)	.262*	.042	.220*	-.181*	-						
6. Caregivers' empathy (TEM)	.107	.039	.098	-.115	.216*	-					
Length of time spent providing care											
7. Time 8-14 hours (TIME2)	-.131	.053	-.038	-.019	-.136	-.098	-				
8. Time 15-21 hours (TIME3)	-.245*	.050	.142	.094	-.227*	.051	-.132	-			
9. Time 22-22 hours (TIME4)	.059	-.123	-.095	.010	-.034	-.129	-.166	.322**	-		
10. Caregivers' health status (TH)	.022	.065	-.076	-.087	.304**	.170*	.108	.010	-.088	-	
11. Secure attachment (TSE)	.282*	-.043	-.023	-.094	.499**	.286*	-.037	-.165	-.042	.484**	-

Note. *p < .05, ** p < .001

The researcher entered the variables in the equation in the following orders.

Independent variables

Model 1 (Equation 1): personal factors (gender, occupation and economic status)

Model 2 (Equation 2): caregivers' satisfaction

Model 3 (Equation 3): caregivers' empathy

Model 4 (Equation 4): length of time spent providing care for older adults

Model 5 (Equation 5): caregivers' health status

The results of the hierarchical regression analysis revealed that, when the independent variables were entered into the equation in order in Model 1 , gender, occupation and economic status were able to cooperatively explain the variance in the secure attachment pattern of caregivers of older adults by 9. 1% with statistical significance (R^2 = .080, F = 11.920, p < .001*).

In Model 2, when the variable of caregivers' satisfaction was entered into the equation, it was found that gender, occupation, economic status and satisfaction of caregivers were able to cooperatively explain the variance of the secure attachment pattern of caregivers of older adults by 27.3% with statistical significance (R^2 = .273, F = 25.734, p < .001***). Furthermore, caregivers' satisfaction was, therefore, able to increase the ability to cooperatively explain the variance in the secure attachment pattern of the caregivers of older adults by 2.5% with statistical significance (R^2_{change}= .025, p = .033*).

In Model 3, when the variable of caregivers' empathy was entered into the equation, it was found that gender, occupation, income, economic status, satisfaction and empathy of caregivers were able to cooperatively explain the variance of the secure attachment pattern of caregivers of older adults by 32.5 % with statistical significance (R^2 = .325, F = 16.251, p =<.001* * *). Caregivers' empathy was, therefore, able to increase the ability to cooperatively explain the variance in the secure attachment pattern of caregivers of older adults by 2.1% with statistical significance (R^2_{change} = .021, p = .040*).

In Model 4, when the variable of length of time spent providing care for older adults was entered in the equation, it was found that gender, occupation,

income, economic status, satisfaction, empathy of caregivers and length of time spent providing care for older adults per day were able to cooperatively explain the variance in the secure attachment pattern of caregivers of older adults by 32.5 % with statistical significance ($R^2 = .325$, $F = 16.251$, $p < .001$***). Length of time spent providing care for older adults per day was, therefore, able to increase the ability to cooperatively explain the variance of the secure attachment pattern of caregivers of older adults by 2.1% with statistical significance ($R^2_{change} = .021$, $p = .040$*).

In Model 5, when the variable of caregivers' health status was entered into the equation, it was found that gender, occupation, income, economic status, satisfaction, empathy of caregivers, length of time spent providing care for older adults per day and caregivers' health status were able to cooperatively explain the variance of the secure attachment pattern of caregivers of older adults by 42.0 % with statistical significance ($R^2 = .420$, $F = 24.445$, $p < .001$***). Caregivers' health status was, therefore, able to increase the ability to cooperatively explain the variance in the secure attachment pattern of caregivers of older adults by 1.8 % with statistical significance ($R^2_{change} = .018$, $p = .043$*).

The results of the hierarchical regression analysis point out that caregivers' health status was the strongest predictor of secure attachment ($\beta = .362$, $t = 5.208$, $p < .001$***), followed by caregivers' satisfaction, caregivers' empathy and gender (female). The factors that did not predict secure attachment were occupation, economic status and length of time spent providing care for older adults. These predictor variables were accounted for 43.6% of the variance in secure attachment among informal caregivers, while the factors influencing the secure attachment pattern of caregivers of older adults were gender, caregivers' satisfaction, caregivers' empathy, and caregivers' health status (see Table 4.6).

From the hierarchical regression analysis studying the factors influencing the secure attachment pattern of caregivers of older adults, namely gender, occupation, economic status, caregivers' satisfaction, caregivers' empathy, length of time spent providing care for older adults per day and caregivers' health status, the equations in raw scores and standard scores can be written as follows.

Equation in standard scores (Enter): Ź =.356Z $_{(TH)}^{***}$ +.320 Z $_{(TS)}^{***}$ + 0.165Z $_{(GEN)}^{*}$ + .148Z $_{(TEM)}^{*}$ -.075Z$_{(OCCU)}$ -.075Z$_{(ECO1)}$ +.003Z $_{(ECO2)}$ -.007Z$_{(TIME1)}$ -.59Z$_{(TIME2)}$)-.027Z $_{(TIME\ 3)}$)

Equation in standardscores (Stepwise) Ź =.362Z $_{(TH)}^{***}$ +.312 Z $_{(TS)}^{***}$ + 178 $_{(GEN)}^{*}$ + .138 $_{(TEM)}$ *****

Table 4.5

Hierarchical Regression Analysis for Predictor Variables of Secure Attachment of Caregivers (n = 140) (Stepwise)

Model	*R*	*R^2*	*R^2 Change*	*F*	*P- value*
1	*.282*	*.080*	*.080*	*11.920*	*.000*
2	*.523*	*.273*	*.025*	*25.734*	*.000*
3	*.570*	*.325*	*.021*	*16.251*	*.000*
4	*.570*	*.325*	*.021*	*16.251*	*.000*
5	*.684*	*.420*	*.018*	*24.445*	*.000*
Predictors	*b*	*S.E.$_b$*	*Beta(β)*	*t*	*P- value*
Health status	*.603*	*.116*	*.362*	*5.208*	*.000*
Satisfaction	*.338*	*.078*	*.312*	*4.318*	*.000*
Gender	*.180*	*.069*	*.178*	*2.604*	*.010*
Empathy	*.530*	*.260*	*.138*	*2.041*	*.043*
	R=.648	*R^2=.420*	*F=24.445*		

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

Table 4.6

Hierarchical Regression Analysis for Predictor Variables of Secure attachment of Caregivers (n = 140) (Enter)

Step	Predictor variable	Model 1			Model 2			Model 3			Model 4			Model 5		
		β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
1	**Gender**															
	Female	.27	3.29	.001	.15	2.04	.043	.14	1.96	.052	.15	1.99	.049	.16	2.32	.022
	Occupation (OCCU)	-.02	-0.23	.816	-.03	-0.44	.656	-.04	-0.54	.585	-.04	-0.62	.531	-.07	-1.09	.274
	Economic status															
	Sufficient income, but not enough for savings (ECO1)	-.10	-1.00	.317	-.18	-2.04	.043	-.18	-2.10	.037	-.18	-1.99	.048	-.07	-0.84	.400
	Sufficient income for savings (ECO2)	-.11	-1.11	.269	-.08	-0.97	.331	-.07	-0.84	.401	-.07	-0.77	.442	.00	0.03	.970
2	**Caregivers'satisfaction** (TS)				.48	6.30	.000	.45	5.87	.000	.45	5.64	.000	.32	4.02	.000
3	**Caregivers'empathy** (TEM)							.18	2.53	.013	.18	2.47	.014	.14	2.13	.035
4	**Length of time**															
	8-14 hrs/day (TIME1)										.05	0.68	.496	-.00	-0.10	.920
	15-21 hrs/day (TIME2)										.00	0.00	.999	-.05	-0.73	.464
	22-24 hrs/day (TIME3)										-.02	-0.32	.744	-.05	-0.37	.711
5	**Caregivrs'health status** (TH)													.35	4.82	.000

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

4.2 Phase 2: The caregivers' perceptions about secure attachment (Qualitative Descriptive Design)

This phase aimed to gain an in-depth understanding of the caregivers's perceptions caring for older adults living at home.

Research findings

The aims of this research were to study the experiences of secure attachment in caregivers caring for older adults. The researcher used the Qualitative descriptive design. The method of Colaizzi was also employed for data analysis. The data were selected from the viewpoints of the caregivers who had been providing care for older adults for at least 3 years, had direct experience in caring for older adults and had a secure type as secure attachment. Thus, 1 male and 9 female informants were purposively selected by screening from the results of the data analysis (Phase 1). These 10 people were those with high scores on the dependent variables. Data were collected for comparison. The results of Phase 2, which was qualitative research were compared in order to strengthen the quantitative research by using in-depth interviews and observation. The data collection period was from February 17, 2020 - April 23, 2020. Data analysis was conducted for the in-depth interviews using the analysis method of Colaizzi (Abalos et al., 2016). The findings were as follows.

Part 1: Personal information

Part 2: The perceptions of caregivers caring for older adults explained the factors affecting secure attachment of caregivers providing care for older adults living at home by using the qualitative descriptive design.

4.2.1 Personal information

In this study, there were 10 participants. The information included personal information, including gender, occupation, economic status, and length of time spent providing care, as shown in Table 4.7.

Table 4.7

Personal Information of the Informants

Informants	Age (years)	Gender	Occupation	Economic status	secure attachment score
Informant 1 (P1)	46 (Nakhon Phanom Province)	Female	Farmer	Sufficient income but not enough for savings	High (taking care of mother and father)
Informant 2 (P2)	51 (Nong Khai Province)	Female (married)	Farmer and community health volunteer	Sufficient income but not enough for savings	High (taking care of mother)
Informant 3 (P3)	43 (Sakon Nakhon Province)	Female (married)	Civil servant working at the municipality	Sufficient income for savings	High (taking care of mother)
Informant 4 (P4)	47 (Nong Khai Province)	Female (married)	Farmer and selling flowers	Sufficient income but not enough for savings	High (taking care of mother)
Informant 5 (P5)	59 (Nong Khai Province)	Male (married)	Farmer	Sufficient income but not enough for savings	High (taking care of wife's sister)
Informant 6 (P6)	35 (Loei Province)	Female	Worker	Sufficient income but not enough for savings	High (taking care of father)
Informant 7 (P7)	50(Nakhon Phanom Province)	Female	farmer	Sufficient income enough for savings	High (taking care of mother)
Informant 8 (P8)	50(Nakhon Phanom Province)	Female	Community health volunteer and farmer	Sufficient income but enough for savings	High (taking care of mother)

Table 4.7

Personal Information of the Informants

Informants	Age (years)	Gender	Occupation	Economic status	secure attachment score
Informant 9 (P9)	46 (Loei Province)	Female	Vendor	Sufficient income but not enough for savings	High (Taking care of mother)
Informant 10 (P10)	60 (SakonNakhon Province)	Female	Farmer	Sufficient income but not enough for savings	High (taking care of mother)

Context of Participants

P1: The interview was conducted at Ban Na Thon Tambon Health Promoting Hospital, which was a two-story cement Health Center. The interviewee had a smiling face and greeted the registered nurse of Ban Na Thon Tambon Health Promoting Hospital. The researcher prepared the questions and had the interviewee sign the consent form and asked for permission to record the conversation. The interviewee was very cooperative, and the researcher gave the interviewee the compensation and made an appointment for the second interview. For the second interview, the researcher asked the registered nurse to make an appointment with the interviewee to give the interview at Ban Na Thon Tambon Health Promoting Hospital. The researcher asked about the attachment with the older adults whom the interviewee had been caring for which was her mother after discharging from Ban Na Thon Tambon Health Promoting Hospital. The transcription was done at the hotel.

P2: The interview location was at Phra That Bang Phuan Health Center, which was a two-story cement Health Center. The interviewee was a female community health volunteer, aged 51 years old. She had a smiling face. She was a

village health volunteer and farmer. The registered nurse arranged an appointment for the interview, which took approximately 45 minutes for the first time. The second interview took 30 minutes.

P3: The interview was made at a two-story wooden house with a cabin in front of the house. The interviewee was 43 years old. The interviewee was a civil servant. The registered nurse made an appointment for the interview on a holiday in Sakon Nakhon Province. During the interview, the interviewee offered good cooperation and asked what kind of questions would be asked. The researcher answered the questions and asked for permission to conduct the interview. While interviewing, the mother of the interviewee also gave more information. After interviewing, the researcher transcribed the interview at a hotel in Sakon Nakhon Province.

P4: The interview was conducted at Phra That Bang Phuan Tambon Promoting Hospital, Nong Khai Province. The interviewee was female and 47 years old. She was waiting at Tambon Promoting Hospital for both interviews at 9.00 am. During the interviews, the interviewee provided good cooperation, and it took about 40 minutes to complete each interview. The interviewee described the care given to her mother, even when she had to leave the house to work. She also planted flowers. The family income was high but not enough. At the end of each interview, the researcher asked to leave and went to stay at a hotel in Nong Khai Province.

P5: The location of the interview was at Phra That Bang Phuan Health Center in winter. The interviewee was a male farmer, aged 59 years. He came with a smiling face. He was a farmer who had been caring for the sister of his wife. He offered good cooperation for the interview. After the interview, the researcher stayed at a hotel in Nong Khai Province.

P6: The interview was conducted at Sok Mai Tambon Health Promoting Hospital, Loei Province. The registered nurse made an appointment for the interview at 9.00 am. The interviewee provided good cooperation. The interviewee was a vendor who spoke fluently and liberally. After finishing the interview, the researcher stayed at a resort in Loei Province and transcribed the interview.

P7: The location of the interview was Ban Na Thon Tambon Health Promoting Hospital, Nakhon Phanom Province. The registered nurse made an appointment with the interviewee for 9.00 am. The interviewee well cooperated. The interviewee was a farmer and had a homestay business. The interviewee spoke fluently and always smiled. The interviewee told about the care provided for the mother who had health problems but had getten stronger. After finishing the interview, the researcher stayed at a hotel in Nakhonphanom Province and transcribed the interview.

P8: The interview was conducted at Ban Na Thon Tambon Health Promoting Hospital, Nakhon Phanom Province. The interviewee was a daughter-in-law taking, aged 50 years who was providing care for her mother-in-law, aged 89 years. She was a farmer and community health volunteer. The interviewee provided good cooperation.

P9: The interview was conducted at Sok Mai Tambon Health Promoting Hospital, Loei Province. The interviewee had a smiling face and took care of her mother. The interviewee was a vendor and cooperated well in the interview. The researcher conducted the interview and requested permission to record the interview. The interviewee offered good cooperation. After the interview, the researcher stayed at a hotel and transcribed the interview.

P10: The interview conducted at the interviewee's house, which was a two-story wooden house. The interviewee was a farmer who liked to go to the temple

and wore cotton clothes and sarongs. The interviewee provided good cooperation. When the researcher arrived, the neighbor and the registered nurses called the interviewee and the researcher gave the interviewee the compensation and transcribed the interview at the hotel in Sakon Nakhon Province.

4.2.2 A secure attachment in the perceptions of caregivers

The qualitative descriptive study was used for explaining secure attachment perceptions of caregivers caring for older adults living at home. The themes emerged.

Theme 1: Meaning of secure attachment

Theme 2: Factors affecting secure attachment of caregivers caring for older adults. The categories included the following: 1) gender of caregivers, 2) caregivers' empathy, 3) caregivers' health status and 4) caregivers' satisfaction (see Figure 4.1 and Table 4.8).

Figure 4.1

Themes and Sub Themes of Qualitative Findings

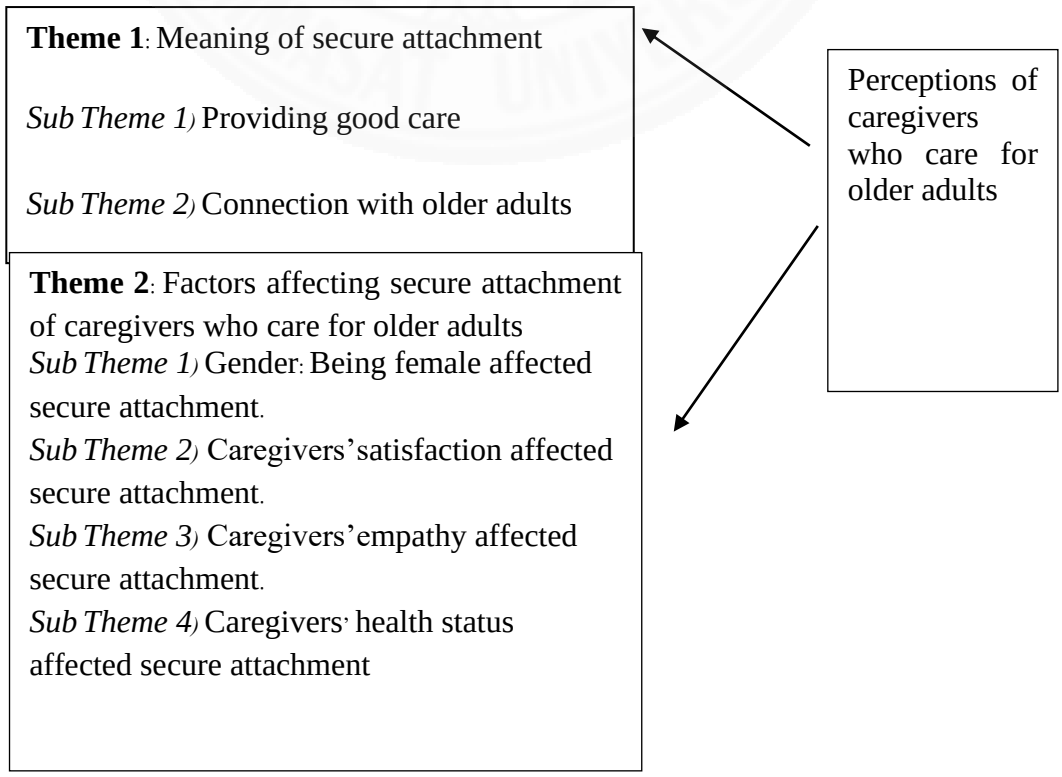


Table 4.8

Themes and Sub Themes of Caregivers Caring for Older Adults

Themes	Sub themes	Categories
1 Meaning of secure attachment	1.1 Providing good care	1) Giving the best care
		2) Love
		3) Caring the older adults
	1.2 Connection with older adults	1) Attachment to parents
		2) The responsibility of youngest child
2 Factors affecting secure attachment of caregivers who care for older adults	2.1 Gender: Being female affected secure attachment.	1) Females providing better care and understanding older adults
		2) Females being more delicate
		3) Females being more available to touch men and female older adults
	2.2 Caregivers' satisfaction affected secure attachment.	1) Thinking that they are happy
		2) Anticipating the future
	2.3 Caregivers' empathy affected secure attachment.	1) Being afraid of making older adults regret
		2) Doing good without hoping for anything in return
		3) Being moral caregivers
		4) Keeping a sense of humor.
	2.4 Caregivers' health status	1) Caregivers stay healthy.

Table 4.8

Themes and Sub Themes of Caregivers Caring for Older Adults

Themes	Sub themes	Categories
	affected secure attachment.	

Theme 1: Meaning of secure attachment

The meaning of the secure attachment of caregivers was giving best care, love, concern, attention, and attachment to older adults living at home, based on Thai culture and value that older adults have a higher position than other family members and informal caregivers believe that they have gratitude and an obligation to care in turn for their senior older adults (Kespichayawattan, 1999). The meaning of secure attachment concluded 2 sub-themes, namely providing good care and connection with older adults. The themes consisted of 5 categories as follows: 1) giving the best care, 2) love, 3) caring the older adults, 4) attachment to parents and 5) the responsibility of the youngest child.

Sub theme: 1.1 Providing good care

1. Giving the best care refers to providing good care for older adults and staying together for a long time, as stated by P2 on spiritual security, "*Since my grandmother is old, I have to give priority to her mind. I also want to take care of my grandmother the best. Overall, I want to take good care of my grandmother... My mother and I take care and understand each other. Therefore, we can stay together for a long time*."

2. Love refers to offering happiness for older adults and making comfortable things available. P1 commented, "*Attachment is loving like we love our parents*." P5 stated, "*Attachment is to love this parent. I love them and they love me. I love my sister-in- law as my parent.*" "*If you have to rate yourself now, what is the level of your happiness? If the full score is 10 points, I give myself 10 points. It means love and care for her. I want her to feel comfortable and good. If she needs anything, I will give it to her. For example, if she wants to offer food to monk, I*

will buy and prepare things for her". P3 added, "*Security is love. In my opinion, I want my mom to stay with me for a long time now. If she passes away, I do not know who I will live with, because there are only two of us. My children have bought houses and live in Bangkok. I have been living with my mother since my husband died. At the time, I lived at Baan Eua Arthorn and my husband died*."

3. Caring the older adults refers to paying attention and concern for older adults with many activities: P2, stated "*I will talk to and observe my mother whom I care for. For example, I will notice if she eats the food that is not delicious because I am the person who cook for her. So, I will give her supplements. Or, when she feels pain or aches, a nurse from the Public Health Center will provide care*". P2 commented, "*Who sleeps with Grandma? ... Grandma's in another room and I sleep with my husband, but I do not close the door*." P3 stated "*It is giving everything to her (the older adult that I am caring for) and wanting her to feel comfortable and good and giving her everything she likes and wants. For example, if she wants to offer food to monk, I will buy and prepare things for her*". "*For a strong commitment to care for older adults, we have to pay attention to them, and take care of their daily routine as well as possible." "We have to prepare food and take care of their clothes*." P4 stated, "*It means being bonded with your mother and caring for each other. If she wants to do something dangerous, such as cutting down trees, I will tell her not to do it. It is to take care of her so that she can stay healthy and live for a long time*."

Sub theme 1.2 Connection with older adults

1. Attachment to parents refers to building attachment with parents or older adults. P1 stated, "*For building attachment, mothers and children must stay together for life. If parents are bed-ridden patients, we will have to stay with them.* P3 stated, *"The bond that we are children must take care of parent*." P 9 stated, "*Having parents, we have to concern and take care of them." I am the only daughter, so I have to take care of them. I am the filial daughter. I cook and prepare food and water for them. I look after them in terms of both eating and living. I also go to the temple and wash clothes for them. I make them feel happy. My parents have*

never complained about me. I stay with them all the time. After going to the shop, I go back home and ask my mother if she's had dinner. Or after going out, I come back home and water vegetables for about 3 minutes. They do not complain me."

2. The responsibility of the youngest child refers to secure attachment in Thai culture in which children have a duty to provide care for their older adults. P2 said, "*The factor that makes me stay with my grandma all the time is that I am the youngest child. I will always be with my grandma and will not escape anywhere. I have never been to Bangkok. I will always be with my grandma... My grandma has six children, but the older sister got married. The same is true for the older brother. I have to take care of two people with disabilities, two children. They live in other provinces."* P10 stated, *"I am the youngest child and live in this house with my husband. There is another house behind my house where my younger brother, who is single, lives with my mother. But I am responsible for preparing food for them. My mother does not like to eat food when children or grandchildren come to visit her. Children or grandchildren bring her food. I always look after her. I have been living with her since I was very young. I always bring her food, because I do not want her to cook herself because she is old. Nevertheless, rice is quite expensive. But I still take care of her. She is healthy. I think she can live for more than 10 years*."

Theme 2: Factors affecting secure attachment of caregivers

It consisted of 4 sub-themes: 1) gender of caregivers; 2) caregivers' empathy; 3) caregivers' health status and 4) caregivers' satisfaction.

Sub theme 2.1: Gender of caregivers

Gender of caregivers refers to how females are thought to provide better care with a stronger likelihood to provide care for older adults than males. According to the qualitative data, caregivers of older adults with a high mean score for secure attachment consisted of the following categories: 1) Females providing better care and understanding for older adults; 2) Females being more delicate, and 3) Females being available to touch men and female older adults.

1. Females providing better care and understanding older adults: P1 (a female caregiver taking care of her mother), P2 (a female caregiver taking care of her mother) answered the question: P1 said, "*Between females and males, who do you think can better provide care for older adults?*" "*Females are better. I think females. Males are not that good in caring*." P2 said, "*If you ask me, it must be females, because we can better reach the people we care for. Sometimes at night, when my mother feels dizzy, we can sleep with them and observe the symptoms. If my mother is okay, I sleep with my husband*."

This was contrary to the opinions of P5 who a male caregiver was taking care of his wife's sister. He said, "*It is similar*". Some participants had different ideas from P5. For example, P4 said, "*Women have the same sex as mothers. Women are closer than men.*"

2. Females being more delicate: P1 said, "*How good are females in providing care for older adults? ....wash clothes. Do everything for the older adults. She does not have to do anything, because she is old*." P3 (a female caregiver taking care of her mother) said, "*It depends on the person. Talking about the viewpoint, if men are around, we may be able to take better care. But, if men are not with their mothers, women are able to take good care of them*".

3. Females being more available to touch men and female older adults: P3 said, "*Women have a softer touch than men, and men are not as close to mothers as women.*" P6 said, "*It is not about being gentle. It depends on how much we care, maintain the relationship and talk to them, not letting them be alone. We should let them listen to music and not let them feel stressful. We should talk to them*."

The seventh participant had a high mean but thought there were differences in gender in relation to those who provide care for older adults. According to P7, "*Do you think females and males have different attachments to older adults? Um, I think they are no different. It is like women can do it easier than men. Men do not dare to touch older adults. Although men do not take good care of wives and children, they give good care to their mothers*."

Sub theme 2.2: Caregivers' empathy

Caregivers' empathy refers to caregivers' emotions in understanding their older adults. Based on the qualitative data from the interviews of those with a high mean score for secure attachment in relation to empathy, the categories with high secure attachment scores were 1) Being afraid of making older adults regret; 2) Doing good without hoping for anything in return; 3) Being moral caregivers, and 4) Keeping a sense of humor. The category with low secure attachment score was 1) Considering before approaching other people.

1. Being afraid of making older adults regret: P1 stated, *"Empathize with others. Empathy for others means recognizing that other people are like us, so do not hurt them because they will regret."*

2. Doing good without hoping for anything in return: P2 said, "*I am sympathetic, but I do good things without hoping for anything in return. I help as much as possible. Before helping others, we have to ensure that we will not be in trouble. Someone borrowed money, but I do not dare to ask about it. If I am not in trouble or suffering, I will not ask them to pay back*."

3. Being moral caregivers for others: P3 said, "*I buy and prepare things, food and desserts for her to make merit at the temple. I also cook rice for that because I feel pity for her. I am a straightforward person*." P8 said, "*In my opinion, empathy is caring, and she raised me from birth until I grew up. When I have a better life, I want my mother to be comfortable. I do not think much about it. In the past, when my mother wanted us to eat, she bought food for us to eat. Or if we wanted to eat anything, we could tell her. Her life was difficult, though. She was a farmer. But now she does not have to do it. We have a better life. She has Dharma in the heart but cannot go to the temple because of her poor health. She prays all the time and listens to Dharma on the radio. Then she tells us what monks have preached such as how to care for parents or someone who does not have relatives. Sometimes, we give help to others, like buying food for them. My mother is generous*."

4. Keeping a sense of humor: P4 said, "*Easily laughing, having a sense of humor and watching movies to relax*."

Sub theme 2.3: Caregivers' health status

Caregivers' health status refers to the perception to stay healthy and maintain health. Based on the qualitative data from the interviews of those getting a high mean score of secure attachment in terms of caregivers' health status, the category with a high secure attachment score was 1) Caregivers stay healthy.

1. Caregivers stay healthy: P2 commented, "*I am a caregiver who also has diabetes. When I accept my condition that I have diabetes, I know that anyone can also have diabetes*." P3 said, "*I am not sick, and my grandmother is 74 years old. I can still take care of myself and take my own medication. I have heart disease, blood pressure and anemia*." P4 said, "*I have allergies, but I do not go to see a doctor. I am allergic to pollen in the air. Allergies have no medication. There is only medication to relieve symptoms. I do not take medicine. It is not necessary. We can get medication from a public health officer. Medication has no effect on my illness*."

Sub theme 2.4: Caregivers' satisfaction

Caregivers' satisfaction refers to not expectating anything in the future and being satisfied with life. Based on the qualitative data from the interviews with the participants who had a high mean score for secure attachment in terms of caregiver satisfaction, the categories with a high secure attachment score were 1) Thinking that they are happy and 2) Anticipating the future.

1. Thinking that they are happy: P2 said, "*I feel happy; I will see stress relief. It is in our hearts. That's it. We have to know our hearts. For example, if we are angry or something, we have to accept our hearts. I go to the temple and always make merit. From a full 10 points, I give myself 8 points. For the other 2 points, I am not brave enough to give them to myself. I'll save them for when I am in a bad mood*." P5 said, "*Normally, I like hugging my mom. If you ask me what score I would give myself from a full score of 10 points, I'd give myself 8 points. I look at the future for myself and want my child to graduate and have a job*." P5 also

said, "*If the full score is 10, how do we rate ourselves?10 out of 10*." P6 commented, "*For happiness, if the full score is 10 points, what score would I give myself? ... 10 points. I feel happy. The older adult who I care for is my father. He is happy with the fields, raising cows, chickens and fish.*"

2. Anticipating the future: P3 stated, "*I do not expect anything for the future. It's enough. If I have more than this, I might suffer. The way to relieve stress is to watch comedy shows*." P5 commented, "*In the future, I hope to have a better, nicer life*."

4.3 Integration of the findings on the seven predictor variables and secure attachment in caregivers

Integration of quantitative and qualitative data by side by side and joint display (Creswell & Clark, 2011) is shown in Table 4.9.

Table 4.9

Integration of the Findings on the Four Predictor Variables and Secure Attachment in Caregivers (Creswell & Clark, 2011).

Predictor variables	**Standardized coefficients (β)**	**Qualitative sub-theme**	**Categories**
Gender	(β = .165, t = 2.326, p < .05)*.	1) Gender affected secure attachment.	1) Females providing better care and understand for older adults. 2) Females being more delicate. 3) Females being more available to touch men and female older adults.
Satisfaction	β = .320, t = 4.022, p < .001***	Caregivers'satisfaction affected secure attachment.	1) Thinking that they are happy. 2) Anticipating the future.
Empathy	β = .148, t = 2.133, p < .05*.	Caregivers'empathy affected secure attachment.	1) Being afraid of making older adults regret. 2) Doing good without hoping for anything in return. 3) Being moral caregivers. 4) Keeping a sense of humor.
Caregiver's health status	(β = .356, t = 4.824, p < .001***)	Caregivers' health status affected secure attachment.	1) Caregivers stay healthy.

4.4 Discussions

The discussions were based on the research hypothesis as follows.

Research hypothesis

Caregiver characteristics, including gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers' empathy, and caregivers' health status will affect the secure attachment in caregivers of older adults living at home.

Based on the research hypothesis, the results can be discussed as follows:

4.4.1. Factors significantly affecting the dependent variables

The factors affecting secure attachment of caregivers caring for older adults in this study were the gender of caregivers, caregivers' satisfaction, caregivers' health status, and caregivers' empathy.

4.4.1.1 Gender

The results concerned the relationship between gender (female), and the secure attachment patterns of caregivers of older adults. Female gender was able to explain the variance in the secure attachment of caregivers of older adults as a significant predictor of secure attachment ($\beta = .178$, $t = 2.604$, $p < .05$). This finding corresponded with the qualitative results in the following categories: Females were described as 1) Females providing better care and understand for older adults, 2) Females being more delicate, and 3) Females being more available to touch men and female older adults.

Females were reported to be more available and willing to touch older adults than men. This was in accordance with Thai society's norms that the roles in the household or in the family are the matter of women. Thai society believes that women have to be responsible for providing care for the well-being of family members as well as older adults in the house (Muenhor & Poonpol, 2016). Also, overall, men were involved in caring for older adults less than women (Phahuwatanakorn, 1995; Phanthurat, 1999). Gender roles formed in early childhood were the determinant of attachment or relationship security in adulthood. According to the findings of a study by Sauter (1996), caregiving attachment or relationship

quality was based on the characteristics of caregivers and care recipients. Multiple regression analysis with controls in place for demographic data was unable to detect significant attachment style differences in relation to gender. Nevertheless, men reported a higher degree of fearful avoidance.At the same time, security was found to be a predictive factor of contentment and engagement, while a dismissive style was found to be correlated with less embarrassment and fear, but a higher degree of engagement (Consedine & Fiori, 2009) . One of the studies reviewed found the correlation between depressive symptoms and attachment to have greater strength in male informants. Another study indicated a stronger correlation between social anxiety and preoccupation among males in father-son relationships. This means that females tend to be more secure than males because females aged between 45 and 65 years have a greater tendency to accept the task of providing care for aging and older family members or other adults (Paulson et al., 2017) . Concerning the gender of demented persons, an aggressive personality is more likely to be found among men than women. Moreover, aggressive behavior is not only common among men, but it also frequently reflects an insecure style. Aggressive behavior among caregivers may emerge when helping a care recipient with toileting, bathing and other ADL (Heinz, 2010).

4.4.1.2 Caregivers' satisfaction

The findings concerned the relationship between caregivers' satisfaction and the secure attachment pattern of caregivers of older adults. The finding was consistent with the qualitative results in categories: 1) Thinking they are happy, 2) Anticipating the future. Caregivers' satisfaction was able to explain the variance in the secure attachment of caregivers of older adults as a significant predictor of secure attachment ($\beta = .312$, $t = 4.318$, $p < .001$). Noticeably, caregivers' satisfaction had an effect on secure attachment. This finding was in accordance with the study of Steadman and team (2007) that addressed communication and openness, breakdown of conflicts and arguments, love and caring, intimacy and closeness, and roles in the relationship. Optimizing was used as the method of searching for positive relationships and past experiences of daughters towards mothers. The daughters had various problems because they did not have the ideal social pattern of a mother-daughter relationship. According to the research, relationship, satisfaction, parenting

and health-related quality of life were negatively affected by caregiving (Murphy et al., 2015). In fact, relationship quality has also been interchangeably used with relationship satisfaction, relationship happiness and even relationship adjustment in recent years (Ayalon & Roziner, 2016). Satisfaction was associated with secure attachment (Hunhaboon, 2008).

4.4.1.3 Caregivers' health status

The findings concerned the relationship between caregiver's health status and secure attachment in caregivers of older adults. Caregivers' health status (TH) was found to be the strongest predictor and able to explain the variance in the secure attachment of caregivers of older adults as a significant predictor of secure attachment ($\beta = .362$, $t = 5.208$, $p < .001$) and quality of physical health, persons identified as insecurely attached were more likely to report more physical and mental health problems than securely attached individuals. The finding was consistent with the qualitative results in categories: 1) Caregivers' stay healthy. This study suggested that impaired function was associated with relationship quality in the elderly. Physical health and functional health (Sauter, 1996) were also associated with relationship quality. Physical problem means many problems related to physical wellbeing such as fatigue. Some studies found that caregivers in poor health were consistently found to have significantly higher burden levels (Chou, 2000). 2) Psychological problems are the burden of distress and related coping processes and also the severity of caregiver distress related to specific coping strategies (Raggi, Domenica, Simonetta, Walter & Raffaele, 2015). Changes in physical health seem to be limited to the ability to provide care in caregivers meeting the needs of care recipients which results in the feelings of the caregivers about physical deterioration, which is negatively associated with caregivers' outcomes (Sauter, 1996). The emotional health of caregivers caring for the elders has an effect on the quality of the caregiving relationship in caring for the elderly. This leads to the decreased functional capability of the caregivers (Sauter, 1996). Folsom and Jeste (Chuman, 2013) explored the perceptions of older adults in terms of positive aging experiences. According to the findings, focus must be placed on the following four dimensions: attitude/adaptation; security/stability; health/wellness and engagement/stimulation. In this study, the researcher used quality of life or caregiver's well-being to measure

caregivers' health status. Secure attachment is related to subjective well-being (Ramos & Lopez, 2017). On the part of caregivers, attachment anxiety has been found to be correlated with impaired mental health, while attachment insecurity has been found to be correlated with an increasingly regulated type of caregiving (Karantzas et al., 2018).

4.4.1.4 Caregivers' empathy

The findings concerned the relationship between caregivers' empathy and secure attachment in caregivers of older adults. Caregivers' empathy was able to explain the variance in the secure attachment of caregivers of older adults as a significant predictor of secure attachment ($\beta = .138$, $t = 2.041$, $p < .05$). The finding was consistent with the qualitative results in categories: 1) Being afraid of making older adults regret, 2) Doing good without hoping for anything in return, 3) Being moral caregivers, and 4) Keeping a sense of humor.

It was consistent with the study which found that empathy can be defined as the ability to perceive the thoughts of other people as cognitive and affective empathy. Empathy, therefore, was the ability to feel the emotions of others and respond with concern, kindness, capacity for adaptation and caring about others' suffering or the emotions of elderly people (Eisenberg, 2000; Makmee, 2016; Suvansri, 2008). A number of studies have indicated a positive correlation between attachment and empathy. Brandon Chuman (Chuman, 2013; Pickard & Nelson-Becker, 2011) studied the cognitive determinants of successful aging. The study measured the relationship between the components of successful aging and the subjective components of successful aging. Empathy is complex in a multi-dimensional moral concept, including cognitive, emotive and behavioral components. Clinical empathy refers to the following abilities: (a) to understand a person's situation, perspective, and feelings (and the elderly as care recipients have attached meanings); (b) to communicate with more understanding; and (c) to act in a good way to show understanding of others. Attachment, or what can be referred to as an internalized emotional bond, is capable of withstanding tremendous impact on a person's affective, behavioral and cognitive responses in social activities and situations taking place for the entire lifespan. Empathy of people would also help to decrease conflicts in an interpersonal relationship with improved communication

(Goleman, 2002). A number of studies have indicated a positive correlation between attachment and empathy (Wei et al., 2011).

It was consistent with the study of Pinijvicha (2015) which studied the relationship between the four attachment styles and two empathy components (affective and cognitive empathy). The study sample was 450 undergraduate students from Chulalongkorn University in Thailand and a descriptive design was used. Pearson product coefficients and multiple regression were employed. Empathy was surveyed using the Thai version of the Basic Empathy Scale (BES), developed by Suvansri (2008) and Attachment Style Questionnaire (Parapob, 2003) developed based on the Albany Measure of Attachment Styles. Another measurement was the Relationship Style Questionnaire (RSQ).

4.4.2 Factors not affecting the dependent variables significantly

4.4.2.1 Occupation

The results concerned the relationship between occupation (non-professional health provider) and the secure attachment pattern of caregivers of older adults. However, non-professional health provider was not a significant predictor of the secure attachment of caregivers of older adults ($\beta = -.075$, $t = -1.098$, $p = .274$).

The occupation did not affect the secure attachment pattern of caregivers was due to the fact that the occupations of both healthcare professionals and non-professional health providers, including community health volunteers or villagers in the northeastern culture, remained the same among people who continued to live the same way. This was different from the study of Songsemsawa (2013) which found that anxious attachment style was able to predict work and interfere with life ($p < .05$). In the case of the elderly with chronic diseases or medications, caregivers may be either non-professional or professional (Tao & McRoy, 2015). Caregivers such as professional nurses, physical therapists, and social workers in health care are primary caregivers who support the elderly and develop independence with the daily living of the elderly. Caregivers require characteristics such as having sufficient knowledge to support the elderly. Hence, the researcher tested the effects of non-professional and professional caregivers on the relationship quality of

caregivers caring for the elderly. The findings of this study were consistent with the effects of attachment styles on work-life balance. Further study on this factor is needed.

4.4.2.2 Economic status

The results concerned the relationship between economic status (ECO1, ECO2) and secure attachment pattern of caregivers of older adults. Having sufficient income but not enough for savings (ECO1) and sufficient income for savings (ECO2) were not significant predictors of secure attachment in caregivers (β = -.075, t = -.845, p =.400 and β = .003, t = .038, p =.970).

This was different from other studies which found that economic resources represent another caregiver characteristic that appears to be important in determining the quality of the relationships of care recipients and caregivers. Economic resources represent the financial means by which an individual meets material needs. In dyadic caregiving relationships, the economic resources of caregivers may be called upon by the care recipients who may lack personal economic resources. Caregivers' assessment of satisfying and adequate economic support may make them feel positive about their good relationship with the older adults (Nantsupawat et al., 2010). Elderly people who are considered to have good living conditions are actively engaged in their own aging process with preparations for financial security, efforts to maintain good health conditions and the assurance of appreciative children or grandchildren during both independence and dependence. However, caregivers who care for active aging care recipients are supported by family patterns. This causes the caregivers and elders to find comfort in the assurance of having a warm and affectionate caregiver in both current and future situations (Eiamkanchanalai et al., 2017; Nantsupawa et al., 2010).

4.4.2.3 Length of time spent providing care

The findings concerned the relationship between the length of time spent providing care (TIME1, TIME2, TIME3) and the secure attachment pattern of caregivers of older adults. However, the length of time spent providing care (TIME1, TIME2, TIME3) was not a significant predictor of the secure attachment of caregivers of older adults (β = -.007, t = -.100, p =.920, β =.-.059, t = -

.735, p =.464, β = -.027, t = -.371, p =.711, respectively). The results of this research might be caused by the culture of the people in the northeastern region that, regardless of how long caregivers stay with the elderly, the activities performed with the older adults remained the same. Therefore, the length of time spent providing care did not affect the caregivers' secure attachment with older adults at home. This was inconsistent with the study of Stolz et al. (2004) in which 26 final articles on caregivers who cared for elderly people in the USA, Europe, Canada and Hong Kong were collected. Most of the articles studied were about the caregivers of older adults with dementia, and both quantitative and qualitative designs were used. In terms of quantitative design, the results reflected the methods for solving the problems of the caregivers. For the qualitative design, the results showed strong evidence that the family caregivers needed to achieve care provision in groups with friends and respite. They also had experiences with negative emotions during the time spent caring for elderly people at home. Moderate evidence revealed that the caregivers needed a network or social support group, experienced fear of social isolation, lost control, had relationship duty changes and needed reciprocity. Moreover, the caregivers who spent more time in caring for the elderly had more experiences in caring methods, thereby leading to good relationship quality. Long-term good quality has been found to be correlated with higher secure attachment rates and styles (Quiroga & Hamilton-Giachritis, 2017).

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

This research aimed to study the factors affecting the secure attachment of caregivers of older adults by using sequential explanatory mixed method. The quantitative research method was employed first, followed by the quatitative research method to find out the factors affecting the secure attachment of caregivers of older adults living at home by using hierarchical regression and the in-depth interview of the caregivers with high score of dependent variables. The method of Colaizzi was employed in data analysis.

Part 1: Conclusion

Part 2: Limitations of the research

Part 3: Recommendations

Part 4: Benefits of the study

5.1 Conclusion

A sequential explanatory mixed methods design consisted of 2 phases. The aimed of Phase 1: A quantitative approach was to identify the factors predicting secure attachment in caregivers of older adults living at home. In this phase, the researcher collected and analyzed quantitative data from informal caregivers of older adults living at home (n = 140). In Phase 2: A qualitative approach was used to gain an in-depth understanding of caregivers' perceptions with secure attachment while caring for older adults living at home (n=10).

Phase1: A cross-sectional study (Quantitative design)

Most of the samples were males, accounted for 56.43% (n = 79). They were non-healthcare professionals, accounted for 51.43% (n= 72). They mostly had sufficient income, but not enough for savings, accounted for 70.00% (n= 98). The length of time spent providing care for older adults was 1-6 hours per day, accounted for 32.86% (n = 46). This research studied the predictive factors that affect secure attachment. It focused on the variables in order. In the first phase, the variable equations were run from gender, occupation, economic status, length of time spent providing care, caregivers' satisfaction, caregivers'empathy, and caregivers' health status and the dependent variable, which was secure attachment. The quantitative

results revealed that caregivers' health status can be considered the strongest predictor ($\beta = .362$, $t = 5.208$, $p < .001***$), of the secure attachment, followed by caregiver' satisfaction, gender (female), and caregivers' empathy. These predictor variables were accounted for 42.0% of the variance in secure attachment among informal caregivers. However, occupation, economic status, length of time spent providing care cannot predict secure attachment in caregivers caring for the older adults living at home.

Phase 2: The caregivers' perceptions about secure attachment (Qualitative Descriptive Design)

The qualitative study aimed to gain an in-depth understanding of caregivers' perceptions using qualitative descriptive study. Ten participants were included in this phase. The results revealed 2 themes. Theme 1: The meaning of secure attachment included: 1) providing good care and 2) connection with older adults. Theme 2: The factors affecting secure attachment included sub themes: 1) gender: being female affected secure attachment; 2) caregivers' satisfaction affected secure attachment; 3) caregivers' empathy affected secure attachment and 4) caregivers' health status affected secure attachment.

5.2 Limitations of the research

However, because the study was set in Thailand, the research results may not be generalizable to other regions/countries. There are limitations of the research because this study cannot be freely generalized to populations in other countries because the study was set in the northeastern region of Thailand. Thus, the differences between cultures would lead to increased likelihood of differences in the results. Also, this study does not explain the cause-effect relationship of the variables with regard to secure attachment because this study can only detect the correlations that exist, not the causality. Because this was a correlational design, causality cannot be inferred from the results.

5.3 Recommendations

5.3.1 Recommendations for practical application of research findings: Nurses should promote caregivers to have good health status in order to help informal caregivers have security and effectively help older adults.

5.3.2 Recommendations for further research: 1) promoting female involved to help males who care for older adults for the best caring; 2) promoting the programme to conduct caregivers caring for older adults to have self-satisfaction and more empathy.

5.4 Benefits of the study

The findings of this study can be applied as follows:

1. To help promote strategies/suggestions of caregivers feeling secure in living with their older adults for a long time

2. To promote quality of life among both aging people and their caregivers, particularly those living at home for a long period of time

3. To manage environments to support secure attachment in caregivers caring for older adults at home

4. To promote caregivers staying at home with gratitude toward their older adults within the Thai context

5. To propose future policies for aging in place to reduce expenditures related to residing in nursing homes.

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APPENDICE

APPENDIX A

Research Instrument

Research questionnaire: Mixed method inquiry on Secure attachment and its causality in Caregivers of Older Adults living at Home.

Explanation: the research instrument is comprised of 3 parts: 1) personal information, 2) predictive and dependent variables, and 3) qualitative interview questions.

.....

Part 1: Personal information

Instruction Please mark √ in the space that best describes yourself.

No.	Personal information	For the researcher
1	Gender [ ] 1. Male [ ] 2. Female	
2	Occupation [ ] 1. Non-healthcare professionals [ ] 2. Healthcare professionals e.g. health volunteers, doctors, nurses, pharmacists, dentists, medical technicians, and Thai massage therapists.	
3	Economic status [ ] 1. Have sufficient income for saving.	

No.	Personal information	For the researcher
	[ ] 2. Have sufficient income but not enough for saving. [ ] 3. Have insufficient income.	
4	Length of time spent providing care [ ] 1. 1-6 hours per day [ ] 2. 7-12 hours per day [ ] 3. 13-18 hours per day [ ] 4. 19-24 hours per day	

Part 2: Questions about predictive and dependent variables that are divided into 4 sets.

Set 1: Caregivers' satisfaction

Definition of term Satisfaction refers to the assessment of good feelings with own life as a whole and having a life that is close to the expected life. The caregiver is satisfied in life and seeing the importance of life and do not change their life from the original. The caregiver is satisfied with the experience that has passed into life and feeling happy and having proud in themselves with everyday life.

Instruction Please consider the following statements and mark √ in the space that best describes your answer.

1 indicates the lowest level of agreement

2 indicates a moderate level of agreement

3 indicates the highest level of agreement

No.	Details	Level of satisfaction (points)		
		3	2	1
1	I think that my current life is as perfect as expected.			
2	I have a good quality of life.			
3	I enjoy my daily life.			
4	I achieved my life goal.			
5	I'm satisfied with my current life.			
6	I recognize my own value.			

Set 2: Caregivers' empathy.

Definition of term Empathy refers to caregivers' ability to understand and sense other people's emotions, thoughts, happiness, and difficulties.

Instruction Please consider the following statements and mark √ in the space that best describes your answer.

3 indicates the highest level of agreement

2 indicates a moderate level of agreement

1 indicates the lowest level of agreement

No.	Details	Level of empathy(points)		
		3	2	1
1	I regard everything the elderly say to me as important.			
2	I can sense when the elderly I care for feel uncomfortable or uneasy.			
3	The things I talk to the elderly sometimes are boring.			

4	I can tell if other people are telling the truth or lying about something.			
5	I can feel that I am the topic of conversation, although nobody tells me.			
6	I can feel that the elderly I care for are hiding their true feelings.			
7	The elderly I care for say that I understand their thoughts very well.			
8	I can do my job without having to consult others.			
9	I cannot predict the emotions of the elderly I care for.			
10	I can predict the behavior of the elderly.			
11	I cannot understand the thoughts of the elderly.			
12	I think it is easy to care for and empathize with the elderly.			
13	When I feel bad for the elderly, I will think how I would feel, if I were them.			
14	Before doing anything, I will always consider the feelings of the elderly first.			
15	Before coming into conflict with the elderly, I will listen to their reasons first.			
16	I think that the opinions of the elderly I care for are important.			
17	I think everyone's opinions are important.			
18	Before talking about other people, I will always think about their feelings.			

19	Before doing anything, I try to think carefully about how the elderly would react to that.			
20	I get worried when seeing the elderly I care for feel worried.			
21	I get excited when seeing the elderly I care for feel excited.			
22	I feel that the emotions of those around me can influence my mood.			
23	I feel very uncomfortable, when I have an argument with the elderly I care for, although I use logical reasons.			
24	I feel happy, when the elderly I care for are bright and cheerful.			
25	When I disagree with the elderly I care for, I can explain the reason to them.			
26	I am not interested in the suffering of the elderly I care for.			
27	If the elderly I care for get sick, I will feel sick as well.			
28	I feel that I understand the problems of the elderly I care for.			
29	I feel uncomfortable, when I see the elderly I care for cry.			
30	I do not dare to share my needs with others.			
31	I do not understand why the elderly are upset with something.			
32	I feel for the characters in dramas.			

33	I can accept the mistakes of the elderly.			
34	I can distinguish my emotions, while watching movies.			
35	I will take advantage of others, if I have a chance.			

Set 3: Caregivers' health status

Definition of term Health status refers to caregivers' perception of physical health, including physical pain and ability to perform daily activities.

Instruction Please consider the following statements and mark √ in the space that best describes your answer.

3 indicates the highest level of agreement

2 indicates a moderate level of agreement

1 indicates the lowest level of agreement

No.	Details	Caregivers' health status (points)		
		3	2	1
1	To what extent you can do routine activities, when you have physical illness such as headache, stomach ache, body pain.			
2	You have enough physical energy to perform various activities (for work and daily living purposes).			

No.	Details	Caregivers' health status (points)		
3	You can sleep well			
4	You can perform daily activities well.			
5	You really need to go to the hospital for treatment.			
6	You have an ability to work as before.			
7	You can go everywhere by yourself.			

Set 4: Secure attachment style

Definition of term Attachment refers to an emotional bond between people associated with the perception of oneself and others. There are 4 types of attachment: secure, dismissing, preoccupied, and fearful.

Instruction Please consider the following statements and mark √ in the space that best describes your answer.

-3 indicates the highest level of disagreement

-2 indicates a moderate level of disagreement

-1 indicates the lowest level of disagreement

0 indicates an uncertain agreement

1 indicates the lowest level of agreement

1 indicates a moderate level of agreement

No.	Details	Level of attachment (Points)						
		Highly disagree	Somewhat disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Somewhat agree	Highly agree
		-3	-2	-1	0	1	2	3
	Secure attachment							
1	Getting to know new people is easy for me.							
2	Getting psychologically close to others is easy for me.							
9	Talking to a stranger is easy for me.							
17	It is easy to make me smile and laugh.							
18	I like being the center of attention.							
32	I am very happy with my current life.							
33	Sometimes when being alone, I can still smile or laugh with what I read or watch on television.							
38	I like to play with and touch others (the elderly I care for).							
	Dismissing attachment							
3	I choose not to rely on anyone.							
11	I choose to be independent and lonely rather than having to rely							

	on others.							
12	I choose to rely on myself than others.							
19	The feeling of individuality is very important to me.							
20	Self-help is very important to me.							
27	I like to be alone.							
28	I do not like to reveal my own stories to others.							
	Preoccupied attachment							
5	I am worried that other people will not value me as much as I value them.							
6	I feel that other people are hesitant to get close to me as I want.							
13	My most important goal is having someone who truly values me.							
21	Sometimes I'm afraid of being alone.							
22	I easily fall in love.							
29	My life is good, when I am with a lover who gives me affection.							
30	I tend to maintain my intimate relationship, although that relationship has been "worse" for a long time.							
34	I feel that I am more dedicated to my relationship than my lover.							
35	Sometimes I talk about myself too much to others.							
36	I love the elderly I care for more							

	than they love me.							
37	I truly want to be psychologically close to others.							
	Fearful attachment							
7	I am quite uncomfortable when being close to others (the elderly I care for).							
8	I think it is hard to fully trust others (the elderly I care for).							
15	Others tend to think that I am arrogant and distant.							
16	Thinking about creating a relationship is safer than creating a relationship in real life.							
24	I am worried that I will get hurt, if I let myself be too close to anyone.							

3 indicates the highest level of agreement

Part 3: Qualitative interview questions (Semi- Structure Interview)

Instruction Please explain all questions based on your perceptions and experiences.

No.	In-depth interview questions
1	What does attachment mean?
2	What are your principles in happily caring for the elderly? Please explain.
3	What are the factors affecting your attachment with the elderly? Please explain.
4	What are the characteristics of those factors?
5	Does your gender have any effect on your emotional attachment and personality? How? Please explain.
6	Does your occupation have any effect on your emotional attachment and personality? How? Please explain.
7	How do you build financial security? Please explain.
8	Do your senior care working hours have any effect on your emotional attachment and personality? How? Please explain.
9	How can you make the elderly satisfied? Please explain.
10	How do you create empathy for others? Please explain.
11	Does your health status have any effect on your emotional attachment and personality? How? Please explain.

APPENDIX B

Ethical Approved

The Ethical Review Sub-Committee Board for Human Research Involving Sciences, Thammasat University, No. 3

Room No. 110, Piyachart Building, 1st Floor, Thammasat University Rangsit Campus, Prathumthani 12121, Thailand, Tel: 0-2986-9213 ext.7358 E-mail: ecsctu3@nurse.tu.ac.th

ScF 03_01 (Eng)

COA No. 161/2562

Certificate of Approval

Project No. : 140/2562

Title of Project : MIXED METHOD INQUIRY ON ATTACHMENT SECURITY AND ITS CAUSAL IN CAREGIVERS OF OLDER ADULTS LIVING AT HOME

Principle Investigator : Ms. Onuma Kaewkerd

Place of Proposed Study/Institution: Faculty of Nursing, Thammasat University

The Ethical Review Sub-Committee Board for Human Research Involving Sciences, Thammasat University, No. 3, Thailand, has approved the above study project, in accordance with the compliance to the Declaration of Helsinki, the Belmont report, CIOMS guidelines and the International practice (ICH-GCP).

Signature: .....
(Assoc. Prof. Jinda Wangboonskul, Ph.D.)
Vice Chairman of the Human Ethics
Sub-Committee of Thammasat University, No. 3

Signature: .....
(Asst.Prof.Laksana Laokiat, Ph.D.)
Secretary of the Human Ethics Sub-Committee of
Thammasat University, No. 3

Date of Approval : 21 November 2019 **Approval Expire date :** 20 November 2020

Progressing Report Due : 20 November 2020

The approval documents including

1) Research proposal
2) Patient/Participant Information Sheet and Informed Consent Form
3) Principal investigator's Curriculum Vitae
4) Research tools eg:
   - Questionnaire

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๗ ธันวาคม ๒๕๖๒

เรื่อง อนุญาตให้เก็บข้อมูลในพื้นที่

เรียน คณบดีคณะพยาศาสตร์ มหาวิทยาลัยธรรมศาสตร์

อ้างถึง หนังสือที่ อว.๖๗.๓๔/ศช.๗๓๕ ลงวันที่ ๖ ธันวาคม ๒๕๖๒

ตามหนังสือที่อ้างถึง คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์ มีนักศึกษาหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) โดยนางสาวอรอุมา แก้วเกิด นักศึกษาระดับปริญญาเอก ซึ่งอยู่ระหว่างกระบวนการทำดุษฎีนิพนธ์ เรื่อง "การวิจัยแบบผสมผสานวิธีเพื่อหาสาเหตุที่มีผลต่อความผูกพันแบบมั่นคงของผู้ดูแลผู้สูงอายุที่บ้าน" โดยมีศาสตราจารย์ดร.ประนอม โอทกานนท์ เป็นอาจารย์ที่ปรึกษาหลักดูแลการทำดุษฎีนิพนธ์ในครั้งนี้ และเห็นว่าพื้นที่โรงพยาบาลส่งเสริมสุขภาพตำบลนาถ่อน อำเภอธาตุพนม จังหวัดนครพนม มีความเหมาะสมในการเก็บรวบรวมข้อมูลเพื่อการศึกษาดุษฎีนิพนธ์นั้น

ในการนี้ สำนักงานสาธารณสุขจังหวัดนครพนม อนุญาตให้นักศึกษาบุคคลดังกล่าว สามารถดำเนินการเก็บข้อมูลการศึกษาดุษฎีนิพนธ์ในพื้นที่โรงพยาบาลส่งเสริมสุขภาพตำบลนาถ่อน อำเภอธาตุพนม จังหวัดนครพนมในครั้งนี้ได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(นายธราพงษ์ กัปโก)
รักษาการในตำแหน่งนายแพทย์เชี่ยวชาญ (ด้านเวชกรรมป้องกัน)
ปฏิบัติราชการแทนนายแพทย์สาธารณสุขจังหวัดนครพนม

กลุ่มงานพัฒนาคุณภาพและรูปแบบบริการ
โทร. ๐ ๔๒๕๑ ๑๔๑๐ ต่อ ๑๑๑
โทรสาร. ๐ ๔๒๕๑ ๒๔๖๓

ด่วนมาก

ที่ ลย ๐๐๓๒.๐๐๙/ ๒๒๗

สำนักงานสาธารณสุขจังหวัดเลย
ถนนมลิวรรณ ลย ๔๒๐๐๐

๒๗ มกราคม ๒๕๖๓

เรื่อง แก้ไขโครงร่างวิจัยตามข้อเสนอแนะ

เรียน นางสาวอรอุมา แก้วเกิด

สิ่งที่ส่งมาด้วย ข้อเสนอแนะเพื่อแก้ไขปรับปรุง จำนวน ๑ แผ่น

ตามที่ งานเลขาคณะกรรมการจริยธรรมการวิจัยในมนุษย์ กลุ่มงานพัฒนาคุณภาพและรูปแบบบริการ สำนักงานสาธารณสุขจังหวัดเลย ได้รับผลงานโครงร่างการวิจัยเพื่อขอรับการพิจารณาจริยธรรมการวิจัยในมนุษย์ จำนวน ๑ เรื่อง MIXED METHOD INQUIRY ON ATTACHMENT SECURITY AND ITS CAUSAL IN CAREGIVERS OF OLDER ADULTS LIVING AT HOME โดย นางสาวอรอุมา แก้วเกิด ตำแหน่ง นักศึกษาปริญญาเอก คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์

ในการนี้ คณะกรรมการจริยธรรมการวิจัยในมนุษย์ สำนักงานสาธารณสุขจังหวัดเลย ได้พิจารณาแล้วพบว่ามีประเด็นแก้ไขเพิ่มเติม รายละเอียดตามสิ่งที่ส่งมาด้วย จึงขอแจ้งให้ผู้ขอรับการพิจารณาจริยธรรมการวิจัยในมนุษย์ แก้ไขปรับปรุงตามข้อเสนอแนะดังกล่าว และจัดส่งเอกสารที่แก้ไขแล้วกลับมายังกลุ่มงานพัฒนาคุณภาพและรูปแบบบริการ **ภายในวันที่ ๒๐ มกราคม ๒๕๖๓** ดังนี้

๑. เอกสารงานวิจัยที่แก้ไขแล้ว (แบบเสนอโครงการฯ โครงร่างวิจัย เครื่องมือเก็บรวบรวมข้อมูล เอกสารชี้แจงข้อมูล เอกสารแสดงความยินยอมและประวัติผู้วิจัยทุกคน) จำนวน ๔ ชุด พร้อม**เอกสารชุดเดิม**

๒. แผ่น CD ไฟล์ข้อมูลบรรจุข้อมูลเอกสารทั้งหมดในข้อที่ ๑.ในรูปแบบไฟล์ Word และ PDF จำนวน ๑ แผ่น

จึงเรียนมาเพื่อทราบและดำเนินการต่อไป

ขอแสดงความนับถือ

(นางกรัณฑชา สุธาวา)
ทันตแพทย์เชี่ยวชาญ (ด้านทันตสาธารณสุข) ปฏิบัติราชการแทน
นายแพทย์สาธารณสุขจังหวัดเลย

กลุ่มงานพัฒนาคุณภาพและรูปแบบบริการ
โทร. ๐๘ ๑๗๐๘ ๓๑๑๓, ๐๘ ๓๑๔๕ ๕๗๘๐ ต่อ ๑๐๖
โทรสาร ๐ ๔๒๘๑ ๑๗๐๒

"เมืองน่าอยู่ เมืองแห่งการท่องเที่ยว การค้าและการลงทุนภายใต้การพัฒนาที่ยั่งยืน"

ที่ อว ๖๗.๓๕/ศช. ๗๓๒

คณะพยาบาลศาสตร์
มหาวิทยาลัยธรรมศาสตร์
ตำบลคลองหนึ่ง อำเภอคลองหลวง
จังหวัดปทุมธานี ๑๒๑๒๑

๒ ธันวาคม ๒๕๖๒

เรื่อง ขออนุญาตเก็บข้อมูลเพื่อการวิจัย
เรียน นายแพทย์สาธารณสุขจังหวัดหนองคาย
สิ่งที่ส่งมาด้วย ๑. โครงร่างการวิจัยฉบับย่อภาษาไทย
๒. หนังสือรับรองจริยธรรมการวิจัย

เนื่องด้วย นางสาวอรอุมา แก้วเกิด นักศึกษาระดับปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์ กำลังดำเนินการทำดุษฎีนิพนธ์ เรื่อง "การวิจัยแบบผสมผสานวิธีเพื่อหาสาเหตุที่มีผลต่อความผูกพันแบบมั่นคงของผู้ดูแลผู้สูงอายุที่บ้าน" โดยมีอาจารย์ที่ปรึกษาหลักคือ ศาสตราจารย์ดร.ประนอม โอทกานนท์ ซึ่งการวิจัยดังกล่าวได้ผ่านการสอบโครงร่างดุษฎีนิพนธ์ และผ่านการพิจารณาจริยธรรมจากคณะอนุกรรมการจริยธรรมการวิจัยในคน มธ. ชุดที่ ๓ สาขาวิทยาศาสตร์ เรียบร้อยแล้ว (ตามเอกสารแนบ)

ในการนี้ คณะพยาบาลศาสตร์ จึงใคร่ขอความอนุเคราะห์ขออนุญาตเก็บข้อมูลเพื่อการวิจัยในโรงพยาบาลส่งเสริมสุขภาพตำบล ในพื้นที่รับผิดชอบ รพ.สต. พระธาตุบังพวน ต.พระธาตุบังพวย อำเภอเมือง จังหวัดหนองคาย ทั้งนี้สามารถสอบถามรายละเอียดเพิ่มเติมได้ที่ นางสาวอรอุมา แก้วเกิด เบอร์โทร ๐๙๕๕๖๗๗๑๖๔ อีเมล์ ornuma๐๓๐@nurse.tu.ac.th หรือ onumakaewkerd@gmail.com

จึงเรียนมาเพื่อโปรดพิจารณาให้ความอนุเคราะห์ด้วย จักขอบคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.ธีรนุช ห้านิรัติศัย)
คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์

สำนักงานเลขานุการคณะพยาบาลศาสตร์
โทร. ๐-๒๙๘๖-๙๒๑๓ ต่อ ๗๓๒๘
โทรสาร ๐-๒๕๑๖-๕๓๘๑

สำเนาเรียน:
- คณะกรรมการจริยธรรมจังหวัดหนองคาย สำนักงานสาธารณสุขจังหวัดหนองคาย
- รพ.สต. พระธาตุบังพวน ต.พระธาตุบังพวย อำเภอเมือง จังหวัดหนองคาย

เอกสารรับรองโครงการวิจัย

คณะกรรมการพิจารณาจริยธรรมการศึกษาวิจัยในมนุษย์ สำนักงานสาธารณสุขจังหวัดสกลนคร

เอกสารรับรองเลขที่ :	SKN REC ๒๐๒๐ – ๐๐๖
ชื่อโครงการ :	การวิจัยแบบผสมผสานวิธีเพื่อหาสาเหตุที่มีผลต่อความผูกพันแบบมั่นคงของผู้ดูแลผู้สูงอายุที่บ้าน (MIXED METHOD INQUIRY ON ATTACHMENT SECURITY AND ITS CAUSAL IN CAREGIVERS OF OLDER ADULTS LIVING AT HOME .)
รหัสโครงการ :	๐๕๙๒๕๖๒
ชื่อหัวหน้าโครงการ :	คุณอรอุมา แก้วเกิด
หน่วยงานที่สังกัด :	วิทยาลัยพยาบาลบรมราชชนนีนครพนม
เอกสารที่รับรอง :	๑ โครงร่างงานวิจัย บทที่ ๑- ๓ ๒ เอกสารชี้แจงข้อมูลสำหรับอาสาสมัครวิจัยกลุ่มที่ ๑ และกลุ่มที่ ๒ ๓ เอกสารแสดงความยินยอมโดยได้รับการบอกกล่าวกลุ่มที่ ๑ ๔ เอกสารแสดงความยินยอมโดยได้รับการบอกกล่าวกลุ่มที่ ๒ ๕ เครื่องมือที่ใช้ในการศึกษา ๖ แบบฟอร์มประวัติผู้วิจัย
วันที่รับรอง :	๒๑ มกราคม ๒๕๖๓
วันที่หมดอายุ :	๒๐ มกราคม ๒๕๖๔
รายงานความก้าวหน้า :	ส่งรายงานความก้าวหน้ารอบ ๖ เดือน และ ๑ ปี หรือส่งรายงานฉบับสมบูรณ์หากดำเนินโครงการเสร็จสิ้นก่อน ๑ ปี

ขอรับรองว่าโครงการวิจัยดังกล่าวข้างต้น ได้ผ่านการพิจารณาเห็นชอบโดยสอดคล้องกับคำประกาศเฮลซิงกิ จากคณะกรรมการพิจารณาจริยธรรมการศึกษาวิจัยในมนุษย์ สำนักงานสาธารณสุขจังหวัดสกลนคร

ลงชื่อ.....

(นางสาวธีรารัตน์ พลราชม)

นายแพทย์ชำนาญการพิเศษ

ประธานคณะกรรมการพิจารณาจริยธรรมการศึกษาวิจัยในมนุษย์

สำนักงานสาธารณสุขจังหวัดสกลนคร

APPENDIX C

Assumptions Test

First preliminary agreement: The samples in this study were randomly selected. Multistage random sampling method was employed for sample selection, which was in accordance with the preliminary agreement.

Second preliminary agreement: The data had normal distribution. The researcher tested the data distribution by Komogorov-Smirnov test. The results showed that all variables did not have normal distribution with statistical significance at $\alpha = 0.05$ ($p < .05$), which violated the preliminary agreement. Then the researcher tested the normal distribution of unstandardized residual using Komogorov-Smirnov test. It was found that unstandardized residual did not have normal distribution with statistical significance at $\alpha = .05$ ($p < .05$), which also violated the preliminary agreement. Therefore, the researcher performed data transformation by using the square root transformation (Krataithong, 1999) of the dependent variables. From the test of the distribution of unstandardized residual, the data had normal distribution, which was in accordance with the preliminary agreement.

One-Sample Kolmogorov-Smirnov Test

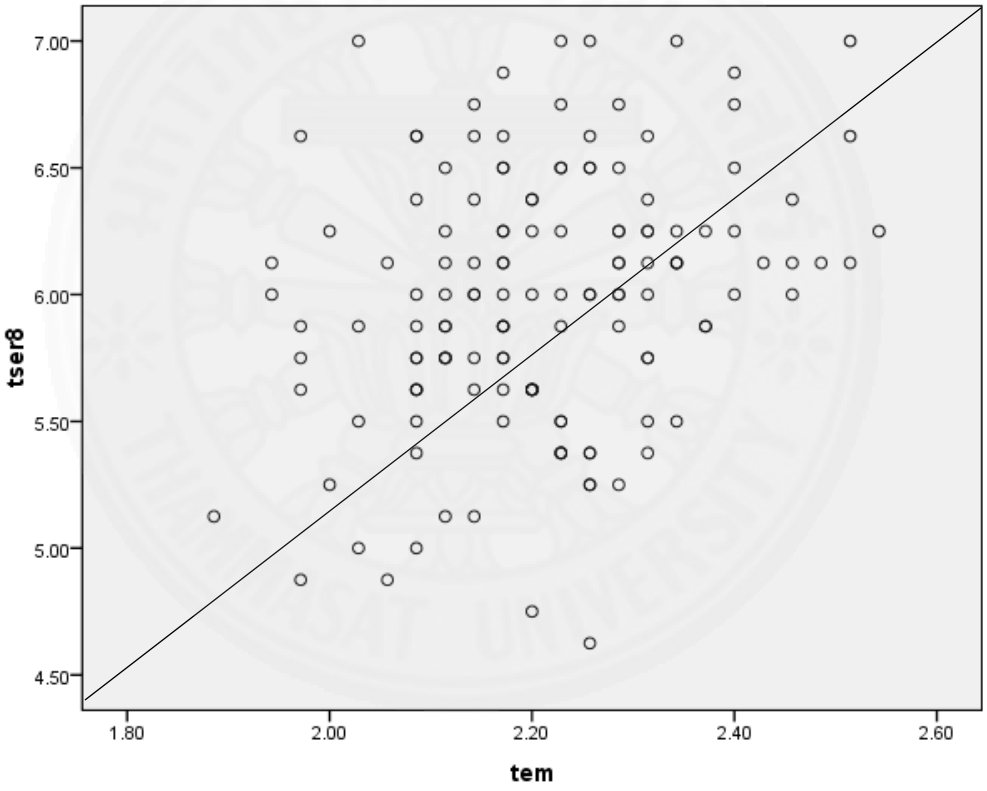
		th7	tser8	ts	tem
N		140	140	140	140
Normal Parameters[a,,b]	Mean	2.4735	5.9875	2.2643	2.2090
	Std. Deviation	.30321	.50566	.46628	.13172
Most Extreme Differences	Absolute	.105	.074	.101	.069
	Positive	.102	.059	.093	.069
	Negative	-.105	-.074	-.101	-.060
Kolmogorov-Smirnov Z		1.247	.877	1.190	.821
Asymp. Sig. (2-tailed)		.089	.425	.118	.511

a. Test distribution is Normal.

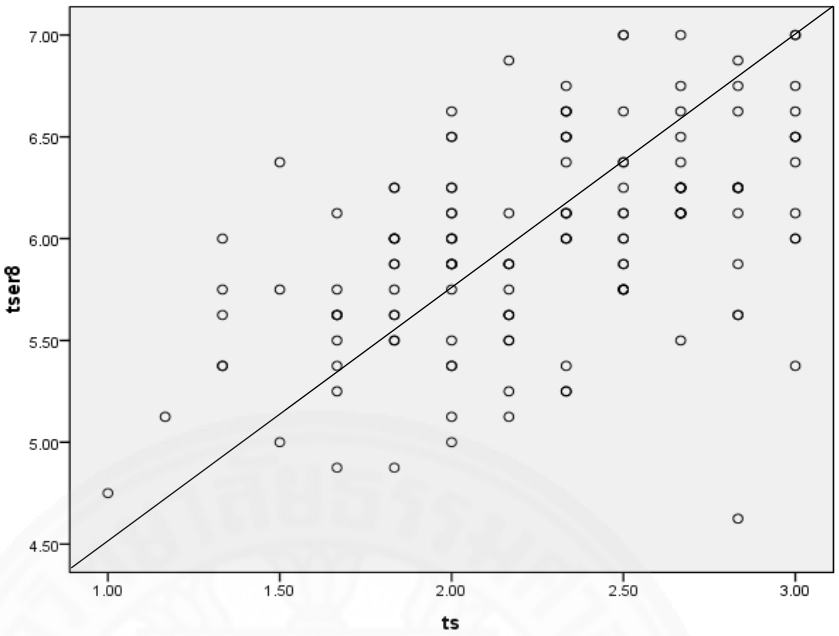
b. Calculated from data.

Third preliminary agreement: The independent variables and the dependent variable had a linear relationship. The researcher tested it by creating a scatter plot graph between the independent variables and the dependent variable, assigning the Y axis as the dependent variable, which was the secure attachment pattern of caregivers and the X axis as the independent variables. It was found that the graph had straight line. It means that all independent variables had a linear relationship with the secure attachment pattern of caregivers, which was in accordance with the preliminary agreement.

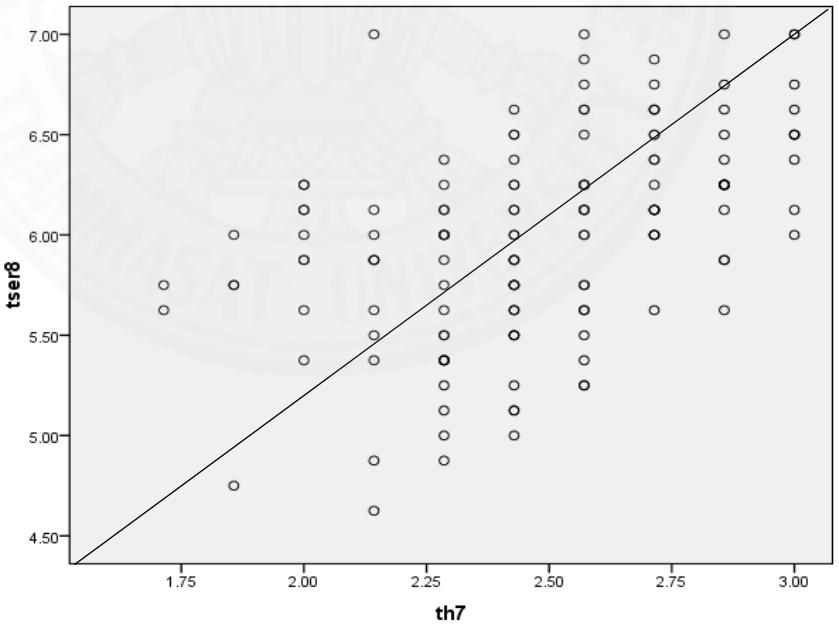
1)



2)

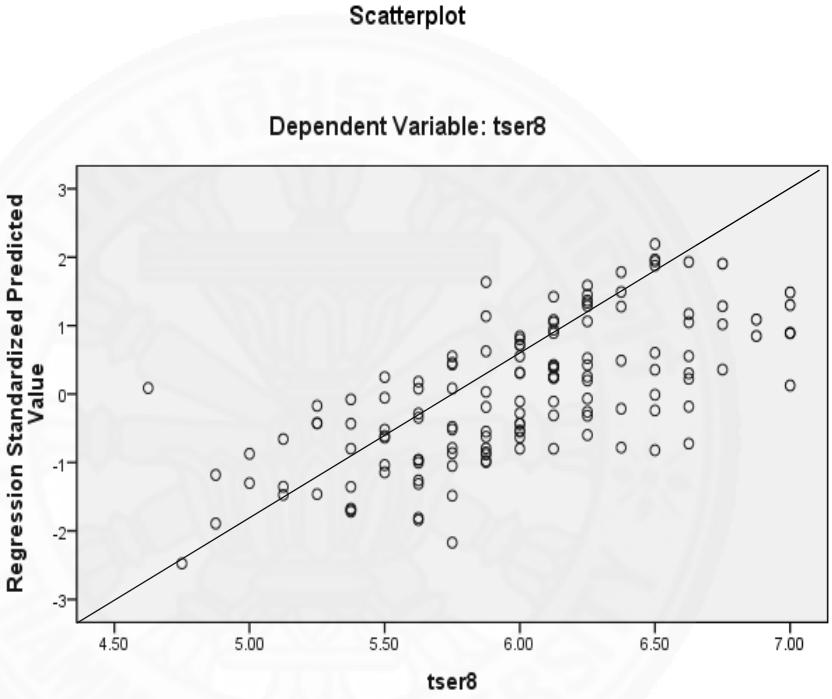


3)



Fourth preliminary agreement: The variance of the dependent variable for all values of the sum of the independent variables must be in homoscedasticity. It

can be tested by creating a graph between the dependent variable on the X axis and the standard variable on the Y axis. It was found that the predictive equation line was tilted from the bottom left corner to the top right corner. This means that the variance of the dependent variable for all values of the sum of the independent variables was in homoscedasticity, which was in accordance with the preliminary agreement.



Fifth preliminary agreement: The unstandardized residual must not have autocorrelation. From the Model Summary Table, Durbin-Watson was 2.080. It can be concluded that DL ≤ D ≤ DU. This violated preliminary agreement that Durbin-Watson must be between 1.50 -2.50. The researcher then tested it by creating a graph between the unstandardized residual on the Y axis and the independent variables on the X axis. The test revealed that the graph had straight line without direction. Or, the distribution of unstandardized residual was not systematic (Kaiyawan, 2014). So, the unstandardized residual had no relation to each other, which was in accordance with the preliminary agreement.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.661[a]	.436	.393	.39402	2.080

a. Predictors: (Constant), th7, time3, อาชีพ, eco2, time2, tem, เพศ, time4, ts, eco1

b. Dependent Variable: tser8

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.456	.623		3.945	.000		
	เพศ	.168	.072	.165	2.326	.022	.866	1.154
	อาชีพ	-.076	.069	-.075	-1.098	.274	.933	1.072
	eco1	-.116	.137	-.075	-.845	.400	.551	1.813
	eco2	.004	.094	.003	.038	.970	.599	1.670
	time2	-.006	.064	-.007	-.100	.920	.843	1.186
	time3	-.074	.100	-.059	-.735	.464	.687	1.456
	time4	-.030	.081	-.027	-.371	.711	.812	1.231
	tem	.569	.267	.148	2.133	.035	.905	1.104
	ts	.347	.086	.320	4.022	.000	.690	1.448
	th7	.594	.123	.356	4.824	.000	.802	1.248

a. Dependent Variable: tser8

Sixth preliminary agreement: All independent variables must not have multicollinearity. The researcher tested it by considering Variance Inflation Factor (VIF) or Tolerance in Coefficients Table. If VIF is low (less than 10) and Tolerance is higher (greater than 0. 2) , it means that the independent variables did not have multicollinearity (Howell, 2013). The results showed that VIF was less than 10 (the

highest = 1.813) and Tolerance was greater than 0.2 (the lowest =.551). This means that all independent variables did not have multicollinearity, which was in accordance with the preliminary agreement.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.456	.623		3.945	.000		
	เพศ	.168	.072	.165	2.326	.022	.866	1.154
	อาชีพ	-.076	.069	-.075	-1.098	.274	.933	1.072
	eco1	-.116	.137	-.075	-.845	.400	.551	1.813
	eco2	.004	.094	.003	.038	.970	.599	1.670
	time2	-.006	.064	-.007	-.100	.920	.843	1.186
	time3	-.074	.100	-.059	-.735	.464	.687	1.456
	time4	-.030	.081	-.027	-.371	.711	.812	1.231
	tem	.569	.267	.148	2.133	.035	.905	1.104
	ts	.347	.086	.320	4.022	.000	.690	1.448
	th7	.594	.123	.356	4.824	.000	.802	1.248

a. Dependent Variable: tser8

BIOGRAPHY

Name	MISS ONUMA KAEWKERD
Date of Birth	June, 1974
Educational Attainment	2002: Master of degree in nursing science (Community Heath Nursing: MNS), Mahidol University
Work Position	Lecturer at Boroomrajonnani NakhonPhanom Nursing Colleage, NakhonPhanom University

Publications

Kaewkerd, O., Kongvattananon, P., & Somprasert, C. (2018). Emotional management problems of caregivers for dependent elderly people: Integrative review. *The Bangkok Medical Journal*, *14*(1), 76-76. https://doi.org/10.31524/bkkmedj.2018.02.014

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Work Experiences

1996-2002: Lecturer, Boromrajonnani Sappasithiprasong Nusing Colleage

2002-2008: Lecturer, Faculty of Nursing Mahidol University

2008-2010: Lecturer, Faculty of Nursing, Chaiyaphum Rajabhat University

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