EFFECTIVENESS OF AN INTEGRATIVE STRESS REDUCTION PROGRAM FOR FAMILY CAREGIVERS OF PEOPLE WITH ADVANCED DEMENTIA: A RANDOMIZED CONTROL TRIAL

PANAWAT SANPRAKHON

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DOCTOR DEGREE OF PHILOSOPHY
(INTERNATIONAL PROGRAM)
IN NURSING SCIENCE
FACULTY OF NURSING
BURAPHA UNIVERSITY
2021

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PANAWAT SANPRAKHON : EFFECTIVENESS OF AN INTEGRATIVE STRESS REDUCTION PROGRAM FOR FAMILY CAREGIVERS OF PEOPLE WITH ADVANCED DEMENTIA: A RANDOMIZED CONTROL TRIAL. ADVISORY COMMITTEE: NUJJAREE CHAIMONGKOL, Ph.D., PORNPAT HENGUDOMSUB, Ph.D. 2021.

Family caregivers usually experience stress and sleep disturbance due to the hardship of giving care to patients with behavioral and psychological symptoms of dementia [BPSD]. Existing stress reduction interventions for caregivers of people with advanced dementia are limited. This randomized controlled trial aimed to determine the effectiveness of an integrative stress reduction program on stress and sleep quality of the caregivers, and BPSD of the patients. Participants who were the primary caregiver of moderate to severe dementia persons were recruited from Songphinong district, Suphan Buri province. Then, they were randomly assigned into the intervention and the control group for twenty-seven for each group. Research instruments included the Relative Stress Scale, Pittsburgh Sleep Quality Index, and the Neuropsychiatric Inventory with their reliability of 0.87, 0.82, and 0.81, respectively. Participants of the intervention participated in six 4-weekly training sessions and routine care while those in the control group received only routine care. Outcome variables were collected three times at baseline (Week 0), post-intervention (Week 4), and follow-up (Week 8). Data were analyzed by using descriptive statistics and two-way repeated measure ANOVA and ANCOVA.

The results revealed that after completion of the intervention, participants in the intervention group had lower stress, better sleep quality and perceived less BPSD than those in the control group. For within the intervention group, at follow-up (week 8), participants also had lower stress, better sleep quality, and perceived less BPSD than those at post-intervention (week 4), and baseline (week 0). Therefore, this integrative stress reduction program is effective in reducing stress, improve sleep quality among the family caregivers, and lessen BPSD. Nurses and relevant health care personnel should utilize this intervention as a standard practice to promote family caregivers' health in the dementia caregiving realm in long-term care services.

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TABLE OF CONTENTS

Page

ABSTRACT .... D

ACKNOWLEDGEMENTS .... F

TABLE OF CONTENTS .... G

LIST OF TABLES .... G

LIST OF FIGURES I

CHAPTER 1 1

INTRODUCTION 1

Statement and significance of the problems 1

Research purpose 6

Research hypotheses 7

Scope of the research 7

Conceptual framework 7

Operational definition of terms 9

CHAPTER 2 11

LITERATURE REVIEWS 11

Dementia and BPSD in older adults 11

Family caregivers of individuals with dementia and the care duties 16

Stress process model 18

Emotional stress of caregivers 21

Sleep quality of caregivers 24

Interventions to improve caregiver stress of people with dementia 26

CHAPTER 3 35

RESEARCH METHODS 35

Research design 35

Setting 35

Population and sample..36
Research instruments..38
Validity and reliability of research instruments 42
Protection of participant rights...44
Pilot study...44
Preparation of the research assistants..45
Data collection procedures 45
Data analysis...49
CHAPTER 4 50
RESULTS 50
Summary of the sample allocation 50
Characteristics of the participants 52
Evaluations of statistical assumptions for the dependent variables 56
Descriptive statistics of outcome variables 57
Comparisons of pre-intervention scores of outcome variables 68
Testing of research hypotheses...68
Summary of the findings 80
CHAPTER 5 81
CONCLUSION AND DISCUSSION 81
Summary of the study...81
Discussions of the findings...82
Strengths and limitations 88
Suggestions and implementations 89
Conclusions 90
REFERENCES 91
APPENDICES 110
BIOGRAPHY 149

LIST OF TABLES

Figures Page

4-1 Characteristics of the participants in the intervention and control groups 53

4-2 Characteristic of the people with advanced dementia in the intervention and control groups 55

4-3 Mean and standard deviation of caregiver stress and subscale scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group 58

4-4 Mean and standard deviation of caregiver sleep quality and subscale scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group 59

4-5 Prevalence of each BPSD among people with advanced dementia reported by family caregivers at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group 63

4-6 Mean and standard deviation of mean composite scores and each symptom scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group 66

4-7 Comparisons of the mean scores of outcome variables between the control group measured at baseline (Week 0, T1) by independent t-test 68

4-8 Repeated measure ANOVA of total RSS scores 70

4-9 Simple effect of groups on RSS scores at each point of times 71

4-10 Pairwise comparisons using Bonferroni of the mean difference in RSS scores between each pair of group differences at over time at baseline, post-intervention, and follow up 71

LIST OF TABLES (continued)

Figures Page

4-11 Simple effect of time on RSS scores in the intervention and control group 72

4-12 Pairwise comparisons using Bonferroni of the mean difference in RSS scores between each pair of time differences in the intervention and control groups 72

4-13 Repeated measure ANCOVA of total PSQI scores 74

4-14 Simple effect of groups on PSQI scores at each point of times 75

4-15 Pairwise comparisons using Bonferroni of the mean difference in PSQI scores between each pair of group differences at post-intervention and follow up 75

4-16 Pairwise comparisons using Bonferroni of the mean difference in PSQI scores between each pair of time differences in the intervention and control groups 76

4-17 Repeated measure ANCOVA of total NPI scores 77

4-18 Simple effect of groups on NPI scores at each point of times 78

4-19 Pairwise comparisons using Bonferroni of the mean difference in NPI scores between each pair of group differences at post-intervention and follow up 79

4-20 Pairwise comparisons using Bonferroni of the mean difference in NPI scores between each pair of time differences in the intervention and control groups 79

LIST OF FIGURES

Figures		Page
1-1	Research framework of the study	10
2-1	Pearlin’s Stress Process Model	21
3-1	Study protocol	43
4-1	A consort flow of the sample allocation	51
4-2	Prevalence of each BPSD among people with advanced dementia reported by family caregivers (n = 54) at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3)	62
4-3	Mean of NPI scores and each symptom scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the participants (n =54)	65
4-4	Comparisons of estimated marginal means RSS scores	70
4-5	Comparisons of estimated marginal means PSQI scores	74
4-6	Comparisons of estimated marginal means NPI scores	78

CHAPTER 1

INTRODUCTION

Statement and significance of the problems

The rapid growth in the number of aging citizens globally is due to the low birth rate and longer life expectancy. Baby boomers have become aged which has dramatically increased the number of degenerative disorders (World Health Organization [WHO], 2020). Dementia is especially a serious concern among the aging population. Older people in the world are developing dementia every 3 seconds, meaning that over 50 million older adults live with dementia now. The number of people with dementia will rise to approximately 82 million by 2030 and 152 million by 2050 (Fleming, Zeisel, & Bennett, 2020). Alzheimer's Disease [AD] is a form of dementia that usually begins in older adults. The Alzheimer's Association (2018) reports that nearly 60% of AD older people live in low- and middle-income countries. Thailand has 600,000 people with dementia, and this number will increase to 1.17 million in 2030 and escalate to 2.07 million by 2050 (Foundation of Thai Gerontology Research and Development Institute, 2016). An individual with dementia has a decline in cognitive and functional abilities that results in memory loss, difficulties in thinking, problem-solving, communication, disabilities, and social functioning (Alzheimer's Association, 2018). A family caregiver residing in the same household usually provides the care associated with cognitive and functional impairment in daily living activities to people with dementia (Rao, Sivakumar, Srivastava, & Sidana, 2020).

Kin relationship is required for a person to be the family caregiver (Knodel, Teerawichitchainan, & Pothisiri, 2018). In particular, daughters or sons followed by spouses providing the long duration of routine and non-routine care duties associated with functional impairment and difficulties in daily living activities to family patients are the most common (Chaobankrang, Anothaisintawee, Kittichai, & Boongird, 2019). Their responsibilities in providing care to family members with dementia are long-term, with an average duration of 4.54 years, while the average time of providing care in routine daily duties is 11.8 hours (Noimongkon, Somboontanont, &

Leelahakul, 2017). According to the literature reviews, the caregiver stress process occurs after providing care for individuals with the decline of cognition and self-care ability, and the effects on caregivers result in distress, overload, social deprivation, job loss, decreased mastery, and loss of self-efficacy (Judge, Menne, & Whitlatch, 2009). Family caregivers of people with dementia reported higher personal distress, overload, and overwhelming care tasks and duties than non-dementia caregivers (Cheng, 2017; Fleming et al., 2020). At the same time, family caregivers of people with dementia often complained about deteriorated social relationships with others (Judge et al., 2009). Furthermore, the physical and mental health problems of these caregivers were more intensely reported (Senturk, Akyol, & Kucukguclu, 2018). Previous studies have indicated that such caregivers seemed to have higher stress than the caregivers of individuals with other serious chronic illnesses (Cheng, 2017). However, the amount of care tasks associated with patients' worse performances produces less caregiver stress than the severe impacts of Behavioral and Psychological Symptoms of Dementia [BPSD] (Javadpour, Shenavar, Dehghani, & Bahredar, 2017).

BPSD refers to the specific clusters of common symptoms of disturbed perceptions, thought contents, moods, or behaviors generating a decline in self-care ability in individuals with dementia (Tible, Riese, Savaskan, & von Gunten, 2017). Irritability is the most common symptom, followed by apathy, agitation, delusion, hallucination, aberrant motor behavior, and sleep disturbance (Baharudin, Din, Subramaniam, & Razali, 2019; Huang, Wang, & Liao, 2017; Mukherjee et al., 2017). Nearly all (99.9%) people with dementia have at least one symptom of BPSD even in the very mild dementia stage, while 71% of those have over four symptoms in the progressive/ advanced stages of disease (Kales, Gitlin, & Lyketsos, 2015; Mukherjee et al., 2017). However, the symptom prevalence or frequency is not the most distressing for caregivers, the severity of each BPSD, such as agitation and aggression, delusion, irritability, night-time sleep disturbances, anxiety, and verbal aggressiveness-unwarranted accusations and swearing, are the prominent predictive factors correlated with high and long-term stress in caregivers (Baharudin et al., 2019; Dhandapani & Gupta, 2018; Fauth & Gibbons, 2014; Hashimoto et al., 2015; Kamiya, Sakurai, Ogama, Maki, & Toba, 2014; Mukherjee et al., 2017). At the same time, the severity of these BPSD remain unchanged, however, aggravation becomes more apparent in the progression of the disease stages in the middle or moderate stages (Fauth & Gibbons, 2014; Kales et al., 2015), thereby being the family caregivers of an individual with advanced dementia is associated with a high degree of long-term stress (Sakka et al., 2019; Seidel & Thyrian, 2019).

Most current evidence proposes that family caregivers providing care to people with advanced dementia usually experience agitation, aggression, anxiety, and night-time wandering of the patients (Baharudin et al., 2019; Hashimoto et al., 2015; Rakkhamnuan & Lueboonthavatchai, 2012). The symptoms often appearing suddenly result in more caregivers feeling unprepared (Ornstein & Gaugler, 2012), which results in family caregivers' improper management of behavior problems resulting in physical and verbal harm to the patient (Isik, Soysal, Solmi, & Veronese, 2019; Kales et al., 2015; Song, Park, Park, Cheon, & Lee, 2018). Usually, family caregivers may feel frustrated, guilty, anxious, and depressed (Fleming et al., 2020). Moreover, they appear emotionally stressed which is associated with personal overloads, having to give up on holidays and hobbies, relationships with friends deteriorate, and having to cope with any negative feelings toward the dementia patient (Pearlin, Paller, Mullan, Semple, & Skaff, 1990; Alzheimer's Association, 2018). The stressed feelings of family caregivers have been reported at a high level in the early caregiving stage and have increased further as the advanced stages of the disease are associated with more severe BPSD of the patients (Pearlin, Aneshensel, & LeBlanc, 1997; Unson, Flynn, Glendon, Haymes, & Sancho, 2015; Win, Chong, Ali, Chan, & Lim, 2017). Therefore, family caregivers of people with advanced dementia have been reported as having higher levels of stress two-fold more than family caregivers of individuals with the mild stage of the disease (Koca, Taskapilioglu, & Bakar, 2017). Also, the caregivers of patients with dementia presented with a strain on their physical health and well-being, such as cardiovascular disease, headaches, back pain, depression, and sleep disturbance (Hashimoto et al., 2015; Javadpour et al., 2017; Seidel & Thyrian, 2019).

Not only caregiver stress causes inferior sleep quality in caregivers, but evidence suggests that sleep quality in family caregivers of people with dementia is dependent on difficulties regulating BPSD in patients (Gao, Chapagain, & Scullin, 2019; Okuda et al., 2019). Family caregivers experiencing the night-time BPSD of patients reported being highly stressed and having inadequate sleep quality (Byun, Lerdal, Gay, & Lee, 2016; Ondee et al., 2013). Sleep disturbance in patients characterized by nocturnal insomnia symptoms, such as delays in sleep onset time, decreases in slow-wave sleep, or increases in nocturnal awakening, would cause inferior sleep quality for family caregivers (Okuda et al., 2019). Previous studies reveal that sleep in family caregivers of dementia patients was low quality for 91.7% of all caregiver participants (Peng, Lorenz, & Chang, 2019). These caregivers had a more significant sleep disturbance and experienced a lower quality of sleep than those of other chronic diseases (Lee et al., 2014) with high (50–70 %) prevalence (Byun et al., 2016). Additionally, the lower sleep quality of caregivers is likely to be affected by the stress associated with role overload of providing care to individuals with dementia. Also, it is affected by lacking interpersonal skills to deal with nocturnal insomnia symptoms and nighttime wandering (Lee, Yiin, Lu, & Chao, 2015). Physical health problems in family caregivers with chronic sleep deprivation such as metabolic and inflammatory changes, impaired glucose tolerance, weight gain, cardiovascular disease, cognition and function declines were reported (Fonareva & Oken, 2014; Gao et al., 2019; McCurry, Song, & Martin, 2015; Peng, Lorenz, & Chang, 2016).

Isik et al. (2019) indicated that correlations between caregiver stress and BPSD of patients with dementia were bidirectional relationships. Both caregivers' stress and sleep disturbance can create more severity of BPSD in the patients (Cheng, 2017) because they lack interaction and communication skills for dealing with BPSD (Huang, Lee, Liao, Wang, & Lai, 2012). When caregivers perceived BPSD as more provocative behaviors (Chen, Clayton, & Chodosh, 2017), they have improper communication, which could inadvertently worsen increased levels of BPSD (Polenick et al., 2018). Furthermore, family caregivers who perceived stress and experienced low sleep quality tend to use problem-focused approaches rather than emotion-oriented strategies to deal with BPSD. Therefore, the irritation, anger, or impatience in family caregivers seem to increase the patient's BPSD (Isik et al., 2019). Similarly, previous studies found that the negative emotion factors of family caregivers directly increased worsening BPSD in patients (Crellin, Charlesworth, & Orrell, 2014; Song et al., 2018).

Although most family caregivers are stressed, some do not experience it, and others do not find stress; if they have proper coping and support mechanisms (Pearlin et al., 1990). Several interventions have been developed to improve well-being outcomes for caregivers regarding burden, stress, and depression. The interventions have provided educational information with group discussions to help caregivers understand the nature of dementia and decrease overloaded care duties (Dam, de Vugt, van Boxtel, & Verhey, 2017; Luchsinger et al., 2016). In addition, training in communication skills for family caregivers to deal with the BPSD of the patients are also provided (Gitlin, Winter, Dennis, Hodgson, & Hauck, 2010; Kales et al., 2015). Cognitive behavior techniques for restructuring cognitive and behavioral modifications to cope with the stressful status of caregivers are conducted to minimize caregiver upset (Carter, Wei, & Li, 2019). However, these programs do not appear to be effective (Calkins et al., 2011; Callan et al., 2016). At the same time, Bjorge, Kvaal, and Ulstein (2019) suggested that the effectiveness of a psychosocial intervention for minimizing the stress in family caregivers of people with dementia in the intervention group did not differ significantly from those in the control group.

An intervention targeting a multi-dimensional stress process to improve several outcomes would be recommended. Several interventions integrating several techniques such as narrative therapy, empowerment, and social support could maintain good caregiver well-being (Yu, Cheng, Chow, Kwok, & Mccormack, 2020). These types of techniques play an essential role in optimizing patients' and caregivers' health and inner strengths (Hausler et al., 2016; Moreno-Camara et al., 2019; Zhang, Zhang, Mei, & Liu, 2020). Acquiring New Skills While Enhancing Remaining Strengths [ANSWERS] intervention (Judge, Yarry, Looman, & Bass, 2013) and Partner In Dementia Care [PDC] program (Bass et al., 2013) have been tested based on the Stress Process Model [SPM]. Both interventions, including a strength-based approach for implementing care goals, teaching caregivers, and providing cognitive rehabilitation skills to address care needs, have had success in improving the levels of stress for caregivers providing care to people with mild dementia. However, the programs were found to be too time-consuming and overwhelming for both caregivers and the patients (Judge et al., 2013). Family caregivers of people with advanced dementia were not included in the program.

The limitations of these types of programs are that they lacked feasibility to improve the adverse impacts of the stress process for family caregivers of people with advanced dementia (Judge, Yarry, & Orsulic-Jeras, 2010). The majority of Thai people with advanced dementia only receive care with medications from a long-term care center in primary care service, which is the usual practice. In addition, family caregivers receive a face-to-face dementia educational program and hands on skill demonstrations from registered nurses about safety care for the patients in general care such as training in feeding, transferring, toileting, dressing, and bathing (Lhimsoonthon, Sritanyarat, & Rungrengkolkit, 2019). Existing stress reduction interventions which combine several approaches, including psychosocial supports, coping strategies, and cognitive-behavioral techniques, have not helped significantly in attenuating the stress of family caregivers of people with advanced dementia (Aboulafia-Brakha, Suchecki, Gouveia-Paulino, Nitrini, & Ptak, 2014; Bjorge et al., 2019; Blom, Zarit, Zwaaftink, Cuijpers, & Pot, 2015; Farran et al., 2016). As a result, severe stress in family caregivers of people with dementia remains when patient BPSD arises, and it continuously deviates no end on the well-being of the caregiver.

An integrative stress reduction program in this study, which combines multi-methods among emotional-oriented strategies, a psychosocial intervention, and cognitive strategy, has been developed to target knowledge and interpersonal skills about dementia and dealing with BPSD. Also, the inner strengths of family caregivers are also considered to optimize the acceptance and active coping (Song et al., 2018). This integrative program has been developed and tested based on the stress process model (Pearlin et al., 1990) to manipulate multi-dimensional variables in stress processes, including BPSD, overload, social deprivation, mastery, and coping and social support. Consequently, minimizing stress and improving sleep quality among family caregivers, and reducing BPSD would be achieved.

Research purpose

To determine the effectiveness of the integrative stress reduction program for family caregivers of people with advanced dementia on caregiver stress as primary outcomes and caregiver sleep quality and behavioral and psychological symptoms of dementia patients as secondary outcomes.

Research hypotheses: There are three hypotheses;

1. Family caregivers who received the integrative stress reduction program would have a lower mean score of stress than those in the control group at the post-intervention (Week 4) and follow-up (Week 8).

2. Family caregivers who received the integrative stress reduction program would have a lower mean score of sleep quality than those in the control group at the post-intervention (Week 4) and follow-up (Week 8).

3. People with advanced dementia who received care from family caregivers in the intervention group would have a lower mean score of BPSD than those who received care from family caregivers in the control group at post-intervention (week 4) and follow-up (week 8).

Scope of the research

This randomized control trial aimed to evaluate the effectiveness of the integrative stress reduction program on stress, sleep quality among family caregivers, and BPSD of people with advanced dementia (moderate to severe stages).
Data collection was carried out at an elderly and long-term care service of the primary care unit in Thung Khok and Bo Suphan subdistrict, Songphinong district, Suphan Buri province, Thailand, from August 2020 to April 2021. This integrative stress reduction program was conducted at the long-term care center in Thung Khok subdistrict municipality.

Conceptual framework

The theoretical framework guiding this study is the Stress Process Model [SPM] (Pearlin et al., 1990). The SPM draws upon the conceptualization of the caregivers' stress process of individuals with dementia and provides an understanding of the stressors and psychological well-being domains that would be most important for treatment planning. Pearlin et al. (1990) emphasize that caregiver stress is a multidimensional or dynamic process resulting in different stress levels. This model thus distinguishes between four elements of stress: (1) Backgrounds and contexts of stress; (2) Stressors; (3) Mediators; and (4) Outcomes or impacts of stress. A mix of these varies considerably among caregivers, and that, consequently, vary in caregiver impacts. The mix is not stable; a change in one of its components can change in others. Mediators can intervene at multiple points along the stress process.

Primary stressors including cognitive impairment, BPSD, dependency are the starting point for the stress process, resulting in overload and social deterioration. These will proliferate into other areas of role strains and intrapsychic strains in secondary stressors. Role strains are the conflict arising from maintaining other roles in one's life, such as family relationships, economic or financial strains. Intrapsychic strains arise when primary stressors begin to erode a person’s self-concept, mastery, and self-esteem (Pearlin et al.,1990). Evidence shows that probably more than role strains, the erosion of mastery and self-efficacy has a more direct and deleterious impact on psychological well-being (Alliance Family Caregiver, 2006). Support and coping will intervene at multiple points along the stress process—consequently, these changes are in caregiver impacts.

Dementia has a transforming effect on the patients which are problematic for individuals with dementia (Judge et al., 2009), and these threaten the caregiver, thwart caregiver efforts, fatigue them, and defeat their dreams and self-concept unavoidably (Pearlin et al.,1990). This leads to psychological stress, inferior sleep quality, and more perceived severity of patient BPSD in caregivers (Peters, Jenkinson, Doll, Playford, & Fitzpatrick, 2013). The programs, resources, family, networks, or others offered to caregivers serve as backgrounds and the contexts have a low effect on stress outcomes. Thus, the integrative stress reduction program is developed based on a multi-dimensional stress process of BPSD, overload, social deterioration, self-efficacy, and mastery manipulated to improve multi-outcomes of stress, sleep quality in caregivers, and lessen the BPSD of individuals with advanced dementia. Coping and social support are used to block the contagion at the junctures between the primary and secondary stressors (Pearlin et al.,1990). Consequently, minimizing caregiver stress, improving sleep quality, and lessening BPSD would be achieved. Figure 1-1 shows the research framework of this study.

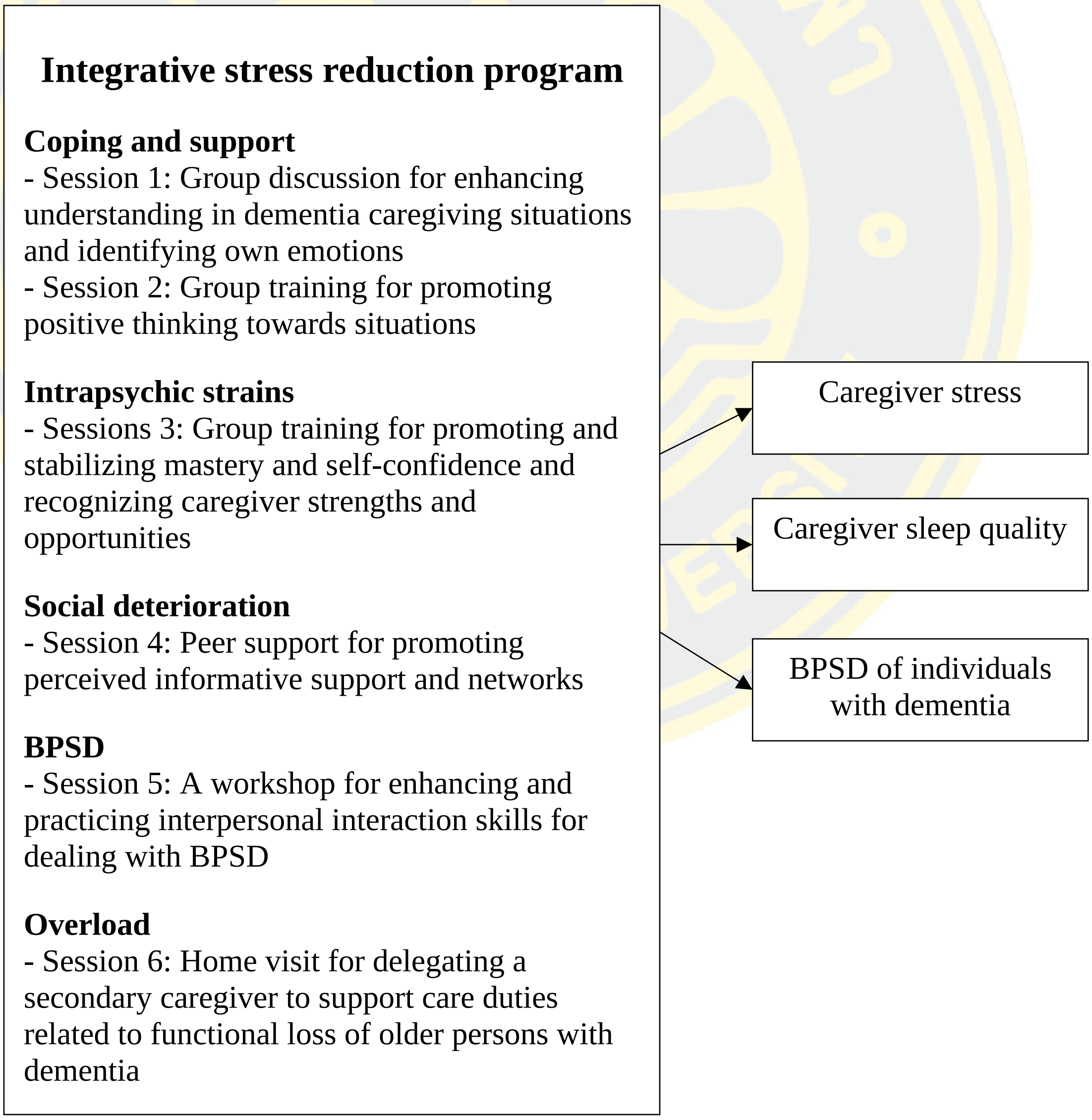
Operational definition of terms

An integrative stress reduction program refers to a set of activities that target a decrease in stress, improve sleep quality in caregivers, and reduce the frequency and severity of the feelings of family caregivers toward BPSD in the patients. Emotional-oriented strategies, cognitive coping techniques, and psychosocial strategies are applied that play an essential role in stabilizing the inner strength, acceptance, and self-confidence of family caregivers, to enhance the interpersonal interactive skills of family caregivers to deal with BPSD, and to improve the positive aspects of family caregivers towards BPSD. This program provides instrumental and informational support via an application line to enhance perceived emotional peer support for improving social relationships in caregivers. This protocol is implemented for the intervention group participants in six 45 to 90 minute sessions over four weeks. Group trainings and a workshop (sessions 1 to 5) were conducted at the long-term center, and the last session was a home visit. The six sessions consist of; (1) own emotional orientations and understanding situations, (2) enhancing positive feelings of dementia caregiving, (3) stabilizing mastery and perceived self-confidence of caregivers, (4) informative support and dementia networks, (5) practicing interpersonal interaction skills for dealing with BPSD, and (6) family support for caregiver duties. Participants in the control group did not receive the program.

Caregiver stress refers to the family caregivers' perceived aspects or feelings of mental pressure and distress due to accompanying challenging or threatening situations such as dementia. Forms of stress can be stimulating, whereas caregivers can tell their level of perceived stress and express their feelings related to caregiving stress in personal distress, degree of life upset, and negative feelings toward the care recipient. Caregiver stress was measured using the Relative Stress Scale (Greene, Smith, Gardiner, & Timbury, 1982)

Sleep quality refers to the perception of family caregivers that they fall asleep easily, get sufficient duration to wake up feeling rested, and make it through their day without experiencing excessive daytime sleepiness. It was determined using the Pittsburg Sleep Quality Index (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989)**.**

Behavioral and psychological symptoms of dementia [BPSD] refer to the perception of family caregivers toward the frequency and severity of each domain of non-cognitive symptoms and behaviors occurring in individuals with dementia, including delusions, hallucinations, agitation, depression/dysphoria, anxiety, euphoria/elation, apathy/indifference, disinhibition, irritability/lability, aberrant motor activity, sleep problems and appetite/eating change. Thus, BPSD is the product of the frequency multiplied by the severity of behavioral domains that family caregivers experience. BPSD was assessed using the Neuropsychiatric Inventory Questionnaire [NPI] (Cummings et al., 1994)



Integrative stress reduction program

Coping and support
- Session 1: Group discussion for enhancing understanding in dementia caregiving situations and identifying own emotions
- Session 2: Group training for promoting positive thinking towards situations

Intrapsychic strains
- Sessions 3: Group training for promoting and stabilizing mastery and self-confidence and recognizing caregiver strengths and opportunities

Social deterioration
- Session 4: Peer support for promoting perceived informative support and networks

BPSD
- Session 5: A workshop for enhancing and practicing interpersonal interaction skills for dealing with BPSD

Overload
- Session 6: Home visit for delegating a secondary caregiver to support care duties related to functional loss of older persons with dementia

Figure 1-1 Research framework of the study

CHAPTER 2

LITERATURE REVIEWS

This chapter reviews the empirical evidence and literature regarding the issues of dementia illness and its impacts on family caregivers, consisting of;

1. Dementia and BPSD in older adults
2. Family caregivers of individuals with dementia and the care duties
3. Stress process model
4. Emotional stress of caregivers
5. Sleep quality of caregivers
6. Interventions to improve caregiver stress of people with dementia

Dementia and BPSD in older adults

Dementia is a collective term used to describe conditions in which there are deteriorations in cognitive functions (i.e., the ability to process thought). It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgment in the patients. Dementia is accompanied by deterioration in emotional and psychological control, behavior, and motivation. However, cognitive impairment does not influence the consciousness of the patients (Alzheimer's Association, 2018; Fleming et al., 2020). Consistently the definitions of dementia by International Classification of Diseases, 10th Revision [ICD-10] states that; the condition in which a person has impaired ability to think, remember, learn, make decisions, and solve problems (Forbes, Langan, & Smeeth, 2018). The dementia characteristics include behavioral, emotional, and personality changes (Morandi et al., 2017). The different forms of dementia in older people, such as Alzheimer's disease, dementia vascular disease, Lewy body (abnormal aggregates of protein that develop inside nerve cells), and front temporal dementia (degeneration of the frontal lobe of the brain), have been reported. Alzheimer's disease usually begins in late life (Trojano & Gainotti, 2016) and is the most common contributing 60-75% of all cases of dementia (Niu, Alvarez-Alvarez, Guillen-Grima, & Aguinaga-Ontoso, 2017).

The majority of the other types of dementia occur in adults and young older people (Outeiro et al., 2019). The boundaries among different forms of dementia are indistinct and mixed forms often co-exist. Brain amyloid imaging and cerebrospinal fluid are biomarkers that demonstrate amyloid early deposition in individuals with causative genetic mutations (di Battista, Heinsinger, & Rebeck, 2016). Three genes of Amyloid Precursor Protein [APP] include Presenilin 1 [PSEN1] or Presenilin 2 [PSEN2]. Symptoms related to these genes develop early in dementia between 30 and 50 years of age. Late-onset dementia, such as Alzheimer's, is likely to be driven by a complex interplay between genetic and environmental factors (Lane et al., 2018). The risk of Alzheimer's is attributed to the Apolipoprotein E [APOE] genes, which comprise of three variants (E2, E3, and E4). The Apolipoprotein E Epsilon 4 [ApoE4] allele associated with an increase of amyloid deposition is the most substantial genetic risk factor for Alzheimer's (di Battista et al., 2016). In Thai Nationals, ApoE4 carriers show an increased incidence of Alzheimer's and influence a worse multiple cognitive, behavioral, and social functioning domain in the elderly patients. However, AopE3 carriers present an increase of the daily living activity [ADL], as well as social skills, and problematic behaviors (Tangwongchai et al., 2018).

A clinical state of dementia, characterized by a loss of function, has at least two cognitive domains. A focused cognitive and physical examination is helpful in diagnosis. The National Collaborating Centre for Mental Health (2007) recommends that a diagnosis of dementia should be confirmed through a range of procedures, including cognitive tests such as Mini-Mental State Examination [MMSE], Computed Tomography [CT], or Magnetic Resonance Imaging [MRI]. These tests can rule out treatable conditions such as depression or vitamin B12 deficiencies, presenting with similar symptoms of dementia. Hippocampal atrophy associated with memory impairment serves as a critical biomarker in the preclinical stages of dementia (Alzheimer's Association, 2016). The diagnosis of dementia in the elderly focuses on the clinical symptoms of the patients. The term dementia referred to in the Diagnostic and Statistical Manual of Mental Disorders [DSM-V] is “dementia, delirium, amnestic and other cognitive disorders (American Psychiatric Association, 2000). Six cognitive domains, consisting of learning and memory, language, intricate attention, executive function, perceptual-motor, and social cognition, are considered dementia. The BPSD is classified as significant, depending on the severity of symptoms. Patients with mild dementia have a modest cognitive decline from previous performance levels in one domain or more. In contrast, major dementia is diagnosed when dementia people show deficits in one domain or more which disturbs independence in everyday activities (Duong, Patel, & Chang, 2017).

BPSD associated progressive or advanced dementia

BPSD in individuals produces distress in the patients. The BPSD term was adopted in 1996 as a collective name for several common symptoms of dementia. The clinical features of BPSD include a variety of affective, psychotic, and behavioral symptoms and signs (Fleming et al., 2020); delusion, hallucination, agitation, elation, disinhibition, aberrant motor behavior, irritability, anxiety, depression, apathy, night-time sleep, and appetite changes. 99.99 % of people with dementia have at least one BPSD, and 71% have over four symptoms (Lasuka, 2014; Mukherjee et al., 2017). The frequencies of irritability, followed by apathy, agitation, aggression' appetite changes, and sleeping or mood disorders in patients, are usually reported by caregivers (Baharudin et al., 2019; Mukherjee et al., 2017). Agitation and aggression of individuals with advanced stages of dementia are caused by multiple factors, including biological, physical discomfort, reacting to the environment, or poor communication between the caregiver and patient (Scullin, Krueger, Ballard, Pruett, & Bliwise, 2018). However, the combination, rather than any specific factor, explains the occurrence of BPSD in the elderly.

The symptoms linked to dementia can be defined in two major stages; early and advanced dementia- which includes middle and severe disease stages. The early stage of dementia is often overlooked because the onset is gradual. Common symptoms include forgetfulness, losing track of time, and becoming lost in familiar places. BPSD may develop, such as anxiety and depressive moods (Koca et al., 2017). Significantly, the occurrence and severity of each behavioral and psychological symptom of dementia are according to the disease stages. The previous study reports that the severity of delusion, agitation, apathy, aberrant motor behavior, night-time behavior disturbances, and eating abnormalities were statistically significantly different across the dementia stages. The severity of seven BPSD domains consisting of: delusion, hallucination, agitation, apathy, irritability, aberrant motor behavior, and sleep disturbance, are met in all patients with the advanced stages of dementia. The severity of agitation, apathy, delusion, aberrant motor behavior, and night-time behavior disturbances continuously increase as the disease progresses, which is the highest at the advanced stages of dementia, and gradually lessen when the patient is in the terminal stage of the disease (Huang et al., 2017). The Clinical Dementia Rating [CDR] measurement helps characterize and track a patient's level of dementia (Morris, 1997). The previous study presented that the overall number and magnitude of BPSD increased with the severity of dementia, and the severity of BPSD score showed a strong positive correlation with increasing CDR scores. All individual BPSD domains, especially agitation, apathy, sleep disorders, appetite and eating disorders, and aberrant motor behavior, significantly correlated with the increasing severity of dementia. Delusion, hallucinations, and agitation were prominent in the moderate severity of dementia (Mukherjee et al., 2017).

Treatments

Treatments of an individual with dementia are divided into pharmacological and non-pharmacological treatments. Acetylcholinesterase inhibitors are the first option prescribed to mild to moderate dementia patients. Donepezil, rivastigmine, or galantamine can lessen agitation and aggression. Selective Serotonin Reuptake Inhibitors [SSRIs] are the primary choice when patients get depressive symptoms. Antipsychotic drugs commonly cause severe extrapyramidal side effects [EPS]; thus, they are used as injection therapy in cases of aggression in clinics (Levy, Lanctot, Farber, Li, & Herrmann, 2012). Antipsychotic drugs lead to the suboptimal treatment of BPSD (Shimizu et al., 2015). Therefore, non-pharmacological interventions, such as cognitive and psychosocial interventions, are used to minimize those side effects and lessen the severity of BPSD in people with dementia.

Cognitive interventions include cognitive stimulation, cognitive training, and cognitive rehabilitation that aim for improving cognitive and social functioning for people with dementia. The cognitive stimulation is implemented to help the brain reserve to remain in mild cognitive impairment [MCI] to moderate dementia. There are a variety of unspecific activities, such as art, music, and handcrafts. Cognitive training is implemented to improve specific objectives, such as increase function, attention, memory, and problem-solving for patients with mild dementia.

Memory training is appropriate for patients with the anamnestic type of MCI, relearning compensatory and restorative training comprised memory aids, categorization, errorless learning, and spaced retrieval (Simon, Yokomizo, & Bottino, 2012). Similarly, multicomponent cognitive training focuses on information processing (attention, perception, and memory) (Buschert et al., 2012). Schroeder and Colwell (2013) suggested that memory-focused training appeared to be more effective in improving individual outcomes than multicomponent approaches when cognitive rehabilitation was integrated with a multicomponent intervention. Improved physical, psychological, and social functioning was demonstrated in the patients.

Psychosocial interventions include all interventions in which counseling, education, behavior management, or social therapy are engaged. Reminiscence is the most popular psychosocial nursing intervention, which includes discussion or conversation, individually or in groups, aiming to stimulate old memories and reflections with the support of, for example, objects, photographs, or music for improving the psychological outcomes of dementia patients. In addition, physical activity and exercise are recommended (McCurry et al., 2011) to improve physical, cognitive, and functional outcomes and BPSD in the patients (Tible et al., 2017). This type of activity increases hippocampal volume, which means it reduces BPSD (McCurry et al., 2011; Varma, Chuang, Harris, Tan, & Carlson, 2015).

Social activities aim to lessen BPSD for individuals with dementia. For example, Multisensory Environments [MSEs] have beneficial effects for patients. The MSEs have been installed in the home, such as outdoor and light therapy (Jakob & Collier, 2017) to lessen BPSD. Light therapy helps to improve night-time sleep, increase daytime wakefulness, and reduce agitation in patients (Figueiro, 2017). Light therapy consists of placing a light box at eye level, 1 meter from the patient, within a 45° visual field for one hour/day before the patient’s usual bedtime (McCurry et al., 2011). The results show significant reductions in the sleep domain of BPSD, such as the number of night-time awakenings, and total time awake at night. Also, caregivers of dementia patients in the treatment group had decreased stress and improved sleep quality (McCurry et al., 2015). However, the intervention in this study does not target the patients. Instead, it targets family caregivers to improve both their outcomes and patient outcomes.

Family caregivers of individuals with dementia and the care duties

Family caregivers of family members with dementia provide long-term care without receiving payment for hardship duties. The characteristics and context of caregivers are effects on the stress process and stress outcome.

Caregivers of people with dementia characteristics

Family caregiver refers to unpaid relatives or friends who help individuals with dementia in daily living activities. This covers spouse, son, daughter, daughters-in-law, or relatives (Anand, Dhikav, Sachdeva, & Mishra, 2016). The majority of family caregivers are usually children or grandchildren (Alzheimer's Association, 2018). In Thailand, family caregivers of dementia persons are required persons with geographical proximity facilitated in the same household. Daughters and spouses are the most common in providing direct assistance with daily living activities to the patients. Children-in-law infrequently serves as the second-person assisting (Knodel et al., 2018). Several previous studies describe that most Thai family caregivers of people with dementia are adult children with a mean age of 53 years, followed by spouses with a mean age of 68 years (Chaobankrang et al., 2019). Daughters ranging from the ages 23-59 with an average age of 49 years are typical of family caregivers (Rakkhamnuan & Lueboonthavatchai, 2012).

Caregivers of people with dementia contexts

ADL deficits and the difficulties with thinking and communication of individuals become overloading for family caregivers. The average duration to provide care was 4.54 years. The average time spent in routine care duties was 11.8 hours per day (Ondee et al., 2013). The Alzheimer's Association (2016) illustrated that family caregivers of people with dementia had an average of 1-4 years for providing care. The average total time for the provision of care by caregivers to relatives with dementia was 3.6 - 4.5 years (Karg, Graessel, Randzio, & Pendergrass, 2018; Seidel & Thyrian, 2019). In addition, Australia Alzheimers (2015) revealed that 81% of family caregivers provided more than 40 hours of care per week.

They provided 18.5 billion hours of unpaid care to people with dementia, valued at almost $234 billion. However, the duration of care was associated less with caregiver stress because informal and formal supportive services were available to family caregivers (Karg et al., 2018; Seidel & Thyrian, 2019).

According to the literature review, family caregivers reported hidden costs that extend to an increased risk of negative mental and physical health outcomes from providing care to people with dementia (Fleming et al., 2020). In addition, evidence revealed that family caregivers experienced high stress when they faced BPSD increases in people with advanced dementia (Sloane et al., 2015; Win et al., 2017). BPSD of people with advanced stages include forgetfulness of recent events and people's names, loss at home, difficulty with communication, impairment in personal care, wandering, and repeated questioning as sufferers become more dependent. People with dementia are not able to walk alone outside their homes. They may show awkwardness when eating, struggle during dressing, and sleep as soon as it becomes dark. Aggression and delusions may appear (Koca et al., 2017). Thus, the BPSD may aggravate, which increases high stress levels and burden (Aboulafia-Brakha et al., 2014) two-fold in caregivers (Ng, Nyunt, Chiam, & Kua, 2011). The previous study demonstrated that caregiver distress increased with the increasing number and magnitude of BPSD, especially with symptoms of delusion and agitation/aggression (Mukherjee et al., 2017).

Caregiving for a dementia patient itself is a demanding task, and, understandably, coping with the additional burden of BPSD correlated with each symptom of dementia, and the more severe a symptom the more significant the distress of caregivers. Moreover, a lack of understanding in family caregivers and their care recipients due to poor communication often created caregiver stress. Walmsley and McCormack (2014) revealed the need to maintain communication levels between individuals and family members to minimize frustration, anxiety, and distress of patients and caregivers. Family caregivers would provide protective actions to ensure their care recipients' safety and well-being as much as possible. Thus, the family caregiver was usually not employed outside the home. Job and financial strain in caregivers were reported (Freedman & Spillman, 2014). In addition, family caregivers would present to a doctor more often due to the suppression of their immune systems (Aboulafia-Brakha et al., 2014; Koca et al., 2017). Consequently, the mortality and morbidity of family caregivers were reported (Koca et al., 2017).

In conclusion, although cognitive impairment, BPSD, and dependency, affect the caregiver negatively in many aspects, another point explored in recent years is the backgrounds of family caregivers that have positive outcomes on the caregivers of people with dementia. In addition, the positive aspects of caregiving were that the caregiver feels helpful, satisfied, and rewarded by looking after the patient (Koca et al., 2017). Thus, the backgrounds and aspects of the caregivers can create positive aspects toward the people with dementia. Furthermore, positive aspects were seen more in young caregivers who looked after antisocial patients and spent more time with them (Metzelthin et al., 2017). The background and context of a caregiver are expected to be a threat throughout the entire stress process. These characteristics signify where people stand within stratified orders having unequal distributions of opportunities and responsibilities.

Stress process model

The Stress Process Model [SPM] has been widely used in research examining the stress of family caregivers of individuals with dementia (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Gaugler et al., 2000; Pearlin et al., 1990). Pearlin's stress process model (Pearlin et al., 1990) was used to serve as the theoretical framework for understanding mechanisms by which stressors lead to mental health outcomes. Pearlin's SPM draws upon the conceptualization of the family caregivers' stress process and the subsequent application of the stress process to the experience of individuals with dementia. Pearlin et al. (1990) suggested that caregiver stress is a multidimensional process resulting in many different kinds and levels of stress. This model distinguishes between four elements of stress:
(1) the background and context of stress; (2) stressors; (3) mediators of stress; and;
(4) outcomes or manifestations of stress.

The background and context of stress consist of socioeconomic characteristics and available informal and formal supportive caregivers' resources to which caregivers are exposed. The caregiver's socioeconomic characteristics comprise age, gender, ethnicity, education, occupation, economic attainments, history of the illness, and caregiving history. The background and context are expected to be a threat throughout the entire stress process. However, the programs, resources, family, networks, or others offered to caregivers that served as backgrounds and contexts resulted in low effects on stress outcomes.

Stressors, the heart of the stress process, are the conditions, experiences, and activities in which dementia caregiving may be embedded. Two primary stressors of objective and subjective primary stressors are hardships and problems anchored directly in individuals with dementia and caregivers. Objective primary stressors are the ability to perform daily living activities, cognitive impairments, and BPSD. These conditions are the starting point for the stress process, the point from which the entire process unfolds (Aneshensel et al., 1995; Judge et al., 2009).

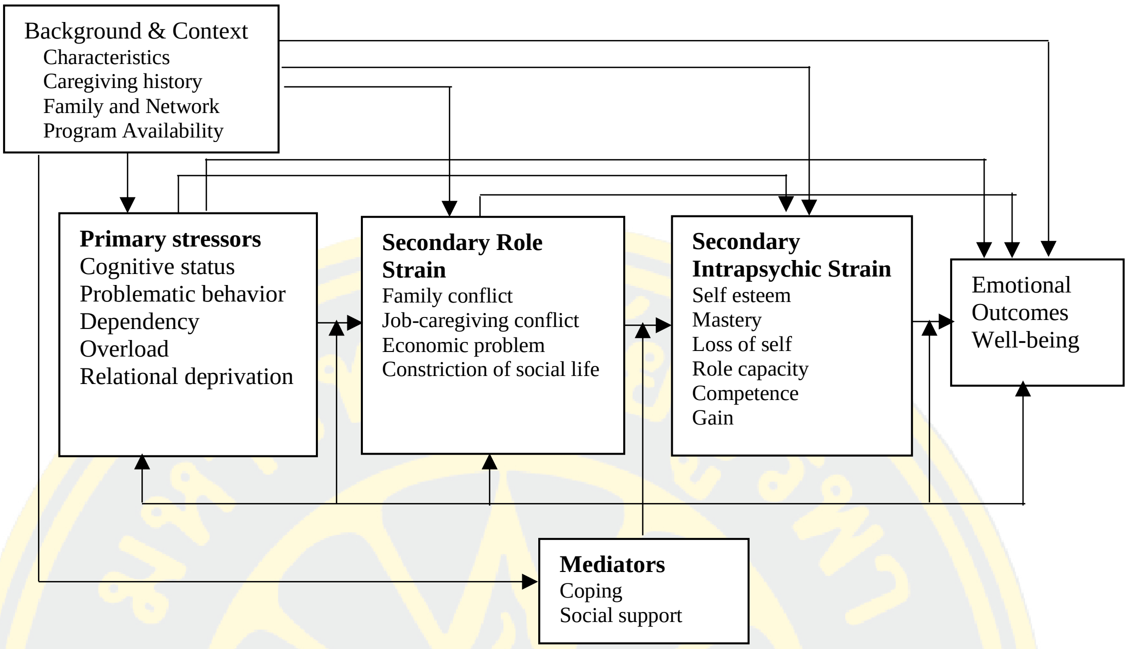
The SPM illustrates the subjective primary stressors: the psychological and emotional consequences experienced by the caregivers due to the objective primary stressors that threaten caregivers, thwart caregiver efforts, fatigue them, and defeat their dreams. This model emphasizes that the nature of dementia has a transforming effect on the patient and this, then, results unavoidably in the caregiver-patient relationships deteriorating. As the impairment progresses, caregivers may feel increasingly separated from the parts of their lives supported by or shared with their relatives. However, caregivers vary considerably in what they find stressful. For example, some caregivers become overwhelmed when a relative with dementia becomes incontinent, but many caregivers manage incontinence without difficulty. Therefore, subjective indicators inquire directly about caregivers' hardships that caregivers experienced, for example, caregivers feeling overloaded or burnt-out and/or experiencing relational deprivation. The primary stressors contribute to the indirect and direct effects on subsequent secondary strains and manifest in the patient and caregiver's emotional well-being.

Primary stressors drive secondary role strains (Pearlin et al., 1990) found in roles and activities outside the caregiving situation comprising of; family conflict, job-caregiving conflict, and economic burden. These will proliferate into intrapsychic strains in secondary stressors that arise when primary stressors begin to erode a person’s mastery, self-confidence, and self-esteem. As a result, these self-concepts may be damaged. When this happens, caregivers are more likely to suffer symptoms of stress, depression, and lower well-being (Pearlin, Menaghan, Lieberman, & Mullan, 1981). The kinds and intensities of stressors to which people are exposed, the coping or social resources can intervene these stressors.

Coping and social support resources can mainly intervene at multiple points along the stress process (Pearlin et al., 1981), resulting in an effect on the decrease of severity of the stressors and improvement in stress outcomes. Pearlin (1989) explains that the indirect effect of stress on psychological outcomes was equally important as the direct effect. Coping is the condition that acted on their behalf and originates from within an individual. Therefore, it represents the perceived stress associated with a specific event/task/activity that will determine how individuals are affected and how they cope. Examples of coping include personality, resilience, and life orientation. Social support prevents the development of secondary stressors. The amounts and types of available informal and formal support, knowledge about the illness, and financial assets are included. Family caregivers receiving social support resources will manifest direct effects on well-being (Pearlin et al., 1990) and may strengthen their ability to manage BPSD (Judge et al., 2009).

Outcomes or manifestations of the stress process vary caregiver impact on cognitive deficit, sleep quality, the ability of caregivers to sustain themselves in their social roles, and the mental health side, which includes stress, depression, or anxiety. In addition, stress outcomes have been observed in previous research with such examples as quality of life, and the well-being of individuals with dementia (Judge et al., 2009).

According to the literature reviewed of Pearlin’s SPM, primary stressors (BPSD, overload, social deprivation) are essential for planning interventions to improve stress and other outcomes in this study. Otherwise, these kinds of stressors may be in the general direction of greater severity and are likely to be durable and intensified over time. The integrative stress reduction program can target the strains at multiple points along the stress process and improve the direct caregiver stress, resulting in improved sleep quality and reduced perception of family caregivers toward patient BPSD. Furthermore, the integrative stress reduction program can block the contagion at the junctures between the primary and secondary stressors affecting those outcomes.



Fugue 2-1 Stress Process Model in caregivers (Pearlin et al., 1990)

Emotional stress of caregivers

Enduring a dementia patient's changes in cognition, ability, and behaviors can be very stressful for caregivers. This stressful situation is a tremendous risk, and the family caregiver might confront crucial negative emotional impacts such as severe stress (Llanque, Savage, Rosenburg, & Caserta, 2016). Emotional stress includes negative moods and affects, such as anxiety and distress, and a cascade of physiological responses associated with the stress-response system (Mendelson, 2013). Stress in family caregivers of people with dementia refers to the perception in what is happening in one's life as uncontrollable, unpredictable, and overloading in giving care to a family member with dementia. The previous studies indicated that family caregivers reported perceived stress towards uncontrollable and unpredictable problematic symptoms of individuals with dementia and overloading in providing care to individuals with dementia (Kim & Schulz, 2008). They declared that they had little time for themselves and felt that their own social life had been influenced (Ferrara et al., 2008).

In addition, family caregivers of people with dementia were more likely to report giving up their holidays or hobbies, having less time for family, and more family conflicts and work-related problems (Alzheimer's Association, 2016). 31% of Australian caregivers felt that caring for individuals with dementia harmed their physical health, and 34% felt weary and exhausted. (Australia Alzheimers, 2015). Because of high expectations regarding caregiving responsibility, family caregivers had high stress (Lee et al., 2015). Ferrara et al. (2008) revealed that 67% of the family caregivers of people with dementia claimed to be ill, 56% felt physically tired, and 51% had a sufficient sleep. In addition, 50% of them argued with the other family members and felt criticized. 54% felt some resentment towards relatives who could help them but choose not to. 53% felt that the relationship with their other family members changed to be poor. The findings implied that caregiver stress created severe misunderstandings among other family members.

Furthermore, the entire situation has led to some resentment of the caregivers toward the patient. Twenty-nine percent of family caregivers claimed to be unable to accept the situation and wanted to abandon their home (Ferrara et al., 2008). A prior study reveals that dementia posed significantly higher stress to family caregivers than other chronic diseases. Significantly, family caregivers of people with advanced dementia had more stress than those of patients with mild dementia (Anand et al., 2016). Family caregivers of people with advanced dementia were involved in intense activities in daily living and experienced the night-time BPSD of the patient. They reported high stress and health problems through the risk of heart disease (Mausbach et al., 2012) after becoming a caregiver (Byun et al., 2016; Ondee et al., 2013).

Dementia illness is an antecedence of the caregiver stress of individuals with dementia correlating with the overload of care tasks and duties. Many previous studies strongly confirmed that agitation, delusion, hallucination, and the mood sub-syndrome had enormously significant correlations with the emotional stress of caregivers (Balieiro, Sobreira, Pena, Silva-Filho, & Vale, 2010). Study findings of Seidel and Thyrian (2019) revealed that family caregivers rated high stress due to aggressive and disoriented behaviors of the patients and severe emotional distress due to lower acceptance of caring. When the family caregivers perceived BPSD as stressed, they could not balance their work and roles. Consequently, this resulted in role overload for family caregivers.

Role overload is defined as the subjective feeling of being overwhelmed by care-related responsibilities, whereas role captivity is the feeling of being an involuntary incumbent of the caregiving role (Liu, Dokos, Fauth, Lee, & Zarit, 2019). The role overload can be overwhelming in taking care of family members with dementia. The finding of a cross-sectional study showed that more than half of family caregivers experienced job-related stress, and all of them had worked more than 8 hours per day (Honda, Date, Abe, Aoyagi, & Honda, 2014). Overload escalated to stress in caregivers (Liu et al., 2019). A systematic review found that caring for persons with BPSD routinely was the critical predictor of stress in caregivers. It may elucidate the stress process for caregivers and can facilitate the development of effective interventions for caregivers (Ornstein & Gaugler, 2012).

While the negative consequences of BPSD on family caregivers are firmly documented, it is unclear how caregiver stress affects the incidence and severity of BPSD. The previous evidence studies attempted to elaborate more on the finding that high caregiver stress was associated with the quality of life of individuals with dementia and correlated in bidirectional relationships between caregiver stress and BPSD (Isik et al., 2019). Caregiver stress deteriorates the relationship between the caregiver and the patient. Significantly, when caregivers perceived BPSD as provocative behaviors (Chen et al., 2017), they may have improper communication, which could inadvertently worsen increased levels of BPSD (Polenick et al., 2018). Family caregivers tended to use problem-focused strategies rather than emotional-oriented strategies triggered by low interactions between family caregivers and the patients, increasing the patient's problematic behaviors (Stanisławski, 2019). Caregivers with high stress, irritation, anger, or impatience tend to use inappropriate characters, which resulted in more irritability, delusions, agitation, and aggression in the patients (Quinn et al., 2020). Furthermore, the Alzheimer's Association (2016) indicated that chronic stress could lead to low sleep quality in caregivers.

Many studies attempted to manipulate BPSD by determining the effects of interventions, such as cognitive behavior modification based on the concept of cognitive-behavioral therapy. The finding from a study on this type of intervention was statistically significant, while the intervention group's stress scores decreased more than in the control group. The family caregivers in the control group receiving the usual care had constant stress levels over time since they had not had any training to cope with stress. Therefore, caregiver stress levels went up (Hengudomsub, Kangchai, Pathumarak, & Paokanha, 2016). The study findings of Carter et al. (2019) proposed that the cognitive behavior modification program had a significant beneficial effect on stress among family caregivers. After completing the program, family caregivers reported better stress. However, family caregivers experiencing the night-time BPSD of the persons with dementia reported high stress (Byun et al., 2016; Ondee et al., 2013), interfering with caregiver sleep.

Sleep quality of caregivers

Sleep refers to an active process generated and modulated by a complex set of neural systems located in the hypothalamus, brainstem, and thalamus (Schroeder & Colwell, 2013). Sleep decreases physiologically in quantity and quality with age. It becomes fragmented with more age and night-time awakenings. As a result, insomnia and excessive daytime sleepiness are frequently reported in the elderly. Also, comorbid insomnia and other sleep disturbances are common among caregivers of people with dementia (Cipriani, Lucetti, Danti, & Nuti, 2015). Family caregivers reported consistent sleep difficulties, sleep quality impairment, and insomnia (McCurry et al., 2015; Peng et al., 2016), they exhibited an inferior quality of sleep than non-caregivers (Lee et al., 2014) and had a prevalence of insomnia up to forty-one percent (Simon, Bueno, Otero, Blanco, & Vazquez, 2019).

Sleep disruption in caregivers has cumulative associations with physical, mental, and cognitive health. Family caregivers have to remember to care for their own needs and remember all of the daily needs of the family member with dementia, such as taking medications and attending medical appointments (Benge et al., 2020). Lee et al. (2014) found that family caregivers of people with dementia experienced a lower quality of sleep than others with a high prevalence (50–70%) (Byun et al., 2016). Peng et al. (2019) also found that the sleep of caregivers of people with dementia was low quality for 91.7%. Thus, the insufficient sleep quality in caregivers associated with a worsened ability to provide care (Prather, Janicki-Deverts, Hall, & Cohen, 2015).

Furthermore, there are several processes by which caregiving for people with dementia could interrupt sleep. Firstly, the sleep in caregivers is affected by the overloaded duties. Prior studies found that the years of care duration and daily hours of care were associated with low sleep quality in caregivers (Lee et al., 2014; Simon et al., 2019). Sleep quality and prolong sleep-onset latency were more difficult for the caregiver performing an overload role (Gao et al., 2019; Scullin et al., 2018). Second, caregivers' perceived sleep disruptions when BPSD of individuals with dementia increased during the night. Scullin et al. (2018) found that short and poor-quality sleep among family caregivers was associated with lower cognitive functioning and high BPSD in people with dementia. The last factor, chronic sleep deprivation in caregivers, is caused by caregivers' negative thoughts and feelings about their responsibility. Gao et al. (2019) found that family caregivers with heightened stress had prolonged sleep-onset latency. Often, they reported sleep disturbances associated with BPDS. Especially, the night-time awakenings by the patient with dementia increased the disturbed sleep of caregivers (Gao et al., 2019). Lee et al. (2014) additionally suggested that family caregivers of people with dementia had more inferior perceived sleep quality and shorter sleep durations than non-caregivers of the individual with dementia.

Environmental-focused views of sleep in caregivers predict that the caregiver role is so stressful and unpredictable. Therefore, caregivers would be unable to change their routine in a manner that benefits their sleep. Lenz and Chura (2017) suggested that older adults could change their behaviors to improve their sleep; it is important to note that interventions to improve sleep hygiene may benefit the nighttime routine for caregivers. Also, daytime exercise could improve burden and fatigue in caregivers (Hirano et al., 2011). However, due to unwanted adverse effects of medications (e.g., decreased responsiveness at night to the care recipient's needs), non-pharmacological interventions were likely to remain the first-line treatment (Gao et al., 2019).

Interventions to improve caregiver stress of people with dementia

Caregiver stress is a multidimensional process. It navigates stressed illness and affects negative well-being together in both caregivers and dementia patients. Several interventions have been developed to improve caregiver well-being, such as strain, burden, stress, and depression. Unfortunately, most of the interventions do not cover a multidimensional stress process. As a result, stress manifestations in caregivers are not minimized. While cognitive-behavioral interventions to solve stress (Hengudomsub et al., 2016), mindfulness to reduce stress (Leach, Francis, & Ziaian, 2014), and communication and resources support interventions (Easom, Alston, & Coleman, 2013) could improve caregiver stress (Carter et al., 2019), there are few interventions to improve multi-stress manifestations. Also, there are few interventions that consider both the caregivers and the patients together. Community based programs can be classified into the following four categories; social intervention, cognitive intervention, emotional-oriented strategy, and multicomponent intervention.

Psychosocial interventions have been delivered in an interpersonal format with face-to-face contact between provider and caregiver. Real-time delivery formats provided include telephone, digital devices, and video conferencing. There is also computer/Internet or video delivery, with minimal face-to-face contact between provider and caregiver. Some psychosocial programs have combined one or more of these options. Existing psychosocial interventions are aimed at supporting family caregivers suffering from dementia caregiving stress and improve caregivers' negative mental health status. Most psychosocial interventions are focused on caregiver skills for addressing tasks associated with the patient's impairments and BPSD.

Some psychosocial programs provided skills communication training for family caregivers and cognitive training for mild dementia patients. Formats for psychosocial interventions included individual, family focus, and group with varying intensity (length of sessions), frequency (how often in a specified time), and duration (length of treatment episode). There were many distinct types of psychosocial intervention, such as daily living training, stress management training, reminiscence, multisensory environments, and physical activity. Additionally, the practical caregiver skills supporting the dementia patient's ADL were provided in 3 training modules;

(1) eating and feeding skills, (2) transferring and toileting skills, and (3) dressing and bathing skills. These modules provided hands-on demonstrations, and each procedure was delivered by professional trainers. The intervention was conducted in 6-hrs over three weeks (2hr/wk.) (DiZazzo-Miller, Samuel, Barnas, & Welker, 2014). Reviewing medication skills was provided for caregivers (Religa et al., 2015) that appropriated medication management skills and could reflect motivation to promote medication safety (Lingler, Schmidt, Gentry, Hu, & Terhorst, 2014).

The sharing of earlier memories as a married couple would help reduce stress in caregivers. The couple's life story program helped patients and caregivers recollect their past life together as a couple, worked on skill patterns trained to communicate with dementia patients, and developed a life storybook comprising of five daily sessions conducted by nurses and social workers. The materials used in this program were significant mementos such as pictures, postcards, clippings, and wedding vows for discussion (Ingersoll-Dayton et al., 2013). Additionally, the stress management training via the internet program comprised of six modules with three months in a web-based format, starting with the details of dementia segments and following the communication techniques of dealing with BPSD. Caregivers also reported; decreased stress and were encouraged to maintain healthy habits like good nutrition and exercise (Kajiyama et al., 2013).

Cognitive interventions are designed to address mental health problems in caregivers at the cognitive level by activating and analyzing thoughts, experiences, memories, and senses (McDougall, 2009). The strategy draws attention to what is going on in mind of the caregivers and helps find solutions that will be effective and permanent. Cognitive Behavioral Therapy [CBT] was a small group-based (6-8 caregivers) that consisted of 8 weekly sessions with discussions and role-playing methods. Family caregivers were invited to share their feelings about the stress of caregiving. The group discussion topics consisted of understanding dementia disease mechanisms, identifying changes and progression, dealing with cognitive symptoms and behavioral manifestations, identifying perspective of care, and anticipatory grief (Aboulafia-Brakha et al., 2014). In addition, the home-based cognitive intervention was also provided to caregivers of older adults with dementia through home visits. Family caregivers were invited to train using stimulus activities in cognitive therapy—this program comprised of 12 sessions within six months. The researchers helped establish the acceptance of the effects of dementia circumstances, problem-solving skills, social skills, and resources and helped with coping with changes and loss experiences, created enjoyable activities, and evaluated changes and goals. This program could decrease adverse emotional health in caregivers (Soellner, Reder, Machmer, Holle, & Wilz, 2015).

Emotional-oriented strategies are coping strategies to reduce emotional distress. These interventions included an example of wishful thinking, avoidance, counting blessings, blaming oneself, spirituality, and forgiveness. Transcendental Meditation [TM] program provided educational content on the health effects of stress and provided fundamental training techniques for establishing the acceptance of the effects of dementia circumstances. It helped when individuals think they cannot avoid the source of stress. The program was conducted over 13 hours in 12 weeks, and after that, family caregivers conducted it at home. Telephone visits were applied to monitor caregivers every six weeks (Leach et al., 2014). Mindfulness-Based Stress Reduction [MBSR] to raise caregivers' awareness and the sensations were applied to train in unique mindful movement, adjusting physical symptoms, emotions, thoughts regarding BPSD in over eight weeks (Brown, Coogle, & Wegelin, 2016). Previous research showed that the benefits of combinations of multi-methods and multi-domains of the stress process could improve both caregivers and individuals with dementia outcomes. For example, enhancing the positive aspects of a caregiving intervention increased positive caregiving aspects and inner strength for Thai dementia caregivers (Pankong, Pothiban, Sucamvang, & Khampolsiri, 2018).

Multicomponent intervention refers to programs or activities that combine various techniques, such as educational methods, social support resources, communication skills training, peer group support, family support, counseling, positive aspects, mindfulness, and cognitive training. The majority of programs apply group support more than individual training. While Acquiring New Skills While Enhancing Remaining Strengths [ANSWERS], Partner in Dementia Care [PDC], and Care of Persons with Dementia in Their Environments [COPE] program provided such dyadic processes to target improvement in the family caregivers and the patients with dementia outcomes.

ANSWERS was applied to target effective communication of caregivers toward the patients and was conducted by a nurse. It provided a core set of skills for managing and coping with the symptoms of mild dementia. Family caregivers received information and interactive skills training across five core areas: (a) education regarding dementia and memory loss, (b) effective communication, (c) managing memory, (d) staying active, and (e) recognizing emotions and behaviors. Sessions were organized into four principles: (a) presenting educational information and core skills, (b) modeling and practicing selected skills, (c) providing direction and feedback, and (d) managing problem-solving and answering questions. This intervention consisted of six 90-minute curriculum-guided sessions within 11 weeks. At the beginning of each session, the action plan was used to assess how each skill was implemented. Also, participants were invited to discuss the barriers encountered. After each session, an action plan was used to list each chosen skill to be practiced. Participants were then asked to keep the action plan in a prominent location and document any difficulties they experienced when practicing skills. ANSWERS decreased care-related stress, increased role captivity, and promoted higher caregiving mastery. Also, the program improved depression and anxiety in caregivers (Judge et al., 2013). However, ANSWERS was too time-consuming and overwhelming for both the family caregiver and the patients. In addition, the program did not include a specific method for capturing each intervention skill used by the care dyads. These limitations make it difficult to disentangle the intervention’s effects on the family caregiver’s outcomes with a lack of acceptability and feasibility (Judge, Yarry, & Orsulic-Jeras, 2010).

PDC program provided telephone-based support to caregivers over 12 months. It was comprised of a standardized care support service for the patients with dementia and their caregivers, including care plan assessment, care plan development, implementation, ongoing monitoring, and reassessment. It also offered a structured training curriculum for providers and an operation manual for uniform implementation. PDC assisted family caregivers by; providing disease-related education and information, offering emotional support and coaching, linking families to medical and non-medical services and resources, and mobilizing and organizing the informal care network. The steps in care consultation included; (1) Initial assessment covering a wide range of dementia caregiving problems such as coordinating and accessing resources or support, medication management, and literacy of dementia; (2) In the process of planning and action, caregivers and the patients would be taught about the action steps which promoted self-management ability; (3) In ongoing monitoring of the status, progress, and barriers encountered on both caregivers and the patients; and (4) Reassessing and monitoring time, this intervention was conducted by care coordinators repeating problem assessments. The effects of the PDC intervention in six months presented in the feasibility expected to improve the caregiver's physical health, caregivers' role captivity, and relationship strains (Bass et al., 2013).

COPE, an intervention for family caregivers of individuals with dementia, provided a schedule to support family caregivers on dementia assessment (patient deficits and capabilities, medical testing, home environment, communication, and BPSD); education (patient capabilities, potential effects of medications, pain, constipation, dehydration); and stress management. In addition, individuals with mild dementia were trained in problem-solving, communication, and management, among other simplifying tasks. The patient and caregiver received up to ten sessions over four months with one face-to-face session by an advanced practice nurse.

In the beginning, the intervener interviewed caregivers to identify care routines, previous and current roles, habits and interests, and caregiver concerns.

Then individuals with dementia were invited to practice cognitive and functional testing to identify patient strengths and deficits in attention, initiation, perseveration, construction, conceptualization, and memory. Next, the modification regarding home environments, daily activities, stress, and communications to support patient capabilities were provided. Finally, a home visit was provided. The results at four months showed that COPE improved caregiver anger, distress, and sleep quality (Gitlin, Winter, Dennis, Hodgson, & Hauck, 2010) and demonstrated a strong trend in dementia patients toward experiencing less frequent and less severe BPSD and positively affected caregiver distress related to managing dementia-related BPSD patients (Fortinsky et al., 2020). In addition, cognitive-behavioral intervention programs for family caregivers showed a significant decrease in behavioral changes in the elderly with dementia.(Fialho, Koenig, Santos, Barbosa, & Caramelli, 2012).

A novel two-day intervention to improve caregiver stress combined mindfulness, behavior management training, and validation therapy. Each module of this intervention supported positive mental health and well-being for caregivers and helped caregivers identify their own emotions. Therefore, it was plausible that this novel two-day program decreased stress in the caregivers. In addition, caregiver management skills for problematic behaviors in individuals with dementia and communication teaching were provided. Thus, the novel two-day intervention could significantly decrease stress after completing the intervention, over and above what was observed in the control group (Spalding-Wilson et al., 2018). Also, Kajiyama et al. (2013) explored the effectiveness of the iCare Stress Management e-Training Program. This program developed the use of the internet as a medium for teaching a specific set of coping skills to help caregivers manage their stress and handle everyday caregiving situations more effectively. In addition, video clips illustrating how to do the various skills, a workbook containing descriptions of exercises, and relevant forms to expand practice opportunities were provided. Family caregivers had satisfaction with the action plans, printed material, and resources in the program. These were valuable for reducing the changes in multi-dimension stress.

A Tele. Tandem intervention was developed based on cognitive approaches with the home-based and telephone-based approaches. It targeted enhancing stress-management and emotion regulation skills, creating value-based activities, strengthening problem-solving abilities, and improving caregiver stress of people with dementia (Wilz, Reder, Meichsner, & Soellner, 2017). Furthermore, an Intervention Helps Family Caregivers Of People With Dementia Attain Own Therapy Goals was used to train caregivers about using stimulus activities in cognitive therapy with healthcare providers in the home— the program was comprised of 12 sessions within six months (Wilz et al., 2018). At the post-intervention, family caregivers in the intervention group reported overall improvements in well-being, symptoms of depression, physical symptoms, and the ability to cope with the stress and burden of care and the behavioral and psychological symptoms of dementia patients.

In addition, the findings concluded that the family caregiver in the intervention group had better stress levels after receiving this program than before participating in the intervention.

A tailored activity program–outpatient version [TAP-O] was provided to reduce BPSD in dementia patients and improve caregiver stress. It contained contents regarding; (1) assessment of cognitive and functional capacities of patients and caregivers received education and learned how to manage BPSD as well as stress-reduction techniques; (2) strategies to simplify communication and adapt activities based on the patient's cognitive and functional profile that promoted engagement; (3) generalization of techniques to daily activities, such as self-care and simplifying activities as the disease progresses. Family caregivers were instructed to use those activities at home. The findings showed that there were statistically decreased BPSD as well as significant differences between the intervention and control groups. In addition, caregiver stress was significantly lower in the experiential group than in the control group. Thus, TAP-O effectively reduced BPSD of patients with dementia and reduced caregiver stress (de Oliveira et al., 2019).

Pinazo-Clapés, Pinazo-Hernandis, and Sales (2020) studied the effects of an educational program for professional caregivers on behavioral alterations in nursing home residents. This intervention combined the behavior-oriented approach, communication approach, and emotion-based approach, targeting the importance of the environment, and external reinforcements in learning. The contents of this program were composed of the practical aspects of the proper guidelines to handle the BPSD of older adults with dementia. Family caregivers could understand that the environment must adapt to each person and the relevance of the background and the consequences surrounding each behavior. The communication approach was used to raise communication skills, including verbal and non-verbal language. Besides, the emotion-based method based on validation and the idea of respect and consideration of the feelings of the people with whom one works through individualized attention plans were used. The results revealed that this program could reduce BPSD in the elderly rated by caregivers

Pankong et al. (2018) studied the effects of a program for enhancing positive aspects of caregiving and subjective well-being among caregivers of older persons with dementia. This intervention was applied to improve self-efficacy in caregiving and spirituality contexts, enhance the caregiving realm's positive caregiver feelings, improve perceived social support, and increase positive appraisal of caregiving situations. The program contained education and skills training, exploring spirituality, and enhancing positive aspects of life events, mindfulness exercises, and positive reappraisal practice. The results showed that family caregivers in the intervention group had more positive caregiving aspects than those in the control group and well-being scores were higher than the control group.

Stress Inoculation Training [SIT] (Hengudomsub et al., 2016) was used to train the family caregivers of people with dementia to promote psychological well-being. This program contained eight-week sessions divided into 3 phases, and each session took about 90 minutes. In phase I, psycho-education towards stress was used to promote the understanding of stress and its impacts. A supportive atmosphere for sharing among the caregivers regarding beliefs and attitudes towards stress was created. Phase II enhanced caregiver knowledge and skill to acquire knowledge and enhanced their cognitive and behavioral skills. Caregivers were invited to train various techniques relating to stress reduction, such as self-talk, cognitive and behavioral modification, muscle relaxation, and breathing exercises. Phase III applied skills to cope and manage stress when confronting stress in real-life situations through imagination and simulated situations. This program enabled caregivers to enhance their skills and build up their self-confidence in using the techniques. Therefore, SIT was successful in stress reduction among family caregivers of people with dementia.

Family caregivers perceived stress and decreased sleep quality in actual hours of sleep time caused by BPSD and other stressors. Existing interventions have targeted improvements in the primary outcomes of family caregivers, including well-being, depression, and burden. However, few interventions have presented as good benefits in caregiver psychological stress. Aboulafia-Brakha et al. (2014) revealed that caregiver stress of advanced dementia was not significantly attenuated after caregivers had received cognitive-behavioral group therapy. The suggestions of a previous study mentioned that family caregivers preferred more social support and services from their family, friends, community, and health care providers (Ingersoll-Dayton et al., 2013). Therefore, interventions to minimize caregiver stress, improve sleep quality, and lessen the severity of BPSD for Thai family caregivers of people with advanced dementia are needed.

In summary, the SPM illustrated that primary stressors lead to secondary stressors, resulting in negative health outcomes (Pearlin et al., 1990). Therefore, many interventions have been developed based on the SPM that could improve adverse outcomes of the stress process (Judge et al., 2013; Moon & Adams, 2013). Existing programs provided general and specific dementia management, including promoting positive thinking skills, mindfulness and counseling, dementia information, and enhanced communications skills for caregivers. These fundamental activities have provided beneficial multi-techniques of one-on-one discussions, group discussions, telephone counseling, home visits, and internet-based training. The integrative stress reduction program for family caregivers of advanced dementia in this study was developed based on Pearlin's SPM; several variables in each concept in the SPM, such as primary stressors, secondary stressors, and coping and support, were manipulated. This integrative stress reduction program combined multi-approaches including emotional-oriented, cognitive, and psychosocial methods based on the literature reviewed. An emotion-focus coping strategy was used to manage emotional responses to the perception of a stressful event/situation for caregivers. Informative support to enhance understanding in dementia caregiving situations was applied. Self-distraction, active coping, planning, and acceptance demonstrated an excellent effect on caregiver well-being, and patient outcomes were considered in the integrative stress reduction program (Baharudin et al., 2019). In addition, the integrative stress reduction program sessions were conducted to enhance interpersonal interaction skills for dealing with BPSD for family caregivers and to delegate a secondary caregiver to support care duties related to the overload of tasks. To stabilize caregiver mastery and self-confidence in intrapsychic strains, recognizing caregiver strengths and opportunities were conducted. In addition, family caregivers were invited to join in dementia networks to improve social deterioration. This integrative stress reduction program was over four weeks and consisted of six sessions. Each session took about 45-90 minutes.

CHAPTER 3

RESEARCH METHODS

This chapter presents the research methods consisting of research design, population and sample, setting, research instruments, protection of human subjects, data collection procedures, and data analysis.

Research design

A single-blind Randomized Control Trial [RCT] was performed to examine the effectiveness of the integrative stress reduction program for family caregivers of people with advanced dementia (moderate to severe stages). The primary outcome was caregiver stress, and secondary outcomes were caregiver sleep quality, and behavioral and psychological symptoms of dementia elderly. This study has been registered with the Thai Clinical Trial registry (TCTR20200601001).

Setting

The study setting was Songphinong district, Suphan Buri province, consisting of fifteen sub-districts with twenty-five Tambon Health Promoting Hospitals [THTHs]. There are three sub-districts of Thung Khok, Bantaten, and Bo Suphan that have facilitated long-term services to support people with dependency and cognitive impairments in the large [L] Primary Care Unit [PCU] of the THTHs. Those sub-districts have the same characteristics regarding socioeconomic conditions, transportation, culture, and health care services. Family caregivers residing in 24 villages in Thung Khok and 18 villages in Bo Suphan areas in August 2020-December 2020 were recruited by simple random sampling. Thung Khok PCUs have facilitated care services twice a month, every first and third Wednesday. Bo Suphan provides facilitated care services twice a month, every first and third Thursday.

Population and sample

The target population was family caregivers aged 18 years or older who provided care to older persons with dementia in both women and men residing in SongPhinong district, Suphan Buri province, Thailand. Eligible participants were recruited through the inclusion and exclusion criteria.

The inclusion criteria:

For the caregivers

1. Self-identified as the primary family caregiver of older adults with dementia residing together at the same home.
2. Providing care for dementia older adults for at least three months.
3. Able to read and communicate in the Thai language.

The individuals aged over 60 years old have

1. Been diagnosed with dementia by physicians and had scores of the Thai Mental State Examination [TMSE] (Train the Brain Forum Committee, 1993) of 22 or lower.
2. In advanced dementia (moderate to severe stages) with a score of 2 or 3 in Clinical Dementia Rating [CDR].

Exclusion criteria

For the caregivers

1. Being a formal caregiver.
2. Have been diagnosed with depression, psychosis, dementia by physicians, and have severe health problems like stroke, cancer, or heart attack.
3. Unable to participate in the intervention for all sessions.

For the individuals with dementia

1. Move to live in another setting.
2. Have changed to another or new caregiver.
3. Have been hospitalized or passed away while participating in the program.

Sample Size

The determinant formula for a repeated measure ANOVA was used to calculate the sample size using power analysis from the G*Power software program. The effect size was 0.22 based on a meta-analysis which studied multicomponent intervention studies for reducing caregiver stress (Williams, Golijani-Moghaddam, Wilde, & De Boos, 2018). Power of .90 and significance level of .05 (one-tailed) were involved. The sample size from this power analysis was 23 for each group; thus, representing at least 46 participants. An estimated attrition rate of 30% was based on the previous study (Judge et al., 2013). Finally, 30 participants per group and a total sample of at least 60 participants were needed.

Sampling

The following steps were used to recruit the participants:

Step 1: A village health volunteer randomly selected two long-term care PCUs in the Songphinong district.

Step 2: The researcher and nurses recruited older patients from the long-term care clinics between August-December 2020 based on the names from the records of diagnosed dementia patients.

Step 3: Through local announcements and word of mouth by village health volunteers, when individuals who self-identified as the family caregivers of older persons were interested, the village health volunteers informed the researcher and passed on their contact details with the permission of the caregivers to the researcher. Then the researcher screened the possible participants with a cognitive test with scores of 22 or lower by TMSE, and advanced dementia with a score of 2 to 3 by CDR.

Step 4: Family caregivers were contacted by telephone, verbally informed about the overview details of the study, the purpose, benefits, procedures, and risks of the procedure, and invited to participate voluntarily in the study.

Step 5: Eligible participants were randomized into study groups using a computer-generated computer limited to 60 cases.

Randomization

Sixty participants were asked to sign the informed consent form and were invited to complete the questionnaires at baseline. Then, a research assistant [RA] drew a ballot out of the 60 ballots mixed in a box to assign the groups. Of the 60 ballots, 30 were marked with the letter “C” for the control group; 30 ballots had the letter “E” for the intervention group. Ballots were not replaced in the envelope.

A participant's name was randomly and equally assigned to either the intervention or control groups. The RA performing the allocation was not involve the intervention and the collection of data at the baseline (Week 0, Time 1 [T1]), post-intervention (Week 4, Time 2 [T2]), and follow-up (Week 8, Time 3 [T3]).

Research instruments

Instruments used in this research were divided into three parts, tools for screening, research instruments for data collection, and the instrument for implementation.

Research instruments for screening

1. Thai Mental State Examination [TMSE] is developed by a Train The Brain Forum Committee (1993). It was used to categorize dementia in older adults in this study. TMSE is based on 30 points containing six essential subtests, consisting of orientation (6 points), registration (3 points), attention (5 points), calculation (3 points), language (10 points), and recall (3 points). TMSE has been applied to 180 normal healthy Thai older adults between 60 and 70 years of age. The mean total score of TMSE for normal Thai older adults is 27.38 (standard deviation 2.02) points. Thus, the cut-off point for the diagnosis of normal healthy Thai older adults for TMSE is >23 points. For this study, TMSE was used to confirm dementia with cognitive scores of 22 or lower in people diagnosed by physicians in the elderly and long-term care clinics. Village health volunteers conducted this.

2. The Washington University Clinical Dementia Rating [CDR] is a structured, nurses and researcher-rated interview that collects information on a patient's cognitive capacity from both the caregiver and patient (Morris, 1997). Six domains are assessed and then synthesized to assign a Global CDR score by researcher-certified training. The domains are memory, orientation, judgment, problem-solving, community affairs, home and hobbies, and personal care. The ratings range along a 5-point scale (except for the personal care domain): CDR-0: no cognitive impairment, 0.5: very mild dementia, 1: mild, 2: moderate, 3: severe. It was used to evaluate the staging severity of people with advanced dementia with CDR-2 and 3.

Research instruments for data collection

1. A demographic questionnaire was developed by the researcher and used for gathering data regarding personal information from caregivers and older adults with dementia. For family caregivers, it included age, gender, marital status, educational level, occupation, history of illness, caregiving duration, and relationship with older persons. Data of older adults with dementia was obtained from family caregivers, such as age, gender, marital status, comorbid, and illness duration.

2. The Relative Stress Scale [RSS] (Greene et al., 1982) is a measure that allowed family caregivers to express their level of stress. It is one of the few identified instruments that (a) measures stress of caregiver explicitly, and (b) is normed on a population of informal caregivers for individuals with dementia. This scale is used in both clinical practice and research (Thommessen et al., 2002) and especially useful because its subscales allow for the examination of the different dimensions of the stress of dementia caregivers (Ulstein, Wyller, & Engedal, 2007). RSS has demonstrated good construct validity (Van Durme, Macq, Jeanmart, & Gobert, 2012) and reliability (Greene et al., 1982). The original developers of the RSS reported three total factors; personal distress (Cronbach's alpha = 0.96), degree of life upset (Cronbach's alpha = 0.96), and negative feelings toward the care recipient (Cronbach's alpha = 0.88). The overall measure showed three-week test-retest reliability of 0.85. This scale is a self-rated 15- item scale, and it used to measure the caregiver stress of care ranging from 0 to 60, with a higher score indicating a higher degree of stress. It comprises of questions asking the respondent to rate the frequency or severity of symptoms on 5-point Likert scales (e.g., "never," "rarely," "sometimes," "frequently," "always"). The scoring is five levels of intensity; 0 = not at all to 4 = to a high degree, with a higher score indicating higher stress levels. The RSS was translated into Thai language and measured multiple dimensions of caregiver stress in this study with Cronbach's alpha = 0.87.

3. The Pittsburgh Sleep Quality Index [PSQI] was developed by Buysse et al. (1989). It is a subjective measure of sleep and a valuable instrument used to measure the quality and patterns of sleep among caregivers of older persons with dementia at a one-month time interval. Family caregivers were required to read and complete the PSQI by themselves. The seven components: subjective sleep quality, sleep latency,

sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction, were added to yield one "global" score, with nineteen individual items generating seven component scores of sleep quality. Each component score has a range of 0-3 points. A score of "0" indicates no difficulty in all cases, while a score of "3" indicates severe difficulty. An overall range of 0-21 points, "0" indicating no difficulty and "21" indicating severe difficulties in all areas. A global PSQI score greater than 5 yielded a diagnostic sensitivity of 89.6% and a specificity of 86.5% (kappa = 0.75, p < 0.001) in distinguishing between good and poor sleepers. The Thai version modified from the Pittsburgh Sleep Quality Index [T-PSQI] (Jirapramukpitak & Tanchaiswad, 1997) with Cronbach’s alpha reliability of 0.84 (Sitasuwan, Bussaratid, Ruttanaumpawan, & Chotinaiwattarakul, 2014) was used to assess a caregiver’s sleep quality in this study with Cronbach's alpha = 0.82.

4. Neuropsychiatric Inventory [NPI] was developed by Cummings et al. (1994). It is a retrospective (1 month) caregiver-based interview covering twelve domains of neuropsychiatric symptoms, consisting of; delusions, hallucinations, agitation, depression/dysphoria, anxiety, euphoria/elation, apathy/indifference, disinhibition, irritability/lability, aberrant motor activity, sleep problems and appetite/eating changes. NPI rated the frequency and severity of twelve symptoms and included caregiver distress in each domain over a one-month time interval.

The frequency rating was rated from 1 (less than once a week) to 4 (very frequently) and rated the severity from 1 - 3 points (less severe to very severe). The caregiver distress was rated from 0 (no distress) to 5 (extreme distress). The total domain score of BPSD was the frequency score product multiplied by the severity score for that behavioral domain (0–144) (Cummings, 1997). The caregiver distress was not included in part of the NPI total score. NPI has been tested as having good validity (Veragiat et al., 2017) and demonstrated good reliability of 0.97 (Camozzato, Godinho, Kochhann, Massochini, & Chaves, 2015). Neuropsychiatric Inventory - Thai version (Senanarong et al., 2013) was used to determine the frequency and severity of BPSD of older adults in this study by interviewing family caregivers with Cronbach's alpha = 0.81. It can be performed by non-physician healthcare personnel and takes roughly 20 minutes to complete.

The translation

The Relative Stress Scale [RSS] was translated from the original English language version into the Thai language. With the back translation technique (Brislin, 1970), the original English version of this scale was translated into the Thai version by two bilingual translators who were Thai natives who produced the two independent translations—working from the original questionnaire and the first translator's [T1] and the second translator's [T2] versions. The two versions were compared and any discrepancies in the translations were considered and resolved by the researcher and the major advisor (producing one standard Thai version T-12). Next, the T-12 version of the questionnaire was given to another bilingual translator who back-translated the instrument into English, blinded to the original version (English). It ensured that the translated version reflected the same contents as the original version.

The instrument for the implementation

The integrative stress reduction program for family caregivers of people with advanced dementia has been drawn from the SPM (Pearlin et al., 1990).
The program was developed by the researcher based on several evidence resources. Systematic literature reviews guided the activities, methods, and arrangement of this protocol. Several stressors consisting of BPSD, dependency, overload, social deprivation, mastery, and mediators including coping and support were manipulated to target improvement in a multi-negative outcome of the stress process.
The integrative stress reduction program aimed to decrease stress, improve sleep quality in caregivers, and reduce caregivers' frequency and severity of feelings toward BPSD in the patients. This program combined emotional-oriented strategies, cognitive coping techniques, and psychosocial strategies in the view of methods. The program played an essential role in inner strengths for improvement of acceptance and active stress coping, played a role in the improvement of interaction and communication skills for dealing with BPSD for family caregivers, and also played a role in the improvement of positive aspects of family caregivers towards BPSD of the patients. The instruments for the implementation consist of the following:

1. The intervention protocol is implemented for the intervention group in six 45 to 90 minutes sessions over four weeks. The contents are based on easy-to-understand language. In the first three weeks, session 1 to session five are conducted

at the PCU, and session 6 in week four is a home visit. The six sessions consist of; own emotional orientations and understanding situations; enhancing positive feelings of dementia caregiving; stabilizing mastery and perceived self-confidence of caregivers; informative support and dementia networks; the practice of interpersonal interaction skills for dealing with BPSD; family support for caregiver duties sessions (Figure 3-1).

2. The booklet contains information about dementia, symptoms, self-identifying emotions, and interaction steps for dealing with BPSD and for recording any such information.

3. The antecedents, behaviors, and consequences [ABCs] tool to record antecedents, behaviors, and consequences related to BPSD, and how to deal with them.

4. Homework has been formulated for participants to discuss further in the week. These assignments were delivered each week to participants. The participants must complete assignments and discuss them in the caregiver group before starting the week sessions.

Validity and reliability of research instruments

Content validity

1. The contents of the integrative stress reduction program were validated by three experts (an advanced practice nurse of dementia services and two professors of nursing faculty). Experts considered and validated the content, language, and arrangement of the intervention. Later, the instrument for implementation was revised according to the recommendations of the experts.

2. Instrument for data collection: The Thai version of the translated-RSS [T-RSS] was evaluated through the content validity index [CVI]. The expert panel was asked to rate the items, whether they fitted with the concept, construct, and definition. Three expert rating scores of the T-RSS were used to calculate a content validity index = 0.90. The Thai version PSQI (Sitasuwan et al., 2014) and NPI (Senanarong et al., 2013) were valid in the previous study, and they were well accepted with a CVI more 0.80.

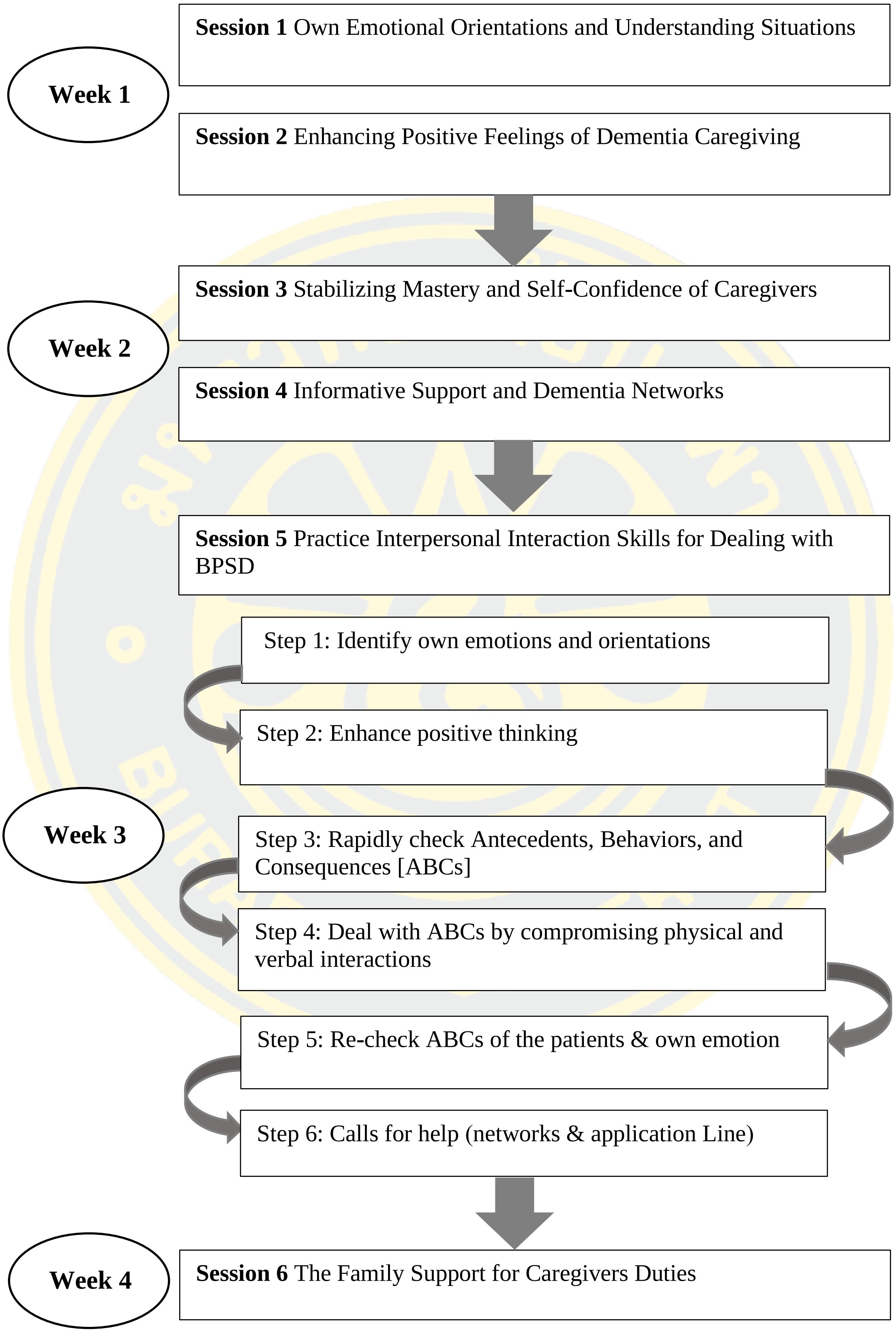


Figure 3-1 Study protocol

Reliability

The questionnaires of T-RSS, T-PSQI, and Thai version of NPI were tried out on thirty family caregivers of community-dwelling persons with advanced stages of dementia in the Bangtaten sub-district who voluntarily participated after approval of the research proposal by the Ethics Committee of Burapha University.
The Cronbach’s alpha reliabilities of the T-RSS, T-PSQI, and Thai version of NPI were 0.87, 0.82, and 0.81, respectively.

Protection of participant rights

This study was approved by the Ethics Committee of Burapha University on 20-07-2020 (No. G-HS 042/2563). The researcher explained the overview details, objectives, procedures, data collection, risks, benefits, and confidentiality policy. Family caregivers were informed that participation in the study is voluntary and they received information regarding withdrawing from the study at any time without having any consequences on treatment received from health care services. After an agreement to participate had been obtained, participants signed a consent form.
The study protocol and questionnaires were evaluated and approved by the ethical approval committee before starting data collection. The information of the participants was kept secret and used for the research objectives only. The results remained anonymous and were presented in overall images. Participants received compensation for participating in the program at week 2. Finally, the participants in the control group were properly provided with the interventions, only for those who needed it after completing the follow-up period.

Pilot study

The pilot study was conducted to evaluate the feasibility of the integrative stress reduction program after approval of the research proposal by the Ethics Committee of Burapha University. Twelve family caregivers met the study criteria and voluntarily participated in six 20 to 90 minute sessions over four weeks of the program. The researcher facilitated the program in the meeting room in the long-term

care clinic at Watpairongwau THPH in the Bangtaten sub-district, Suphan Buri province. Participants were asked any questions or concerns about the study.
The effects of this intervention were determined by the Thai version of RSS, PSQI, and NPI measurements. All of the participants (100 %) continued until the completion of the sessions.

Preparation of the research assistants

Two village health volunteers with secondary school level education were trained to be research assistants [RA-1 and RA-2]. They were assigned different roles and duties. The researcher explained the details of the study to the RAs, including the objectives, roles of a RA, and the data collections. RA-1 assisted the researcher in recruitment and allocation, obtained the consent form, and appointed participants for maintenance in this study. However, RA-1 was not involved in the intervention procedures. RA-2 was trained to collect accurate and consistent data. The researcher asked RA-2 to repeat the procedures until she demonstrated the correct understanding of the whole program and assisted in administering the questionnaires to those participants at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3).

Data collection procedures

1. Before beginning the data collection, the researcher sent a letter to the Song Phi Nong District Health Office director to get permission to contact participants and use the settings for data collection procedures.

2. Through local announcements and word of mouth by village health volunteers, 161 who self-identified as the family caregivers of older persons with dementia were interested in participating in the project. Village health volunteers informed the researcher and passed on their contact details with permission.

3. The researcher contacted family caregivers by telephone, verbally informed, and invited them to participate voluntarily in the study. The researcher thoroughly explained to the participants about the research project, including objectives, procedures, data collection, risks, benefits, confidentiality policy, and

withdrawal from the study. Ninety-four were excluded from the recruitment process; sixty-eight were family caregivers of mild cognitive impaired older persons, nineteen were family caregivers of persons with mild dementia, three were formal caregivers, and four were family caregivers who diagnosed with depression.

4. Sixty-seven participants who fit the eligibility criteria were randomized using a computer-generated computer program limited to 60 cases. Then, participants were asked to sign the informed consent form. The researcher thanked seven cases who were not randomized to participate in the projects and informed them of the application Line which they could use to practice by themselves once the study was completed.

5. At the baseline (Week 0, T1), sixty randomized participants were invited to complete the Thai version of RSS, PSQI, and NPI carried out by RA-2.

6. Sixty participants received routine care from the registered nurses as care managers in the long-term care clinic. Care managers assessed the patient conditions, stated problem lists, and provided face-to-face dementia educational programs concerning information with neuropsychiatric symptoms and modifying home safety— hands-on skill demonstrations about general care activities such as feeding, transferring, and others.

7. RA-1 allocated 30 participants who were marked with the letter “E” into the intervention group and assigned 30 participants who were marked with “C” into the control group. RA-1 made an appointment with the participants in the intervention group to participate in six 45 to 90 minute sessions over four weeks. The meeting room of the Thung Khok subdistrict Municipality was used to conduct the integrative stress reduction program. Monitor, projector, whiteboards, flipcharts, registration desk, wifi, and parking were facilitated.

Intervention group

Week 1: Orientations and positive aspects of caregiving

Session 1 Own Emotional Orientations and Understanding Situations: The group discussion to enhance inner strength facilitating the caregiver's ability to cope effectively with primary stressors was provided. Each caregiver group was facilitated with flipcharts to document their emotions such as embarrassment, anger, distress, or sadness when they experienced BPSD as the starting point. Participants practiced the tips for not emotionally reacting in the moment to a patient's BPSD. Instead, they might accept the nature of the illness and understand the nature of BPSD that arose from the dementia disease itself and was not of the patient's behaviors. This session was conducted with a group discussion that was applied for 60 minutes.

Session 2 Enhancing Positive Feelings of Dementia Caregiving: Video clips illustrated good caregiving for a loved one with dementia. A caregiver role model shared experiences in caregiving and demonstrated how to interact with BPSD. Then, participants identified the values and had the opportunity to share caregiving to enhance the positive caregiving aspects that contributed to decreased perceived stress. The group discussion was applied for 30 minutes.

Week 2: Self-confidence and support

Session 3 Stabilizing Mastery and Perceived Self-Confidence of Caregivers: Due to feeling overloaded and feeling like giving up, verbal reinforcements in the caregiver group were needed. Participants recognized their strengths and opportunities. The participants were trained in the antecedents, behaviors, and consequences [ABCs] tools to monitor BPSD. It was plausible that the activities could enhance perceived self-confidence and develop the participants' mastery, contributing to decreased stress. This group session was applied for 60 minutes.

Session 4 Informative Support and Dementia Networks: Participants who participate in caregiver group support were invited to engage in dementia caregiver networks via the application Line. The application provided the resources of emotional and informational support contained in the interpersonal interactive handbook. This session offset the stress of participants. The activity was applied for 30 minutes on Tuesday morning. Participants received compensation for participating in the program this week.

Week 3: interpersonal interaction skill workshop

Session 5 Practice Interpersonal Interaction Skills for Dealing with BPSD: Simulations with group training (workshop) were provided. Participants enrolled in interpersonal interactive training to practice interaction skills and techniques to manage the patients' irritability, agitation, verbal or physical aggression, and nighttime wandering. Participants practiced following the six steps of the interpersonal interaction practice protocol. The session aimed to lessen the BPSD, including irritability, agitation, verbal or physical aggression, by promoting skills to deal with practical communication skills. This lesson was offered by group teaching and training. The researcher conducted this session for 90 minutes on Tuesday morning.

Week 4: Overload task management

Session 6 Family support to address care tasks: A home visit with family support was applied to generate care tasks related to functional loss of older persons with dementia to other family members. Family caregivers were trained using the ADL tool to understand the dependency level in people with dementia and to delegate a partial task to the secondary caregiver. Also, these activities contributed to decreased overload tasks of the family caregiver. Group family members were also given a turn to check in and express how they feel about their caregiving without interruption or feedback. This activity was finished in 45 minutes.

Post-intervention (Week 4, T2)

Participants in the intervention group were asked to complete the Thai version of NPI, RSS, and PSQI. by RA-2 on Friday in week 4. RA-1 appointed them to complete the Thai version of NPI, RSS, and PSQI again in the next four weeks.

Follow-up (Week 8, T3)

Participants in the intervention groups were asked to complete the Thai version of NPI, RSS, and PSQI. RA-2 obtained these measurements on the Friday this week.

Control group

Participants in the control participated in routine care. Registered nurses in the primary care center of THPHs provided a psychosocial strategy to family caregivers. In addition, a face-to-face dementia educational program concerning knowledge information with neuropsychiatric symptoms and security care, hands-on skills demonstrations about general care activities such as feeding, transferring, toileting, dressing, bathing, changing a sterile wound dressing had been provided. These routine activities support the caregiver role and competence in both the intervention and control groups to improve their overall well-being. After participants in the control participated in the routine care from the nurses at PCUs, they were asked to complete the Thai version of RSS, PSQI, and NPI by RA-2. RA-2 obtained these measurements on Tuesday in week 4 (T2) and week 8 (T3). At the same time, RA-1 appointed them to complete the Thai version of NPI, RSS, and PSQI again in week 4 (T2) and week 8 (T3). Then the researcher provided social support resources via the Line application to the participants to practice by themselves.

Data analysis

A computer software program was used to analyze the data. The level of significance was set at $p<.05$. Descriptive statistics, including mean, frequency, standard deviation, and percentage, were used to describe the participant characteristics and variables. Independence t-test, Chi-square, and Fisher exact tests were used to examine the differences of characteristics between the intervention and control groups. The differences between the mean scores of the stress between the treatment and the control groups among the three time points, pre-intervention, post-intervention, and follow-up period, were determined by two-way repeated measure analysis of variance [ANOVA]. The differences between the mean scores of BPSD and sleep quality between the intervention and the control groups among those time points were determined by repeated measure analysis of covariance [ANCOVA].

CHAPTER 4

RESULTS

This chapter presents the research results regarding the integrative stress reduction program for family caregivers of people with advanced dementia in Songphinong district, Suphan Buri province. The findings include a summary of the sample allocation, demographic data of family caregivers and characteristics of dementia persons, testing of statistical assumptions, descriptive statistics of outcome variables, and the verification of the integrative stress reduction program hypotheses.

Summary of the sample allocation

One hundred and sixty-one Thai patients were listed in medical records diagnosed with cognitive impairment from elderly and long-term clinics. Ninety-four family caregivers were excluded; sixty-eight provided care to people with mild cognitive impairment, nineteen provided care to people with mild dementia, three patients had formal caregivers, and four were diagnosed with depression. Sixty-seven family caregivers of people with advanced dementia were eligible and voluntarily participated in the study (Figure 4-1). Sixty of those agreed and who had signed informed consent forms were randomly assigned into the intervention and control groups with an equal number of 30 participants per group. At baseline (Week 0, T1), participants in the intervention group were asked to complete a demographic questionnaire, RSS, PSQI, and NPI, and then participated in six sessions over four weeks in the integrative stress reduction program. After completing the intervention at week four and week 8 (follow up), they were invited to complete all three outcome measures. The control group at the baseline measurement also completed a demographic questionnaire, the Thai version of RSS, PSQI, and NPI. At four and eight weeks after the first meeting at baseline, they completed the same questionnaires (except the demographic questionnaire). During the implementation sessions, two cases of patients in the intervention group passed away, and one case in the control group was hospitalized. A summary of participant allocation is shown in Figure 4-1

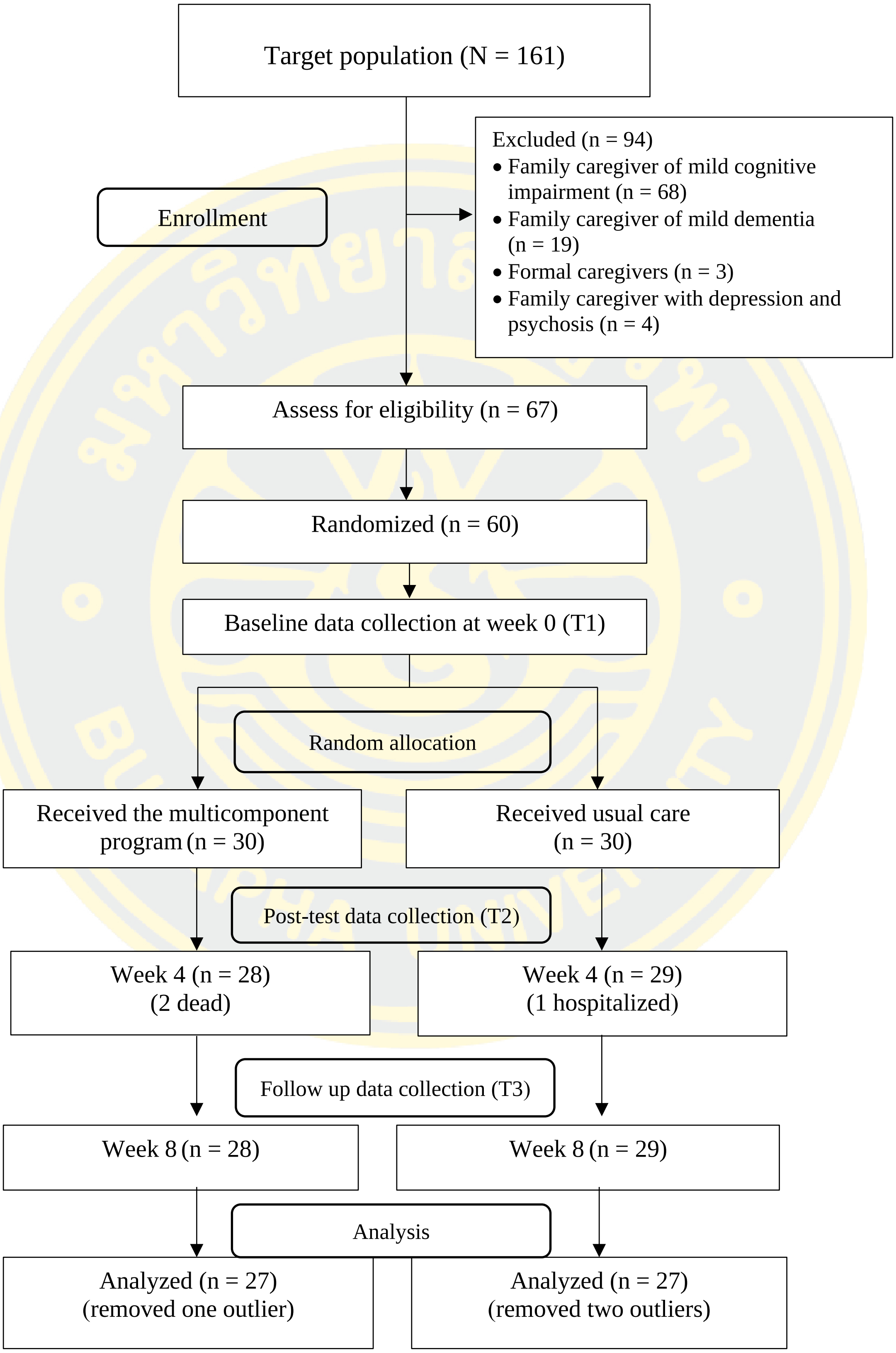


Figure 4-1 A consort flow of the sample allocation

Characteristics of the participants

Family caregivers' characteristics

There were 27 family caregivers in the intervention group with a mean age of 49.33 years. Most of them were women (92.60 %). More than one-half of the participants were married (55.60 %). Most family caregivers had completed primary school (74.10%), and they were farmers (40.7%). Most of them were a son or daughter (70.4 %), relative (14.8 %), and spouse (14.8 %), respectively. Half of them had sufficient income to go on (59.3 %), and fifty-six percent of family caregivers had underlying diseases. The duration of care they provided to older patients on average was 18.70 months, and was 13.48 hours/day.

For the twenty-nine family caregivers in the control group, they had a mean age of 51.59 years. Also, most of them were women (96.3%). In addition, more than one-half of these participants were married (66.7 %). Most caregiver participants had completed primary school (70.4 %). More than one-half of the occupations of the participants was a worker (40.7 %). The relationship with the patients was son or daughter (59.3 %), relative (29.6 %), and spouse (11.1 %). Half of them had sufficient income to go on (74.1 %). Fifty-six percent of family caregivers had underlying diseases. The duration of care they provided to the dementia patients on average was 19.00 months and 12.96 hours/day.

The caregivers' characteristics between the intervention and the control group were compared using the Chi-square and Fisher exact tests for categorical data and independent. An independent t-test was used to determine the differences for continuous data. There were no significant differences found in family caregiver characteristics between the groups (*p* > .05). Details are shown in Table 4-1

Table 4-1 Characteristics of the participants in the intervention and control groups

Characteristic	**Intervention group (n=27)**		**Control group (n=27)**		***t***	χ^2	***p***
	n	**%**	**n**	**%**			
Age (years)	*M* = 49.33 (*SD* = 11.74, range 22-76)		*M* = 51.59 (*SD* = 12.74, range 20-72)		-.68		.50
Gender							
Male	2	7.4	1	3.7		$.35^{\dagger}$	.50
Female	25	92.6	26	96.3			
Marital status							
Single	5	18.5	6	22.2		$1.98^{\dagger}$	.57
Married	15	55.6	18	66.7			
Widowed	2	7.4	1	3.7			
Divorced/ separated	5	18.5	2	7.4			
Education							
No formal education	3	11.1	3	11.1		$.28^{\dagger}$	.42
Primary school	20	74.1	19	70.4			
Secondary school and higher	4	14.8	5	18.5			
Occupations							
No occupation	2	7.4	3	11.1		$1.72^{\dagger}$	.63
Farmer	11	40.7	10	37.0			
Vender	6	22.3	3	11.1			
Worker	8	29.6	11	40.7			
Relationship with the patient							
Spouse	4	14.8	3	11.1		$2.21^{\dagger}$	.53
Son or daughter	19	70.4	16	59.3			
Relative	4	14.8	8	29.6			

Table 4-1 (continued)

Characteristic	**Intervention group (n=27)**		**Control group (n=27)**		***t***	χ^2	***p***
	n	**%**	**n**	**%**			
Income adequacy							
Insufficient	11	40.7	7	25.9		$1.33^{\dagger}$	.19
Sufficient	16	59.3	20	74.1			
Having diseases							
No	12	44.4	12	44.4		$.000^{\dagger}$	1.00
Yes	15	55.6	15	55.6			
Duration of care (months)	*M* =18.70, *SD* = 21.68 (range 3-120)		*M* =19.00, *SD* = 22.00 (range 3-120)		-.05		.96
Hours/day of care duties	*M* = 13.48, *SD* = 2.25 (range 8-16)		*M* = 12.96, *SD* = 2.62 (range 10-18)		.78		.44

[†] Fisher's exact test

People with dementia

Twenty-seven people with dementia were in the intervention group with a mean age of 82.07 years. Most of them were women (71.4%) and were widowed (81.5 %). Twenty-three persons had Alzheimer's disease. At the same time, twenty-five persons with dementia in the intervention group also had comorbidity.

The average cognitive capacity of persons with dementia in the intervention group was 7.29, and the average staging severity was 2.40.

For the twenty-seven people with dementia in the control group, they had a mean age of 83.22 years. Most of them were women (71.4 %), were widowed (74.1 %). More than 90 percent of the older persons had Alzheimer's disease and also had comorbidity. People with dementia presented an average cognitive capacity score of 8.03, staging severity score of 2.37. In regards to the characteristics of people with dementia between the intervention and the control groups, no significant differences were found between the groups ($p > .05$). Details are shown in Table 4-2.

Table 4-2 Characteristics of the older persons with dementia in the intervention and control groups

Characteristic	**Intervention group (n=27)**		**Control group (n=27)**		**t**	χ^2	***p***
	n	**%**	**n**	**%**			
Age (years)	M = 82.07 (SD = 8.04, range 60-98)		M = 83.22 (SD = 6.69, range 71-95)		-.57		.57
Gender							
Male	7	25.9	7	25.9		0.00†	1.00
Female	20	71.4	20	71.4			
Marital status							
Single	0	-	1	3.7		2.11†	.55
Married	5	18.5	6	22.2			
Widowed/ divorced	22	81.5	20	74.1			
Comorbidity							
No	2	7.4	2	7.4		0.00†	1.00
Yes	25	92.6	25	92.6			
Dementia types							
Alzheimer	23	85.2	26	96.3		1.98†	.35
Vascular dementia	4	14.8	1	3.7			
Duration of illness (months)	M = 18.85 (SD = 22.79, range 3-120)		M = 21.88 (SD = 25.79, range 3-120)		-.46		.65
TMSE scores	M = 7.29 (SD = 4.77, range 0-15)		M = 8.03 (SD = 5.88, range 0-18)		-.50		.61
CDR scores	M = 2.40 (SD= 0.50, range 2-3)		M = 2.37 (SD = 0.49, range 2-3)		-.27		.78

†Fisher's exact test

Evaluations of statistical assumptions for the dependent variables

The statistic model of repeated measure of ANOVA and ANCOVA were robust for distribution and homogeneity assumption and there was a sufficient sample size to test for with this statistic. In addition, the assumptions for subsequent statistical analyses were tested to ensure the validity of the statistical calculations.

1. Normality distribution

Stress, sleep quality, and BPSD of the intervention and control groups at three-time measurements were tested for univariate normality; visual inspection of the histogram, stem and leaf plots, normal Q-Q plots, and box plots showed normality. Fisher's skewness and kurtosis coefficient were calculated by dividing the skewness or kurtosis value by the standard error for skewness or kurtosis. Values above +1.96 or below -1.96 were significant at the .05 level. As a result, these results indicated that distribution was significantly skewed and signified kurtosis—Fisher's measure of kurtosis indicated this variable as an assumption of normal distribution. The total scores for the caregiver stress, sleep quality, and BPSD were normally distributed for both the intervention and control groups.

2. Homogeneity of variance (between-subject)

Levenete's statistic was used for testing the assumption of homogeneity of variance for the between-subject design. The test of homogeneity of variances for the between-subject comparison presented no significance ($p > .05$). This finding illustrated that the variance of dependent variables between the groups was equal, and also the homogeneity of variance assumption was met. All of the error variances of the scales were equal across the groups.

3. Assumption of sphericity (within-subject)

Mauchly's test of sphericity was considered for testing the assumption of sphericity. The total caregiver stress scores, sleep quality, and BPSD showed significance ($p < .05$). The findings were summarized that the homogeneity of variance-covariance matrices were not equal, and neither were the sphericity assumptions met. Greenhouse-Geisser, therefore, was used to report the results of repeated measure ANOVA in these aspects.

4. The linear relationship assumption of ANCOVA was tested between the covariate and sleep quality and BPSD at post-intervention and follow-up. The results showed that there were linear relationships.

5. Test for outliners

The probability of Mahalanobis was checked for multivariate outliers. There were multivariate outliers of stress in participants No. 24 (intervention group) and No. 45 (control group) by probability value of Mahalanobis ($\leq .001$). Boxplot verified univariate outliners presented in case No.39 and case No.45 for stress data at Time 1, case No.39 for stress data at Time 2, case No. 34 for data sleep quality at Time 2, and case No.45 for data of BPSD at over Time 1, Time 2, and Time 3. In summary, there were outliers in cases No. 24, 34, No. 39, and No. 45. However, case No. 39 did not influence the normal distribution. Multivariate outliers of case No. 24 in the intervention group and extreme outliers of case No. 34 and No.45 for data sleep quality at Time 3 in the control group were removed. The remaining 27 participants in the intervention group and 27 in the control group were used to analyze in this study.

Descriptive statistics of outcome variables

In this study, outcome variables consisted of caregiver stress, sleep quality, and BPSD. These variables were measured three times at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3). Means and standard deviations of RSS scores (stress), PSQI (sleep quality), and NPI (BPSD) were used to describe each variable for both the intervention and the control groups.

Caregiver stress

The mean scores of caregiver stress in the intervention group at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3) tended to decrease with 50.04, 38.55, and 30.33, respectively. (Mean scores of three subscales of caregiver stress of the three measurement times were calculated. The mean score of personal distress components tended to decrease from 22.00, 17.52, to 14.22, respectively. The life upset component also tended to decrease from 16.37, 12.85, to 10.37, respectively. At the same time, the negative feelings toward the dementia patient had reported a decrease of 11.67, 8.18, and 5.74, respectively. For participants in the control group, the mean scores of caregiver stress showed no changes at 48.22, 48.07, and 48.22, respectively. The mean scores of the personal distress were minimal decreases. However, the mean scores of the life upset and the negative feelings toward the dementia patient did not change. Details are shown in Table 4-3.

Table 4-3 Mean and standard deviation of caregiver stress and subscale scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group

Caregiver stress	**Week**	**Intervention group (n = 27)**		**Control group (n = 27)**	
		M	***SD***	***M***	***SD***
RSS					
Total scores	0	50.04	4.00	48.22	4.97
	4	38.55	3.21	48.07	4.47
	8	30.33	3.01	48.22	4.70
Subscales					
Personal distress	0	22.00	1.18	20.96	2.08
	4	17.52	1.48	20.78	1.89
	8	14.22	1.93	20.70	2.01
Life upset	0	16.37	1.92	15.67	2.29
	4	12.85	1.13	15.74	1.81
	8	10.37	1.04	15.92	1.82
Negative feelings toward the care recipient	0	11.67	2.06	11.59	1.78
	4	8.18	1.98	11.55	1.99
	8	5.74	1.46	11.59	1.71

Sleep quality

The mean scores of sleep quality of participants in the intervention group at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3) tended to decrease from 11.74, 8.74, to 5.63, respectively. The mean scores of the seven components of sleep quality of the three measurement times were calculated. When the time increasingly changed, the mean scores of subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction in the intervention group tended to be lower. While the mean scores of sleep quality of the participants in the control group at the three measurement times tended to show a minimal decrease at 9.33, 8.92, and 8.93, respectively. The mean scores of the components in habitual sleep efficiency, sleep duration, and use of sleep medication showed a minimal decrease. However, there were no changes in the mean scores of subjective sleep quality, sleep disturbances, sleep latency, and daytime dysfunction. Details are shown in Table 4-4.

Table 4-4 Mean and standard deviation of caregiver sleep quality and subscale scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group

Sleep quality	**Week**	**Intervention group (n = 27)**		**Control group (n = 27)**	
		M	***SD***	***M***	***SD***
PSQI					
Total scores	0	11.74	2.79	9.33	2.25
	4	8.74	2.43	8.92	1.77
	8	5.63	1.36	8.93	1.73
Subscales					
Subjective sleep quality	0	2.22	.42	1.74	.45
	4	1.67	.48	1.74	.45
	8	1.15	.36	1.70	.46

Table 4-4 (continued)

Sleep quality	**Week**	**Intervention group (n = 27)**		**Control group (n = 27)**	
		M	***SD***	***M***	***SD***
Sleep latency	0	2.81	.48	2.48	.58
	4	2.18	.56	2.44	.58
	8	1.48	.64	2.56	.51
Sleep duration	0	1.78	.64	1.44	.75
	4	1.30	.67	1.41	.50
	8	.52	.58	1.33	.55
Habitual sleep efficiency	0	1.22	.97	.89	.93
	4	.70	.82	.78	.85
	8	.26	.53	.74	.90
Sleep disturbances	0	1.33	.48	1.11	.32
	4	1.00	.00	1.03	.19
	8	.89	.32	1.03	.19
Use of sleep medication	0	.44	1.01	.074	.26
	4	.33	.83	.074	.26
	8	.33	.83	.11	.42
Daytime dysfunction	0	1.93	.61	1.59	.64
	4	1.55	.58	1.44	.57
	8	1.00	.62	1.44	.57

Behavioral and psychological symptoms of dementia [BPSD]

The prevalence of each BPSD overall among people with advanced dementia (N=54) was measured and calculated at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3). Notably, the common symptoms included anxiety, irritability, aggression, hallucination, and sleep disturbance, respectively. The least common symptom was euphoria. Details are shown in Figure 4-3. For the intervention group at the three measurement times, the most common symptom was anxiety (96.4%), and the least common symptom was euphoria (14.3%). For the control group, the most common symptom was irritability (829.7%), and the least common symptom was eating abnormalities (6.9%). Details are shown in Table 4-6.

The mean composite scores (frequency x severity) for each BPSD domain overall in people with advanced dementia at baseline (Week 0, T1) were measured and calculated. The BPSD with the highest composite scores were anxiety, agitation, sleep disturbance, irritability, hallucination, depression, apathy, delusion, AMB, eating abnormality, disinhibition, and euphoria. Details are shown in Figure 4-4. For the intervention group, the mean composite scores (frequency x severity) of total BPSD scores at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3), were 38.21 (SD = 13.42), 27.21 (SD = 9.19), and 19.93 (SD = 7.74). BPSD with the highest composite scores were anxiety (5.86±2.86), anxiety (3.68±1.80), and agitation (3.29±3.10), respectively. For the control group, the mean composite scores (frequency x severity) of Total BPSD scores at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3), were 27.35 (SD = 11.79), 29.61 (SD = 12.17), and 27.77 (SD = 9.69). At the same time, BPSD with the highest composite scores were agitation (4.15±3.38) and anxiety (4.15±2.88) at the baseline, anxiety (4.53±3.44) at post-intervention, and also anxiety in the follow-up (4.65±3.16). Details are shown in Table 4-7.

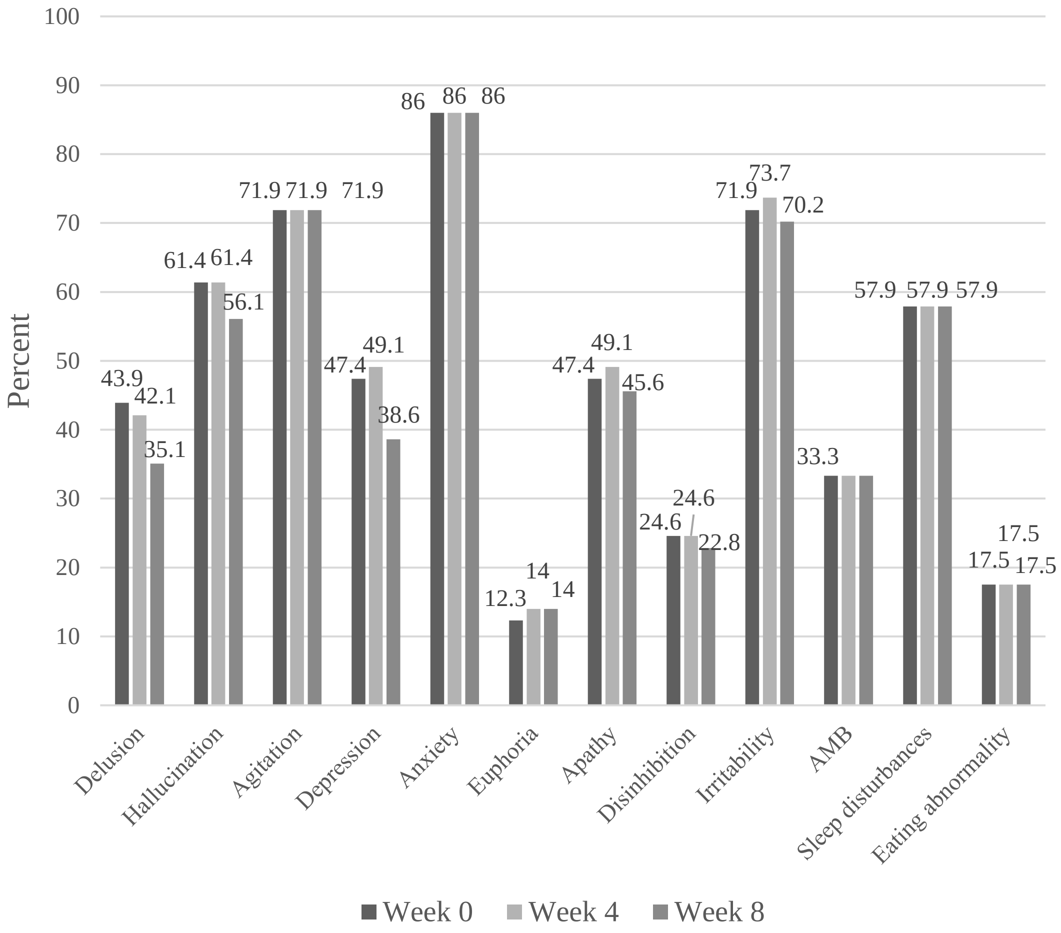


Figure 4-2 Prevalence of each BPSD among people with advanced dementia reported by family caregivers (n = 54) at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3)

Table 4-5 Prevalence of each BPSD among people with advanced dementia reported by family caregivers at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group

Types of BPSD	**Week**	**Intervention group (n=27)**		**Control group (n=27)**	
		n	%	n	%
Delusion	0	11	39.3	14	48.3
	4	10	37.5	14	48.3
	8	7	25.0	13	44.8
Hallucination	0	19	67.9	16	55.2
	4	19	67.9	16	55.2
	8	16	57.1	16	55.2
Agitation	0	21	75.0	20	69.0
	4	21	75.0	20	69.0
	8	21	75.0	20	69.0
Depression	0	20	71.4	7	24.1
	4	21	75.0	7	24.1
	8	15	53.6	7	24.1
Anxiety	0	27	96.4	22	75.9
	4	27	96.4	22	75.9
	8	27	96.4	22	75.9
Euphoria	0	4	14.3	3	10.3
	4	4	14.3	4	13.8
	8	4	14.3	4	13.8
Apathy	0	15	53.6	12	41.4
	4	15	53.6	13	44.8
	8	14	50.0	12	41.4
Disinhibition	0	7	25.0	7	24.1
	4	7	25.0	7	24.1
	8	6	21.4	7	24.1

Table 4-5 (continued)

Types of BPSD	**Week**	**Intervention group (n=27)**		**Control group (n=27)**	
		n	%	n	%
Irritability	0	17	60.7	24	82.8
	4	16	57.1	26	89.7
	8	15	53.6	25	86.2
AMB	0	9	32.1	10	34.5
	4	9	32.1	10	34.5
	8	9	32.1	10	34.5
Sleep disturbances	0	16	57.1	17	58.6
	4	16	57.1	17	58.6
	8	16	57.1	17	58.6
Eating abnormality	0	8	28.6	2	6.9
	4	7	25.0	3	10.3
	8	7	25.0	3	10.3

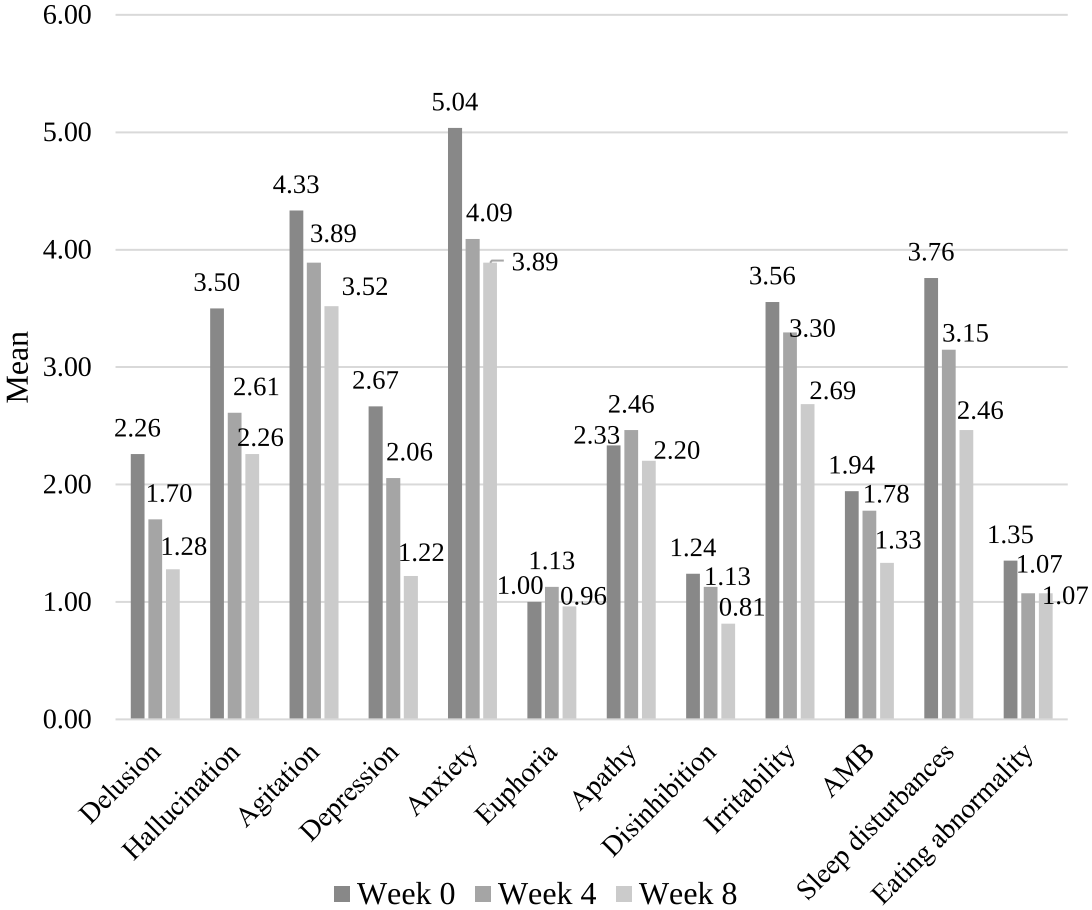


Figure 4-3 Mean of NPI scores and each symptom scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the participants (n =54)

Table 4-6 Mean and standard deviation of mean composite scores and each symptom scores measured at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow up (Week 8, T3) for the intervention group and control group

BPSD	**Week**	**Intervention group (n=27)**		**Control group (n=27)**	
		M	***SD***	***M***	***SD***
NPI					
Total scores	0	38.21	13.42	27.35	11.79
	4	27.21	9.19	29.61	12.17
	8	19.93	7.74	27.77	9.69
Subscales					
Delusion	0	2.39	3.33	2.12	3.08
	4	1.28	1.96	2.15	2.89
	8	.71	1.49	1.88	2.66
Hallucination	0	4.43	3.58	2.50	2.77
	4	2.82	2.74	2.38	2.74
	8	2.03	2.22	2.50	3.01
Agitation	0	4.50	3.44	4.15	3.38
	4	3.54	2.67	4.27	3.47
	8	3.29	3.10	3.77	3.14
Depression	0	4.21	3.38	1.00	1.85
	4	2.71	1.96	1.35	2.49
	8	1.39	1.47	1.04	1.91
Anxiety	0	5.86	2.86	4.15	2.88
	4	3.68	1.80	4.53	3.44
	8	3.18	1.80	4.65	3.16
Euphoria	0	1.46	3.72	.50	1.90
	4	1.18	3.14	1.08	3.31
	8	.89	2.33	1.04	3.28

Table 4-6 (continued)

BPSD	**Week**	**Intervention group (n=27)**		**Control group (n=27)**	
		M	***SD***	***M***	***SD***
Apathy	0	2.57	3.20	2.07	3.04
	4	2.60	3.39	2.31	3.22
	8	2.07	2.68	2.34	3.37
Disinhibition	0	1.18	2.49	1.31	2.94
	4	.86	1.99	1.42	3.10
	8	.46	1.03	1.19	2.45
Irritability	0	3.21	3.68	3.92	2.85
	4	2.43	2.53	4.23	2.55
	8	1.32	1.47	4.15	2.78
AMB	0	2.29	3.83	1.58	2.62
	4	1.60	2.68	1.96	3.42
	8	1.07	1.84	1.61	3.03
Sleep disturbances	0	4.07	4.29	3.42	3.59
	4	2.93	3.13	3.38	3.59
	8	2.00	2.04	2.96	2.93
Eating abnormality	0	2.04	3.55	.61	2.17
	4	1.57	3.18	.53	1.92
	8	1.50	3.05	.61	2.17

Comparisons of pre-intervention scores of outcome variables

At baseline (Week 0, T1), the scores of all outcome variables were compared between the intervention and control groups to determine any differences before implementing the intervention using an independent t-test. The results presented no significant differences ($p > .05$) in the caregiver stress variable, but sleep quality and BPSD variables between the intervention and control groups at pre-intervention showed significant statistical differences (Table 4-10).

Table 4-7 Comparisons of the mean scores of outcome variables between the control group measured at baseline (Week 0, T1) by independent t-test

Variable	**Intervention group (n=27)**		**Control group (n=27)**		***t***	***p***
	M	***SD***	***M***	***SD***		
Stress	50.03	4.00	48.22	4.97	1.48	.146
Sleep quality	11.74	2.79	9.33	2.25	3.48	.001
BPSD	38.07	13.65	27.89	11.90	2.99	.005

Testing of research hypotheses

1. Comparisons of stress variable (RSS scores) among three-time measurements between the intervention and control group and among three-time measurements within subjects.

Two-way repeated-measures ANOVA (one-way between-subjects independent variable and one-way within-subjects independent variable) was used to determine the mean differences in the total RSS scores (stress variable), comparing the intervention and control groups at three-time point measures, namely: pre-intervention (Week 0, T1); post-intervention (Week 4, T2); and follow-up (Week 8, T3).

The results showed that the main effect of the group and time had significant differences ($F_{1,52} = 68.89$, $p < .001$ and $F_{1.55} = 14.37$, $p < .001$, respectively).

In addition, the interaction effect (Time*Group) also had statistically significant difference ($F_{1.55, 80.56} = 316.39$, $p < .001$) (Table 4-9). Likewise, the line graph connecting the intervention group showed a dramatic decrease while there was a minimal increase in the control group. The details are shown in Figures 4-5.

A test of simple effects using Bonferroni-corrected t-test revealed that at baseline (Week 0, T1), the mean RSS scores between the intervention and control groups were not different ($p > .05$). At the post-intervention (Week 4) and follow up (Week 8), however, there were significant differences ($F_{1,52} = 9.52$, $p < .001$, and $F_{1,52} = 17.89$, $p < .001$, respectively) (Table 4-10). This finding implied that the caregiver stress of the participants in the intervention group was better than that of the control group during the post-intervention to follow-up period. At the same time, the mean scores of RSS scores in the intervention group at post-intervention and follow-up were lower than the same periods of the control group ($M_{diff} = 9.52$, *and* $M_{diff} = 17.89$, $p < .001$) (Table 4-11).

In addition, there were statistically significant differences in the intervention (Table 4-12). The mean RSS scores of the participants in the intervention group at the follow-up were lower than those at baseline and post-intervention ($M_{diff} = 19.70$ and $M_{diff} = 8.22$, $p < .001$, respectively), and the mean score of the RSS at post-intervention were lower than the mean RSS score at baseline ($M_{diff} = 11.48$, $p < .001$) (Table 4-13). These findings indicated that the participants in the intervention group had lower levels of stress after receiving the integrative stress reduction program than before participating in the intervention. When the time increasingly changed, caregiver stress in the intervention improved.

Table 4-8 Repeated measure ANOVA of total RSS scores

Sources of variation	***SS***	***df***	***MS***	***F***	***p***	η^2
Between subjects						
Group	2947.41	1	2947.41	68.89	< .001	.570
Error	2224.86	52	42.79			
Within-subjects						
Time	2649.04	1.55	1709.83	317.43	< .001	.859
Time* Group	2640.35	1.55	1704.22	316.39	< .001	.859
Error time	433.95	80.56	5.39			

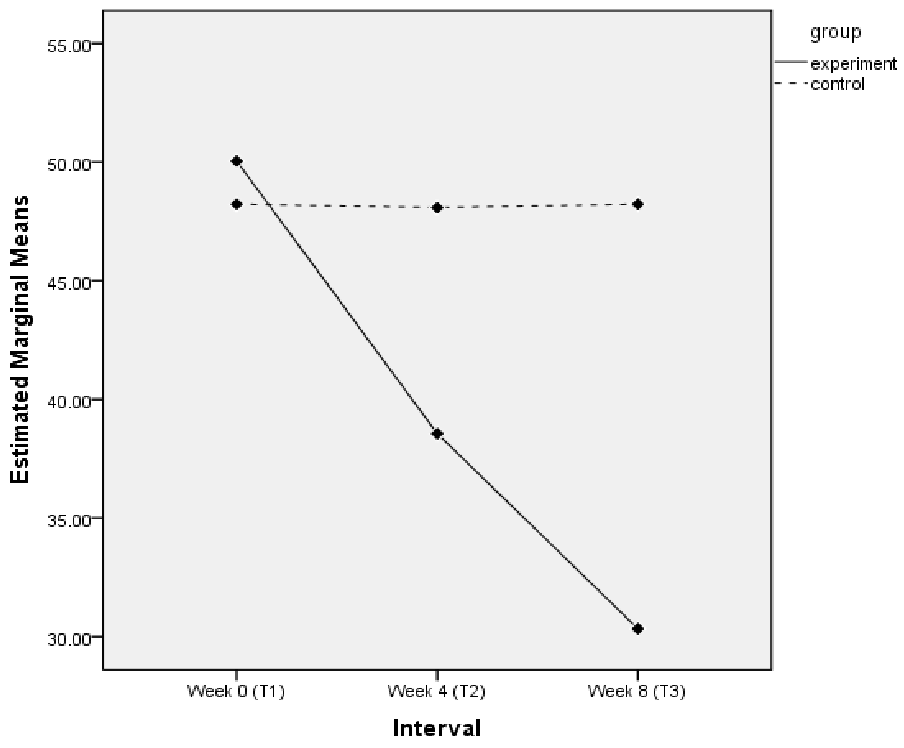


Figure 4-4 Comparisons of estimated marginal means RSS scores

Table 4-9 Simple effect of groups on RSS scores at each point of times

Sources	***SS***	***df***	***MS***	***F***	***p***	***η2***
Baseline (week 0)						
Between subjects	44.463	1	44.46	2.18	.146	.04
Error	1059.63	52	20.38			
Post-intervention (week 4)						
Between subjects	1223.13	1	1223.13	80.66	< .001	.61
Error	788.52	52	15.164			
Follow up (week 8)						
Between subjects	4320.17	1	4320.17	277.12	< .001	.84
Error	810.67	52	15.59			

Table 4-10 Pairwise comparisons using Bonferroni of the mean difference in RSS scores between each pair of group differences overtime at baseline, post-intervention, and follow up

Sources	**Group**	***M***	M_{diff}	***SE***	***p***
Baseline (week 0)			-1.81	1.23	.146
	Control	48.22			
	Intervention	50.04			
Post-intervention (week 4)			9.52	1.06	< .001
	Control	48.07			
	Intervention	38.56			
Follow up (week 8)			17.89	1.07	< .001
	Control	48.22			
	Intervention	30.33			

Table 4-11 Simple effect of time on RSS scores in the intervention and control group

Sources	***SS***	***df***	***MS***	***F***	***p***	η^2
Intervention group						
Interval	5288.99	1.37	3850.70	537.84	< .001	.95
Error	255.68	35.71	7.16			
Control group						
Time	.39	1.73	.23	.06	.058	.002
Error	178.27	45.04	3.96			

Table 4-12 Pairwise comparisons using Bonferroni of the mean difference in RSS scores between each pair of time differences in the intervention and control groups

Source	**Time**	***M***	M_{diff}	***SE***	***p***
Intervention group					
Week 0 vs. Week 4	1	50.04	11.48	.53	< .001
	2	38.56			
Week 0 vs. Week 8	1	50.04	19.70	.68	< .001
	3	30.33			
Week 4 vs. Week 8	2	38.56	8.22	.43	< .001
	3	30.33			
Control group					
Week 0 vs. Week 4	1	48.22	.15	.53	1.00
	2	48.07			
Week 0 vs. Week 8	1	48.22	.00	.68	1.00
	3	48.22			
Week 4 vs. Week 8	2	48.07	-.15	.43	1.00
	3	48.22			

2. Comparisons of sleep quality (PSQI scores) of post-intervention and follow up between the intervention and control groups, and within subjects.

The data in Table 4-8 showed inequity in the baseline (Week 0, T1) of PSQI scores, with those scores in the intervention group higher than those in the control group ($t= 2.53$, $p = .014$). Then, repeated measures analysis of covariance [ANCOVA] was computed using the PSQI scores at pretest as the covariate and PSQI scores at post-intervention (Week 4) and follow up (Week 8) as the dependent measure. The details are as follows:

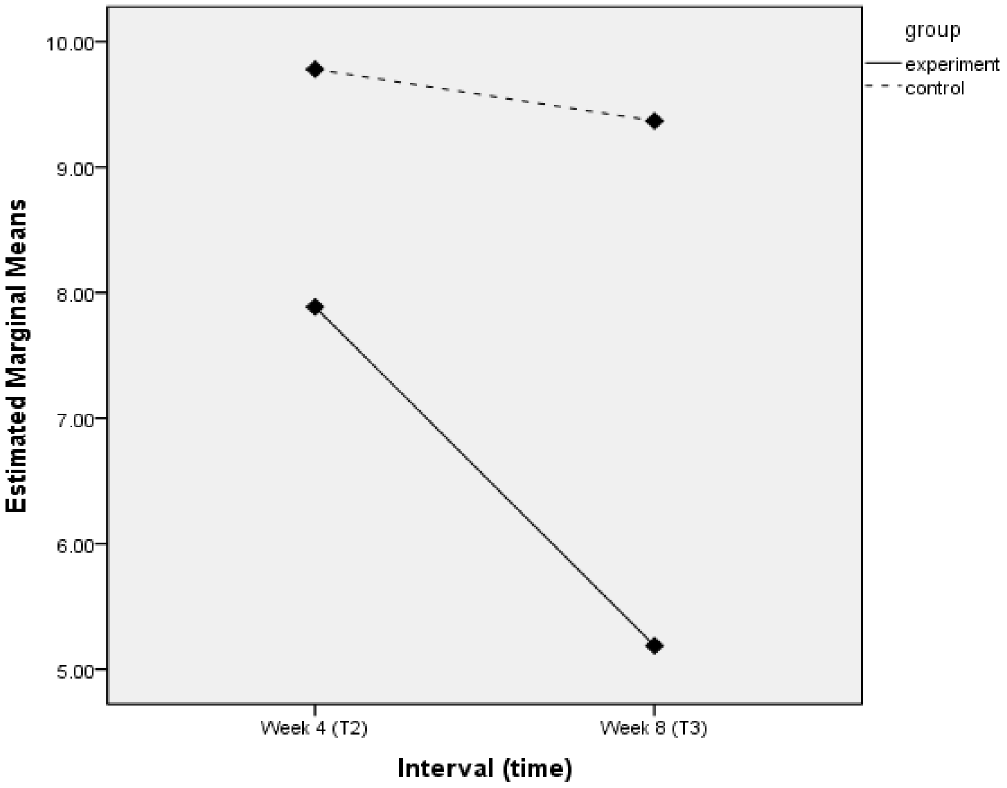
The results showed that the main effect of the group and time had significant differences ($F_{1,51} = 117.63$, $p < .001$ and $F_{1}= 5.15$, $p < .05$, respectively). At the same time, the interaction effect (Time*Group) had a statistically significant difference ($F_{1, 51} = 24.45$, $p < .001$) (Table 4-14). In the graph (Figure 4-6), the line connecting the intervention groups showed a dramatic decrease, while there were minimal decreasing changes in the control group.

The simple effects showed that at post-intervention and follow up there were significant differences ($F_{1,51} = 30.21$, $p < .001$, and $F_{1,51} = 120.49$, $p < .001$, respectively) (Table 4-15). The results implied that the sleep quality of the participants in the intervention group was better than that of those in the control group during the post-intervention to follow-up period. The mean scores of the PSQI scores of the participants in the intervention group at post-intervention and follow-up were lower than those in the control group in the same periods ($M_{diff} = 1.89$, *and* $M_{diff} = 4.18$, $p < .001$) (Table 4-16).

There were statistically significant differences within the intervention group; the mean PSQI scores at the follow-up (Week 8, T3) were lower than those at post-intervention ($M_{diff} = 1.89$, $p < .001$) (Table 4-17). Results indicated that the participants in the intervention group had better sleep quality after receiving the integrative stress reduction program. When the time increasingly changed, the sleep quality of family caregivers in the intervention group improved.

Table 4-13 Repeated measure ANCOVA of total PSQI scores

Sources of variation	***SS***	***df***	***MS***	***F***	***p***	η^2
Between subjects						
Sleep quality (pretest)	194.32	1	194.32	113.22	< .001	.689
Group	201.89	1	201.89	117.63	< .001	.698
Error	87.53	51	1.72			
Within-subjects						
Time	6.02	1	6.02	5.15	.028	.092
Time * Sleep quality (pretest)	19.65	1	19.65	16.79	< .001	.248
Time* Group	28.62	1	28.62	24.45	< .001	.324
Error time	59.68	51	1.170			



Covariates appearing in the model are evaluated at the following values: Sleep quality_Pretest = 10.5370

Figure 4-5 Comparisons of estimated marginal means PSQI scores

Table 4-14 Simple effect of groups on PSQI scores at each point of times

Sources	***SS***	***df***	***MS***	***F***	***p***	***η2***
Post-intervention (week 4)						
Between subjects	39.24	1	39.24	30.21	< .001	.372
Error	66.25	51	1.30			
Follow up (week 8)						
Between subjects	191.26	1	191.26	120.49	< .001	.703
Error	80.96	51	1.59			

Table 4-15 Pairwise comparisons using Bonferroni of the mean difference in PSQI scores between each pair of group differences at post-intervention and follow up

Sources	**Group**	***M***	M_{diff}	***SE***	***p***
Post-intervention (week 4)			1.89	.34	< .001
	Control	9.780^a			
	Intervention	7.887^a			
Follow up (week 8)			4.18	.38	< .001
	Control	9.368^a			
	Intervention	5.188^a			

a. Covariates appearing in the model are evaluated at the following values: Sleep quality pretest = 10.5370.

Table 4-16 Pairwise comparisons using Bonferroni of the mean difference in PSQI scores between each pair of time differences in the intervention and control groups

Sources	**Time**	***M***	***M*_*diff***	***SE***	***p***
Intervention group			2.70	.31	< .001
Week 4 vs. Week 8	2	7.89ᵃ			
	3	5.19ᵃ			
Control group			.41	.31	.191
Week 4 vs. Week 8	2	9.78ᵃ			
	3	9.37ᵃ			

a. Covariates appearing in the model are evaluated at the following values: Sleep quality pretest = 10.5370.

3. Comparisons of BPSD (NPI scores) of post-intervention and follow-up between the intervention and control group and within-subjects.

The data in Table 4-8 showed inequity at the baseline (Week 0, T1) of the NPI scores (BPSD), with those in the intervention group higher than those in the control group (t= 2.59, p = .012). Then, repeated measures analysis of covariance [ANCOVA] was computed using the NPI scores at pretest as the covariate and NPI scores at post-intervention (Week 4) and follow up (Week 8) as the dependent measure. The details are as follows:

The results showed that the interaction effect (Time*Group) had a statistically significant difference ($F_{1,51} = 9.28$, $p < .05$) (Table 4-18). The connecting line graph in the intervention group showed a dramatic decrease, while there were changes with minimal decreases in the control group. The details are shown in Figure 4-7. The simple effects showed that at post-intervention (Week 4, T2) and follow up (Week 8, T3), there was a significant difference ($F_{1,51} = 73.63$, $p < .001$, and $F_{1,51} = 101.45$, $p < .001$, respectively) (Table 4-19). The mean scores of NPI scores of the intervention group at post-intervention and follow-up were lower than that at post-intervention and follow-up in the control group ($M_{diff} = 10.89$, *and* $M_{diff} = 14.32$, *p* < .001) (Table 4-20). The results indicated that the BPSD of participants in the intervention group was better than those in the control group during the post-intervention to follow-up period.

In addition, there were statistically significant differences within the intervention group. The mean NPI scores of participants within the intervention group at the follow-up were lower than that at post-intervention ($M_{diff} = 6.38$, $p < .001$) (Table 4-21). The results indicated that the participants within the intervention group reported a better BPSD in people with dementia after receiving the integrative stress reduction program. When the time increasingly changed, BPSD in people with advanced dementia improved.

Table 4-17 Repeated measure ANCOVA of total NPI scores

Sources of variation	***SS***	***df***	***MS***	***F***	***p***	η^2
Between subjects						
BPSD (pretest)	7344.16	1	7344.16	211.19	<.001	.805
Group	3686.95	1	3686.95	106.02	<.001	.675
Error	1773.54	51	34.77			
Within-subjects						
Time	20.54	1	20.54	2.79	.101	.052
Time * BPSD (pretest)	198.57	1	198.57	26.97	<.001	.346
Time* Group	68.29	1	68.29	9.28	.004	.154
Error time	375.51	51	7.36			

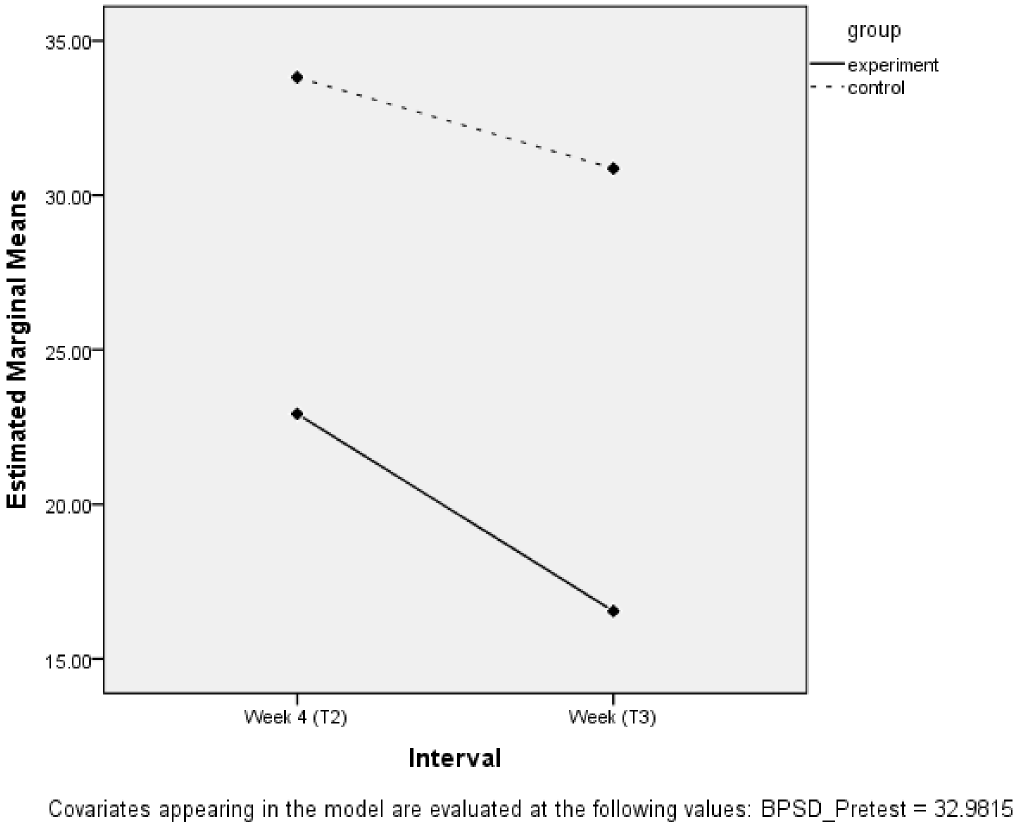


Figure 4-6 Comparisons of estimated marginal means NPI scores

Table 4-18 Simple effect of groups on NPI scores at each point of times

Sources	***SS***	***df***	***MS***	***F***	***p***	***η2***
Post-intervention (week 4)						
Between subjects	1375.83	1	1375.83	73.63	< .001	.591
Error	952.95	51	18.68			
Follow up (week 8)						
Between subjects	2379.42	1	2379.42	101.45	< .001	.665
Error	1196.09	51	23.45			

Table 4-19 Pairwise comparisons using Bonferroni of the mean difference in NPI scores between each pair of group differences at post-intervention and follow up

Sources	**Group**	***M***	M_{diff}	***SE***	***p***
Post-intervention (week 4)			10.89	1.27	< .001
	Control	33.82^a			
	Intervention	22.92^a			
Follow up (week 8)			14.32	1.42	< .001
	Control	30.87^a			
	Intervention	16.54^a			

a. Covariates appearing in the model are evaluated at the following values: BPSD (pretest) = 32.9815.

Table 4-20 Pairwise comparisons using Bonferroni of the mean difference in NPI scores between each pair of time differences in the intervention and control groups

Sources	**Time**	***M***	M_{diff}	***SE***	***p***
Intervention group			6.383	.768	<.001
Week 4 vs. Week 8	2	22.92^a			
	3	16.54^a			
Control group			2.951	.768	<.001
Week 4 vs. Week 8	2	33.82^a			
	3	30.87^a			

a. Covariates appearing in the model are evaluated at the following values: BPSD (pretest) = 32.9815.

Summary of the findings

Stress, sleep quality, and BPSD outcomes determined the effectiveness of this integrative stress reduction program among the three-time measurements.
The mean scores of RSS (stress), PSQI (sleep quality), and NPI (BPSD) at baseline were compared between the intervention and control groups by the independent t-test statistic. The results showed no differences in the RSS mean scores between the intervention and control groups. However, the results showed differences in the PSQI and NPI mean scores between the intervention and control groups.

A two-way repeated measure ANOVA was performed to determine the differences of the effects of the integrative stress reduction program on the stress outcome between the intervention and control groups and within-group (3-time-measurements). Tests of simple effects using Bonferroni-corrected t-tests were analyzed to compare the time differences between the groups after the main effect was significant. The results revealed that the mean score of RSS (stress) of family caregivers in the intervention group was lower than that of those in the control group after receiving the integrative stress reduction program at post-intervention (Week 4, T2) and follow-up (Week 8, T3). Within the intervention group, the stress of the family caregivers at follow-up was lower than that at post-intervention and baseline.

For sleep quality and BPSD, two-way repeated measure ANCOVA was performed to determine the differences of the effects of the integrative stress reduction program between the intervention and control groups after participating in the program. Sleep quality and BPSD scores at the baseline were computed as the covariate. The results revealed that the mean score of the PSQI (sleep quality) of family caregivers in the intervention group was lower than that of those in the control group at post-intervention and follow-up. Moreover, sleep quality within the intervention group at follow-up was lower than that at post-intervention and baseline. For BPSD in people with advanced dementia in the intervention group had a lower mean score of NPI (BPSD) after participating in the program than that of those in the control group at post-intervention (week 4) and follow-up (week 8). In addition, within the intervention group, the mean score of NPI at follow-up was lower than that at the post-intervention and baseline.

CHAPTER 5

CONCLUSION AND DISCUSSION

This chapter presents the summary and discussions. Conclusions, strengths, limitations, suggestions, and recommendations are also discussed.

Summary of the study

This study aimed to evaluate the effectiveness of the integrative stress reduction program for family caregivers of people with advanced dementia. A single-blind, randomized control trial was designed. Sixty caregivers were randomly assigned into the intervention and control groups with an equal number of 30 participants per group. Caregiver stress, sleep quality, and BPSD were measured three times at baseline (Week 0, T1), post-intervention (Week 4, T2), and follow-up (Week 8, T3). The Thai version of RSS, PSQI, and NPI measurements with Cronbach's alphas of .87, .80, and .81, respectively, were administered at a long-term care clinic in the Songphinong district, Suphan Buri province, from August 2020 to April 2021. Two participants in the intervention group and one in the control group dropped out. In addition, one outlier in the intervention group and two outliers in the control group were removed. Therefore, the data of twenty-seven participants in the intervention and twenty-seven participants in the control group were analyzed by descriptive statistics, two-way repeated measure ANOVA and ANCOVA.

The results found no differences in the participants' demographic characteristics between the intervention and control groups. At baseline, there were no statistically significant differences in caregiver stress between the intervention and control groups. However, sleep quality and BPSD were significantly different. Family caregivers in the intervention group had a lower mean score of stress than those in the control group at post-intervention and follow-up. Also, participants in the intervention group had a lower mean score of sleep quality than those in the control group at post-intervention and follow-up. In addition, family caregivers in the intervention group reported a lower mean score of BPSD in people with advanced dementia than those in the control group at post-intervention and follow-up.

Discussions of the findings

The discussions are following the research hypotheses.

Hypothesis I: Family caregivers receiving the integrative stress reduction program would have a lower mean score of stress than those in the control group at the post-intervention (Week 4) and follow-up (Week 8).

The results showed a decrease in the stress of family caregivers in the intervention group at post-intervention (Week 4, T2) and follow-up (Week 8, T3), and there were statistically significant differences compared with those in the control group ($F_{1.55}$, 80.56 = 316.39, $p < .001$). In addition, the results illustrated that the stress of family caregivers in the intervention group at post-intervention and follow-up was lower than in those periods of the control group ($M_{diff} = 9.52$, and $M_{diff} = 17.89$, $p < .001$, respectively). At the same time, the stress of family caregivers in the intervention group at the follow-up was lower than those at baseline and post-intervention ($M_{diff} = 19.70$ and $M_{diff} = 8.22$, $p < .001$, respectively), and also the stress at post-intervention was lower than that at baseline ($M_{diff} = 11.48$, $p < .001$). The results have confirmed that the integrative stress reduction program is effective in that it helps reduce stress in the family caregivers. This hypothesis was supported.

The stress process model [SPM] illustrates that caregiver stress is a dynamic process. A mix of stress elements consisting of the background and context of stress, stressors, and mediators vary considerably among caregivers, and consequently, vary in caregiver impacts. The mix is not stable; a change in one of its components can affect changes in other components (Pearlin et al., 1990). Stressors are the heart of the stress process (Pearlin et al., 1990). The integrative stress reduction program in this study targets decreased stress, improves sleep quality, and reduces BPSD in the patients. It plays an essential role in stress reduction by stabilizing the inner strength (acceptance and self-confidence), enhancing interpersonal interactive skills to deal with patient BPSD, and improving positive aspects for family caregivers towards BPSD. In addition, this program reduces stress by enhancing perceived care and emotional support to block the contagion at the junctures between the primary and secondary stressors, resulting in decreased stress in family caregivers. When sessions of this integrative stress reduction program could target significant stressors, such as BPSD, overload, social deprivation, caregiver stress was improved.

According to research evidence, family caregivers providing care to people with advanced dementia are usually stressed; they often report personal distress, life upset, and negative feelings towards the patients. Therefore, the integrative stress reduction program which stabilizes the inner strength and enhances coping skills for family caregivers could improve positive reappraisal based on understanding the meaning of life and the opportunity to give back. In addition, this integrative stress reduction program enhanced good orientation and perception to understand the transforming effect on the patients for family caregivers, targeting decreased caregiver stress. Peters et al. (2013) revealed that family caregivers preferred to increase inner strength to reduce feelings of life upset. This finding is consistent with the effectiveness of a strength-based skills training program for dementia caregiving that improved the understanding of the transforming effect on the patients (Judge et al., 2010).

Therefore, this integrative stress reduction program could target stress reduction in caregivers. This finding is consistent with the results of de Oliveira et al. (2019). They found that an activity program–outpatient version could reduce stress in family caregivers of dementia patients. The stress of family caregivers in the intervention group was significantly lower than that of those in the control group. Also, the findings of Spalding-Wilson et al. (2018) supported that the effectiveness of the novel two-day intervention improved positive mental health outcomes and well-being for caregivers. It helped caregivers identify and understand their own emotions. The decreased stress in the family caregivers was reported to persist six months after the intervention. Similarly, Kajiyama et al. (2013) found that the effects of the internet-based program for reducing caregiver distress using the iCare Stress Management e-Training Program was valuable for reducing caregiver stress.

The findings are also in line with the recent studies of Wilz et al. (2017); they provided the Tele.TAnDem intervention for family caregivers to lessen caregiver stress, improve stress-management and emotion regulation skills, promote self-care, create value-based caregiving activities, and enhance problem-solving abilities based on home-based intervention. The results at the post-intervention showed that family caregivers in the intervention group reported improved well-being, improved symptoms of depression, and physical symptoms, and improved ability to cope with

the stress and burden of care and the BPSD in the patients. These findings concluded that the family caregiver in the intervention group had better levels of stress after receiving the Tele.TAnDem intervention than before participating in the intervention. At the same time, Stress Inoculation Training was used to train the caregivers of people with dementia to promote psychological well-being. Family caregivers trained in various techniques relating to stress reduction, including self–talk, cognitive modification, behavioral modification, muscle relaxation, and breathing exercises. They could cope and manage stress effectively (Hengudomsub et al., 2016).
As a result, stress among the caregivers of older adults with dementia was minimized.

Hypothesis II: Family caregivers receiving the integrative stress reduction program would have a lower mean score of sleep quality than those in the control group at the post-intervention (Week 4) and follow-up (Week 8).

The results showed a better sleep quality of family caregivers in the intervention group at post-intervention (Week 4, T2) and follow-up (Week 8, T3), and there were statistically significant differences compared with those in the control group ($F_{1, 51} = 24.45$, $p < .001$). The mean score of the sleep quality of family caregivers in the intervention group at post-intervention (Week 4) and follow-up (Week 8) were lower than those in the control group ($M_{diff} = 1.89$, and $M_{diff} = 4.18$, $p < .001$). At the same time, the mean score of the sleep quality of family caregivers in the intervention group at the follow-up (week 8) was lower than that at post-intervention (week 4) ($M_{diff} = 1.89$, $p < .001$). Therefore, the family caregivers in the intervention group had improved sleep quality after receiving the integrative stress reduction program and better than those in the control group. The findings have confirmed that the integrative stress reduction program could improve the sleep quality of family caregivers. This hypothesis was supported.

Sleep quality of caregivers is accounted as well-being outcomes in the stress process. It is manifested by primary stressors (BPSD, cognitive impairment, dependency, overload, and social deprivation) and secondary stressors (Pearlin et al., 1990). Much evidence has confirmed that BPSD of the patient is the leading cause of lower sleep quality in family caregivers. Therefore, family caregivers would experience decreased perceived sleep quality and actual hours of sleep time (Gao et al., 2019). Exposure to the continued stress process of caregiving for people with dementia could result in caregiver stress that leads to poor sleep quality in family caregivers (Senturk et al., 2018). The SPM has supported that effective interventions could improve through the well-being of family caregivers (Pearlin et al., 1990). Thus, this integrative stress reduction program could effectively improve directly caregiver stress, and it also led to achieving sleep quality in family caregivers. In addition, the healthy sleep quality of family caregivers was the byproduct of decreased BPSD in aspects of patient nighttime behavior problems. The findings of Falck et al. (2019) supported that using a multimodal personalized chronotherapy could improve sleep in adults with mild cognitive impairment. Also, Brewster, Bliwise, Epps, Yeager, and Hepburn (2019) found that caregiver stress was associated with insomnia in caregivers of persons living with dementia, and it should be minimized for achieving sleep quality in family caregivers.

A study by Murawski, Wade, Plotnikoff, Lubans, and Duncan (2018) also concluded that cognitive and behavioral interventions could improve sleep in people with chronic diseases. Also, family caregivers of people with a mental health condition reported better overall sleep health, sleep quality, and sleep duration. The finding is in concordance with Basu, Hochhalter, and Stevens (2015) who showed that the REACH II intervention improved the sleep quality of family caregivers of people with dementia. The study's finding is also in line with the recent systematic review of Fernandez-Puerta, Prados, and Jimenez-Mejías (2021). They found that family caregivers perceived better sleep quality after receiving interventions combined with cognitive-behavioral sleep programs, supporting health interventions, and exercise programs. The finding is consistent with Simpson and Carter (2010), indicating that the effectiveness of a brief behavioral sleep intervention could positively affect the better sleep quality of family caregivers of individuals with dementia.

Additionally, the benefits of stress reduction intervention for family caregivers of people with dementia combined psychosocial intervention, stress reduction program, and mindfulness training, tended to show minor sleep disturbance in family caregivers of patients with progressive dementia after receiving the stress reduction program. Also, family caregivers who registered sleep problems initially reported improved sleep quality throughout the study (Paller et al., 2015).

Hypothesis III: People with advanced dementia receiving care from family caregivers in the intervention group would have a lower mean score of BPSD than that of those who receive care from family caregivers in the control group at post-intervention (week 4) and follow-up (week 8).

The findings in this study revealed that the mean score of BPSD in people with advanced dementia receiving care from family caregivers in the intervention group was lower than those in the control group during the post-intervention (Week 4) to follow-up (Week 8) ($F_{1, 51} = 9.28$, $p < .05$). The mean score of BPSD in people with advanced dementia receiving care from family caregivers in the intervention group was lower mean score than that of the control group at post-intervention (Week 4) and follow-up (Week 8) ($M_{diff} = 10.89$, and $M_{diff} = 14.32$, $p < .001$).

In addition, the mean score of BPSD in people with advanced dementia receiving care from participants in the intervention group at the follow-up (Week 8) was lower than that at post-intervention (Week 4) ($M_{diff} = 6.38$, $p < .001$). Hypothesis III was supported. Participants in the intervention group could report improved BPSD after receiving the integrative stress reduction program.

BPSD is the crucial primary stressors that are the heart of the stress process. However, due to the background and context of some family caregivers, they may not understand such symptoms and may not have an experience in dementia caregiving (Pearlin et al., 1990). When sessions of this integrative stress reduction program could target at significant stressors, such as BPSD, overload, and social deprivation, caregiver stress was improved. The integrative stress reduction program in this study decreased stress, improved sleep quality, and reduced BPSD in the patients.

The intervention plays an essential role in stress reduction by stabilizing the inner strength (acceptance and self-confidence), as well as enhancing the interpersonal interactive skills of the caregivers to deal with patient BPSD, resulting in improving positive aspects for family caregivers towards BPSD. In addition, this program reduces stress by enhancing perceived care and emotional support to block the contagion at the junctures between the primary and secondary stressors, resulting in decreased stress in family caregivers.

The integrative stress reduction program targets improving understanding of BPSD for family caregivers, enhancing interpersonal interactive skills to deal with patient BPSD, and improving positive aspects for family caregivers towards BPSD. At the end of the program, there was a decrease in the rate of BPSD in people with advanced dementia. Additionally, fewer stressed caregivers were likely to be more able to take care of patients and perceived positive feelings toward the expression of BPSD. Family caregivers were more tolerant of BPSD, while some no longer felt overwhelmed by distress and, thus, had increased their tolerance threshold to BPSD. Even if these changes do manifest, family caregivers do not cause significant distress. The decrease of BPSD experienced by family caregivers was reported. A previous study by Tible et al. (2017) supported that the management intervention of behavioral and psychological symptoms of dementia combined with multi-techniques could effectively lessen the frequency and severity of BPSD of people with dementia.

The findings of de Oliveira et al. (2019) confirmed that the intervention to reduce neuropsychiatric symptoms and caregiver burden in a dementia tailored activity program–outpatient version could reduce BPSD in older persons with dementia. There were statistically decreased significant differences of BPSD between the intervention and control groups receiving a single program ($p = .003$). The finding is in concordance with Fortinsky et al. (2020). They found that the effects of the care of persons with dementia in their environments [COPE] had the value for reducing the frequency and severity of BPSD in dementia patients. Also, the multicomponent intervention combined with cognitive-behavioral programs for family caregivers could minimize and decrease BPSD changes in older persons with dementia (Fialho et al., 2012). The findings are in concordance with Pinazo-Clapés et al. (2020); who conducted an educational program for caregivers in nursing home residents combined with a behavior-oriented approach, communication approach, and emotion-based approach handling the BPSD. In this current study, the family caregivers understood that the environment must be adapted to each person and they also understood the relevance of the background of their situation. They also raised awareness about how to communicate with the patients. People with advanced dementia receiving care from family caregivers rated improved BPSD.

Strengths and limitations

Strengths: This study could produce reliable and robust conclusions to develop clinical practice.

1. A single-blinded randomized control trial [RCT] for determining causation was performed to be against biases by masking assessors.

2. Participants were invited to sign an informed consent form before assigning them to the intervention and control groups.

3. The study focused on cases of family caregivers with a high-risk stress from providing care to people with advanced dementia.

4. The researcher received certified NPI interviewer training from Cleveland Clinic Lou Ruvo Center for Brain Health and is certified as a CDR rater.

5. The measurements in this study showed more than 0.80 of reliability. Also, the integrative stress reduction program was developed based on specifications of the theoretical framework—the program strength was verified contents and arrangements by nursing professors and experts.

6. Although some participants dropped out and outliers were deleted from the analysis, there was a large sample with adequate statistical power.

7. There was inequality of some variable scores at baseline between the intervention and the control group. Advanced statistical analysis was considered to control those covariates.

Limitations

1. Caregivers of people with mild dementia were not included in the study because this study aimed to focus on the giving care and burden of caregivers for the patient with an advanced stage of the disease.

2. Contamination bias have may occurred during the implementation phases since all the participants lived in the same community. However, its effect may be minimal.

2. Data collection was carried out in one province. Generalizability may be limited to other settings.

3. This intervention was not unable to be conducted using a double-blind technique since this is an integrative stress reduction program for people living in the community where its procedure was different from that in a laboratory.

Suggestions and implementations

1. Caregiver distress scales should be utilized to screen participants in the enrolling process.

2. Contamination biases that may result in the Hawthorne effect should be considered.

3. Data collection should be carried out in more than one setting or province for generalizability to other settings.

3. Further research should also determine the extent of the effectiveness of this program on other stressors and outcomes such as dependent status, cognitive level, overload, relational deprivation, depression, and anxiety.

4. Further study should include mindfulness fundamentals into the program to improve inner strengths and be developed via an internet-based program.

Implementation

The results of this randomized controlled trial have important implications that contribute to theoretical and practical knowledge of nursing and the healthcare system as follows:

1. Theoretically, this result can contribute to more understanding of Pearlin's stress process model by testing the manipulated ways of primary and secondary stressors that manifest emotional well-being

2. For the nursing practice, nurse practitioners and community nurses need to be trained in various skills for utilizing this intervention as an evidence-based practice to enhance the family caregiver's knowledge and skills for dealing with problematic behaviors and providing care to people with dementia. Furthermore, the impact of this study contributes to community care resources—for example, the protocol handbook for healthcare providers and the care handbook for caregivers.

3. For policymakers in health care at a community level, the results of this study could imply that family caregivers should be added to the whole of care dementia guidelines and policies. The integrative stress reduction program was demonstrated to be effective, and it should be delivered as a new guideline of long-term care services for promoting family caregivers' health in the dementia caregiving realm.

Conclusions

Stressors are viewed as the heart of the stress process. They are the conditions in which dementia caregiving may be embedded. Primary stressors lead to secondary stressors, resulting in caregiver psychological health outcomes and well-being (Pearlin et al., 1990). This integrative stress reduction program was developed based on Pearlin's SPM. The concept of BPSD, overload, social deterioration, self-efficacy, and mastery, were manipulated. While coping and social support were used to block the contagion at the junctures between the primary and secondary stressors to improve multi-outcomes of stress. This program combined multi-approaches, including emotional-oriented, cognitive, and psychosocial methods for targeting decreased stress, improving sleep quality, and reducing BPSD in the patients. The emotion-focus coping strategy to promote inner strength was fundamental for improving caregivers' emotional reactions in which stressful situations might be embedded. Self-distraction, active coping, and acceptance skills were applied. In addition, informative support to enhance the understanding of the nature of dementia and interpersonal interactive skills to deal with patient BPSD was promoted.

Key factors in the success of this integrative stress reduction program are to play an essential role in stress reduction by stabilizing the inner strength of family caregivers, enhancing their interpersonal interactive skills to deal with patient BPSD, promoting positive aspects for family caregivers towards BPSD, and supporting care and emotion, resulting in decreased stress in family caregivers. Fewer stressed caregivers are likely more able to take care of people with dementia. Also, they are more tolerant of BPSD, while some no longer feel distressed and, thus, have increased their tolerance threshold to BPSD. Even if these changes do manifest, family caregivers do not cause significant distress. Thus, decreased stress and better sleep quality of family caregivers are reported. At the same time, there is much evidence that is concordant with integrative or comprehensive interventions that have demonstrated excellent caregiver and patient well-being outcomes.

REFERENCES

REFERENCES

Aboulafia-Brakha, T., Suchecki, D., Gouveia-Paulino, F., Nitrini, R., & Ptak, R. (2014). Cognitive–behavioural group therapy improves a psychophysiological marker of stress in caregivers of patients with Alzheimer's disease. *Aging & Mental Health, 18*(6), 801-808. doi:10.1080/13607863.2014.880406

Alliance Family Caregiver. (2006). *Caregiver assessment: Voices and views from the field.* Paper presented at the Report from a national consensus development conference.

Alzheimer's Association. (2016). 2016 Alzheimer's disease facts and figures. *Alzheimer's & Dementia, 12*(4), 459-509.

Alzheimer's Association. (2018). 2018 Alzheimer's disease facts and figures. *Alzheimer's & Dementia, 14*(3), 367-429.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (Vol. 4th ed., text rev). Washington, DC: Author.

Anand, K. S., Dhikav, V., Sachdeva, A., & Mishra, P. (2016). Perceived caregiver stress in Alzheimer's disease and mild cognitive impairment: A case control study. *Annals of Indian Academy of Neurology, 19*(1), 58-62. doi:10.4103/0972-2327.167695

Aneshensel, C. S., Pearlin, L. I., Mullan, J. T., Zarit, S. H., & Whitlatch, C. J. (1995). *Profiles in caregiving: The unexpected career*. San Diego, CA, US: Academic Press.

Australia Alzheimers. (2015). *Dementia language guidelines*. Canberra: Alzheimer's Australia.

Baharudin, A. D., Din, N. C., Subramaniam, P., & Razali, R. (2019). The associations between behavioral-psychological symptoms of dementia (BPSD) and coping strategy, burden of care and personality style among low-income caregivers of patients with dementia. *BMC Public Health, 19*(4), 1-12. doi:10.1186/s12889-019-6868-0

Balieiro Jr, A. P., Sobreira, E. S. T., Pena, M. C. S., Silva-Filho, J. H., & Vale, F. d. A. C. d. (2010). Caregiver distress associated with behavioral and psychological symptoms in mild Alzheimer's disease. *Dementia & Neuropsychologia, 4*(3), 238-244.

Bass, D. M., Judge, K. S., Lynn Snow, A., Wilson, N. L., Morgan, R., Looman, W. J., . . . Randazzo, R. (2013). Caregiver outcomes of partners in dementia care: effect of a care coordination program for veterans with dementia and their family members and friends. *Journal of the American Geriatrics Society, 61*(8), 1377-1386.

Basu, R., Hochhalter, A. K., & Stevens, A. B. (2015). The Impact of the REACH II intervention on caregivers' perceived health. *J Appl Gerontol, 34*(5), 590-608. doi:10.1177/0733464813499640

Benge, J. F., Dinh, K. L., Logue, E., Phenis, R., Dasse, M. N., & Scullin, M. K. (2020). The smartphone in the memory clinic: A study of patient and care partner’s utilisation habits. *Neuropsychological Rehabilitation, 30*(1), 101-115. doi:10.1080/09602011.2018.1459307

Bjorge, H., Kvaal, K., & Ulstein, I. (2019). The effect of psychosocial support on caregivers’ perceived criticism and emotional over-involvement of persons with dementia: an assessor-blinded randomized controlled trial. *BMC health services research, 19*(1), 744. doi:10.1186/s12913-019-4551-x

Blom, M. M., Zarit, S. H., Zwaaftink, R. B. G., Cuijpers, P., & Pot, A. M. (2015). Effectiveness of an Internet intervention for family caregivers of people with dementia: results of a randomized controlled trial. *PLOS ONE, 10*(2), 1-11.

Brewster, G. S., Bliwise, D., Epps, F., Yeager, K., & Hepburn, K. (2019). dyadic factors that associate with insomnia in caregivers of persons living with dementia. *Innov Aging, 3*(Suppl 1), S367.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216. doi:10.1177/135910457000100301

Brown, K. W., Coogle, C. L., & Wegelin, J. (2016). A pilot randomized controlled trial of mindfulness-based stress reduction for caregivers of family members with dementia. *Aging Ment Health, 20*(11), 1157-1166. doi:10.1080/13607863.2015.1065790

Buschert, V. C., Giegling, I., Teipel, S. J., Jolk, S., Hampel, H., Rujescu, D., & Buerger, K. (2012). Long-term observation of a multicomponent cognitive intervention in mild cognitive impairment. *J Clin Psychiatry, 73*(12), e1492-e1498. doi:10.4088/JCP.11m07270

Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The pittsburgh sleep quality index: A new instrument for psychiatric practice and research. *Psychiatry research, 28*(2), 193-213. doi:10.1016/0165-1781(89)90047-4.

Byun, E., Lerdal, A., Gay, C., & Lee, K. (2016). How adult caregiving impacts sleep: A systematic review. *Current Sleep Medicine Reports, 2*(4), 191-205. doi:10.1007/s40675-016-0058-8

Calkins, A. W., Deveney, C. M., Weitzman, M. L., Hearon, B. A., Siegle, G. J., & Otto, M. W. (2011). The effects of prior cognitive control task exposure on responses to emotional tasks in healthy participants. *Behavioural and Cognitive Psychotherapy, 39*(2), 205-220. doi:10.1017/S1352465810000652

Callan, J. A., Siegle, G. J., Abebe, K., Black, B., Martire, L., Schulz, R., . . . Hall, M. H. (2016). Feasibility of a pocket-PC based cognitive control intervention in dementia spousal caregivers. *Aging & Mental Health, 20*(6), 575-582. doi:10.1080/13607863.2015.1031635

Camozzato, A. L., Godinho, C., Kochhann, R., Massochini, G., & Chaves, M. L. (2015). Validity of the Brazilian version of the Neuropsychiatric Inventory Questionnaire (NPI-Q). *Arquivos de neuro-psiquiatria, 73*(1), 41-45. doi:10.1590/0004-282x20140177

Carter, M. M., Wei, A., & Li, X. (2019). An individualised, non-pharmacological treatment strategy associated with an improvement in neuropsychiatric symptoms in a man with dementia living at home. *BMJ Case Rep, 12*(5), 1-6. doi:10.1136/bcr-2018-229048

Chaobankrang, C., Anothaisintawee, T., Kittichai, K., & Boongird, C. (2019). Predictors of depression among thai family caregivers of dementia patients in primary care. *Int J Gerontol Geriatr Res, 3*(1), 7-13.

Chen, C. K., Clayton, K., & Chodosh, J. (2017). The relationship between “what we believe” and “how we care” among daughters caring for a parent with dementia. *American Journal of Alzheimer's Disease & Other Dementias, 32*(2), 90-95. doi:10.1177/1533317517689875

Cheng, S.-T. (2017). Dementia caregiver burden: A research update and critical analysis. *Current Psychiatry Reports, 19*(9), 64. doi:10.1007/s11920-017-0818-2

Cipriani, G., Lucetti, C., Danti, S., & Nuti, A. (2015). Sleep disturbances and dementia. *Psychogeriatrics, 15*(1), 65-74. doi:10.1111/psyg.12069

Crellin, N., Charlesworth, G., & Orrell, M. (2014). Measuring family caregiver efficacy for managing behavioral and psychological symptoms in dementia: a psychometric evaluation. *Int Psychogeriatr, 26*(1), 93-103. doi:10.1017/S1041610213001646.

Cummings, J. L. (1997). The neuropsychiatric inventory: assessing psychopathology in dementia patients. *Neurology, 48*(5 Suppl 6), S10-S16. doi:10.1212/wnl.48.5_suppl_6.10s

Cummings, J. L., Mega, M., Gray, K., Rosenberg-Thompson, S., Carusi, D. A., & Gornbein, J. (1994). The neuropsychiatric inventory: comprehensive assessment of psychopathology in dementia. *Neurology, 44*(12), 2308-2308. doi:10.1212/wnl.44.12.2308

Dam, A. E., de Vugt, M. E., van Boxtel, M. P., & Verhey, F. R. (2017). Effectiveness of an online social support intervention for caregivers of people with dementia: the study protocol of a randomised controlled trial. *Trials, 18*(1), 1-10. doi:10.1186/s13063-017-2097-y

de Oliveira, A. M., Radanovic, M., Homem de Mello, P. C., Buchain, P. C., Dias Vizzotto, A., Harder, J., . . . Forlenza, O. V. (2019). An intervention to reduce neuropsychiatric symptoms and caregiver burden in dementia: Preliminary results from a randomized trial of the tailored activity program–outpatient version. *International Journal of Geriatric Psychiatry, 34*(9), 1301-1307. doi:10.1002/gps.4958

Dhandapani, M., & Gupta, S. (2018). Specific health effects of care-giving stress and its management. *Indian Journal of Psychiatric Nursing, 15*(2), 53-60. doi:10.4103/2231-1505.262442

di Battista, A. M., Heinsinger, N. M., & Rebeck, G. W. (2016). Alzheimer's disease genetic risk factor APOE-ε4 also affects normal brain function. *Curr*

Alzheimer Res, 13(11), 1200-1207. doi:10.2174/1567205013666160401115127

DiZazzo-Miller, R., Samuel, P. S., Barnas, J. M., & Welker, K. M. (2014). Addressing everyday challenges: feasibility of a family caregiver training program for people with dementia. *Am J Occup Ther, 68*(2), 212-220. doi:10.5014/ajot.2014.009829

Duong, S., Patel, T., & Chang, F. (2017). Dementia: What pharmacists need to know. *Can Pharm J (Ott), 150*(2), 118-129. doi:10.1177/1715163517690745

Easom, L. R., Alston, G., & Coleman, R. (2013). A rural community translation of a dementia caregiving intervention. *Online Journal of Rural Nursing and Health Care, 13*(1), 66-91. doi:10.14574/OJRNHC.V13I1.248

Falck, R. S., Best, J. R., Davis, J. C., Chan, P., Backhouse, D., Landry, G. J., & Liu-Ambrose, T. (2019). multimodal personalized chronotherapy improves sleep in adults with mild cognitive impairment: a randomized trial. *Innov Aging, 3*(Supplement_1), S367-S367.

Farran, C. J., Etkin, C. D., Eisenstein, A., Paun, O., Rajan, K. B., Sweet, C. M. C., . . . Evans, D. A. (2016). Effect of moderate to vigorous physical activity intervention on improving dementia family caregiver physical function: A randomized controlled trial. *Journal of Alzheimer's disease & Parkinsonism, 6*(4). doi:10.4172/2161-0460.1000253

Fauth, E. B., & Gibbons, A. (2014). Which behavioral and psychological symptoms of dementia are the most problematic? Variability by prevalence, intensity, distress ratings, and associations with caregiver depressive symptoms. *International Journal of Geriatric Psychiatry, 29*(3), 263-271. doi:10.1002/gps.4002

Fernandez-Puerta, L., Prados, G., & Jimenez-Mejías, E. (2021). Interventions that improve sleep in caregivers of adult care-recipients: A systematic review. *West J Nurs Res, 43*(5), 407-504. doi:10.1177/0193945921995477

Ferrara, M., Langiano, E., Di Brango, T., Di Cioccio, L., Bauco, C., & De Vito, E. (2008). Prevalence of stress, anxiety and depression in with Alzheimer caregivers. *Health and Quality of life Outcomes, 6*(1), 1-5.

Fialho, P. P. A., Koenig, A. M., Santos, M. D. L. d., Barbosa, M. T., & Caramelli, P. (2012). Positive effects of a cognitive-behavioral intervention program for family caregivers of demented elderly. *Arquivos de neuro-psiquiatria, 70*(1), 786-792. doi:10.1590/s0004-282x2012001000007

Figueiro, M. G. (2017). Light, sleep and circadian rhythms in older adults with Alzheimer's disease and related dementias. *Neurodegenerative disease management, 7*(2), 119-145. doi:10.2217/nmt-2016-0060

Fleming, R., Zeisel, J., & Bennett, K. (2020). *World Alzheimer Report 2020: Design, dignity, dementia: Dementia-related design and the built environment*. London: Alzheimer’s Disease International.

Fonareva, I., & Oken, B. S. (2014). Physiological and functional consequences of caregiving for relatives with dementia. *International psychogeriatrics/IPA, 26*(5), 725-747. doi:10.1017/S1041610214000039

Forbes, H., Langan, S., & Smeeth, L. (2018). *ICD-10 codes-Dementia*. London: London School of Hygiene & Tropical Medicine.

Fortinsky, R. H., Gitlin, L. N., Pizzi, L. T., Piersol, C. V., Grady, J., Robison, J. T., . . . Wakefield, D. (2020). Effectiveness of the care of persons with dementia in their environments intervention when embedded in a publicly funded home- and community-based service program. *Innov Aging, 4*(6), 1-13. doi:10.1093/geroni/igaa053

Foundation of Thai Gerontology Research and Development Institute. (2016). *Situation of Thai elderly 2016*. Nakhon Pathom, Thailand: Printery.

Freedman, V. A., & Spillman, B. C. (2014). Disability and care needs among older Americans. *The Milbank Quarterly, 92*(3), 509-541. doi:10.1111/1468-0009.12076

Gao, C., Chapagain, N. Y., & Scullin, M. K. (2019). Sleep duration and sleep quality in caregivers of patients with dementia: A systematic review and meta-analysis. *JAMA network open, 2*(8), e199891-e199891. doi:10.1001/jamanetworkopen.2019.9891

Gaugler, J. E., Edwards, A. B., Femia, E. E., Zarit, S. H., Stephens, M.-A. P., Townsend, A., & Greene, R. (2000). Predictors of institutionalization of cognitively impaired elders: family help and the timing of placement. *The*

Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 55(4), 247-255. doi:10.1093/geronb/55.4.P247

Gitlin, L. N., Winter, L., Dennis, M. P., Hodgson, N., & Hauck, W. W. (2010). A biobehavioral home-based intervention and the well-being of patients with dementia and their caregivers: the COPE randomized trial. *Jama, 304*(9), 983-991.

Gitlin, L. N., Winter, L., Dennis, M. P., Hodgson, N., & Hauck, W. W. (2010). Targeting and Managing Behavioral Symptoms in Individuals with Dementia: A Randomized Trial of a Nonpharmacological Intervention. *Journal of the American Geriatrics Society, 58*(8), 1465-1474. doi:10.1111/j.1532-5415.2010.02971.x

Greene, J., Smith, R., Gardiner, M., & Timbury, G. (1982). Measuring behavioural disturbance of elderly demented patients in the community and its effects on relatives: a factor analytic study. *Age and Ageing, 11*(2), 121-126. doi:10.1093/ageing/11.2.121

Hashimoto, M., Yatabe, Y., Ishikawa, T., Fukuhara, R., Kaneda, K., Honda, K., . . . Ikeda, M. (2015). Relationship between dementia severity and behavioral and psychological symptoms of dementia in dementia with lewy bodies and Alzheimer's disease patients. *Dementia and geriatric cognitive disorders extra, 5*(2), 244-252. doi:10.1159/000381800

Hausler, A., Sanchez, A., Gellert, P., Deeken, F., Rapp, M. A., & Nordheim, J. (2016). Perceived stress and quality of life in dementia patients and their caregiving spouses: does dyadic coping matter? *Int Psychogeriatr, 28*(11), 1857-1866. doi:10.1017/s1041610216001046

Hengudomsub, P., Kangchai, W., Pathumarak, N., & Paokanha, R. (2016). The effect of cognitive behavior modification program on stress among caregivers of older adults with dementia. *Thai pharmaceutical and health science journal, 11*(1), 1-9.

Hirano, A., Suzuki, Y., Kuzuya, M., Onishi, J., Ban, N., & Umegaki, H. (2011). Influence of regular exercise on subjective sense of burden and physical symptoms in community-dwelling caregivers of dementia patients: a randomized controlled trial. *Arch Gerontol Geriatr, 53*(2), e158-163. doi:10.1016/j.archger.2010.08.004

Honda, A., Date, Y., Abe, Y., Aoyagi, K., & Honda, S. (2014). Work-related stress, caregiver role, and depressive symptoms among Japanese workers. *Saf Health Work, 5*(1), 7-12. doi:10.1016/j.shaw.2013.11.002

Huang, S.-S., Wang, W.-F., & Liao, Y.-C. (2017). Severity and prevalence of behavioral and psychological symptoms among patients of different dementia stages in Taiwan. *Archives of Clinical Psychiatry (São Paulo), 44*(4), 89-93. doi:10.1590/0101-60830000000127

Huang, S. S., Lee, M. C., Liao, Y. C., Wang, W. F., & Lai, T. J. (2012). Caregiver burden associated with behavioral and psychological symptoms of dementia (BPSD) in Taiwanese elderly. *Arch Gerontol Geriatr, 55*(1), 55-59. doi:10.1016/j.archger.2011.04.009

Ingersoll-Dayton, B., Spencer, B., Kwak, M., Scherrer, K., Allen, R., & Campbell, R. (2013). The couples life story approach: A dyadic intervention for dementia. *Journal of gerontological social work, 56*(1), 237-254. doi:10.1080/01634372.2012.758214

Isik, A. T., Soysal, P., Solmi, M., & Veronese, N. (2019). Bidirectional relationship between caregiver burden and neuropsychiatric symptoms in patients with Alzheimer's disease: A narrative review. *Int J Geriatr Psychiatry, 34*(9), 1326-1334. doi:10.1002/gps.4965

Jakob, A., & Collier, L. (2017). Sensory enrichment for people living with dementia: increasing the benefits of multisensory environments in dementia care through design. *Design for Health, 1*(1), 115-133. doi:10.1080/24735132.2017.1296274

Javadpour, A., Shenavar, M. R., Dehghani, M., & Bahredar, M. J. (2017). Frequency and correlates of behavioral and psychological symptoms in a group of Iranian patients with dementia. *Shiraz E-Med J, 18*(2), 1-6. doi:10.17795/semj33852

Jirapramukpitak, T., & Tanchaiswad, W. (1997). Sleep disturbances among nurses of Songklanagarind Hospital. *J Psychiatr Assoc Thailand, 42*(3), 123-132.

Judge, K. S., Menne, H. L., & Whitlatch, C. J. (2009). Stress process model for individuals with dementia. *Gerontologist, 50*(3), 294-302. doi:10.1093/geront/gnp162

Judge, K. S., Yarry, S. J., Looman, W. J., & Bass, D. M. (2013). Improved strain and psychosocial outcomes for caregivers of individuals with dementia: Findings from project ANSWERS. *Gerontologist, 53*(2), 280-292. doi:10.1093/geront/gns076

Judge, K. S., Yarry, S. J., & Orsulic-Jeras, S. (2010). Acceptability and feasibility results of a strength-based skills training program for dementia caregiving dyads. *Gerontologist, 50*(3), 408-417. doi:10.1093/geront/gnp138

Kajiyama, B., Thompson, L. W., Eto-Iwase, T., Yamashita, M., Di Mario, J., Marian Tzuang, Y., & Gallagher-Thompson, D. (2013). Exploring the effectiveness of an internet-based program for reducing caregiver distress using the iCare Stress Management e-Training Program. *Aging & Mental Health, 17*(5), 544-554. doi:10.1080/13607863.2013.775641

Kales, H. C., Gitlin, L. N., & Lyketsos, C. G. (2015). Assessment and management of behavioral and psychological symptoms of dementia. *Bmj, 350*, h369. doi:10.1136/bmj.h369

Kamiya, M., Sakurai, T., Ogama, N., Maki, Y., & Toba, K. (2014). Factors associated with increased caregivers' burden in several cognitive stages of Alzheimer's disease. *Geriatr Gerontol Int, 14* (2), 45-55. doi:10.1111/ggi.12260

Karg, N., Graessel, E., Randzio, O., & Pendergrass, A. (2018). Dementia as a predictor of care-related quality of life in informal caregivers: a cross-sectional study to investigate differences in health-related outcomes between dementia and non-dementia caregivers. *BMC Geriatrics, 18*(1), 1-9. doi:10.1186/s12877-018-0885-1

Kim, Y., & Schulz, R. (2008). Family caregivers' strains: comparative analysis of cancer caregiving with dementia, diabetes, and frail elderly caregiving. *J Aging Health, 20*(5), 483-503. doi:10.1177/0898264308317533

Knodel, J., Teerawichitchainan, B., & Pothisiri, W. (2018). Caring for Thai older persons with long-term care needs. *J Aging Health, 30*(10), 1516-1535. doi:10.1177/0898264318798205

Koca, E., Taşkapilioğlu, Ö., & Bakar, M. (2017). Caregiver burden in different stages of Alzheimer's disease. *Noro psikiyatri arsivi, 54*(1), 82-86. doi:10.5152/npa.2017.11304

Lane, C. A., Sudre, C. H., Barnes, J., Nicholas, J. M., Hardy, R., Parker, T. D., . . . Schott, J. M. (2018). Influences of blood pressure and blood pressure trajectories on cerebral pathology at age 70: Results from a British birth cohort. *Alzheimer's & Dementia, 14*(7), 626-627. doi:10.1016/j.jalz.2018.06.2663

Lasuka, D. (2014). Duangruedee Lasuka Dementia in Thailand : Current situation. *GLOCOL ブックレット, 15*(1), 43-52.

Leach, M. J., Francis, A., & Ziaian, T. (2014). Improving the health and well-being of community-dwelling caregivers of dementia sufferers: study protocol of a randomized controlled trial of structured meditation training. *J Altern Complement Med, 20*(2), 136-141. doi:10.1089/acm.2013.0170

Lee, D., Heo, S. H., Yoon, S. S., Chang, D. I., Lee, S., Rhee, H. Y., . . . Park, K. C. (2014). Sleep disturbances and predictive factors in caregivers of patients with mild cognitive impairment and dementia. *J Clin Neurol, 10*(4), 304-313. doi:10.3988/jcn.2014.10.4.304

Lee, K. C., Yiin, J. J., Lu, S. H., & Chao, Y. F. (2015). The burden of caregiving and sleep disturbance among family caregivers of advanced cancer patients. *Cancer Nurs, 38*(4), E10-E18. doi:10.1097/ncc.0000000000000166

Lenz, L. S., & Chura, L. R. (2017). Global council on brain health: Survey data and recommendations highlight opportunities to promote physical activity, sleep, and social engagement in adults. *Alzheimer's & Dementia, 13*(7S_Part_25), P1202-P1203.

Levy, K., Lanctôt, K. L., Farber, S. B., Li, A., & Herrmann, N. (2012). Does pharmacological treatment of neuropsychiatric symptoms in Alzheimer's disease relieve caregiver burden? *Drugs Aging, 29*(3), 167-179. doi:10.2165/11599140-000000000-00000

Lhimsoonthon, B. L., Sritanyarat, W., & Rungrengkolkit, S. (2019). Development of care services for older people with dementia in a primary care setting. *Pacific Rim International Journal of Nursing Research, 23*(3), 214-227.

Lingler, J., Schmidt, K., Gentry, A., Hu, L., & Terhorst, L. (2014). A new measure of research participant burden: Brief report. *Journal of Empirical Research on Human Research Ethics, 9*(1), 46-49. doi:10.1177/1556264614545037

Liu, Y., Dokos, M., Fauth, E. B., Lee, Y. G., & Zarit, S. H. (2019). Financial strain, employment, and role captivity and overload over time among dementia family caregivers. *Gerontologist, 59*(5), e512-e520. doi:10.1093/geront/gnz099

Llanque, S., Savage, L., Rosenburg, N., & Caserta, M. (2016). Concept analysis: Alzheimer's caregiver stress. *Nursing Forum, 51*(1), 21-31. doi:https://doi.org/10.1111/nuf.12090

Luchsinger, J. A., Burgio, L., Mittelman, M., Dunner, I., Levine, J. A., Kong, J., . . . Teresi, J. A. (2016). Northern Manhattan Hispanic Caregiver Intervention Effectiveness Study: protocol of a pragmatic randomised trial comparing the effectiveness of two established interventions for informal caregivers of persons with dementia. *BMJ open, 6*(11), 186-191. doi:10.1016/j.gerinurse.2015.12.002.

Mausbach, B. T., Chattillion, E., Roepke, S. K., Ziegler, M. G., Milic, M., von Känel, R., . . . Grant, I. (2012). A longitudinal analysis of the relations among stress, depressive symptoms, leisure satisfaction, and endothelial function in caregivers. *Health Psychology, 31*(4), 433-440. doi:10.1037/a0027783

McCurry, S. M., Pike, K. C., Vitiello, M. V., Logsdon, R. G., Larson, E. B., & Teri, L. (2011). Increasing walking and bright light exposure to improve sleep in community-dwelling persons with Alzheimer's disease: results of a randomized, controlled trial. *J Am Geriatr Soc, 59*(8), 1393-1402. doi:10.1111/j.1532-5415.2011.03519.x

McCurry, S. M., Song, Y., & Martin, J. L. (2015). Sleep in caregivers: what we know and what we need to learn. *Current opinion in psychiatry, 28*(6), 497-503. doi:10.1097/yco.0000000000000205

McDougall, G. J., Jr. (2009). A framework for cognitive interventions targeting everyday memory performance and memory self-efficacy. *Fam Community Health, 32*(1 Suppl), S15-S26. doi:10.1097/01.FCH.0000342836.20854.fb

Mendelson, T. (2013). Stress, Emotional. In M. D. Gellman & J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine* (pp. 1906-1908). New York, NY: Springer New York.

Metzelthin, S., Verbakel, E., Veenstra, M., Exel, J., Ambergen, A., & Kempen, G. (2017). Positive and negative outcomes of informal caregiving at home and in institutionalised long-term care: A cross-sectional study. *BMC Geriatrics, 17*(1), 1-10. doi:10.1186/s12877-017-0620-3

Moon, H., & Adams, K. B. (2013). The effectiveness of dyadic interventions for people with dementia and their caregivers. *Dementia (London), 12*(6), 821-839. doi:10.1177/1471301212447026

Morandi, A., Davis, D., Bellelli, G., Arora, R. C., Caplan, G. A., Kamholz, B., . . . Rudolph, J. L. (2017). The Diagnosis of delirium superimposed on dementia: An emerging challenge. *Journal of the American Medical Directors Association, 18*(1), 12-18. doi:10.1016/j.jamda.2016.07.014

Moreno-Camara, S., Palomino-Moral, P., Moral-Fernández, L., Frías-Osuna, A., Parra-Anguita, L., & Del-Pino-Casado, R. (2019). Perceived needs of the family caregivers of people with dementia in a Mediterranean setting: A qualitative study. *Int J Environ Res Public Health, 16*(6), 1-12. doi:10.3390/ijerph16060993

Morris, J. C. (1997). Clinical dementia rating: a reliable and valid diagnostic and staging measure for dementia of the Alzheimer type. *Int Psychogeriatr, 9* (1), 173-178. doi:10.1017/s1041610297004870

Mukherjee, A., Biswas, A., Roy, A., Biswas, S., Gangopadhyay, G., & Das, S. K. (2017). Behavioural and psychological symptoms of dementia: correlates and impact on caregiver distress. *Dementia and geriatric cognitive disorders extra, 7*(3), 354-365.

Murawski, B., Wade, L., Plotnikoff, R. C., Lubans, D. R., & Duncan, M. J. (2018). A systematic review and meta-analysis of cognitive and behavioral interventions to improve sleep health in adults without sleep disorders. *Sleep Medicine Reviews, 40*(1), 160-169. doi:https://doi.org/10.1016/j.smrv.2017.12.003

National Collaborating Centre for Mental Health. (2007). *Antenatal and postnatal mental health: the NICE guideline on clinical management and service guidance*. Leicester (UK): British Psychological Society.

Ng, T. P., Nyunt, M. S., Chiam, P. C., & Kua, E. H. (2011). Religion, health beliefs and the use of mental health services by the elderly. *Aging Ment Health, 15*(2), 143-149. doi:10.1080/13607863.2010.508771

Niu, H., Alvarez-Álvarez, I., Guillen-Grima, F., & Aguinaga-Ontoso, I. (2017). Prevalence and incidence of Alzheimer's disease in Europe: A meta-analysis. *Neurología (English Edition), 32*(8), 523-532. doi:https://doi.org/10.1016/j.nrleng.2016.02.009

Noimongkon, S., Somboontanont, W., & Leelahakul, V. (2017). Selected factors related to resilience in family caregivers of older adults with dementia. *Nursing Journal of The Ministry of Public Health, 27*(1), 85-98.

Okuda, S., Tetsuka, J., Takahashi, K., Toda, Y., Kubo, T., & Tokita, S. (2019). Association between sleep disturbance in Alzheimer’s disease patients and burden on and health status of their caregivers. *Journal of neurology, 266*(6), 1490-1500.

Ondee, P., Panitrat, R., Pongthavornkamol, K., Senanarong, V., Harvath, T. A., & Nittayasudhi, D. (2013). Factors predicting depression among caregivers of persons with dementia. *Pacific Rim International Journal of Nursing Research, 17*(2), 167-180.

Ornstein, K., & Gaugler, J. E. (2012). The problem with “problem behaviors”: a systematic review of the association between individual patient behavioral and psychological symptoms and caregiver depression and burden within the dementia patient–caregiver dyad. *Int Psychogeriatr, 24*(10), 1536-1552. doi:10.1017/S1041610212000737

Outeiro, T. F., Koss, D. J., Erskine, D., Walker, L., Kurzawa-Akanbi, M., Burn, D., . . . McKeith, I. (2019). Dementia with Lewy bodies: an update and outlook. *Mol Neurodegener, 14*(1), 1-18. doi:10.1186/s13024-019-0306-8

Paller, K. A., Creery, J. D., Florczak, S. M., Weintraub, S., Mesulam, M. M., Reber, P. J., . . . Maslar, M. (2015). Benefits of mindfulness training for patients with progressive cognitive decline and their caregivers. *Am J Alzheimers Dis Other Demen, 30*(3), 257-267. doi:10.1177/1533317514545377

Pankong, O., Pothiban, L., Sucamvang, K., & Khampolsiri, T. (2018). A randomized controlled trial of enhancing positive aspects of caregiving in Thai dementia caregivers for dementia. *Pacific Rim International Journal of Nursing Research, 22*(2), 131-143.

Pearlin, L. I. (1989). The sociological study of stress. *Journal of Health and Social Behavior, 30*(3), 241-256. doi:10.2307/2136956

Pearlin, L. I., Aneshensel, C. S., & LeBlanc, A. J. (1997). The forms and mechanisms of stress proliferation: The case of AIDS caregivers. *Journal of Health and Social Behavior, 38*(3), 223-236. doi:10.2307/2955368

Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior, 22*(4), 337-356. doi:10.2307/2136676

Pearlin, L. I., Paller, K. A., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the stress process: an overview of concepts and their measures. *Gerontologist, 30*(5), 583-594. doi:10.1093/geront/30.5.583

Peng, H.-L., Lorenz, R. A., & Chang, Y.-P. (2019). Factors associated with sleep in family caregivers of individuals with dementia. *Perspectives in Psychiatric Care, 55*(1), 95-102. doi:10.1111/ppc.12307

Peng, H. L., Lorenz, R. A., & Chang, Y. P. (2016). Sleep quality in family caregivers of individuals with dementia: A concept analysis. *Clin Nurs Res, 25*(4), 448-464. doi:10.1177/1054773815610747

Peters, M., Jenkinson, C., Doll, H., Playford, E. D., & Fitzpatrick, R. (2013). Carer quality of life and experiences of health services: a cross-sectional survey across three neurological conditions. *Health Qual Life Outcomes, 11*(1), 1-8. doi:10.1186/1477-7525-11-103

Pinazo-Clapés, C., Pinazo-Hernandis, S., & Sales, A. (2020). Effects of an educational program for professional caregivers on behavioral alterations in nursing home residents: Pilot study. *Int J Environ Res Public Health, 17*(23), 1-13. doi:10.3390/ijerph17238845

Polenick, C. A., Struble, L. M., Stanislawski, B., Turnwald, M., Broderick, B., Gitlin, L. N., & Kales, H. C. (2018). "The filter is kind of broken": Family caregivers' attributions about behavioral and psychological symptoms of dementia. *Am J Geriatr Psychiatry, 26*(5), 548-556. doi:10.1016/j.jagp.2017.12.004

Prather, A. A., Janicki-Deverts, D., Hall, M. H., & Cohen, S. (2015). Behaviorally assessed sleep and susceptibility to the common cold. *Sleep, 38*(9), 1353-1359. doi:10.5665/sleep.4968

Quinn, C., Nelis, S. M., Martyr, A., Morris, R. G., Victor, C., & Clare, L. (2020). Caregiver influences on 'living well' for people with dementia: Findings from the IDEAL study. *Aging Ment Health, 24*(9), 1505-1513. doi:10.1080/13607863.2019.1602590

Rakkhamnuan, S., & Lueboonthavatchai, P. (2012). Behavioral and psychological symptoms of dementia (BTSD) and caregiver burden among caregivers of Alzheimer's dementia patients at department of psychiatry, King Chulalongkorn Memorial hospital. *Journal of the Psychiatric Association of Thailand, 57*(3), 335-346.

Rao, G. P., Sivakumar, P. T., Srivastava, S., & Sidana, R. C. (2020). Cognitive Therapy and Family Intervention for Patients with Dementia and Psychosis. *Indian journal of psychiatry, 62*(2), S183-S191. doi:10.4103/psychiatry.IndianJPsychiatry_769_19

Religa, D., Fereshtehnejad, S.-M., Cermakova, P., Edlund, A.-K., Garcia-Ptacek, S., Granqvist, N., . . . Eriksdotter, M. (2015). SveDem, the Swedish Dementia Registry – A tool for improving the quality of diagnostics, treatment and care of dementia patients in clinical practice. *PLOS ONE, 10*(2), e0116538. doi:10.1371/journal.pone.0116538

Sakka, M., Goto, J., Kita, S., Sato, I., Soejima, T., & Kamibeppu, K. (2019). Associations among behavioral and psychological symptoms of dementia, care burden, and family-to-work conflict of employed family caregivers. *Geriatr Gerontol Int, 19*(1), 51-55. doi:https://doi.org/10.1111/ggi.13556

Schroeder, A. M., & Colwell, C. S. (2013). How to fix a broken clock. *Trends in pharmacological sciences, 34*(11), 605-619. doi:10.1016/j.tips.2013.09.002

Scullin, M. K., Krueger, M. L., Ballard, H. K., Pruett, N., & Bliwise, D. L. (2018). The effects of bedtime writing on difficulty falling asleep: A polysomnographic study comparing to-do lists and completed activity lists. *J Exp Psychol Gen, 147*(1), 139-146. doi:10.1037/xge0000374

Seidel, D., & Thyrian, J. R. (2019). Burden of caring for people with dementia - comparing family caregivers and professional caregivers. A descriptive study. *Journal of multidisciplinary healthcare, 12*(1), 655-663. doi:10.2147/JMDH.S209106

Senanarong, V., Harnphadungkit, K., Poungvarin, N., Vannasaeng, S., Chongwisal, S., Chakorn, T., . . . Cummings, J. L. (2013). The Dementia and disability project in Thai elderly: rational, design, methodology and early results. *BMC Neurol, 13*(3), 1-11. doi:10.1186/1471-2377-13-3

Senturk, S. G., Akyol, M. A., & Kucukguclu, O. (2018). The relationship between caregiver burden and psychological resilience in caregivers of individuals with dementia. *International Journal of Caring Sciences, 11*(2), 1223-1230.

Shimizu, S., Mizuguchi, Y., Sobue, A., Fujiwara, M., Morimoto, T., & Ohno, Y. (2015). Interaction between anti-Alzheimer and antipsychotic drugs in modulating extrapyramidal motor disorders in mice. *J Pharmacol Sci*, *127*(4), 439-445. doi:10.1016/j.jphs.2015.03.004

Simon, M. A., Bueno, A. M., Otero, P., Blanco, V., & Vazquez, F. L. (2019). Insomnia in female family caregivers of totally dependent patients with dementia: an exploratory study. *Psicología Conductual*, *27*(1), 107-119. doi:10.3390/jcm8071072

Simon, S. S., Yokomizo, J. E., & Bottino, C. M. C. (2012). Cognitive intervention in amnestic mild cognitive Impairment: A systematic review. *Neuroscience and Biobehavioral Reviews, 36*(4), 1163-1178. doi:10.1016/j.neubiorev.2012.01.007

Simpson, C., & Carter, P. (2010). Pilot study of a brief behavioral sleep intervention for caregivers of individuals with dementia. *Research in gerontological nursing, 3*(1), 19-29. doi:10.3928/19404921-20090731-02

Sitasuwan, T., Bussaratid, S., Ruttanaumpawan, P., & Chotinaiwattarakul, W. (2014). Reliability and validity of the Thai version of the Pittsburgh Sleep Quality Index. *J Med Assoc Thai, 97*(3), S57-S67.

Sloane, P. D., Figueiro, M., Garg, S., Cohen, L. W., Reed, D., Williams, C. S., . . . Zimmerman, S. (2015). Effect of home-based light treatment on persons with dementia and their caregivers. *Light Res Technol, 47*(2), 161-176. doi:10.1177/1477153513517255

Soellner, R., Reder, M., Machmer, A., Holle, R., & Wilz, G. (2015). The Tele.TAnDem intervention: study protocol for a psychotherapeutic intervention for family caregivers of people with dementia. *BMC Nursing, 14*(1), 1-11. doi:10.1186/s12912-015-0059-9

Song, J.-A., Park, M., Park, J., Cheon, H. J., & Lee, M. (2018). Patient and caregiver interplay in behavioral and psychological symptoms of dementia: Family caregiver's experience. *Clin Nurs Res, 27*(1), 12-34.

Spalding-Wilson, K. N., Guzmán-Vélez, E., Angelica, J., Wiggs, K., Savransky, A., & Tranel, D. (2018). A novel two-day intervention reduces stress in caregivers of persons with dementia. *Alzheimer's & Dementia: Translational Research & Clinical Interventions, 4*(1), 450-460. doi:https://doi.org/10.1016/j.trci.2018.08.004

Stanisławski, K. (2019). The coping circumplex model: An integrative model of the structure of coping with stress. *Frontiers in psychology, 10*, 694-694. doi:10.3389/fpsyg.2019.00694

Tangwongchai, S., Supasitthumrong, T., Hemrunroj, S., Tunvirachaisakul, C., Chuchuen, P., Houngngam, N., . . . Maes, M. (2018). In Thai Nationals, the ApoE4 Allele affects multiple domains of neuropsychological, biobehavioral, and social functioning thereby contributing to Alzheimer's disorder, while the ApoE3 Allele protects against neuropsychiatric symptoms and psychosocial deficits. *Mol Neurobiol, 55*(8), 6449-6462. doi:10.1007/s12035-017-0848-0

Thommessen, B., Aarsland, D., Braekhus, A., Oksengaard, A. R., Engedal, K., & Laake, K. (2002). The psychosocial burden on spouses of the elderly with stroke, dementia and Parkinson's disease. *International Journal of Geriatric Psychiatry, 17*(1), 78-84. doi:https://doi.org/10.1002/gps.524

Tible, O. P., Riese, F., Savaskan, E., & von Gunten, A. (2017). Best practice in the management of behavioural and psychological symptoms of dementia. *Therapeutic advances in neurological disorders, 10*(8), 297-309. doi:10.1177/1756285617712979

Train The Brain Forum Committee. (1993). Thai mental state examination (TMSE). *Siriraj Hospital Gazette, 45*(1), 359–374.

Trojano, L., & Gainotti, G. (2016). Drawing disorders in Alzheimer's disease and other forms of dementia. *J Alzheimers Dis, 53*(1), 31-52. doi:10.3233/jad-160009

Ulstein, I., Wyller, T. B., & Engedal, K. (2007). High score on the Relative Stress Scale, a marker of possible psychiatric disorder in family carers of patients with dementia. *International Journal of Geriatric Psychiatry, 22*(3), 195-202. doi:https://doi.org/10.1002/gps.1660

Unson, C., Flynn, D., Glendon, M. A., Haymes, E., & Sancho, D. (2015). Dementia and caregiver stress: An application of the reconceptualized uncertainty in illness theory. *Issues Ment Health Nurs, 36*(6), 439-446. doi:10.3109/01612840.2014.993052

Van Durme, T., Macq, J., Jeanmart, C., & Gobert, M. (2012). Tools for measuring the impact of informal caregiving of the elderly: a literature review. *Int J Nurs Stud, 49*(4), 490-504. doi:10.1016/j.ijnurstu.2011.10.011

Varma, V. R., Chuang, Y.-F., Harris, G. C., Tan, E. J., & Carlson, M. C. (2015). Low-intensity daily walking activity is associated with hippocampal volume in older adults. *Hippocampus, 25*(5), 605-615. doi:https://doi.org/10.1002/hipo.22397

Veragiat, S., Pensuksan, W. C., Suvanchot, K. S., Yooyen, C., Chetkhunthod, P., & Sarsanas, P. (2017). Prevalence of dementia and neuropsychiatric symptoms among elderly patients attending outpatient Departments of Psychiatric Hospitals in Southern Thailand. *Walailak Journal of Science and Technology (WJST), 14*(1), 43-49.

Walmsley, B. D., & McCormack, L. (2014). The dance of communication: retaining family membership despite severe non-speech dementia. *Dementia (London), 13*(5), 626-641. doi:10.1177/1471301213480359

Williams, F., Golijani-Moghaddam, N., Wilde, S., & De Boos, D. (2018). Interventions for reducing levels of burden amongst informal carers of persons with dementia in the community. A systematic review and meta-analysis of randomised controlled trials. *Aging & Mental Health*, *23*(12), 1-14. doi:10.1080/13607863.2018.1515886

Wilz, G., Reder, M., Meichsner, F., & Soellner, R. (2017). The Tele.TAnDem intervention: Telephone-based CBT for family caregivers of people with dementia. *Gerontologist, 58*(2), e118-e129. doi:10.1093/geront/gnx183

Wilz, G., Weise, L., Reiter, C., Reder, M., Machmer, A., & Soellner, R. (2018). Intervention Helps Family Caregivers of People With Dementia Attain Own Therapy Goals. *Am J Alzheimers Dis Other Demen*, *33*(5), 301-308. doi:10.1177/1533317518769475

Win, K. K., Chong, M. S., Ali, N., Chan, M., & Lim, W. S. (2017). Burden among family caregivers of dementia in the oldest-old: An exploratory study. *Frontiers in medicine*, *4*, 205.

World Health Organization [WHO]. (2020). *Ageing", in Health at a Glance: Asia/Pacific 2020: Measuring Progress Towards Universal Health Coverage*. Paris: OECD Publishing.

Yu, D., Cheng, S.-T., Chow, E. O.-W., Kwok, T., & Mccormack, B. (2020). Effects of strength-based intervention on health outcomes of family caregivers of persons with dementia: A study protocol. *Journal of Advanced Nursing, 76*(10), 2737-2746. doi:https://doi.org/10.1111/jan.14470

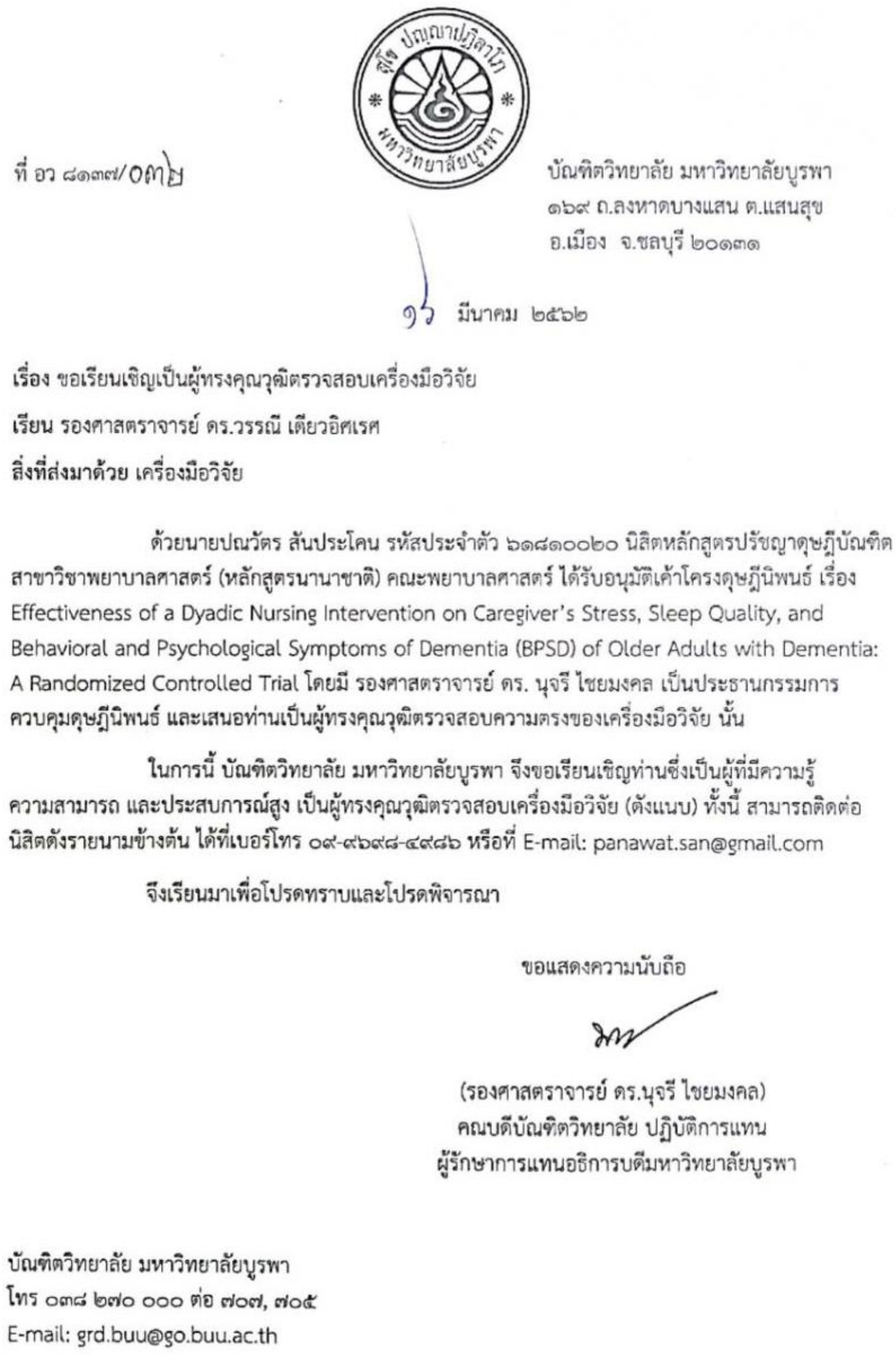
Zhang, L., Zhang, Z., Mei, Y., & Liu, Q. (2020). Dyadic appraisals, dyadic coping, and mental health among couples coping with stroke: A longitudinal study protocol. *Journal of Advanced Nursing, 76*(11), 3164-3170.

APPENDICES

Inviting documents of experts

รายนามผู้ทรงคุณวุฒิ

1. รองศาสตราจารย์ ดร. วรรณี เดียวอิศเรศ	คณะพยาบาลศาสตร์ มหาวิทยาลัยราชภัฏรำไพพรรณี
2. ผู้ช่วยศาสตราจารย์ ดร. อรนุช ชูศรี	สาขาการพยาบาลชุมชน คณะพยาบาลศาสตร์ มหาวิทยาลัยสวนดุสิต
3. พว. ทิพเนตร งามกาละ	งานการพยาบาลอายุรศาสตร์ ฝ่ายการพยาบาล คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี



ที่ อว ๘๑๓๗/๐๓๒

บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
๑๖๙ ถ.ลงหาดบางแสน ต.แสนสุข
อ.เมือง จ.ชลบุรี ๒๐๑๓๑

๑๖ มีนาคม ๒๕๖๒

เรื่อง ขอเรียนเชิญเป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย

เรียน รองศาสตราจารย์ ดร.วรรณี เดียวอิศเรศ

สิ่งที่ส่งมาด้วย เครื่องมือวิจัย

ด้วยนายปณวัตร สันประโคน รหัสประจำตัว ๖๑๘๑๐๐๒๐ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์ เรื่อง Effectiveness of a Dyadic Nursing Intervention on Caregiver's Stress, Sleep Quality, and Behavioral and Psychological Symptoms of Dementia (BPSD) of Older Adults with Dementia: A Randomized Controlled Trial โดยมี รองศาสตราจารย์ ดร. นุจรี ไชยมงคล เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ และเสนอท่านเป็นผู้ทรงคุณวุฒิตรวจสอบความตรงของเครื่องมือวิจัย นั้น

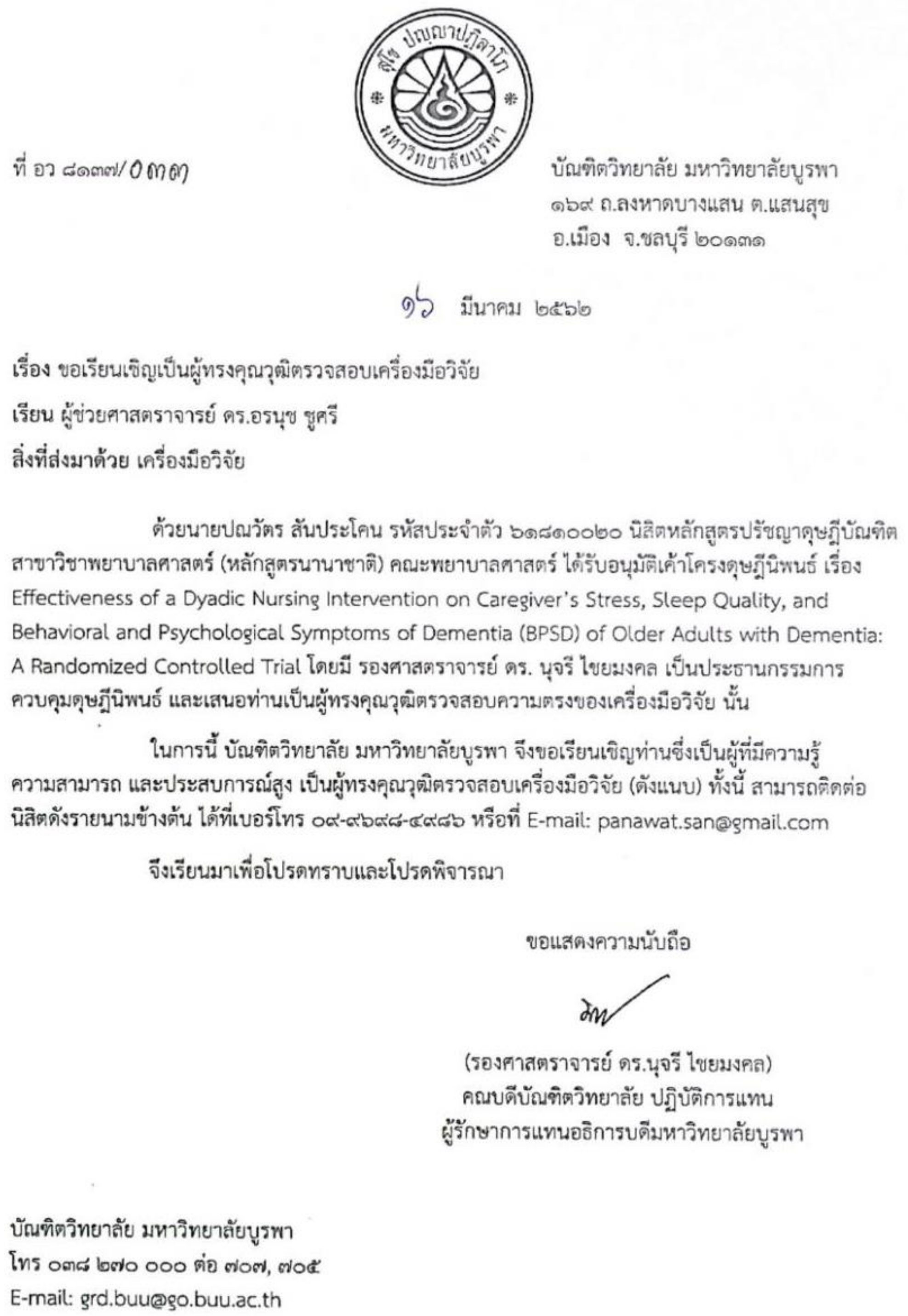
ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา จึงขอเรียนเชิญท่านซึ่งเป็นผู้ที่มีความรู้ ความสามารถ และประสบการณ์สูง เป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย (ดังแนบ) ทั้งนี้ สามารถติดต่อนิสิตดังรายนามข้างต้น ได้ที่เบอร์โทร ๐๙-๙๖๙๘-๔๙๘๖ หรือที่ E-mail: panawat.san@gmail.com

จึงเรียนมาเพื่อโปรดทราบและโปรดพิจารณา

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.นุจรี ไชยมงคล)
คณบดีบัณฑิตวิทยาลัย ปฏิบัติการแทน
ผู้รักษาการแทนอธิการบดีมหาวิทยาลัยบูรพา

บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
โทร ๐๓๘ ๒๗๐ ๐๐๐ ต่อ ๗๐๗, ๗๐๕
E-mail: grd.buu@go.buu.ac.th



ที่ อว ๘๑๓๗/๐๓๓

บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
๑๖๙ ถ.ลงหาดบางแสน ต.แสนสุข
อ.เมือง จ.ชลบุรี ๒๐๑๓๑

๑๖ มีนาคม ๒๕๖๒

เรื่อง ขอเรียนเชิญเป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.อรนุช ชูศรี

สิ่งที่ส่งมาด้วย เครื่องมือวิจัย

ด้วยนายปณวัตร สันประโคน รหัสประจำตัว ๖๑๘๑๐๐๒๐ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์ เรื่อง Effectiveness of a Dyadic Nursing Intervention on Caregiver's Stress, Sleep Quality, and Behavioral and Psychological Symptoms of Dementia (BPSD) of Older Adults with Dementia: A Randomized Controlled Trial โดยมี รองศาสตราจารย์ ดร. นุจรี ไชยมงคล เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ และเสนอท่านเป็นผู้ทรงคุณวุฒิตรวจสอบความตรงของเครื่องมือวิจัย นั้น

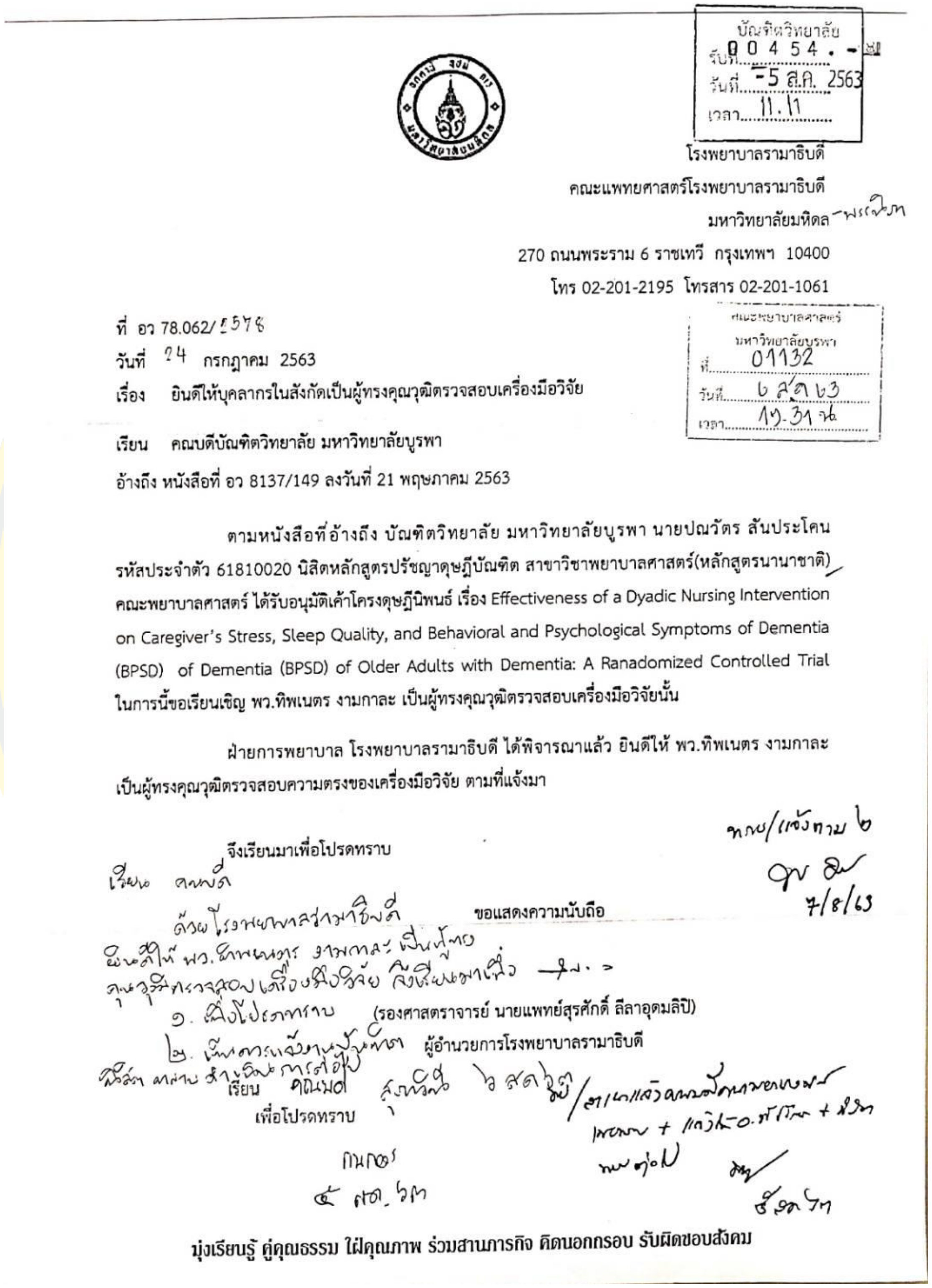
ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา จึงขอเรียนเชิญท่านซึ่งเป็นผู้ที่มีความรู้ ความสามารถ และประสบการณ์สูง เป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย (ดังแนบ) ทั้งนี้ สามารถติดต่อนิสิตดังรายนามข้างต้น ได้ที่เบอร์โทร ๐๙-๙๖๙๘-๔๙๘๖ หรือที่ E-mail: panawat.san@gmail.com

จึงเรียนมาเพื่อโปรดทราบและโปรดพิจารณา

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.นุจรี ไชยมงคล)
คณบดีบัณฑิตวิทยาลัย ปฏิบัติการแทน
ผู้รักษาการแทนอธิการบดีมหาวิทยาลัยบูรพา

บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
โทร ๐๓๘ ๒๗๐ ๐๐๐ ต่อ ๗๐๗, ๗๐๕
E-mail: grd.buu@go.buu.ac.th



บัณฑิตวิทยาลัย
รับที่ 00454.-
วันที่ -5 ส.ค. 2563
เวลา 11.11

โรงพยาบาลรามาธิบดี
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
มหาวิทยาลัยมหิดล
270 ถนนพระราม 6 ราชเทวี กรุงเทพฯ 10400
โทร 02-201-2195 โทรสาร 02-201-1061

คณะพยาบาลศาสตร์
มหาวิทยาลัยบูรพา
ที่ 01132
วันที่ ๖ ส.ค. ๖๓
เวลา 13.31 น.

ที่ อว 78.062/ 2578
วันที่ 24 กรกฎาคม 2563
เรื่อง ยินดีให้บุคลากรในสังกัดเป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย

เรียน คณบดีบัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา

อ้างถึง หนังสือที่ อว 8137/149 ลงวันที่ 21 พฤษภาคม 2563

ตามหนังสือที่อ้างถึง บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา นายปณวัตร สันประโคน รหัสประจำตัว 61810020 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์(หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์ เรื่อง Effectiveness of a Dyadic Nursing Intervention on Caregiver's Stress, Sleep Quality, and Behavioral and Psychological Symptoms of Dementia (BPSD) of Dementia (BPSD) of Older Adults with Dementia: A Ranadomized Controlled Trial ในการนี้ขอเรียนเชิญ พว.ทิพเนตร งามกาละ เป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัยนั้น

ฝ่ายการพยาบาล โรงพยาบาลรามาธิบดี ได้พิจารณาแล้ว ยินดีให้ พว.ทิพเนตร งามกาละ เป็นผู้ทรงคุณวุฒิตรวจสอบความตรงของเครื่องมือวิจัย ตามที่แจ้งมา

ทสบ/แจ้งท่าน ๒
7/8/63

จึงเรียนมาเพื่อโปรดทราบ

เรียน คณบดี
ด้วย โรงพยาบาลรามาธิบดี ยินดีให้ พว.ทิพเนตร งามกาละ เป็นผู้ทรงคุณวุฒิตรวจสอบเครื่องมือวิจัย จึงเรียนมาเพื่อ
๑. เพื่อโปรดทราบ
๒. เห็นควรแจ้งงานบัณฑิตศึกษา [illegible]

ขอแสดงความนับถือ

(รองศาสตราจารย์ นายแพทย์สุรศักดิ์ ลีลาอุดมลิปิ)
ผู้อำนวยการโรงพยาบาลรามาธิบดี

เรียน คณบดี
เพื่อโปรดทราบ
กนกอร
๕ สค. ๖๓

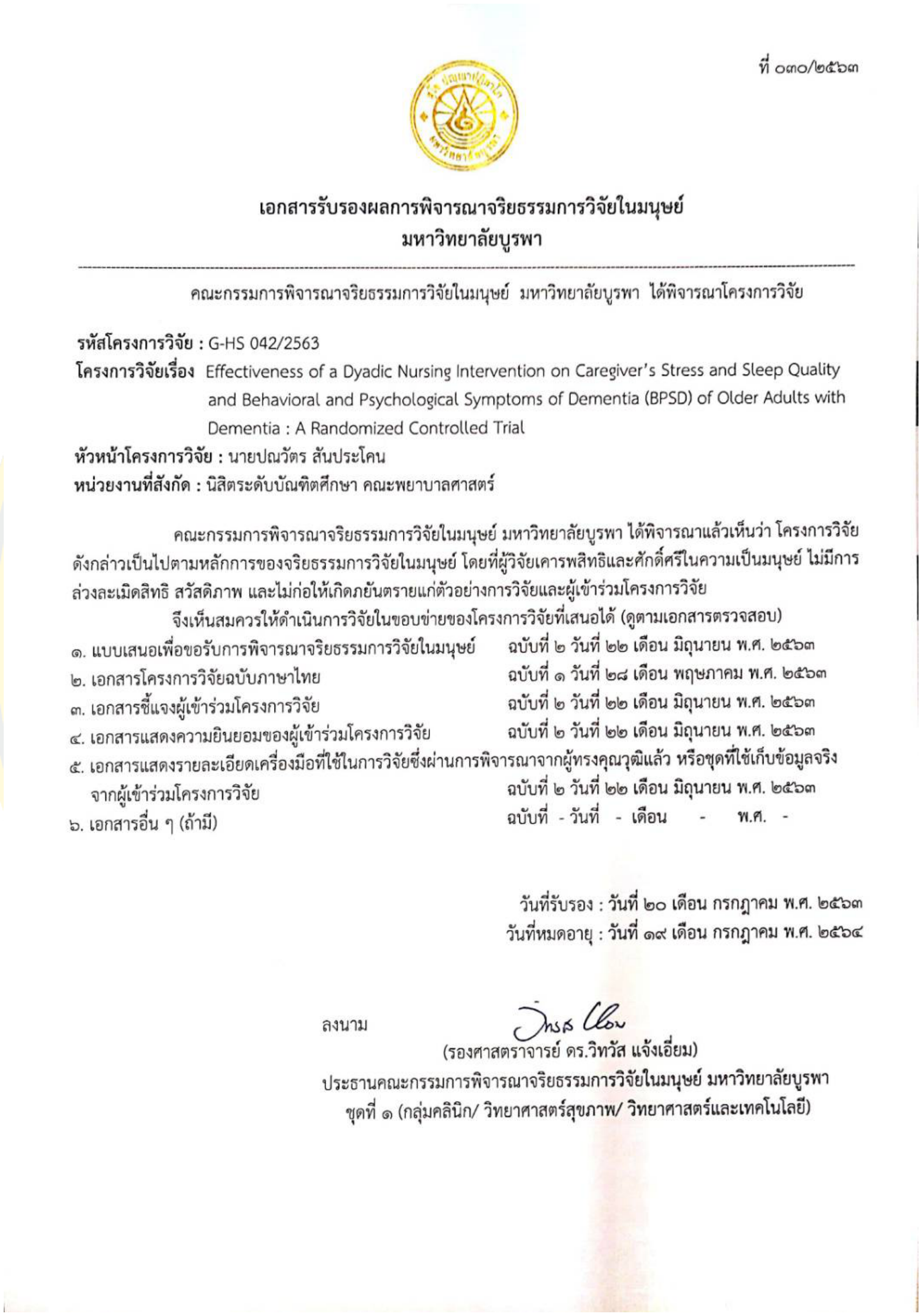
สุภาวดี ๖ สค ๖๓

[illegible]
๖ สค ๖๓

มุ่งเรียนรู้ คู่คุณธรรม ใฝ่คุณภาพ ร่วมสานภารกิจ คิดนอกกรอบ รับผิดชอบสังคม

APPENDIX B

Ethical document



ที่ ๐๓๐/๒๕๖๓

เอกสารรับรองผลการพิจารณาจริยธรรมการวิจัยในมนุษย์
มหาวิทยาลัยบูรพา

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาโครงการวิจัย

รหัสโครงการวิจัย : G-HS 042/2563

โครงการวิจัยเรื่อง Effectiveness of a Dyadic Nursing Intervention on Caregiver's Stress and Sleep Quality and Behavioral and Psychological Symptoms of Dementia (BPSD) of Older Adults with Dementia : A Randomized Controlled Trial

หัวหน้าโครงการวิจัย : นายปณวัตร สันประโคน

หน่วยงานที่สังกัด : นิสิตระดับบัณฑิตศึกษา คณะพยาบาลศาสตร์

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาแล้วเห็นว่า โครงการวิจัยดังกล่าวเป็นไปตามหลักการของจริยธรรมการวิจัยในมนุษย์ โดยที่ผู้วิจัยเคารพสิทธิและศักดิ์ศรีในความเป็นมนุษย์ ไม่มีการล่วงละเมิดสิทธิ สวัสดิภาพ และไม่ก่อให้เกิดภยันตรายแก่ตัวอย่างการวิจัยและผู้เข้าร่วมโครงการวิจัย

จึงเห็นสมควรให้ดำเนินการวิจัยในขอบข่ายของโครงการวิจัยที่เสนอได้ (ดูตามเอกสารตรวจสอบ)

๑. แบบเสนอเพื่อขอรับการพิจารณาจริยธรรมการวิจัยในมนุษย์	ฉบับที่ ๒ วันที่ ๒๒ เดือน มิถุนายน พ.ศ. ๒๕๖๓
๒. เอกสารโครงการวิจัยฉบับภาษาไทย	ฉบับที่ ๑ วันที่ ๒๘ เดือน พฤษภาคม พ.ศ. ๒๕๖๓
๓. เอกสารชี้แจงผู้เข้าร่วมโครงการวิจัย	ฉบับที่ ๒ วันที่ ๒๒ เดือน มิถุนายน พ.ศ. ๒๕๖๓
๔. เอกสารแสดงความยินยอมของผู้เข้าร่วมโครงการวิจัย	ฉบับที่ ๒ วันที่ ๒๒ เดือน มิถุนายน พ.ศ. ๒๕๖๓
๕. เอกสารแสดงรายละเอียดเครื่องมือที่ใช้ในการวิจัยซึ่งผ่านการพิจารณาจากผู้ทรงคุณวุฒิแล้ว หรือชุดที่ใช้เก็บข้อมูลจริงจากผู้เข้าร่วมโครงการวิจัย	ฉบับที่ ๒ วันที่ ๒๒ เดือน มิถุนายน พ.ศ. ๒๕๖๓
๖. เอกสารอื่น ๆ (ถ้ามี)	ฉบับที่ - วันที่ - เดือน - พ.ศ. -

วันที่รับรอง : **วันที่ ๒๐ เดือน กรกฎาคม พ.ศ. ๒๕๖๓**
วันที่หมดอายุ : **วันที่ ๑๙ เดือน กรกฎาคม พ.ศ. ๒๕๖๔**

ลงนาม
(รองศาสตราจารย์ ดร.วิทวัส แจ้งเอี่ยม)
ประธานคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา
ชุดที่ ๑ (กลุ่มคลินิก/ วิทยาศาสตร์สุขภาพ/ วิทยาศาสตร์และเทคโนโลยี)

เอกสารชี้แจงผู้เข้าร่วมโครงการวิจัย

(Participant Information Sheet)

รหัสโครงการวิจัย : G-HS 042/2563
(สำนักงานคณะกรรมการพิจารณาจริยธรรมในมนุษย์ มหาวิทยาลัยบูรพา เป็นผู้ออกรหัสโครงการวิจัย)
โครงการวิจัย : เป็นการศึกษาเกี่ยวกับผลของโปรแกรมการพยาบาลญาติผู้ดูแลที่ให้การดูแลผู้สูงอายุที่เจ็บป่วยจากภาวะสมองเสื่อมที่มีพฤติกรรมและอาการทางจิต
เรียน ....

ข้าพเจ้า นายปณวัตร สันประโคน นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (นานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ขอเรียนเชิญท่านเข้าร่วมโครงการวิจัย เรื่อง ผลของโปรแกรมการพยาบาลญาติผู้ดูแลที่ให้การดูแลผู้สูงอายุที่เจ็บป่วยจากภาวะสมองเสื่อมที่มีพฤติกรรมและอาการทางจิต ก่อนที่ท่านจะตกลงเข้าร่วมการวิจัย ขอเรียนให้ท่านทราบรายละเอียดของโครงการวิจัย ดังนี้

วิจัยนี้มีวัตถุประสงค์ เพื่อศึกษาผลของโปรแกรมการพยาบาลผู้ดูแลที่ให้การดูแลญาติที่เจ็บป่วยด้วยภาวะสมองเสื่อมที่บ้าน เพื่อลดระดับความเครียด เพิ่มคุณภาพการนอนหลับของท่านที่เป็นผู้ดูแลและลดพฤติกรรมและอาการทางจิตของญาติผู้สูงอายุที่ท่านให้การดูแลอยู่

เนื่องด้วยท่านเป็นหนึ่งในผู้ดูแลที่ได้รับผลกระทบทางสุขภาพจากการให้การดูแลญาติในครอบครัวที่มีภาวะสมองเสื่อม ดังนั้น จึงได้รับเชิญให้เข้าร่วมการวิจัยนี้ ซึ่งมีผู้เข้าร่วมโครงการทั้งหมด 60 คน จะถูกแบ่งเป็น 2 กลุ่ม ได้แก่ กลุ่มที่หนึ่ง จะได้รับกิจกรรมการให้การพยาบาลผู้ดูแล จำนวน 4 ครั้ง ประกอบด้วย 6 กิจกรรม จะดำเนินงานสัปดาห์ละ 1 ครั้งจนครบทั้ง 4 สัปดาห์ ดังนี้ ในสัปดาห์แรก ท่านจะได้เข้าร่วม 2 กิจกรรม ใช้เวลาทั้งสิ้น 90 นาที เพื่อให้ท่านเข้าใจและได้รับมุมมองเชิงบวกจากประสบการณ์ที่หลากหลายในการดูแลผู้ป่วยสมองเสื่อม เสริมความมั่นใจและฝึกทักษะให้ท่านใช้แบบประเมินอาการในการวางแผนการดูแลได้อย่างเหมาะสม สำหรับสัปดาห์ถัดไป ท่านจะได้รับการฝึกการประเมินพฤติกรรมที่แสดงถึงความต้องการของผู้ป่วย เพื่อให้ท่านสามารถตอบสนองได้โดยไม่รู้สึกเครียด ตลอดจนจะได้เข้าร่วมเป็นเครือข่ายในกลุ่มเพื่อนผู้ดูแล เพื่อเป็นแหล่งสนับสนุนความช่วยเหลือด้านข้อมูลเกี่ยวกับอาการสมองเสื่อม นอกจากนั้นในสัปดาห์ที่สาม ท่านจะได้รับการฝึกการมีปฏิสัมพันธ์กับพฤติกรรมที่ผู้ป่วยแสดงออก ซึ่งใช้เวลา 1 ชั่วโมง 30 นาที และสัปดาห์สุดท้าย ท่านและญาติที่ท่านให้การดูแลอยู่จะได้เข้าร่วมกลุ่มสนทนาเพื่อพูดคุยและรับฟังเกี่ยวกับปัญหาซึ่งกันและกัน ตลอดจนวางแผนกิจกรรมการดูแลที่เหมาะสมตามบริบทครอบครัว ซึ่งกิจกรรมนี้ไม่มีความเสี่ยงใด ๆ ต่อผู้ป่วยที่ท่านให้การดูแลอยู่ เป็นการดูแลที่บ้านเพื่อสร้างเสริมสุขภาพและสัมพันธภาพภายในครอบครัวเท่านั้น

อย่างไรก็ตาม หากท่านถูกเชิญเข้าร่วมในกลุ่มที่สอง ก็จะได้รับสุขศึกษาและการสนับสนุนช่วยเหลือจากพยาบาลจากคลินิกผู้สูงอายุที่ท่านรับบริการตามปกติ ทั้งนี้เพื่อประโยชน์ต่อการศึกษาและผู้อื่น ไม่ว่าท่านจะอยู่ในกลุ่มใดก็ตาม ขอความร่วมมือท่านตอบแบบสอบถามเกี่ยวกับความเครียดและคุณภาพการนอนหลับของท่าน ตลอดจนข้อมูลเกี่ยวกับพฤติกรรมและอาการทางจิตของญาติผู้สูงอายุที่ท่านให้การดูแลอยู่ จำนวนสามครั้ง ในระหว่างดำเนินการวิจัย

ทั้งนี้เมื่อท่านเข้าร่วมโครงการวิจัยแล้ว อาจทำให้ท่านรู้สึกเสียเวลา เบื่อหน่าย รู้สึกอึดอัดใจหรือไม่สบายใจในการตอบแบบสอบถาม ท่านสามารถที่จะตอบหรือไม่ตอบคำถามเหล่านั้นและสามารถยุติการตอบแบบสอบถามได้ทุกขณะ หากท่านประสงค์ที่จะไม่ปฏิบัติตามโปรแกรม ก็สามารถถอนตัวหรือยุติการเข้าร่วมวิจัยได้ทันทีทุกเวลา โดยไม่ต้องชี้แจงเหตุผลใด ๆ และจะไม่มีผลกระทบต่อการได้รับบริการจากเจ้าหน้าที่ในโรงพยาบาลที่ท่านรับการดูแลรักษา

การเข้าร่วมวิจัยครั้งนี้เป็นความสมัครใจของท่าน ไม่มีการบังคับใด ๆ และไม่มีผลต่อการรับบริการจากโรงพยาบาล เพื่อการปกปิดความลับและความเสี่ยงอันไม่พึงประสงค์ ผู้วิจัยของดใช้ชื่อนามสกุลของท่านลงในข้อมูลใด ๆ ในแบบสอบถามแต่จะใช้การลงรหัสแทน

หากท่านตัดสินใจเข้าร่วมวิจัยแล้ว จะมีขั้นตอนรายละเอียดของการวิจัย ประกอบด้วย การกำหนดนัดหมายวัน เวลา สถานที่สำหรับการให้ข้อมูล และจะดำเนินกิจกรรมตามโปรแกรมที่ได้แจ้งไว้ข้างต้น

หากมีข้อข้องใจที่จะสอบถามเกี่ยวกับการวิจัย หรือเมื่อบาดเจ็บ/ เจ็บป่วยจากการวิจัย ท่านสามารถติดต่อ นายปณวัตร สันประโคน (ผู้วิจัย) ได้ที่โทรศัพท์หมายเลข 099-6984986 ได้ตลอด 24 ชั่วโมง

การเข้าร่วมวิจัยครั้งนี้ ท่านจะไม่ได้รับค่าตอบแทน แต่ท่านจะได้รับความรู้และทักษะในการจัดการพฤติกรรมและอาการทางจิตที่เกี่ยวข้องกับภาวะสมองเสื่อม เพื่อให้ท่านสามารถดูแลญาติในครอบครัวท่านได้อย่างมีประสิทธิภาพโดยไม่ต้องเสียค่าใช้จ่ายใด ๆ ทั้งสิ้น

หากมีข้อมูลเพิ่มเติมทั้งด้านประโยชน์และความเสี่ยงที่เกี่ยวข้องกับการวิจัยนี้ ผู้วิจัยจะแจ้งให้ทราบโดยรวดเร็ว ไม่ปิดบังซ่อนเร้น

ทั้งนี้ข้อมูลส่วนตัวของท่านจะถูกเก็บรักษาไว้ ไม่เปิดเผยต่อสาธารณะเป็นรายบุคคลแต่จะรายงานผลการวิจัยเป็นข้อมูลส่วนรวมเท่านั้น ข้อมูลของผู้เข้าร่วมวิจัยเป็นรายบุคคลอาจมีคณะบุคคลบางกลุ่มเข้ามาตรวจสอบ เช่น ผู้ให้ทุนวิจัย สถาบันหรือองค์กรของรัฐที่มีหน้าที่ตรวจสอบ คณะกรรมการจริยธรรมฯ เป็นต้น

หากผู้วิจัยไม่ปฏิบัติตามที่ได้ชี้แจงไว้ในเอกสารชี้แจงผู้เข้าร่วมโครงการวิจัย สามารถแจ้งมายังคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา กองบริหารการวิจัยและนวัตกรรม หมายเลขโทรศัพท์ 038-102561-62

เมื่อท่านพิจารณาแล้วเห็นสมควรเข้าร่วมในการวิจัยนี้ ขอความกรุณาลงนามในเอกสารแสดงความยินยอมร่วมโครงการที่แนบมาด้วย และขอขอบพระคุณในความร่วมมือของท่านมา ณ ที่นี้

เอกสารแสดงความยินยอม
ของผู้เข้าร่วมโครงการวิจัย (Consent Form)

รหัสโครงการวิจัย : G-HS 042/2563 ....
(สำนักงานคณะกรรมการพิจารณาจริยธรรมในมนุษย์ มหาวิทยาลัยบูรพา เป็นผู้ออกรหัสโครงการวิจัย)
โครงการวิจัย เป็นการศึกษาเกี่ยวกับผลของโปรแกรมการพยาบาลญาติผู้ดูแลที่ให้การดูแลผู้สูงอายุที่เจ็บป่วยจากภาวะสมองเสื่อมที่มีพฤติกรรมและอาการทางจิต
ให้คำยินยอม วันที่ .... เดือน .... พ.ศ. ....

ก่อนที่จะลงนามในเอกสารแสดงความยินยอมของผู้เข้าร่วมโครงการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายถึงวัตถุประสงค์ของโครงการวิจัย วิธีการวิจัย และรายละเอียดต่างๆ ตามที่ระบุในเอกสารข้อมูลสำหรับผู้เข้าร่วมโครงการวิจัย ซึ่งผู้วิจัยได้ให้ไว้แก่ข้าพเจ้า และข้าพเจ้าเข้าใจคำอธิบายดังกล่าวครบถ้วนเป็นอย่างดีแล้ว และผู้วิจัยรับรองว่าจะตอบคำถามต่างๆ ที่ข้าพเจ้าสงสัยเกี่ยวกับการวิจัยนี้ด้วยความเต็มใจ และไม่ปิดบังซ่อนเร้นจนข้าพเจ้าพอใจ

ข้าพเจ้าเข้าร่วมโครงการวิจัยนี้ด้วยความสมัครใจ และมีสิทธิที่จะบอกเลิกการเข้าร่วมโครงการวิจัยนี้
เมื่อใดก็ได้ การบอกเลิกการเข้าร่วมการวิจัยนั้นไม่มีผลกระทบจากการรับบริการจากเจ้าหน้าที่ในโรงพยาบาลส่งเสริมสุขภาพประจำตำบล ที่ข้าพเจ้าจะพึงได้รับต่อไป

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเกี่ยวกับตัวข้าพเจ้าเป็นความลับ จะเปิดเผยได้เฉพาะในส่วนที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลของข้าพเจ้าต่อหน่วยงานต่างๆ ที่เกี่ยวข้องต้องได้รับอนุญาตจากข้าพเจ้า

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วมีความเข้าใจดีทุกประการ และได้ลงนามในเอกสารแสดงความยินยอมนี้ด้วยความเต็มใจ
กรณีที่ข้าพเจ้าไม่สามารถอ่านหรือเขียนหนังสือได้ ผู้วิจัยได้อ่านข้อความในเอกสารแสดงความยินยอมให้แก่ข้าพเจ้าฟังจนเข้าใจดีแล้ว ข้าพเจ้าจึงลงนามหรือประทับลายนิ้วหัวแม่มือของข้าพเจ้าในเอกสารแสดงความยินยอมนี้ด้วยความเต็มใจ

ลงนาม ....ผู้ยินยอม
(..)
ลงนาม ....พยาน
(..)

สำนักงานสาธารณสุขอำเภอสองพี่น้อง
เลขที่รับ 5367
วันที่ 6 ส.ค. 63

ที่ อว ๘๑๓๗/๕๐๑
บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
๑๖๙ ถ.ลงหาดบางแสน ต.แสนสุข
อ.เมือง จ.ชลบุรี ๒๐๑๓๑

๔ สิงหาคม ๒๕๖๓

เรื่อง ขออนุญาตเก็บรวบรวมข้อมูลเพื่อดำเนินการวิจัย

เรียน สาธารณสุขอำเภอสองพี่น้อง

สิ่งที่ส่งมาด้วย ๑. เอกสารรับรองจริยธรรมของมหาวิทยาลัยบูรพา
๒. เครื่องมือที่ใช้ในการวิจัย

ด้วยนายปณวัตร สันประโคน รหัสนิสิต ๖๑๘๑๐๐๒๐ หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์ เรื่อง ผลของโปรแกรมการพยาบาลญาติผู้ดูแลที่ให้การดูแลผู้สูงอายุที่เจ็บป่วยจากภาวะสมองเสื่อมที่มีพฤติกรรมและอาการทางจิต ต่อระดับความเครียด คุณภาพการนอนหลับของผู้ดูแล และพฤติกรรมและอาการทางจิตของผู้ป่วย (Effectiveness of a Dyadic Nursing Intervention on Caregiver's Stress and Sleep Quality and Behavioral and Psychological Symptoms of Dementia (BPSD) of Older Adults with Dementia: A randomized controlled trial) โดยมี รศ.ดร.นุจรี ไชยมงคล เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ และเสนอหน่วยงานท่านในการเก็บรวบรวมข้อมูลเพื่อดำเนินการวิจัยนั้น

ในการนี้ บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา จึงขออนุญาตให้นิสิตดังรายนามข้างต้น ดำเนินการเก็บรวบรวมข้อมูลจากผู้ดูแลหลักในครอบครัวทั้งเพศหญิงและชาย ที่มีอายุตั้งแต่ ๑๘ ปีขึ้นไปและให้การดูแลผู้สูงอายุที่มีอายุตั้งแต่ ๖๐ ปีขึ้นไป ที่เจ็บป่วยด้วยโรคสมองเสื่อม ในพื้นที่รับผิดชอบของโรงพยาบาลส่งเสริมสุขภาพตำบล ๒ แห่ง ได้แก่ (๑) โรงพยาบาลส่งเสริมสุขภาพเฉลิมพระเกียรติ ๖๐ พรรษา นวมินทราชินี ตำบลบ่อสุพรรณ และ (๒) โรงพยาบาลส่งเสริมสุขภาพตำบลบ้านลองตอง จำนวน ๖๐ คน ระหว่างวันที่ ๑ กันยายน พ.ศ.๒๕๖๓ ถึง วันที่ ๑๔ กรกฎาคม พ.ศ. ๒๕๖๔ ทั้งนี้ สามารถติดต่อนิสิตดังรายนามข้างต้น ได้ที่เบอร์โทร ๐๙๙-๖๙๘๔๙๘๖

จึงเรียนมาเพื่อโปรดทราบและโปรดพิจารณา

เรียน สสอ.สองพี่น้อง
- มหาวิทยาลัยบูรพา ขออนุญาต ให้
นายปณวัตร สันประโคน นิสิตปริญญาเอก
ภาคพยาบาลศาสตร์ [illegible] เก็บข้อมูล
ในเขตพื้นที่ บ่อสุพรรณ และ บ้านลองตอง
[illegible] จำนวน 60 คน
กลุ่มผู้ดูแล ผู้สูงอายุ [illegible]
1 ก.ย. 63 - 14 ก.ค. 64
- เห็นควรอนุญาต

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.นุจรี ไชยมงคล)
คณบดีบัณฑิตวิทยาลัย ปฏิบัติการแทน
อธิการบดีมหาวิทยาลัยบูรพา

- [illegible]

สำเนาเรียน ๑. ผู้อำนวยการโรงพยาบาลส่งเสริมสุขภาพตำบลบ้านลองตอง
๒. ผู้อำนวยการโรงพยาบาลส่งเสริมสุขภาพเฉลิมพระเกียรติ ๖๐ พรรษา นวมินทราชินี ตำบลบ่อสุพรรณ

บัณฑิตวิทยาลัย มหาวิทยาลัยบูรพา
โทร ๐๓๘ ๒๗๐ ๐๐๐ ต่อ ๗๐๗, ๗๐๕
E-mail: grd.buu@go.buu.ac.th

๖ ส.ค. ๖๓

APPENDIX C

Instruments

รายละเอียด

ของ

โปรแกรมการลดความเครียดแบบบูรณาการสำหรับผู้ดูแลที่ให้การดูแลผู้สูงอายุที่มีภาวะสมองเสื่อมขั้นรุนแรง

ปณวัตร สันประโคน
ที่อยู่ติดต่อได้ ๑๖๙ ถนนลงหาดบางแสน ต.แสนสุข อ.เมือง จ.ชลบุรี ๒๐๑๓๐
หมายเลขโทรศัพท์ ๐๙๙-๖๙๘๔๙๘๖

โครงการวิจัย เรื่อง **Effectiveness of an integrative stress reduction program for family caregivers of people with advanced dementia: a randomized control trial**

หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (นานาชาติ)
คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

แนวคิดและจุดมุ่งหมายของคู่มือ

แนวคิด

โปรแกรมการลดความเครียดแบบบูรณาการสำหรับผู้ดูแลที่ให้การดูแลผู้สูงอายุที่มีภาวะสมองเสื่อมขั้นรุนแรง ถูกพัฒนาขึ้นจากการทบทวนวรรณกรรมอย่างเป็นระบบ โดยใช้แนวคิดกระบวนการความเครียดในการดูแลผู้ป่วย (Stress Process Model) ของเพียร์ลินและคณะ ในการออกแบบกิจกรรมเพื่อลดความเครียดจากการดูแลบุคคลที่มีภาวะสมองเสื่อมที่มีปัญหาทางพฤติกรรมและอารมณ์ ที่ส่งผลต่อกระบวนการความเครียดของผู้ดูแล ก่อให้เกิดความรู้สึกเหน็ดเหนื่อยเกินกำลัง (overloaded) รู้สึกถูกตัดขาดจากสังคมด้วยภาระหน้าที่ (relational deprivation) รู้สึกคับข้องใจต่อครอบครัว งาน ตลอดจนรู้สึกสูญเสียอำนาจในการควบคุมสถานการณ์ต่างๆ ของตนเอง (Loss of mastery) จนส่งผลกระทบต่อสภาวะอารมณ์ที่เป็นปัญหา เช่นความเครียดที่รุนแรง ภาวะซึมเศร้า รวมทั้งปัญหาด้านการนอนหลับ อย่างไรก็ตาม การเผชิญปัญหาส่วนบุคคล (Coping) และแรงสนับสนุนทางสังคม (Social Support) จะช่วยปรับสมดุลระหว่างสิ่งกระตุ้นเหล่านี้กับผลกระทบด้านความเครียดจากการดูแลให้ดีขึ้น

แผนการดำเนินงานและกิจกรรมนี้จึงถูกพัฒนาขึ้น จากการทบทวนวรรณกรรมอย่างเป็นระบบ (systematic reviews) ในองค์ประกอบสำคัญ ได้แก่ (๑) วิธีการและแนวทางซึ่งถูกจัดทำเป็นคู่มือสำหรับพยาบาลและเจ้าหน้าที่สาธารณสุขชุมชน และ (๒) แนวทางการดูแลตนเองและผู้ป่วยสมองเสื่อมซึ่งจัดทำเป็นคู่มือสำหรับผู้ดูแล มุ่งแก้ไขมโนทัศน์หลักของความเครียดจากการดูแลที่ผสมผสานวิธีการสร้างความเข้มแข็งภายในด้านอารมณ์ (emotional-oriented approach) เพื่อยอมรับการเจ็บป่วย นำกลยุทธ์ด้านการคิด (cognitive strategy) มาใช้เพื่อสร้างคุณค่าและโอกาสในการดูแลผู้สูงอายุ ควบคู่กับแก้ไขปัญหาจากการดูแล (problem-based methods) ด้วยการพัฒนาความรู้และทักษะในการมีปฏิสัมพันธ์กับผู้ป่วยให้สามารถรับมือกับสถานการณ์ปัญหาได้อย่างมีประสิทธิภาพ นอกจากนั้นยังสร้างแหล่งสนับสนุน (social support resources) ไลน์ชุมชนสมองสุขเพื่อให้ผู้ดูแลมีเครือข่ายการดูแลและเพิ่มช่องทางในการเข้าถึงแหล่งประโยชน์และบริการให้สะดวกมากขึ้น

จุดมุ่งหมาย

เพื่อสร้างความเข้าใจเกี่ยวกับโรคสมองเสื่อมและยอมรับผู้ป่วย รู้เท่าทันอารมณ์ของตนเองและใช้ทักษะการคิดเชิงบวกและจัดการอารมณ์ได้อย่างเหมาะสม เพิ่มความรู้สึกเชื่อมั่นในตนเองตลอดจนพัฒนาทักษะการมีปฏิสัมพันธ์เมื่อผู้ป่วยมีปัญหาพฤติกรรมและอารมณ์ นอกจากนั้นสนับสนุนการด้นอารมณ์จากเครือข่ายผู้ดูแล และใช้ไลน์ชุมชนสมองสุขเพื่อให้เป็นแหล่งประโยชน์สำหรับการขอความช่วยเหลือเบื้องต้น ทั้งนี้มุ่งหวังเพื่อลดความเครียดของผู้ดูแล เพิ่มคุณภาพการนอนหลับของผู้ดูแลให้ดีขึ้น และลดความรุนแรงของพฤติกรรมและอารมณ์ในผู้สูงอายุ

รายละเอียด

โปรแกรมการลดความเครียดเชิงบูรณาการสำหรับผู้ดูแลที่ให้การดูแลผู้สูงอายุที่มีภาวะสมองเสื่อมที่มีพฤติกรรมและอาการทางจิต

โปรแกรมการช่วยเหลือนี้มุ่งเน้นในการสร้างความเข้าใจเพื่อให้เกิดการยอมรับผู้ป่วยและการเจ็บป่วย สร้างความไวในการรับรู้ความรู้สึกและอารมณ์ของตนเองให้แก่ผู้ดูแลเมื่อต้องเผชิญกับสภาวะหรือสถานการณ์ที่ไม่พึงประสงค์ ทั้งยังช่วยสร้างทักษะการคิดในรูปแบบตามความเป็นจริงร่วมกับการใช้ความคิดเชิงบวกเพื่อมีมุมมองที่แตกต่างจากเดิม ตลอดจนพัฒนาทักษะในการจัดการอารมณ์และพฤติกรรมของผู้ป่วย และสร้างแหล่งสนับสนุนอารมณ์และความรู้สึก และแหล่งประโยชน์ที่ผู้ดูแลสามารถขอความช่วยเหลือได้ ซึ่งประกอบด้วย ๖ กิจกรรม ได้แก่ (๑) ความเข้าใจภาวะสมองเสื่อมและยอมรับในการเจ็บป่วย (๒) รู้สึกตัว รู้จักอารมณ์ตนเองและสร้างมุมมองเชิงบวกในการดูแลให้เป็นผู้ป่วยสมองสุข (๓) สร้างความเชื่อมั่นตนเองในจัดการดูแลผู้ป่วยอย่างมืออาชีพ (๔) ชุมชนสมองสุขและเครือข่ายผู้ดูแลผู้ป่วยสมองเสื่อม (๕) การฝึกปฏิสัมพันธ์และการสื่อสารกับอารมณ์และพฤติกรรมของผู้ป่วยสมองเสื่อม และ (๖) ครอบครัวสมองสุข พื้นที่ความสุขของผู้ดูแล โดยกิจกรรมทั้ง ๖ ของโปรแกรมนี้ เป็นกิจกรรมกลุ่มใหญ่และกลุ่มย่อยโดยเน้นให้ผู้ดูแลมีประสบการณ์และมีทักษะ ๖ ด้านดังต่อไปนี้

ทักษะที่ 1 ความไวต่อการรับรู้และเข้าใจอารมณ์และความรู้สึกตนเอง

……………………..

ทักษะที่ 2 การคิดตามความเป็นจริงหรือคิดเพิ่มและการสร้างทัศนคติเชิงบวก

……………………..

ทักษะที่ 3 การประเมินสถานการณ์

……………………..

ทักษะที่ 4 การจัดการกับอารมณ์และพฤติกรรมของผู้ป่วย

……………………..

ทักษะที่ 5 การรับรู้ต่ออารมณ์ของตนเองและประเมินสถานการณ์ซ้ำ

……………………..

ทักษะที่ 6 การขอความช่วยเหลือ

……………………..

การจัดกิจกรรมเพื่อเสริมสร้างการยอมรับการเจ็บป่วย สร้างความรู้ความเข้าใจเกี่ยวกับโรค การคิดเชิงบวกเกี่ยวกับพฤติกรรมของผู้ป่วย สร้างความมั่นใจในการดูแลและสร้างทักษะในการจัดการดังที่ได้กล่าวมานั้น ทั้ง ๖ แผนกิจกรรม จัดได้ห้องประชุมใหญ่และห้องกลุ่มย่อย จัดทุกสัปดาห์ๆ ละ ๑ ครั้ง (ครั้งละ ๙๐ – ๑๒๐ นาที) ติดต่อกัน ๔ สัปดาห์ ……………………..

แผนการจัดกิจกรรมครั้งที่ ๑

เรื่อง ความเข้าใจภาวะสมองเสื่อมและยอมรับในการเจ็บป่วย

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา: ๖๐ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรม ที่สามารถจุคนได้มากกว่า ๓๐ คน

ลักษณะการจัดกิจกรรม: ....

วัตถุประสงค์ทั่วไป เพื่อให้ผู้ดูแลที่เข้าร่วมโครงการ มีเข้าใจความเข้าใจโรค........................

วัตถุประสงค์เฉพาะ ผู้ดูแลที่เข้าร่วมโครงการสามารถ;

๑. บอกและอธิบายธรรมชาติ........................
๒. อธิบายลักษณะพฤติกรรมและอารมณ์........................
๓. สะท้อนความรู้สึกเชิงการยอมรับ........................

วิธีการประเมินผล

๑. การตอบคำถามตรงประเด็น
๒. สังเกตการมีส่วนร่วมในกระบวนการกลุ่ม

ตารางที่ ๒ แผนการจัดกิจกรรมครั้งที่ ๑ ความเข้าใจภาวะสมองเสื่อมและยอมรับในการเจ็บป่วย

วัตถุประสงค์	**กิจกรรมและเนื้อหา**	**วิธีการ**	**สื่อ**	**ระยะเวลา (นาที)**
๑. บอกและอธิบายธรรมชาติของโรคสมองเสื่อมได้อย่างถูกต้อง	- ปฐมนิเทศผู้เข้าร่วมกิจกรรมและสร้างสัมพันธภาพ แนะนำชื่อสกุลผู้วิจัยสร้างความคุ้นเคย	- ตั้งคำถาม		๒๐
๒. อธิบายลักษณะพฤติกรรมและอารมณ์และ........................	- เปิดเรื่องสั้นเกี่ยวกับเรื่องราวของครอบครัวหนึ่งที่ดูแลผู้ป่วย “อัลไซเมอร์”	- สะท้อนคิดและ	Clip VDO Alzheimer	๒๐
๓. สะท้อนความรู้สึก........................	เปิดเรื่องสั้น “กตัญญู...คุณค่าของคนวัดกันที่อะไร”	- สะท้อน	คลิปวิดีโอ	๒๐

แผนการจัดกิจกรรมครั้งที่ ๒

เรื่อง รู้สึกตัว รู้จักอารมณ์ตนเองและสร้างมุมมองเชิงบวกในการดูแลให้เป็นผู้ป่วยสมองสุข

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา ๖๐ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรม ที่สามารถจุคนได้มากกว่า ๓๐ คน

ลักษณะการจัดกิจกรรม: กลุ่มใหญ่

วัตถุประสงค์ทั่วไป เพื่อให้ผู้ดูแลที่เข้าร่วมโครงการ.........................

วัตถุประสงค์เชิงพฤติกรรม ผู้ดูแลที่เข้าร่วมโครงการสามารถ;

๑. วิเคราะห์อารมณ์.........................
๒. ใช้ทักษะการคิดแหรือแสดง.........................
๓. ใช้ทักษะในจัดการกับ.........................

วิธีการประเมินผล

๑. สังเกตการฝึกและสาธิตย้อนกลับ
๒. สังเกตการมีส่วนร่วมในกระบวนการกลุ่ม

ตารางที่ ๓ แผนการจัดกิจกรรมครั้งที่ ๒ รู้สึกตัว รู้จักอารมณ์ตนเองและสร้างมุมมองเชิงบวกในการดูแลให้เป็นผู้ป่วยสมองสุข

วัตถุประสงค์	กิจกรรมและเนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
๑. วิเคราะห์อารมณ์ของตนเอง......................... ๒. ใช้ทักษะการคิด.........................	ประสบการณ์จากผู้ดูแลต้นแบบ......................... - อารมณ์หรือพฤติกรรมที่ผู้ดูแลรู้สึกลำบากใจ......................... - ผู้ดูแลมี......................... - ผลลัพธ์ที่เกิดจาก.........................	- แลกเปลี่ยนประสบการณ์จากผู้ดูแลต้นแบบ -สะท้อนคิด	ผู้ดูแลต้นแบบ	๓๐
๓. ใช้ทักษะในจัด.........................	ฝึกการควบคุมอารมณ์และ.........................	- ตั้งคำถาม - ฝึกสติ	ผู้ดูแลต้นแบบ	๓๐

แผนการจัดกิจกรรมครั้งที่ ๓

เรื่อง สร้างความเชื่อมั่นตนเองในจัดการดูแลผู้ป่วยอย่างมืออาชีพ

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา ๖๐ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรมส่วนตัว

ลักษณะการจัดกิจกรรม: แบ่งกลุ่มผู้ดูแลกลุ่มละ ๑๐ คน ....

วัตถุประสงค์ทั่วไป เพื่อให้ผู้เข้าร่วมโครงการ;

เกิดการรับรู้สมรรถนะแห่งตนและ........................

วัตถุประสงค์เชิงพฤติกรรม ผู้ดูแลที่เข้าร่วมโครงการสามารถ;

๑. บอกจุดแข็ง จุดอ่อน โอกาส ....
๒. ใช้แบบประเมิน ABCs เพื่อป้องกัน........................

วิธีการประเมินผล

๑. สังเกตการฝึกและสาธิตย้อนกลับ
๒. สังเกตการมีส่วนร่วมในกระบวนการกลุ่ม
๓. ถามตอบ

ตารางที่ ๔ แผนการจัดกิจกรรมครั้งที่ ๓ สร้างความเชื่อมั่นตนเองในจัดการดูแลผู้ป่วยอย่างมืออาชีพ

วัตถุประสงค์เชิงพฤติกรรม	เนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
๑. บอกจุดแข็ง	- เขียนรายละเอียดเกี่ยวกับความสามารถของตนเอง........................ - ผู้ดูแลนำข้อมูล........................ - ผู้กำกับให้ความหมาย	- อภิปราย - แลกเปลี่ย - ใช้แรงเสริมทางบวก	- TOWS Matrix/	๓๐
๒. ใช้แบบประเมิน ABCs	- ผู้วิจัยอธิบายประโยชน์........................ - ผู้กำกับกลุ่มสาธิตวิธี........................ - ผู้เข้าร่วมวิจัยสาธิต........................ - ฝึกการประเมิน........................	- ระดมสมอง - นำเสนอ - ผู้วิจัยให้ Feedback	กระดาษ Flip Chart	๓๐

แผนการจัดกิจกรรมครั้งที่ ๔

เรื่อง ชุมชนสมองสุขและเครือข่ายผู้ดูแลผู้ป่วยสมองเสื่อม

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา ๖๐ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรม

ลักษณะการจัดกิจกรรม: แบ่งกลุ่มผู้ดูแลกลุ่มละ ๑๐ คน และ.........................

วัตถุประสงค์ทั่วไป เพื่อให้ผู้ดูแลที่เข้าร่วมโครงการ; ....

วัตถุประสงค์เชิงพฤติกรรม ผู้ดูแลที่เข้าร่วมโครงการสามารถ;

๑. บอกแหล่งประโยชน์ในชุมชน ....
๒. บอกปัญหาการนอนหลับ ....
๓. เข้าร่วมเครือข่ายเพื่อนผู้ดูแล ....

วิธีการประเมินผล

๑. ถามตอบ
๒. สังเกตการมีส่วนร่วมในกระบวนการกลุ่ม

ตารางที่ ๕ แผนการจัดกิจกรรมครั้งที่ ๔ ชุมชนสมองสุขและเครือข่ายผู้ดูแลผู้ป่วยสมองเสื่อม

วัตถุประสงค์เชิงพฤติกรรม	เนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
	ผู้วิจัยกล่าวทักทาย.........................			
๑. บอกแหล่งประโยชน์.........................	- เจ้าหน้าที่พยาบาลที่ผู้รับผิดชอบ.........................	กลุ่มใหญ่ การให้	ผู้เกี่ยวข้อง/	๒๐
๒. บอกปัญหาการนอนหลับ	- กลุ่มเพื่อนสมาชิก แลกเปลี่ยนปัญหาการนอน	แลกเปลี่ยน		๒๐
๓. เข้าร่วมเครือข่ายเพื่อนผู้ดูแล	- สมาชิกถูกเพิ่มชื่อติดต่อใน Line “ชุมชนสมองสุข”	สาธิตการใช้แบบ	Line BPSD	๒๐

แผนการจัดกิจกรรมที่ ๕

เรื่อง การฝึกปฏิสัมพันธ์และการสื่อสารกับอารมณ์และพฤติกรรมของผู้ป่วยสมองเสื่อม

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา ๙๐ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรม

ลักษณะการจัดกิจกรรม: แบ่งกลุ่มผู้ดูแลกลุ่มละ ๑๐ คน ....

วัตถุประสงค์ทั่วไป เพื่อให้ผู้เข้าร่วมโครงการ; ....

วัตถุประสงค์เชิงพฤติกรรม ผู้เข้าร่วมโครงการสามารถ;

๑. ปฏิบัติและฝึกการรับรู้ความรู้สึกตัวและ........................
๒. ใช้การคิดเชิงบวกหรือมองตามความเป็นจริง........................
๓. ประเมินปัญหา สิ่งกระตุ้น และแก้ไขปัญหา........................
๔. อธิบายขั้นตอนในการมีปฏิสัมพันธ์........................
๕. มีทักษะปฏิสัมพันธ์กับพฤติกรรมและอารมณ์ก้าวร้าว........................
๖. มีทักษะในการจัดการและรับมือกับผู้ป่วยสมองเสื่อม........................
๗. มีทักษะปฏิสัมพันธ์ที่ดีกับผู้ป่วยที่อยู่ใน........................

วิธีการประเมินผล

๑. ถามตอบ
๒. สังเกตการมีส่วนร่วมในกระบวนการกลุ่ม
๓. สาธิตย้อนกลับได้

ตารางที่ ๖ แผนการจัดกิจกรรมครั้งที่ ๕ การฝึกปฏิสัมพันธ์และการสื่อสารกับอารมณ์และพฤติกรรมของผู้ป่วยสมองเสื่อม

วัตถุประสงค์เชิงพฤติกรรม	เนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
	ผู้วิจัยทักทาย สอบถามปัญหาในการจัดการดูแล หลังจากได้รับการอบรม ๔ กิจกรรมเกี่ยวกับ ความเข้าใจในอารมณ์ของตนเอง			
๑. ปฏิบัติและฝึกการรับรู้ความรู้สึกตัวและสามารถบอกอารมณ์ของตนเองได้	ขั้นตอนที่ ๑ กำหนดความรู้สึกตัวเพื่อควบคุมตัวเอง - ให้ผู้เข้าร่วมวิจัยหลับตา - .... - .... - .... - เมื่อสามารถควบ........................ -	กลุ่มย่อย สาธิตและสาธิตย้อนกลับ	โปสเตอร์ แนวทางในการรับมือและปฏิสัมพันธ์กับพฤติกรรมและอารมณ์	๑๐
๒. ใช้กระบวนการคิดเชิงบวกหรือมองตามความเป็น........................	ขั้นตอนที่ ๒ คิดเพิ่มและใช้กระบวนการคิดเชิงบวก - ฝึกการคิดอยู่ในใจที่พิจารณา........................ - ฝึกใช้มุมมองการคิดทางบวก........................	กลุ่มย่อย สาธิตและสาธิตย้อนกลับ	โปสเตอร์ แนวทางในการรับมือและปฏิสัมพันธ์กับพฤติกรรมและอารมณ์	๑๐
๓. ประเมินปัญหาพฤติกรรมและอารมณ์........................	ขั้นตอนที่ ๓ หาปัญหาและประเมินผู้ป่วยอย่างรวดเร็ว - ทบทวนการใช้เครื่องมือ ABCs อีกครั้ง ที่........................ -	กลุ่มย่อย - ระดมสมอง - นำเสนอ	กระดาษ Flip Chart	๑๐
๔. อธิบายขั้นตอนในการมีปฏิสัมพันธ์........................	ขั้นตอนที่ ๔ ปฏิสัมพันธ์กับพฤติกรรม........................ - ผู้วิจัยและผู้กำกับกลุ่ม........................ - สาธิตและฝึกการสบตาและการสัมผัส........................ - สาธิตการสบตา (Eye contact)	กลุ่มย่อย สอนแบบกลุ่ม สาธิตและสาธิตย้อนกลับ	โปสเตอร์ แนวทางในการรับมือและปฏิสัมพันธ์กับพฤติกรรมและอารมณ์ ๖ ขั้นตอน	๑๕

วัตถุประสงค์เชิงพฤติกรรม	เนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
๕. มีทักษะปฏิสัมพันธ์กับ........................	สถานการณ์จำลองที่ ๑ ก้าวร้าว ยั่วยุ โมโหร้าย - แจกสถานการณ์.............. - ระดมสมองในการรับมือ .... - เริ่ม role play	ระดมสมอง ฝึกในสถานการณ์จำลอง Feedback	กระดาษ Flip Chart - ใบงานสถานการณ์จำลองที่ ๑ (เอกสารแนบ)	๑๕
๖. มีทักษะในการจัดการและรับมือกับ........................	สถานการณ์ที่ ๒ หลงทาง และ........................ - แจกสถานการณ์ตามใบงานที่ ๒ จากสถาน........................ - ระดมความคิดเกี่ยวกับการรับมือกับปัญหา........................ - กลุ่มแสดงบทบาทสมมติ จากแนวทางที่ได้รับ........................ - ผู้วิจัยกล่าวชื่นชม และ feedback ดังนี้ ผู้ดูแลอาจล็อคประตูบ้าน........................	ระดมสมอง ฝึกในสถานการณ์จำลอง Feedback	- ใบงานสถานการณ์จำลองที่ ๒ (เอกสารแนบ)	๑๕
๗. มีทักษะปฏิสัมพันธ์ที่ดีกับผู้ป่วยที่อยู่ในภาวะหูแว่ว........................	สถานการณ์ที่ ๓ ความจริงเรื่องหูแว่วและภาพหลอน - แจกสถานการณ์ตามใบงาน .... - ระดมสมองเพื่อจัดหาและวางแผน .... - กลุ่มแสดงบทบาทสมมติ จากแนวทาง........................ - สะท้อนคิดและผู้วิจัย Feedback โดย........................	ระดมสมอง ฝึกในสถานการณ์จำลอง (role play) Feedback	- ใบงานสถานการณ์จำลองที่ ๓ (เอกสารแนบ)	๑๕
	- ผู้วิจัยเปิดโอกาสให้ซักถามข้อสงสัย			

แผนการจัดกิจกรรมครั้งที่ ๖

เรื่อง ครอบครัวสมองสุข พื้นที่ความสุขของผู้ดูแล

ผู้เข้าร่วมกิจกรรม: ผู้ดูแลหลักในครอบครัวที่ให้การดูแลผู้ป่วยสมองเสื่อมในชุมชน ไม่เกิน ๓๐ คน

ผู้ดำเนินกิจกรรม: พยาบาลวิชาชีพ/ นักกิจกรรมบำบัด

ระยะเวลา ๔๕ นาที

สถานที่จัดกิจกรรม: ห้องอบรม/ ห้องประชุม / ห้องอบรม

ลักษณะการจัดกิจกรรม: การเยี่ยมบ้าน (home visit)

วัตถุประสงค์ทั่วไป เพื่อให้ผู้เข้าร่วมโครงการ; ....

วัตถุประสงค์เชิงพฤติกรรม ผู้เข้าร่วมโครงการสามารถ;

๑. บอกความต้องการและความรู้สึก.........................
๒. ใช้แบบประเมินระดับความสามารถ.........................
๓. จัดลำดับความสำคัญของงานที่รับผิดชอบและ.........................

วิธีการประเมินผล

๑. ถามตอบ
๒. แลกเปลี่ยนและรับฟังความคิดเห็นซึ่งกันกับสมาชิกภายในครอบครัว
๓. สาธิตย้อนกลับได้

ตารางที่ ๗ แผนการจัดกิจกรรมครั้งที่ ๖ ครอบครัวสมองสุข พื้นที่ความสุขของผู้ดูแล

วัตถุประสงค์เชิงพฤติกรรม	กิจกรรมและเนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
๑. บอกความต้องการ........................	ผู้วิจัยสร้างสัมพันธภาพกับผู้ป่วย .... - สอบถามความเหนื่อยล้า......................... - สอบถามสมาชิกในครอบครัวท่านอื่นว่า .... - ถาม "หากขออะไรได้และเป็นสิ่งมหัศจรรย์......................... - ผู้วิจัยสะท้อน......................... - สรุปประเด็น.........................	ตั้งคำถามและเน้นทำความเข้าใจปัญหา	การมีส่วนร่วมของครอบครัว	๑๕

วัตถุประสงค์เชิงพฤติกรรม	กิจกรรมและเนื้อหา	วิธีการ	สื่อ	ระยะเวลา (นาที)
๒. ประเมินความสามารถ...........................	- ผู้วิจัยจะอธิบายหลักการในการใช้แบบประเมิน ADL - ฝึกการใช้แบบประเมิน........................	สาธิต	แบบประเมิน ADL	๑๕
๓. จัดลำดับความสำคัญของงานที่รับผิดชอบและวางแผนภาระหน้าที่ร่วมกับบุคคลในครอบครัวได้อย่างเหมาะสม	- สร้างความเข้าใจในการพึ่งพาของผู้ป่วยเพื่อช่วยเหลือบางส่วนและกระตุ้น........................ - จัดลำดับความสำคัญของงานพิจารณาจากผลกระทบทั้งต่อความรู้สึกของผู้ดูแลและผู้ป่วย........................ - ตั้งคำถาม "มีอะไรเป็นตัวบอกว่าสถานการณ์ดีขึ้น .... - ชื่นชมให้กำลังใจ เช่น ทั้ง ๆ ที่คุณมีปัญหา........................ - ถ้าชีวิตคุณเหมือนสมุดเล่มนี้หน้านี้ยังว่าง	ตั้งคำถามและเน้นการแก้ไขปัญหาด้วยตนเอง		๑๕
	เปิดโอกาสให้ซักถามและแจ้งการติดตาม และนัดเก็บรวบรวมข้อมูล			

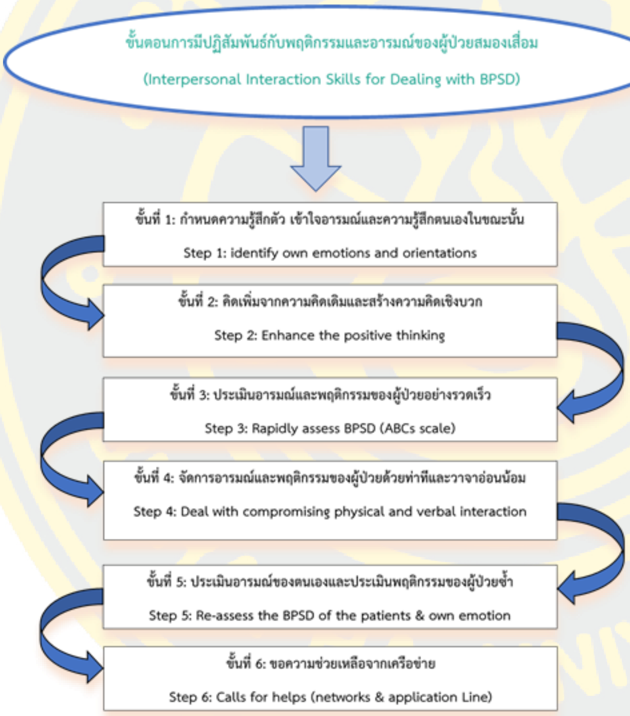
ใบงานที่ ๑
พฤติกรรมก้าวร้าว ยั่วยุ โมโหร้าย

อภิปรายกลุ่ม (discussion)

ประสบการณ์ความรุนแรงของอารมณ์และพฤติกรรมของผู้ป่วย พฤติกรรมที่คิดว่าทำให้รู้สึกโมโหตามประสบการณ์ของผู้ดูแลเป็นอย่างไร และมีปฏิสัมพันธ์กับอาการเหล่านั้นอย่างไร

ฝึกทักษะตามกระบวนการปฏิสัมพันธ์กับพฤติกรรมและอารมณ์ของผู้ป่วย ๖ ขั้นตอน

การแสดงออกทางสายตา ท่าทางควรอ่อนโยน อ่อนน้อม ไม่คุกคาม ฝึกการสบตาและการสัมผัสเมื่อต้องการสื่อสารกับผู้ป่วยเมื่อมีอาการเน้นการแสดงท่าทางที่เหมาะสม



- การสบตา (Eye contact) เริ่มจากการเข้าหาทางด้านหน้าและสายตาควรอยู่ในระดับต่ำกว่า.......................

- การสัมผัสคือ (Touch) เริ่มบริเวณที่มีปฏิกิริยารับสัมผัสที่น้อยที่สุดก่อน ค่อยๆ วางมือลงไปบริเวณที่จะสัมผัสและวาดมือ........................

ภาพที่ ๑ ขั้นตอนการมีปฏิสัมพันธ์กับพฤติกรรมและอารมณ์ของผู้ป่วยสมองเสื่อม

การให้ข้อมูลป้อนกลับ (Feedback)

เสนอแนะให้แก้ไขปัญหาด้านสิ่งแวดล้อม จัดหาแว่นตาและเครื่องช่วยฟังหากผู้ป่วยมีปัญหาด้านสายตาและการได้ยิน การพูดต้องใช้โทน เสียงต่ำ นุ่มนวล ฟังชัดเจน พูดไม่ช้าหรือเร็วเกินไป ใช้ศัพท์และประโยคที่เข้าใจง่าย เป็นขั้นตอน เน้นคำพูดไปในทางบวก ให้เวลาผู้ป่วยนึกคิด ถ้าผู้ป่วยไม่เข้าใจหรือหลงลืมสิ่งที่พูดไปอาจต้องพูดซ้ำและต้องปรับคำพูดให้เข้าใจง่าย กรณีที่ต้องการให้ผู้ป่วยทำสิ่งใดให้ใช้ประโยคเชิญชวนแทนประโยคคำสั่ง ....

ใบงานที่ ๒
หลงทางและออกจากบ้าน

อภิปรายกลุ่ม (discussion)

การมีปฏิสัมพันธ์ที่เหมาะสมได้อย่างไร กับผู้ป่วยที่มีอาการหลงลืมและมีพฤติกรรมออกจากบ้านในตอนกลางคืน

สถานการณ์และแสดงบทบาทสมมติ

ผู้ป่วยที่กำลังมีอาการหลงลืมและมักเดินออกจากบ้านในตอนกลางคืน จากนั้นให้ผู้เข้าร่วมวิจัยที่เป็นผู้ดูแลไปล็อคประตูบ้านเพื่อป้องกันผู้ป่วยออกไปนอกบ้านและถือกุญแจไว้ แต่ผู้ป่วยก็พยายามที่จะเปิดและผลักหรือดึงประตูออกไป อย่างไรก็ตามก็ไม่สามารถเปิดออกไปได้ ผู้ป่วยจึงเตะประตูเสียงดัง ด้วยความโมโหและอาการโกรธ

การให้ข้อมูลป้อนกลับ (Feedback)

ผู้ดูแลต้องวางแผนและใช้เทคนิคและทักษะต่างๆ ที่เหมาะสม อาจล็อคประตูบ้านทุกบานเพื่อป้องกันไม่ให้ผู้ป่วยออกไปข้างนอก และปิดประตูทุกห้องภายในบ้าน ยกเว้นห้องนอนของผู้ป่วยเท่านั้นที่เปิดไว้ ทำให้ผู้ป่วยไม่เดินออกนอกตัวบ้านซึ่งอาจเกิดอันตราย วิธีการนี้ผู้ป่วยอาจมีอาการหลงภายในบ้านเท่านั้นซึ่งอันตรายน้อยกว่า ผู้ป่วยบางรายต้องการกลับบ้านทั้งๆที่อยู่ในบ้าน ผู้ดูแลอาจใช้รูปถ่ายที่มีรูปผู้ป่วยและครอบครัว เป็นตัวช่วยยืนยันว่าที่นี่คือบ้าน นอกจากนั้นการจัดการกับอาการหลงทางหลงบ้านในตอนกลางคืน ควรล็อคประตูบ้านทุกบานเพื่อป้องกันไม่ให้ผู้ป่วยออกไปข้างนอกและปิดประตูทุกห้องภายในบ้าน ยกเว้นห้องนอนของผู้ป่วยเท่านั้นที่เปิดไว้ เปิดไฟให้สว่าง วิธีการนี้ผู้ป่วยอาจมีอาการหลงภายในบ้านเท่านั้นซึ่งอันตรายน้อยกว่า ....

ใบงานที่ ๓
ความจริงเรื่องหูแว่วและภาพหลอน

อภิปรายกลุ่ม (discussion)

การมีปฏิสัมพันธ์กับผู้ป่วยอย่างไรที่สามารถจัดการอาการเมื่อผู้ป่วยแสดงอาการหูแว่ว ภาพหลอน เช่น เห็นผีอยู่ในห้อง เห็นงูเข้ามาในบ้าน เห็นได้ยินเสียงเรียกให้ออกไปนอกบ้าน

สถานการณ์และแสดงบทบาทสมมติ

ผู้ป่วยปิดไฟและนอนอยู่ในห้อง ผู้ดูแลได้ยินเสียงตะโกนร้องออกมาจากภายในห้องของผู้ป่วย จึงรีบเข้าไปดู พบว่า ผู้ป่วยนั่งอยู่ในมุมห้องนอน กอดตัวเองไว้แน่นและแสดงอาการหวาดกลัว บอกผู้ดูแลว่าเห็นผีอยู่ในห้องนอนของตัวเอง

....

การให้ข้อมูลป้อนกลับ (Feedback)

ผู้ดูแลต้องวางแผนและใช้เทคนิคและทักษะต่างๆ ที่เหมาะสม ได้แก่ การสื่อสาร ปฏิสัมพันธ์ การจัดการกับสิ่งเร้าและการจัดสิ่งแวดล้อมให้ปลอดภัย เช่น ควรเปิดไฟในห้องให้สว่าง การอยู่ใกล้ๆ ทำให้ผู้ป่วยรู้สึกปลอดภัย คล้อยตามกับสิ่งที่ผู้ป่วยบอกบ้าง จัดหาแว่นตา เครื่องช่วยฟังแก่ผู้ป่วย ค้นหาและจัดการกับสิ่งกระตุ้นที่ก่อให้เกิดการแปลความผิด และให้ข้อมูลความจริงแก่ผู้ป่วยเพื่อลดความวิตกกังวล เพิ่มเทคนิค (Tips) สำหรับการช่วยเหลือผู้ป่วย ดังนี้

การเบี่ยนเบนความสนใจ โดยการชวนคุยเรื่องอื่น หลีกเลี่ยงการโต้เถียงหรือพยายามอธิบายแก้ไขในสถานการณ์ที่ผู้ป่วยหลงผิด หรือชวนผู้ป่วยให้เล่าประสบการณ์ที่เคยภาคภูมิใจในอดีตโดยอาจนำภาพเหตุการณ์ต่างๆ ให้ผู้ป่วยเล่า

การให้ความมั่นใจ เพื่อรับมือกับความวิตกกังวลของผู้ป่วย อาจพูดคุยเพื่อสร้างความมั่นใจแก่ผู้ป่วยด้วยน้ำเสียงอ่อนโยนและรับปากที่จะทำให้ตามความเป็นจริง แต่หากเป็นเรื่องทั่วไปก็ใช้เทคนิคการเบี่ยงเบ

....

แบบบันทึกพฤติกรรมและอารมณ์ของผู้ป่วย ABCs

ผู้บันทึก..

สิ่งกระตุ้น (antecedences) :

....

....

....

พฤติกรรมและอาการ (behaviours) :

....

....

ขณะนั้นทำอะไรอยู่

....

....

เกิดขึ้นที่ไหน

....

เกิดขึ้นมื่อไหร่

....

ผลกระทบ (consequences):

....

....

ใครได้รับผลกระทบ

....

รุนแรงเพียงใด

....

ภาพที่ ๒ แบบบันทึกพฤติกรรมและอารมณ์ของผู้ป่วย ABCs

ภาพที่ ๓ คู่มือการดูแลตนเองและการให้การดูแลผู้ป่วยสมองเสื่อม สำหรับผู้ดูแล

แบบบันทึกการใช้ ๖ ขั้นตอนในการมีปฏิสัมพันธ์เมื่อผู้ป่วยมีปัญหาด้านพฤติกรรมและอารมณ์ (สำหรับผู้ดูแล)

คำชี้แจง ผู้ดูแลลงบันทึกลักษณะพฤติกรรมและอารมณ์ของผู้สูงอายุและทำเครื่องมือ ✓ ลงในขั้นตอนการปฏิสัมพันธ์เมื่อได้ทำตามขั้นตอนนั้น ๆ

วันที่	พฤติกรรมและอารมณ์ของผู้สูงอายุ	ขั้นตอนการปฏิสัมพันธ์ของผู้ดูแล					
		ขั้นตอนที่ ๑	ขั้นตอนที่ ๒	ขั้นตอนที่ ๓	ขั้นตอนที่ ๔	ขั้นตอนที่ ๕	ขั้นตอนที่ ๖

แบบประเมินความเครียดจากการดูแลผู้ป่วยสมองเสื่อม

กรุณาระบุความบ่อยหรือความรุนแรง โดยใช้เครื่องหมายวงกลมเขียนบนช่องคะแนนตามความคิดเห็นหรือความรู้สึกของท่าน เกี่ยวกับการให้การดูแลญาติที่เจ็บป่วย

0	1	2	3	4
ไม่เคยเลย	น้อยมาก/ เล็กน้อย	บางครั้ง/ ปานกลาง	บ่อยครั้ง/ ค่อนข้างมาก	เป็นประจำ/ มาก

1. คุณรู้สึกว่า ไม่สามารถรับมือกับ.........................	0	1	2	3	4
2. คุณรู้สึกว่า ต้องการหยุด....................................	0	1	2	3	4
3. คุณรู้สึกเศร้าใจ/ ไม่สบายใจจาก.........................	0	1	2	3	4
4. สุขภาพของคุณ.........................	0	1	2	3	4
5. คุณกังวลเกี่ยวกับอุบัติเหตุที่จะเกิดขึ้น.........................	0	1	2	3	4
6. คุณรู้สึกว่าปัญหาเกี่ยวกับการเจ็บป่วย.........................	0	1	2	3	4
7. มันเป็นเรื่องยากสำหรับคุณที่........................	0	1	2	3	4
8. การให้การดูแลญาติที่เจ็บป่วยครั้งนี้ส่ง.........................	0	1	2	3	4
9. การให้การดูแลญาติที่เจ็บป่วยครั้งนี้.........................	0	1	2	3	4
10. การนอนหลับของคุณถูกรบกวนจาก.........................	0	1	2	3	4
11. มาตรฐานการดำเนินชีวิตของคุณ........................	0	1	2	3	4
12. คุณรู้สึกอึดอัดใจต่อ........................	0	1	2	3	4
13. คุณไม่ได้พบปะผู้คน หรือ........................	0	1	2	3	4
14. คุณรู้สึกโกรธ	0	1	2	3	4
15. คุณรู้สึกหงุดหงิด/ คับข้องใจในเวลาที่........................	0	1	2	3	4

คะแนนรวม ☐

แบบสอบถามคุณภาพการนอนหลับ

คำแนะนำ ให้ผู้ดูแลทำเครื่องหมาย ✓ หรือเติมข้อความในช่องว่างแต่ละข้อที่ตรงกับการนอนหลับส่วนใหญ่ของท่านในระยะ 1 เดือนที่ผ่านมา (กรุณาตอบทุกข้อ)

1. ท่านมักเข้านอนเวลาประมาณ ....น.
2. ท่านต้องใช้เวลานานประมาณเท่าไร ตั้งแต่เข้านอนจนหลับไปประมาณ...........นาที
3. ปกติท่านลุกจากที่นอนเช้า เวลาประมาณ.......................น.
4. ปกติท่านนอนหลับได้คืนละ..................................ชั่วโมง (จำนวนชั่วโมงอาจจะแตกต่างจากจำนวนชั่วโมงตั้งแต่เริ่มเข้านอนจนถึงตื่นนอน)

5.ท่านมีปัญหาเกี่ยวกับการนอนหลับเนื่องจากสาเหตุเหล่านี้บ่อยเพียงใด	**ไม่เลย**	**<1 ครั้ง/ สัปดาห์**	**1-2 ครั้ง/ สัปดาห์**	**≥ 3 ครั้ง/ สัปดาห์**
5.1 นอนไม่หลับหลัง........................				
5.2 ตื่นกลางดึกหรือ........................				
5.3 ตื่นเช้า........................				
5.4 หายใจ........................				
5.5 ไอ				
5.6 รู้สึกหนาว........................				
5.7 รู้สึกร้อน........................				
5.8 ฝันร้าย				
5.9 เจ็บหรือปวด........................				
5.10 สาเหตุอื่น ๆ ถ้ามีระบุ				
6. ท่านใช้ยานอนหลับ (จะโดยแพทย์สั่งหรือซื้อเอง) เพื่อ........................				
7. ท่านรู้สึกง่วงนอน........................				
	ไม่เป็นปัญหา	**เป็นปัญหาบ้างเล็กน้อย**	**เป็นปัญหาพอสมควร**	**เป็นปัญหามาก**
8. ท่านรู้สึกมีปัญหาเกี่ยวกับความกระตือรือร้นในการทำงาน........................				
	ดีมาก	**ดี**	**ไม่ค่อยดี**	**ไม่ดีเลย**
9. ในระยะ 1 เดือนที่ผ่านมา.................				

คะแนนรวม ☐

แบบทดสอบทางจิตประสาทของญาติผู้สูงอายุที่ท่านให้การดูแล

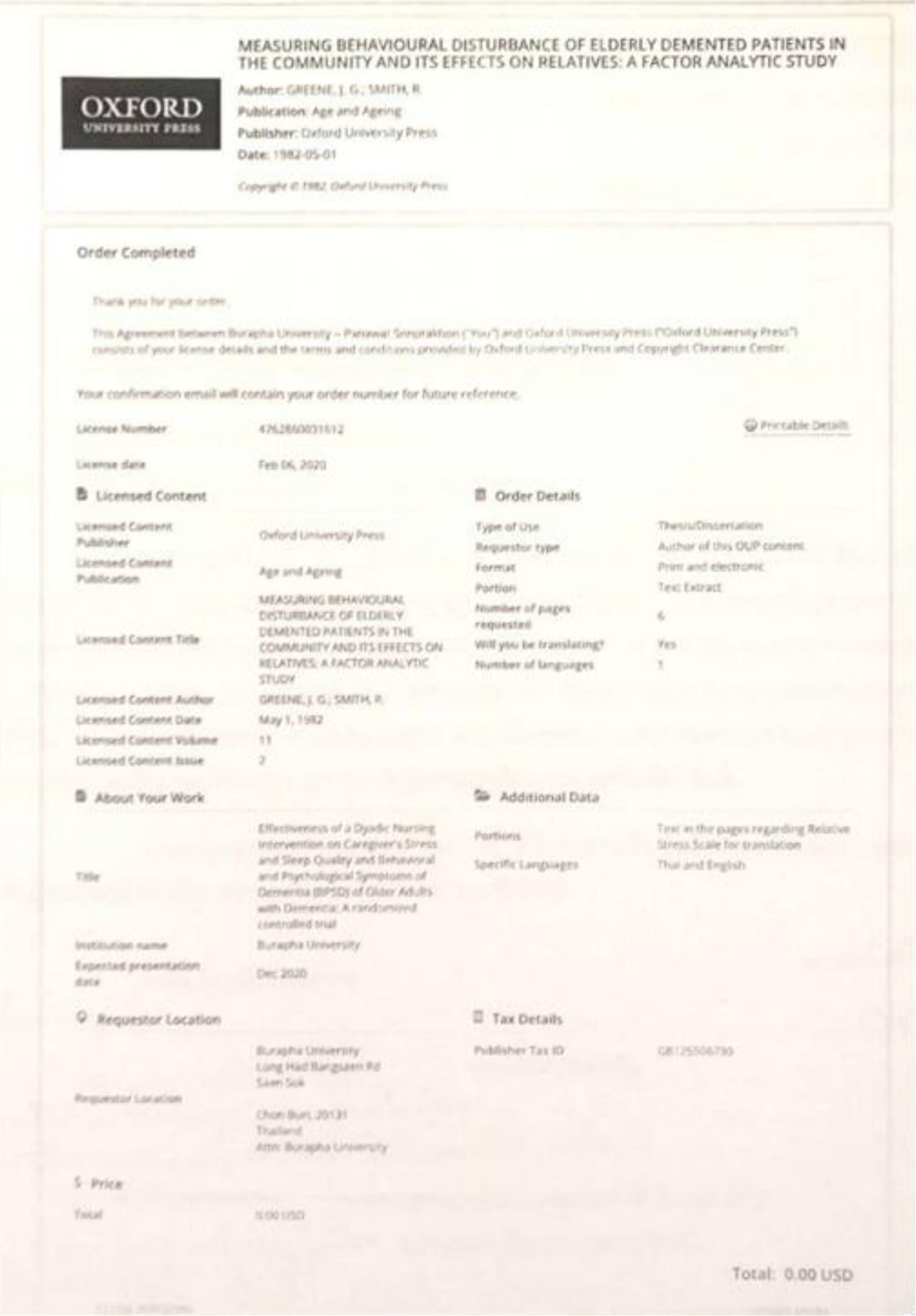
คำชี้แจง ให้ผู้ช่วยวิจัยถามผู้ดูแลเกี่ยวกับคำถาม แล้วขีด “มี” เมื่อมีอาการปรากฏใน 1 เดือนที่ผ่านมา และขีด “ไม่มี” เมื่อไม่ปรากฏอาการชัดเจน พร้อมทั้งประเมินความรุนแรงและความทุกข์ทรมานของผู้ดูแล

หัวข้อ	ความรุนแรง (S)
ความคิดหลงผิด (Delusion): ท่านคิดว่าผู้ป่วยมีความเชื่อในสิ่งที่ไม่เป็นจริงไหม........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ มีความคิดหลงผิดแต่ไม่เป็นอันตรายต่อผู้ป่วย........................ ☐ **2 ปานกลาง** คือ มีความคิดหลงผิดที่ทำให้ผู้ป่วยเกิดความทุกข์ .... ☐ **3 รุนแรง** คือ มีความคิดหลงผิดจนทำให้เกิดพฤติกรรมวุ่นวาย .... **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
ประสาทหลอน (Hallucination): ผู้ป่วยมีการได้ยินหรือได้เห็นสิ่งหลอน เช่น .... ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ มีการเห็นหรือได้ยินสิ่งหลอนแต่อาการนี้ไม่เป็นอันตรายต่อ........................ ☐ **2 ปานกลาง** คือ มีการเห็นหรือได้ยินสิ่งหลอนโดยทำให้ผู้ป่วยมี........................ ☐ **3 รุนแรง** คือ มีการเห็นได้ยินสิ่งหลอน ทำให้เกิดพฤติกรรมวุ่นวายจนทำให้........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
พฤติกรรมก่อกวนวุ่นวาย ก้าวร้าว (Agitation): ผู้ป่วยมีบางเวลาหรือบางครั้งที่........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ มีพฤติกรรมที่ทำให้เกิดความวุ่นวายแต่สามารถทำให้สงบลงด้วย........................ ☐ **2 ปานกลาง** คือ มีพฤติกรรมที่ทำให้เกิดความวุ่นวาย ซึ่งผู้ดูแลพยายามชักจูง........................ ☐ **3 รุนแรง** คือ มีพฤติกรรมวุ่นวายก่อให้เกิดความโกลาหลและเป็นปัจจัยที่ทำให้การดูแลผู้ป่วยมี........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
อารมณ์ซึมเศร้า (Depression/ Dysphasia): ท่านคิดว่าผู้ป่วยดูเหมือนจะ........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ อารมณ์ซึมเศร้าที่เกิดขึ้นถึงขั้นน่าวิตกแต่ก็ดีขึ้นด้วย........................ ☐ **2 ปานกลาง** คือ อารมณ์ซึมเศร้าที่เกิดขึ้นค่อนข้างน่าวิตก ผู้ป่วยมัก........................ ☐ **3 รุนแรง** คือ อารมณ์ซึมเศร้าของผู้ป่วยน่าวิตกมากและ........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
ความหงุดหงิดวิตกกังวล (Anxiety): ท่านคิดว่าผู้ป่วยมีลักษณะหงุดหงิด กังวล ตื่นกลัว โดย........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** ความวิตกกังวลนี้ถึงแม้ว่าจะทำให้เป็นทุกข์ แต่ก็ดีขึ้นได้ด้วย........................ ☐ **2 ปานกลาง** ความวิตกกังวลที่เกิดขึ้นค่อนข้างเป็นทุกข์ ผู้ป่วยมักจะ........................ ☐ **3 รุนแรง** ความวิตกกังวลใจนี้ทำให้ผู้ป่วยเป็นทุกข์และเป็น........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
อารมณ์ร่าเริง/ ฟุ้งซ่านเกินเหตุ (Euphoria/ Elation): ผู้ป่วยดูเหมือนว่ารู้สึก........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ อารมณ์ฟุ้งซ่านนี้ เพื่อนและสมาชิกในครอบครัวสามารถ........................ ☐ **2 ปานกลาง** คือ อารมณ์ร่าเริงฟุ้งซ่านที่เห็นนั้น........................ ☐ **3 รุนแรง** คือ อารมณ์ร่าเริงฟุ้งซ่านนั้นเห็นได้ชัดเจน โดยผู้ป่วยมี........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง

หัวข้อ	ความรุนแรง (S)
ความเฉยเมยไม่สนใจสิ่งรอบตัว (Apathy/ Indifference): ผู้ป่วยขาดความสน........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ ความเฉยเมยนี้สังเกตเห็นได้ แต่........................ ☐ **2 ปานกลาง** คือ ความเฉยเมยนี้สังเกตเห็นได้ชัด อาจเพียงแค่........................ ☐ **3 รุนแรง** คือ ความเฉยเมยนี้สังเกตให้เห็นได้ชัดและไม่........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
ความไม่ยับยั้งชั่งใจ (Disinhibition): ผู้ป่วยดูเหมือนจะทำอะไรหุนหันพลันแล่นเหมือน........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ ความไม่ยับยั้งชั่งใจมีให้เห็นได้แต่มักจะทุเลาลงโดยการ........................ ☐ **2 ปานกลาง** คือ ความไม่ยับยั้งชั่งใจมีให้เห็นได้ชัดและผู้ดูแล........................ ☐ **3 รุนแรง** คือ ความไม่ยับยั้งชั่งใจจะไม่สามารถตอบสนองต่อ........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
อารมณ์หงุดหงิดโกรธง่าย/อารมณ์เปลี่ยนแปลงไม่แน่นอน (Irritability/ Liability): ผู้ป่วยหงุดหงิดโกรธง่าย หรือ........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ อารมณ์หงุดหงิดโกรธง่ายหรืออารมณ์เปลี่ยนแปลงไม่........................ ☐ **2 ปานกลาง** คือ อารมณ์หงุดที่โกรธง่ายหรืออารมณ์ที่เปลี่ยนแปลงไม่........................ ☐ **3 รุนแรง** คือ อารมณ์หงุดที่โกรธง่ายหรืออารมณ์ที่เปลี่ยนแปลงไม่........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
พฤติกรรม/ การกระทำแปลก ๆ ที่เกิดขึ้น (Aberrant Motor Activities): ผู้ป่วยเคยเดินไปเดินมา ทำอะไรซ้ำๆ ซากๆ เช่น .... ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ พฤติกรรมแปลกๆ ที่เกิดขึ้นสังเกตเห็นได้ แต่ไม่........................ ☐ **2 ปานกลาง** คือ พฤติกรรมแปลกๆ ที่เกิดขึ้นสังเกตเห็นได้ชัดและ........................ ☐ **3 รุนแรง** คือ พฤติกรรมแปลกๆ ที่เกิดขึ้นสังเกตเห็นได้ชัด ผู้ดูแล........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
การนอนหลับ/ พฤติกรรมวานวายช่วงกลางคืน (Night Time Behavior): ผู้ป่วยมีปัญหาการนอนหลับไหม คำถามมิได้........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ มีพฤติกรรมประหลาดตอนกลางคืน แต่........................ ☐ **2 ปานกลาง** คือ มีพฤติกรรมประหลาดตอนกลางคืนที่........................ ☐ **3 รุนแรง** คือ มีพฤติกรรมดตอนกลางคืน พฤติกรรมนี้มี........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง
ความเจริญอาหารและการรับประทานอาหารที่เปลี่ยนไป (Apatite/Eating Change): ผู้ป่วยมีความอยากอาหารที่เปลี่ยนแปลง........................ ☐ ไม่มี ☐ มี **ความถี่ (F)** ☐ 1 = < 1 ครั้ง/.... ☐ 2 = 1 ครั้ง/.... ☐ 3 = หลายครั้ง/.... ☐ 4 = ทุกวัน	☐ **1 น้อย** คือ มีความเปลี่ยนแปลงในการอยากอาหารหรือ........................ ☐ **2 ปานกลาง** คือ มีความเปลี่ยนแปลงในการอยากอาหารหรือ........................ ☐ **3 รุนแรง** คือ มีความเปลี่ยนแปลงในการอยากอาหารหรือ........................ **ความทุกข์ผู้ดูแล** ☐ 0 = ไม่มี ☐ 1 = น้อยมาก ☐ 2 = น้อย ☐ 3 = ปานกลาง ☐ 4 = มาก ☐ 5 = รุนแรง

APPENDIX D

Instrument permission and trainings



MEASURING BEHAVIOURAL DISTURBANCE OF ELDERLY DEMENTED PATIENTS IN THE COMMUNITY AND ITS EFFECTS ON RELATIVES: A FACTOR ANALYTIC STUDY

Author: GREENE, J. G.; SMITH, R.
Publication: Age and Ageing
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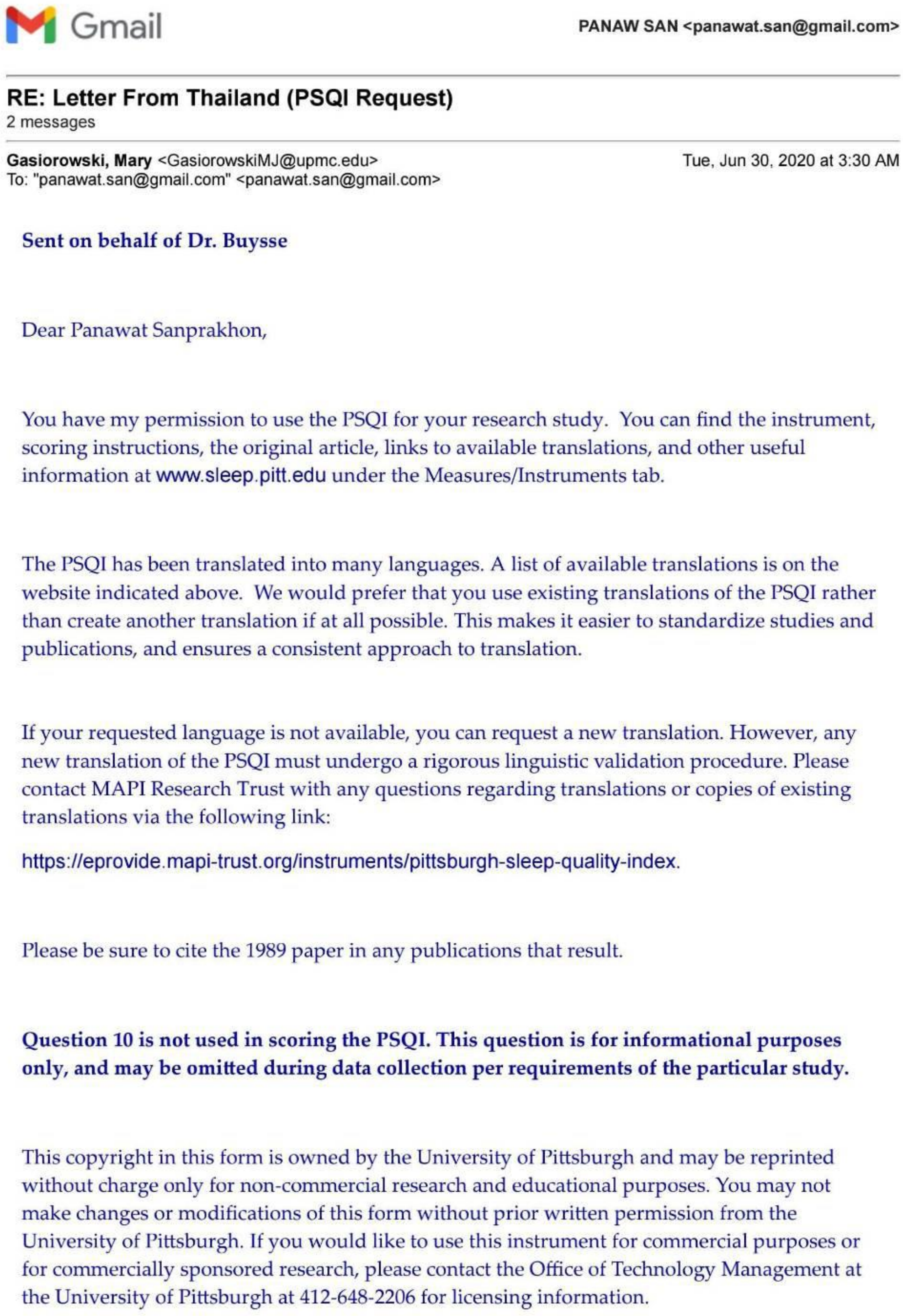

PANAW SAN <panawat.san@gmail.com>

RE: Letter From Thailand (PSQI Request)

2 messages

Gasiorowski, Mary <GasiorowskiMJ@upmc.edu>
To: "panawat.san@gmail.com" <panawat.san@gmail.com>

Tue, Jun 30, 2020 at 3:30 AM

Sent on behalf of Dr. Buysse

Dear Panawat Sanprakhon,

You have my permission to use the PSQI for your research study. You can find the instrument, scoring instructions, the original article, links to available translations, and other useful information at www.sleep.pitt.edu under the Measures/Instruments tab.

The PSQI has been translated into many languages. A list of available translations is on the website indicated above. We would prefer that you use existing translations of the PSQI rather than create another translation if at all possible. This makes it easier to standardize studies and publications, and ensures a consistent approach to translation.

If your requested language is not available, you can request a new translation. However, any new translation of the PSQI must undergo a rigorous linguistic validation procedure. Please contact MAPI Research Trust with any questions regarding translations or copies of existing translations via the following link:

https://eprovide.mapi-trust.org/instruments/pittsburgh-sleep-quality-index.

Please be sure to cite the 1989 paper in any publications that result.

Question 10 is not used in scoring the PSQI. This question is for informational purposes only, and may be omitted during data collection per requirements of the particular study.

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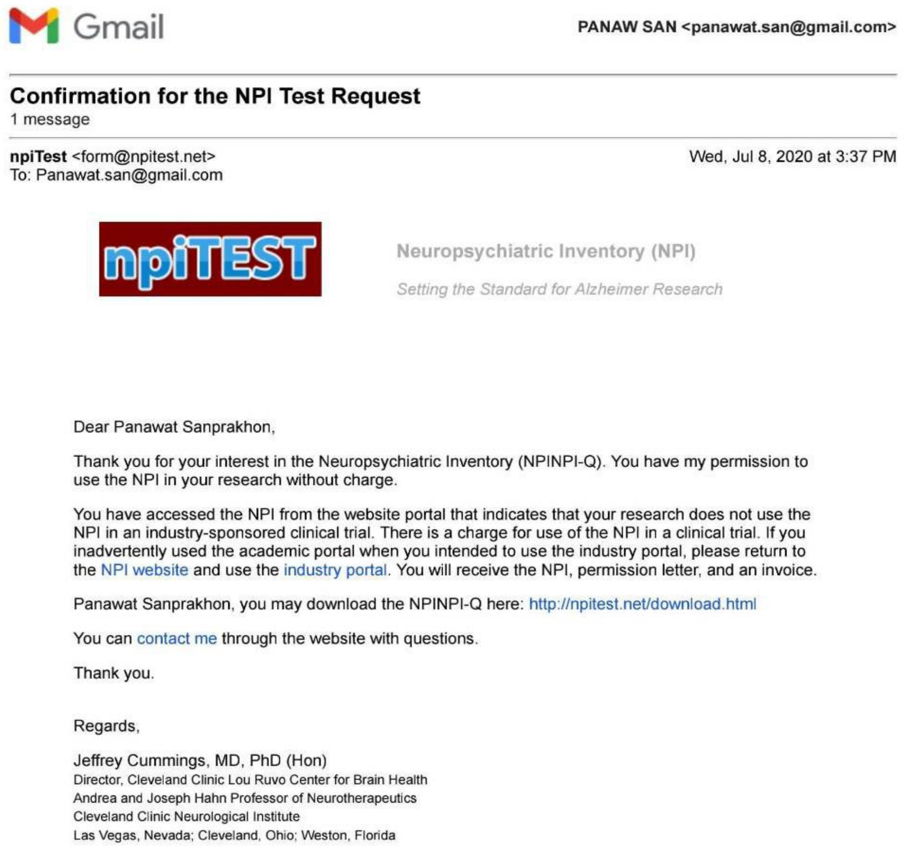

PANAW SAN <panawat.san@gmail.com>

Confirmation for the NPI Test Request
1 message

npiTest <form@npitest.net>
To: Panawat.san@gmail.com

Wed, Jul 8, 2020 at 3:37 PM

Neuropsychiatric Inventory (NPI)

Setting the Standard for Alzheimer Research

Dear Panawat Sanprakhon,

Thank you for your interest in the Neuropsychiatric Inventory (NPINPI-Q). You have my permission to use the NPI in your research without charge.

You have accessed the NPI from the website portal that indicates that your research does not use the NPI in an industry-sponsored clinical trial. There is a charge for use of the NPI in a clinical trial. If you inadvertently used the academic portal when you intended to use the industry portal, please return to the NPI website and use the industry portal. You will receive the NPI, permission letter, and an invoice.

Panawat Sanprakhon, you may download the NPINPI-Q here: http://npitest.net/download.html

You can contact me through the website with questions.

Thank you.

Regards,

Jeffrey Cummings, MD, PhD (Hon)
Director, Cleveland Clinic Lou Ruvo Center for Brain Health
Andrea and Joseph Hahn Professor of Neurotherapeutics
Cleveland Clinic Neurological Institute
Las Vegas, Nevada; Cleveland, Ohio; Weston, Florida

Certificate of Completion

This certifies that
Panawat Sanprakhon
has successfully completed the
NPIQ Interviewer Training Module
on June 29, 2020.

Walter Kukull, PhD

Director, NACC

Jeffrey L. Cummings, MD

Director, Cleveland Clinic Lou Ruvo Center for Brain Health

Washington University School of Medicine
Knight Alzheimer's Disease Research Center
Memory & Aging Project
St. Louis, Missouri, USA

Certifies that

PANAWAT SANPRAKHON SANPRAKHON
on
11/07/2020
dd/mm/yyyy

Has fulfilled the requirements for certification as a
"CDR Rater"

Having passed the Brief Training & Reliability Protocol for the Clinical Dementia Rating (CDR) via the on-line training system at knightadrc.wustl.edu

John C. Morris
John C. Morris, M.D., Director, ADRC & Memory & Aging Project

KnightADRC
Alzheimer's Disease Research Center
WASHINGTON UNIVERSITY ST. LOUIS

BIOGRAPHY

NAME	Panawat Sanprakhon
DATE OF BIRTH	11 February 1985
PLACE OF BIRTH	Buri Ram, Thailand
PRESENT ADDRESS	773/ 31 Ramindra Road, Tarang, Ket Bankean, Bangkok, Thailand 10220
POSITION HELD	A faculty position Suan Dusit University
EDUCATION	2003-2007 Bachelor of Nursing Science Mahidol University, Bangkok, Thailand 2014-2017 Master of Nursing Science (Community nurse practitioner) Mahidol University, Bangkok, Thailand 2018-2021 Doctor of Philosophy (Nursing science) Burapha University, Chon Buri, Thailand
AWARDS OR GRANTS	-