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THE EFFECT OF HOME VISIT AND TELEPHONE
TRACKING PROGRAM ON KNOWLEDGE, CAREGIVER
BURDEN AND QUALITY OF LIFE AMONG DEMENTIA
CAREGIVERS RATCHABURI PROVINCE THAILAND

Mrs. Worarat Magteppong



A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy in Public Health
Common Course
COLLEGE OF PUBLIC HEALTH SCIENCES
Chulalongkorn University
Academic Year 2019
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ผลของโปรแกรมเยี่ยมบ้านและโทรศัพท์ติดตามต่อความรู้ ภาวะการดูแล และคุณภาพชีวิตของ
ผู้ดูแลผู้ป่วยสมองเสื่อม จังหวัดราชบุรี ประเทศไทย



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาขารณสุขศาสตรดุษฎีบัณฑิต
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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	THE EFFECT OF HOME VISIT AND TELEPHONE TRACKING PROGRAM ON KNOWLEDGE, CAREGIVER BURDEN AND QUALITY OF LIFE AMONG DEMENTIA CAREGIVERS RATCHABURI PROVINCE THAILAND
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Field of Study	Public Health
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วรรณัน มากเทพพงษ์ : ผลของโปรแกรมเยี่ยมบ้านและโทรศัพท์ติดตามต่อความรู้ ภาระการดูแล และคุณภาพชีวิตของผู้ดูแลผู้ป่วยสมองเสื่อม จังหวัดราชบุรี ประเทศไทย. (THE EFFECT OF HOME VISIT AND TELEPHONE TRACKING PROGRAM ON KNOWLEDGE, CAREGIVER BURDEN AND QUALITY OF LIFE AMONG DEMENTIA CAREGIVERS RATCHABURI PROVINCE THAILAND) อ.ที่
 ปริญญาหลัก : รศ. ดร.เขมิกา ขามะรัต

ผู้สูงอายุภาวะสมองเสื่อมมีปัญหาด้านพฤติกรรมและต้องการการดูแลจากผู้ดูแลอย่างมากทำให้เกิดเป็นปัญหาของครอบครัว โปรแกรมที่มีหลายองค์ประกอบที่กำหนดเป้าหมายอย่างครอบคลุมมีประสิทธิภาพมากกว่าโปรแกรมที่กำหนดเป้าหมายในการดูแลเพียงอย่างเดียว การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาผลของโปรแกรมการเยี่ยมบ้านและโทรศัพท์ติดตามต่อความรู้ ภาระการดูแล และคุณภาพชีวิตของผู้ดูแลผู้ป่วยสมองเสื่อม

การศึกษานี้เป็นการวิจัยกึ่งทดลองแบบมี 2 กลุ่ม ดำเนินการเก็บข้อมูลระหว่างเดือนพฤศจิกายน 2561 ถึงเดือนกรกฎาคม 2562 กลุ่มตัวอย่าง คือ ผู้ดูแลผู้ป่วยสมองเสื่อมจากโรงพยาบาลราชบุรีจำนวน 62 คน (กลุ่มควบคุม 31 คน และกลุ่มทดลอง 31 คน) กลุ่มทดลองได้รับโปรแกรมการเยี่ยมบ้านและโทรศัพท์ติดตาม ในขณะที่กลุ่มควบคุมได้รับการดูแลตามปกติ เก็บข้อมูลด้วยแบบสอบถามจำนวน 3 ครั้ง คือ ก่อนเริ่มการวิจัย หลังสิ้นสุดโปรแกรม (สัปดาห์ที่ 8) และ 3 เดือนหลังสิ้นสุดโปรแกรม (สัปดาห์ที่ 20) เพื่อเปรียบเทียบความรู้ ความรู้สึกเป็นภาระการดูแล และคุณภาพชีวิตของผู้ดูแลผู้ป่วยสมองเสื่อมระหว่างกลุ่มทดลองและกลุ่มควบคุม

ผลการวิจัยพบว่าผู้ดูแลผู้ป่วยสมองเสื่อมส่วนใหญ่เป็นเพศหญิง อายุระหว่าง 41-60 ปี เป็นบุตรสาวของผู้ป่วยสมองเสื่อม และจบการศึกษาในระดับประถมศึกษาหรือมัธยมศึกษา ระดับความรู้ คุณภาพชีวิต และความรู้สึกเป็นภาระการดูแลก่อนการได้รับโปรแกรมการเยี่ยมบ้านและโทรศัพท์ติดตามของกลุ่มตัวอย่างทั้ง 2 กลุ่ม ไม่มีความแตกต่างอย่างมีนัยสำคัญ ($p > .05$) หลังได้รับ โปรแกรมการเยี่ยมบ้านและโทรศัพท์ติดตามมีการเปลี่ยนแปลงของความรู้และคุณภาพชีวิตของกลุ่มทดลองสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติหลังสิ้นสุดโปรแกรมหรือสัปดาห์ที่ 8 ($p < .001$) และเมื่อ 3 เดือนหลังสิ้นสุดโปรแกรมหรือสัปดาห์ที่ 20 ($p < .001$) คะแนนของความรู้สึกเป็นภาระการดูแลในกลุ่มทดลองลดลงในขณะที่กลุ่มควบคุมเพิ่มมากขึ้นที่สัปดาห์ที่ 8 และทั้งสองกลุ่มมีคะแนนของความรู้สึกเป็นภาระการดูแลเพิ่มขึ้นในสัปดาห์ที่ 20 แต่ไม่มีความแตกต่างอย่างมีนัยสำคัญ ($F(1,58) = 2.394, p = 0.127$)

สรุป โปรแกรมการเยี่ยมบ้านและโทรศัพท์ติดตามสามารถช่วยเพิ่มระดับความรู้และคุณภาพชีวิตในผู้ดูแลผู้ป่วยสมองเสื่อมได้ แต่ไม่มีผลต่อความรู้สึกเป็นภาระการดูแล ควรมีการเพิ่มระยะเวลาของโปรแกรมรวมถึงเพิ่มเติมกิจกรรมในโปรแกรมเพื่อช่วยลดความรู้สึกเป็นภาระการดูแลของผู้ดูแลผู้ป่วยสมองเสื่อม

สาขาวิชา สาธารณสุขศาสตร์
 ปีการศึกษา 2562

ลายมือชื่อนิติ
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KEYWORD: HOME VISIT, TELEPHONE TRACKING, DEMENTIA CAREGIVER,
KNOWLEDGE, CAREGIVER BURDEN, QUALITY OF LIFE

Worarat Magteppong : THE EFFECT OF HOME VISIT AND TELEPHONE
TRACKING PROGRAM ON KNOWLEDGE, CAREGIVER BURDEN AND
QUALITY OF LIFE AMONG DEMENTIA CAREGIVERS RATCHABURI
PROVINCE THAILAND. Advisor: Assoc. Prof. Dr. KHEMIKA YAMARAT

Background: Elders with dementia have serious behavioral problems and require extensive care from caregivers. This poses a significant problem for patients' families. Multicomponent interventions have been reported to be more effective than interventions targeting one point of caregiver functioning. This study aims to examine the effect of a home visit and telephone tracking program on knowledge, caregiver burden, and quality of life among dementia caregivers.

Methods: This study was a quasi-experimental with two group comparisons during November 2018 – July 2019. The participants of this study comprised 62 dementia caregivers (31 participants in intervention and 31 participants in control group) from Ratchaburi Hospital in Ratchaburi Province, Thailand. The intervention group received a home visit and telephone tracking program while the control group received usual care. Data was collected at baseline, immediately after the end of the program, and three months after the end of the program by questionnaires to compare the knowledge, caregiver burden, and quality of life of dementia caregivers.

The majority of both groups were female, 41-60 years, daughter of dementia patients and graduated from primary school and high school. The sociodemographic data of dementia caregivers, level of knowledge, caregiver burden, and quality of life among dementia caregivers before receiving the home visit and telephone tracking program are similar between intervention and control group ($p > .05$). The results indicated the knowledge score and quality of life of intervention group were found significantly higher than control group following the intervention immediately after the end of the program or week 8 ($p < .001$) and three months after the end of the program or week 20 ($p < .001$). The caregiver burden score of dementia caregiver in intervention group decreased while the caregiver burden score of dementia caregiver in control increased at week 8 ($p < .001$). The caregiver burden score of both groups was decreased at week 20. However, there was no statistically significant difference between groups as demonstrated by ANOVA ($F(1.58) = 2.394, p = 0.127$).

Conclusion: The home visit and telephone tracking program had a positive effect on knowledge and quality of life in dementia caregivers. However, the program did not affect caregiver

Field of Study: Public Health
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Student's Signature
Advisor's Signature

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TABLE OF CONTENTS

	Page
ABSTRACT (THAI).....	iii
ABSTRACT (ENGLISH)	iv
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER I INTRODUCTION.....	1
1.1 Background and Rationale.....	1
1.2 Research Question	6
1.3 Research Hypotheses	6
1.4 Research Objective.....	7
1.5 Operational Definitions.....	7
1.6 Conceptual Framework of the research	10
CHAPTER II LITERATURE REVIEW	11
2.1 Dementia.....	12
2.2 Dementia caregiver	21
2.3 The transactional theory of stress and coping (TTSC).....	31
2.4 Burden in dementia caregiver.....	34
2.5 Quality of life in dementia caregiver.....	37

2.6 Knowledge of dementia caregiver	39
2.7 Social support of dementia caregiver.....	41
2.8 Intervention for dementia caregiver.....	42
CHAPTER III RESEARCH METHODOLOGY	47
3.1 Research Design	47
3.2 Study Area	48
3.3 Study population	48
3.4 Sampling Technique	49
3.5 Sample and Sample size	50
3.6 Eligibility Criteria	50
3.7 Measurement Tools.....	51
3.8 Testing of Measurement Quality	60
3.9 Data Collection	61
3.10 Data Analysis	68
3.11 Protection of Human Subject	68
CHAPTER IV RESEARCH RESULTS	71
4.1 Socio-demographic characteristics and data of the participants	71
4.2 Comparison of knowledge scores among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within groups and between groups at baseline, at the end of the program (week 8) and the 3rd month after the end of the program implementation (week 20). 78	

4.3 To compare caregiver burden among dementia caregivers that were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, at the end of the program (week 8) and the 3 rd month after the end of the program implementation (week 20).	81
4.4 To compare the quality of life among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, at the end of the program (week 8) and the 3 rd month after the end of the program implementation (week 20).	84
CHAPTER V DISCUSSION, CONCLUSION & RECOMMENDATIONS	88
5.1 Discussion	88
5.2 Conclusion	96
5.3 Limitation of This Study	97
5.4 Recommendations	97
REFERENCES	100
APPENDIX	101
Appendix A: Questionnaires	102
Appendix B: Questionnaires (in Thai)	123
Appendix C: Home visit and telephone tracking program	143
Appendix D: Question Guideline for Focus Group Discussion	153
Appendix E: Information record form - Dementia caregiver (In Thai)	155
and Home environment assessment form (In Thai)	155
Appendix F: Booklet for dementia caregiver	166
VITA	184

LIST OF TABLES

Table 1 Demographic characteristics of intervention group and control group	71
Table 2 Data related to caregiver for caring dementia patients of intervention group and control group.	73
Table 3 Demographic data of the sample-statistical analysis of income.	75
Table 4 Data of dementia patients.....	75
Table 5 Age of dementia patients of the sample-statistical analysis of income.....	76
Table 6 The sample-statistical analysis of the individual perceives social support from three resources, frequency of problem in dementia patients, and caregiver's reaction to the problem in dementia patients.	77
Table 7 Mean and standard deviation of knowledge score between intervention and control group.....	78
Table 8 Comparison of knowledge score at baseline, week 8 and week 20.	80
Table 9 Comparison of knowledge score between intervention and control at baseline, week 8 and week 20.....	81
Table 10 Comparison of caregiver burden at baseline, week 8 and week 20.	82
Table 11 Comparison group means on caregiver burden across repeated measurements of time.	84
Table 12 Mean and standard deviation of Quality of life between intervention and control group at baseline, week 8 and week 20.	85
Table 13 Comparison of Quality of life within group at baseline, week 8 and week 20.	86
Table 14 Comparison of Quality of life between intervention and control group at baseline, week 8 and week 20.....	87

LIST OF FIGURES

Figure 1.1 Conceptual Framework.....	10
Figure 2.1 Process of intervention	67
Figure 4.1 Mean of knowledge score	79
Figure 4.2 Mean of caregiver burden score	82
Figure 4.3 Mean of quality of life	85



CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Thailand is in the threshold into the aging society since 2005. Fifty years ago, a 60 years old Thai can expect to live an additional 17 years. At present and thirty years from now, a 60 years old Thai can expect to live an additional 22 and 26 years respectively (Foundation of Thai Gerontology Research and Development Institute, 2013). One of the chronic diseases that is a problem for the Thai elderly population is dementia. Dementia is a set of symptoms that results from a gradual death of brain cells. The loss of cognitive abilities that occurs with dementia results in the impairment in memory, reasoning, behavior, and planning. This syndrome is mostly found in patients with brain diseases in primary or secondary stages (Duong, Patel, & Chang, 2017; Gouras, 2014; Shaji, Sivakumar, Rao, & Paul, 2018). People with Alzheimer's disease and other dementias are increasing yearly. In 2015, 5.3 million Americans had Alzheimer's disease and the number will be 7.1 million in 2050. These effects result in \$226 billion and \$1.1 trillion in costs in 2015 and 2050, respectively (Alzheimer's Association, 2015). In Thailand, the percentage of dementia in the elderly is 12.3. In detail, the percentage of dementia in the elderly between 60-69 years, 70-79 years and at least 80 years are 4.8, 7.7 and 22.6 respectively (Wichai, 2016).

Dementia is a progressive disease and the symptoms get worse over time. At present, the treatments available for dementia cannot reverse the degeneration of brain cells (Ray & Davidson, 2014). Elderly with dementia in later stages have serious problems that disorientate time and place, difficulties in understanding the situation, unable to recognize relatives' friends and familiar, unable to do activity and self-care without assistance (World Health Organization, 2012). The most common behavioral

problems in people with dementia is memory loss, repeating questions, insomnia, loss of daily activities living and irritability lead to burden for caregivers (Muangpaisan et al., 2010). Therefore; dementia is one of the most challenging age-related illnesses for caregivers (Huang, Lee, Liao, Wang, & Lai, 2011).

More than 80% of the elderly with dementia need constant care most of the time. In addition, the elderly with dementia needed much more care than the elderly without dementia (Vaingankar et al., 2016). It is a big problem for the family of patients especially family caregivers or informal caregivers. Many studies have shown caregivers for dementia patient was more stressful than caregivers caring for physical disability patient and elderly person (Tremont, 2011; Vaingankar et al., 2016). Dementia caregivers can lead to increase risk of physical health problems. It is proposed that the chronic stress associated with not getting enough sleep, poor nutrition, immunological and hormone functioning thereby increasing susceptibility to illness (Tremont, 2011). The level of circulating inflammatory markers among family dementia caregivers was higher than the noncaregiving controls. Therefore, caregivers were likely to experience more stress than noncaregiving controls (Gouin, Glaser, Malarkey, Beversdorf, & Kiecolt-Glaser, 2012). Furthermore, more than 50% of caregivers of patients with dementia have shown a high level of anxiety and depression (García-Alberca, Lara, & Berthier, 2011).

Overall, 62% of the caregivers presented experiencing burden associated with caring for people with dementia. Forty-three percent of caregivers demonstrated mild to moderate burden and 38% reported little to no burden (Tang et al., 2013). In addition, an increase in psychological distress indicates an increase in burden (Razani et al., 2014). Likewise, the higher caregiver burden is associated with higher depression (Papastavrou et al., 2011). Dementia caregivers whose caring for dementia patients with high behavioral and psychological symptoms of dementia score show a high level of caregiver burden (Rosdinom, Zarina, Zanariah, Marhani, & Suzaily, 2013). Dementia caregivers who lack understanding about dementia' disease may not care

well and be at risk for caregiver burden. Moreover, dementia caregivers with knowledge were shown to have better decision-making processes (Innes, Morgan, & Kostineuk, 2011). Caring for a person with dementia requires knowledge of caring dementia. Caregivers who perceived adequate knowledge about dementia is associated with lower levels of caregiver burden (Schindler, Engel, & Rupprecht, 2012). The caregiver with burden has an affect on the quality of life. A caregiver with a high level of burden is associated with poorer quality of life (Srivastava, Tripathi, Tiwari, Singh, & Tripathi, 2016). The level of quality of life among major informal caregivers was lower than the general Thai people in six dimensions especially in role limitation due to physical and emotional problems (Lamlianpon, 2015). Generally caregivers experience physical and mental health problems as demonstrated by a lower mean score of physical composite score and mental composite score (NurFatihah et al., 2013).

The literature review showed dementia caregivers have verbal and physical violence directed towards the person with dementia. Around 62% of dementia caregivers admitted to displaying some form of abusive behavior to a person with dementia within the past month. Verbal abuse was the most common and physical abuse was less common (Yan, 2014; Yan & Kwok, 2011). In China, there was a case study that found 18% of family caregivers having verbally or physically abused their care recipients. Moreover, the report found more abusive behaviors in caregivers who had a higher level of stress. Family caregivers who spent more days living with the care recipients, no assistance, observed more agitated behaviors in the care people with dementia, and/or represented a higher level of caregiver stress, reported more abusive behaviors (Yan & Kwok, 2011)

The interventions that is effective for dementia caregivers include being psychotherapeutic, multicomponent, tailored to the specific needs of the caregiver, and of adequate duration. Interventions that have more generic educational components tend to increase caregivers' knowledge about dementia, although they

have a lesser significant impact on caregiver distress and burden. A psychotherapeutic component was added to intervention to help caregivers apply strategies learned in the intervention and/or address barriers to making changes. Therefore, psychosocial interventions can reduce the negative consequences for family caregivers of individuals with dementia (Tremont, 2011). Multi-component interventions were the interventions consisting of a combination of various forms of interventions such as information, education, psychoeducation, support skills training and coping strategies, environmental adaptations for people with dementia. Multicomponent interventions were reported more effective than interventions targeting one point of caregiver functioning. Likewise, fixed interventions are less beneficial than those repairable to specific needs of caregivers (Huis in het Veld, Verkaik, Mistiaen, van Meijel, & Francke, 2015; Tremont, 2011). The multicomponent program is effective in reducing the burden, depression of caregivers, and increasing the quality of life, emotions and sense of competence (Huis in het Veld et al., 2015).

The information needed for informal caregivers with chronic health conditions were information about etiology, diagnosis, general prognosis, availability of services for caregivers and care recipients (Washington, Meadows, Elliott, & Koopman, 2011). The study in Thailand demonstrated the top three caregiver's needs were caregiver education and training, telephone line provided for caregiver consultation and special system in a hospital provided for dementia patients to have rapid access to see a doctor. In addition, around 30% of dementia caregivers need home visits from healthcare professionals (Muangpaisan et al., 2010). Moreover, the interview caregivers at a dementia clinic in Ratchaburi province revealed caregivers who come to the clinic cannot stay at the dementia clinic for a long time because people with dementia cannot stay alone. They need telephone tracking and home visit. After dementia caregivers were received home visit nurses, they gained a feeling of security and decrease stress. Moreover, they had a better understanding of caring for dementia patients (Kitamura, Tanimoto, Oe, Kitamura, & Hino, 2019). Dementia caregivers that received the telephone intervention had a decrease of depressive symptom (Tremont et

al., 2015) increase satisfaction, fewer problems, and reduction in feelings of guilt related to placement (Davis, Tremont, Bishop, & Fortinsky, 2011). Therefore, the home visit and telephone tracking are used for programs.

The conceptual framework for this study is the transactional theory of stress and coping or TTSC on the psychological response of the person. The theory deals with how a person copes with a stressful situation. There were major concepts: stress, appraisal, and coping (Lazarus & Folkman, 1984). Base on the theory caregiver will perceive the role of caring people with dementia. Therefore; dementia caregivers consider the problem from caring people with dementia that majorly contribute to their response to stress. Caregivers classified the situation of caring dementia caregiver as a treat, a challenge or a harm-loss. The judgement is positive or negative appraisal and continuous evaluation based on new information received from the environment and person during the situation. Dementia caregivers considered a suitable strategy to be implemented in specific situations. The forms of coping consist of problem-focused coping and emotional focused coping. They can take one or two forms of coping.

The culture and context of Thailand is different from other countries. In Thailand, there were programs for family caregivers. The study of Worakhunphiset & Sasat (2015) revealed family caregivers who received Home Environmental Arrangement and Progressive Muscle Relaxation Program had significantly lower stress than before receiving program and caregiver in the control group that received usual care (Worakhunphiset & Sasat, 2015). Likewise, the study of Pongpaew & Sasat (2011) revealed the effect of giving information about an Anapanasti program on stress in dementia caregivers can reduce the stress of dementia caregivers. Empowerment programs for dementia caregivers can increase scores on power perception and caregiving practice (Cheewirote, Subgranon, Paokanha, & Kangchai, 2010). These interventions were studied in the urban area of Thailand.

However, there is little evidence about multi-component intervention for dementia caregivers in Thailand especially intervention that studied in semi-urban, semi-rural society. Ratchaburi province is the semi-urban, semi-rural society. The percentage of the elderly in Ratchaburi province is 18% higher than the percentage of the elderly in Thailand. Moreover, the number of dementia patients in Ratchaburi province is around 30% that higher than the percentage of people with dementia in Thailand (Yimyam & Yamsakul, 2013). The culture and context of semi-urban, semi-rural society is different from the urban society. The researcher will develop programs based on multi-component program concept and the transactional theory of stress and coping. The intervention consists of supported positive appraisal, assist caregivers to define the major problem, teaching skill for caring patients and skill to dealing with problems, create and guide dementia caregiver to use of specific coping strategies by home visit and telephone tracking methods.

1.2 Research Question

1.2.1 Does home visit and telephone tracking program be able to improve knowledge and quality of life among dementia caregivers?

1.2.2 Does home visit and telephone tracking program be able to decrease caregiver burden among dementia caregivers?

1.3 Research Hypotheses

1.3.1 The post-test and follow up scores of knowledge and quality of life are higher than baseline in the intervention group.

1.3.2 The post-test and follow up scores of caregiver burden is lower than the baseline in the intervention group.

1.3.3 The post-test and follow up scores of knowledge and quality of life in the intervention group are higher than in the control group.

1.3.4 The post-test and follow up scores of caregiver burden in the intervention group are lower than the control group.

1.4 Research Objective

1.4.1 General objective

The effect of home visit and telephone tracking program on knowledge, caregiver burden, and quality of life among dementia caregivers.

1.4.2 Specific objective

1.4.2.1 To compare a) knowledge b) caregiver burden and c) quality of life among dementia caregivers that are receiving home visit and telephone tracking program and receiving routine care within the group at baseline, the end of the program and 12th week after the end of program implementation.

1.4.2.2 To compare a) knowledge b) caregiver burden and c) quality of life among dementia caregivers that is receiving home visit and telephone tracking program and receiving routine care at baseline, until the end of the program and 12th week after the end of program implementation between intervention and control group.

1.5 Operational Definitions

Caregiver is defined as a person who provides care and provides direct care for the elderly with dementia at least 6 hours per day.

Knowledge is defined as an understanding of dementia caregivers on basic knowledge of dementia and how to care for people with dementia. Knowledge can be measured by the Dementia Knowledge Assessment Tool Version 2 (DKAT-2).

Caregiver Burden is defined as the degree to which a caregiver's emotional or physical health, social life or financial status have suffered as a result of caring for dementia patients. The caregiver burden can be measured by the Thai Burden Interview for Caregivers of Patients with Chronic Illness.

Quality of life is defined as dementia caregiving's perception of their position in life in the context of the culture and value systems in which they live in the relations to their goals, expectations, standards, and concerns. Quality of life can be measured by The World Health Organization Quality of Life Brief - Thai (WHOQOL-BREF-THAI).

Age is defined as the length or number of years for which a person has lived from the day of birth.

Sex is defined as the gender of the person or the state of being male or female.

Marital Status is defined as living with single, spouse, widow, and divorced/separate.

Education level defined as the highest level of education that were three categories; uneducated, complete primary school, complete secondary school, complete bachelor's degree, and postgraduate.

Employment status is defined as the characteristic of a working arrangement between an employer and an individual for legal purposes. Employment status was four categories; full-time, part-time, not employed, and retired.

Income defined as money received during the period of time in exchange for labor or services of dementia caregivers.

Stages of dementia is defined as the severity of symptoms among people with dementia. Stages of dementia can be measured by Clinical Dementia Rating (CDR).

Behavioral problems of patient is defined as a problem in behavior and memory difficulties in patients with dementia and caregiver rating of their reaction to each of the behavioral problems. Behavioral problems of patients can be measured by the Revised Memory and Behavior Problem Checklist.

Duration of being caregiver is defined as the length of time for caring for people with dementia. Caregivers can identify by year and/or month.

Family relationship is defined as relatedness or connection by blood or marriage or adoption or close relationship between caregiver and people with dementia or relationship to care for recipient. Family relationship consists of spouse, son, daughter, close relation, and relative.

Social support is defined as the perception of family caregivers for support from family, friend, and significant other. The support that helps family caregivers feel more certain about a situation and therefore feel as if they have control over the situations. It can be measured by Thai multidimensional scale of perceived social support.

Home visit and telephone tracking program is defined as a multi-component program for dementia caregiver. The program is developed by the transactional theory of stress and coping, and literature review. The program consists of education and psychoeducation program. The duration of the program is 8 weeks.

Routine care is defined as the regular care from doctor and nurse in a dementia clinic. The routine care including assessment, recommendations about caring for dementia patients, and doctor examination.

1.6 Conceptual Framework of the research

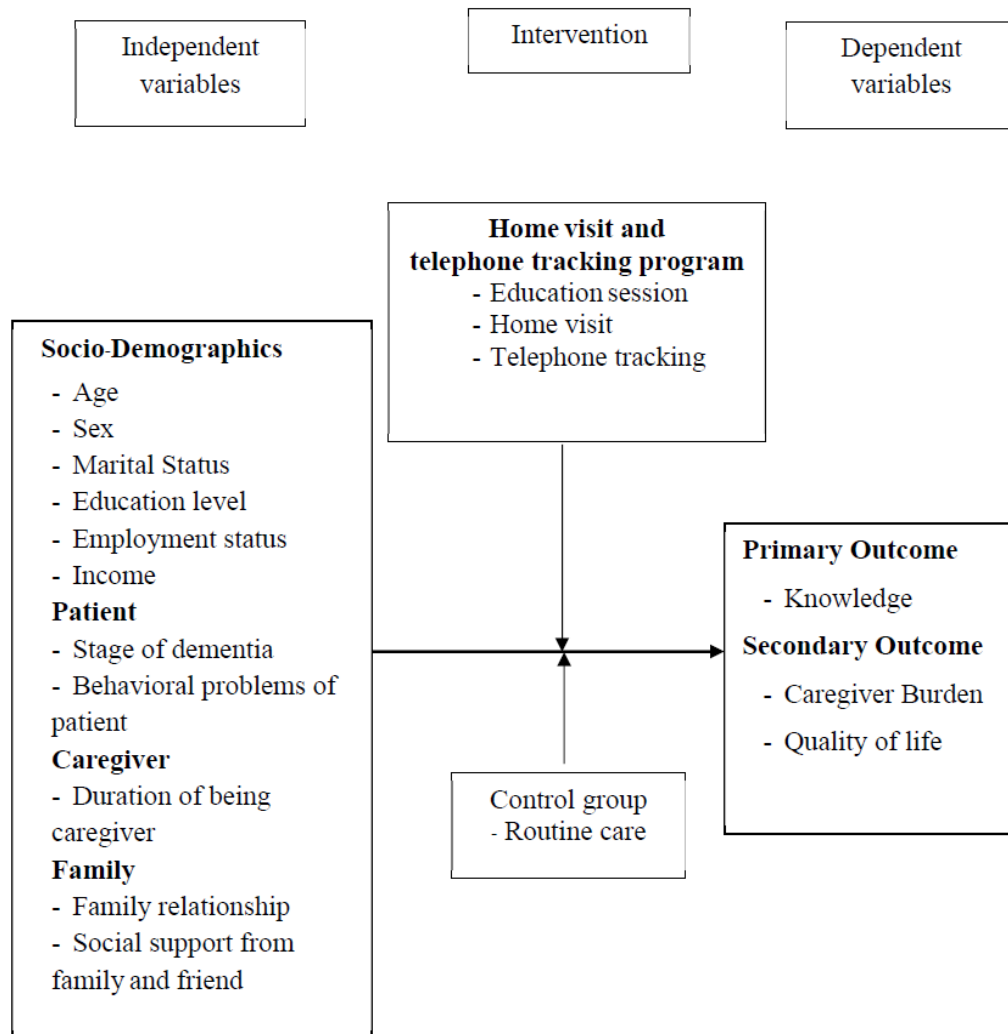


Figure 1.1 Conceptual Framework

CHAPTER II

LITERATURE REVIEW

The study aimed to examine the effect of home visit and telephone tracking program on knowledge, caregiver burden, and quality of life among dementia caregivers. The literature reviews as the following topic:

2.1 Dementia

2.1.1 Definition of dementia

2.1.2 Epidemiology of dementia

2.1.3 Factors associated with dementia

2.1.4 Stages of dementia and Signs and symptom

2.1.5 Treatment of dementia

2.2 Dementia caregiver

2.2.1 Definition and type of caregiver

2.2.2 The role of caregiver

2.2.3 Problems of dementia caregiver

2.3 The transactional theory of stress and coping (TTSC)

2.4 Burden in dementia caregiver

2.5 Quality of life in dementia caregiver

2.5.1 Definition of quality of life

2.5.2 Quality of life in dementia caregiver

2.6 Knowledge of dementia caregiver

2.7 Social support of dementia caregiver

2.8 Interventions for dementia caregiver

2.1 Dementia

2.1.1 Definition of dementia

Dementia is a generic term indicating “a loss of intellectual functions including memory, significant deterioration in the ability to carry out day-to-day activities, and often, changes in social behavior”(Scottish Intercollegiate Guidelines Network, 2006).

Dementia is a disorder characterized by problems with memory and at least one other cognitive function that is severe enough to interfere with activities of daily living (Group Health, 2009).

Dementia is a set of behaviors or symptoms which suggest difficulties with cognitive function (Ray & Davidson, 2014).

2.1.2 Epidemiology of dementia

The estimates of global incidence showed rates of dementia increases with increasing age. Dementia is a global epidemic. The number of people with dementia worldwide in 2015 was estimated at 47.47 million. There were 7.7 million new people with dementia each year, implying one new case every 4.1 seconds(World Health Organization, 2012, 2015). Likewise, the aging population is rapidly growing in Thailand. A negative effect of the rapid aging of the population is the increased number of people with dementia (World Health Organization, 2012). In Thailand, the percentage of dementia elderly is 12.3. In detail, the percentage of dementia in elderly with 60-69 years, 70-79 years and at least 80 years are 4.8, 7.7 and 22.6 respectively (Wichai, 2016).

People with Alzheimer's disease and other dementias are increasing yearly. The cost of care in the USA was \$226 billion and \$1.1 trillion in 2015 and 2050, respectively (Alzheimer's Association, 2015). The estimated worldwide cost of dementia was estimated at around US\$ 604 billion in 2010(World Health Organization, 2012).

2.1.3 Factors associated with dementia

1. Comorbidity

Several diseases were relating to dementia. Hypertension was an important risk factor for vascular dementia. Diabetes was related to the risk of Alzheimer's disease. A history of stroke and cardiovascular disease were associated with the risk of dementia (Alzheimer's Association, 2014, 2019; Alzheimer's Disease International, 2014). Dyslipidemia was associate with dementia (Silpaanan, 2016).

2. Drugs

Literature reviews demonstrated several drugs were related to the risk of dementia. The commonly used drugs including benzodiazepines, statin, simvastatin, antihypertensive drugs, and NSAIDs drugs. In detail, benzodiazepines were related to increased risk of dementia. However, statin, simvastatin, antihypertensive drugs, and NSAIDs drugs were related to decreasing the risk of dementia and Alzheimer's disease (Alzheimer's Association, 2014, 2019; Alzheimer's Disease International, 2014; Jen-Hau, Kun-Pei, & Yen-Ching, 2009).

3. Physical exercise/Physical activity

Physical exercise is associated with the risk of dementia (Wei et al., 2014). The systematic reviews have shown the association between physical activity and cognitive function in older people. Physical activity can reduce cognitive impairment and has an improvement in cognitive function among the elderly. In summary, physical exercise and physical activity can reduce the risk of dementia (Alzheimer's Association, 2014, 2019; Alzheimer's Disease International, 2014). The result is consistent with the study of Silpaanan (2016) in Thailand, no exercise and high body mass index are associated with the risk of dementia (Kawitu, Siri, Sujirarat, & Chakrbhandu-Na-Ayutaya, 2015; Silpaanan, 2016).

4. Sex

The prevalence of all dementia causes was higher in females than in males (Wei et al., 2014). It may be attributable to changes in estrogen levels in a female. In China, women who must do more housework than men, so they have less time to do cerebral work (Qu et al., 2005).

5. Education

The prevalence of dementia in higher education was lower than in lower education (Wei et al., 2014). Literature reviews found several studies that have shown people with less education had a higher risk of dementia than people with high education. The low education level (less than 12th grade level or less than 10 years) was significantly associated with an increased risk of dementia. It may be that people who have lower education levels have lower cognitive function compared with people that have a higher education level (Jen-Hau et al., 2009). Likewise, the study of Silpaanan (2016) and Kawittu et al (2015) in Thailand shows the low education level or no education associated with dementia (Kawitu et al., 2015; Silpaanan, 2016). Moreover, illiterate patients are associated with an increased risk of dementia (Silpaanan, 2016).

6. Age

The effect of aging was associated with risk factors for dementia in many countries. The literature reviews in the United States, Europe, and China demonstrated the link between age and risk of dementia. The prevalence of dementia increases with age (Jen-Hau et al., 2009). Likewise, the study of Silpaanan (2016) in Thailand showed that the elderly was associated with an increased risk of dementia (Silpaanan, 2016).

7. Other

Several studies have shown factors related to the risk of dementia. These factors including early parental death, household financial management (Wei et al., 2014).

Type of dementia

There were several types of dementia as follow:

Alzheimer's disease

The most common cause of dementia is Alzheimer's disease or AD. AD is a pathological change in the brain that results in memory loss, thinking and language skills. Memory problems, progressive deterioration, the ability to perform daily activities, common behavioral changes usually apathy and social withdrawals are the main symptoms of Alzheimer's disease. The eventual death of selective nerves in the brain, as well as abnormal functioning, is usually the cause of Alzheimer's. Once diagnosed the average survival period is about 8 to 10 years (Alzheimer's Association, 2019; Alzheimer's Disease International, 2014; Ray & Davidson, 2014; Scottish Intercollegiate Guidelines Network, 2006).

Vascular dementia

Vascular dementia is caused by the reduced blood supply to the brain due to diseased blood vessels. In some cases, there appears to be a direct chronological relationship between significant cerebrovascular events and the occurrence of dementia. Signs such as stroke or other vascular problems, for example, ischemic heart disease or hypertension may occur in the patients. The occurrence might be sudden or it could decline and become stable. Physical problems such as urinary incontinence, decreased mobility, and balance problems are more commonly seen in people with vascular dementia (VaD) than in people with Alzheimer's disease (Ray & Davidson, 2014; Scottish Intercollegiate Guidelines Network, 2006).

Dementia with Lewy bodies

Characteristic features of dementia with Lewy bodies (DLB) such as tremor, rigidity, and slowness of movement or poverty of expression are signs of Parkinsonism which fluctuate from day-to-day. People usually have visual hallucinations, delusions and falls are also common. The pathological basis of Parkinson's disease dementia and DLB are similar and both are associated with

progressive cognitive decline and Parkinsonism. People with Parkinson's disease usually develop dementia after 10 years, it affects around three-quarters of people with Parkinson (Ray & Davidson, 2014; Scottish Intercollegiate Guidelines Network, 2006).

Fronto-temporal dementia

Fronto-temporal dementia (FTD) is not as common as Alzheimer's disease or vascular dementia but it still affects people with dementia under the age of 65. Changes in behavior such as disinhibition, lack of judgment, loss of social awareness and loss of insight are much more common than memory problems. Moreover, mood disturbance, speech, and continence also happen regularly. A positive family history of a similar disorder is not uncommon (Ray & Davidson, 2014; Scottish Intercollegiate Guidelines Network, 2006).

Mixed dementias

Two or more types of dementia are mixed dementia. Studies suggest that the interaction between vascular disease and the core features of Alzheimer's disease is extremely complex and that rigid boundaries between subtypes of dementia may be unduly artificial. The treatment and side effects from the mixed dementia treatments may be different from those in people with a specific diagnosis (Alzheimer's Association, 2019; Alzheimer's Disease International, 2014; Scottish Intercollegiate Guidelines Network, 2006).

2.1.4 Stages of dementia and Signs and symptom of dementia

Dementia is a set of symptoms that results from brain disease. The patients have a disturbance of multiple higher cortical functions, including memory, thinking, orientation, understanding, calculation, learning capacity, language, and judgment. Consciousness is decreased, and some symptoms such as abnormal emotion and social behavior can be found. This syndrome is mostly found in patients with brain disease in primary or secondary stages (Group Health, 2009; Scottish Intercollegiate Guidelines Network, 2006). 60–70% of dementia patients are Alzheimer's disease.

Other major conduct dementia includes vascular dementia, dementia with Lewy bodies, and frontotemporal dementia. Common symptoms experienced by people with dementia syndrome as follow (Alzheimer's Association, 2019; Alzheimer's Disease International, 2014; Ray & Davidson, 2014; World Health Organization, 2012)

Early stage: The early stage is often missed because the onset of the disease is slow and continuous. Most family and friends think some behavior change results from a normal part of the aging process. The symptoms include forgetting something especially regarding things that just happened, some difficulty with communication, lose familiar places, track of the time, difficulty in making decisions and handling personal finances, difficulty in carrying out some household tasks. In addition, mood and behavior changes such as being less active and motivated, losing interest in activities and hobbies, showing anger or aggressiveness on occasions.

Middle stage: Become very absent-minded, especially of recent events and people's names. The problems that patient face is having difficulties remembering time, date, place and events communication. Unable to prepare food, cook, clean or shop by themselves. Moreover, they need help with personal care. Unable to live alone safely without considerable support. Behavior changes such as wandering, repeated questioning, calling out, clinging, disturbed sleep, and hallucinations.

Late stage: Memory disturbances are very serious and the physical side of the disease becomes more severe. These problems are disorientated of time and place, difficulty in understanding the situation that happens around them, unable to recognize relatives, friends and familiar objects. Unable to eat without assistance, may have difficulty in swallowing. Increasing the need for assisted self-care, problems about bladder, bowel incontinence, and mobility. Behavior changes may escalate including aggression towards caregivers and nonverbal agitation.

2.1.5 Treatment of dementia

Dementia has often been regarded as untreatable, except for dementia of uncommon etiology. Several pharmacological options have been used for slowing the progression in the early stage of the disease.

1. Pharmacological Intervention

The medications have used the care of patients which include (Alzheimer's Association, 2019; Downs & Bowers, 2014; Meiner, 2011; Miller, 2009; National Collaborating Centre for Mental, 2007; K. S. Shaji, P. T. Sivakumar, G. Prasad Rao, & Neelanjana Paul, 2018a).

1.1 Acetylcholinesterase inhibitor

New approaches to the pharmacological treatment of dementia began with the acetylcholinesterase inhibitor. Acetylcholinesterase inhibitors breakdown of acetylcholine, a neurotransmitter thought to be important in the chemical basis of some cognitive processes. Acetylcholine was also thought to be involved in some behavior disturbance, although this is speculative. Acetylcholinesterase inhibitor which was used for treatment includes.

- Tacrine (Cognex): It was the first of cholinesterase inhibitors. Tacrine needs close monitoring of the liver function of patients; therefore, its use is limited.

- Donepezil (Aricept), rivastigmine (Exelon), and galantamine (Reminyl) were originally medicine that has fewer side effects and demonstrated greater cognitive and global functional improvement in the early and middle stage of dementia. These medications take a long time to slow down the progression of the symptoms.

- Memantine (Namenda) medicine for treating moderate to severe Alzheimer's disease. This medicine blocks the neural toxicity associated with excess release of glutamate.

1.2 Calcium Channel Blocker

Nimodipine (Nimotop) was a calcium channel blocker that benefited from the treatment of Vascular Dementia, but little evidence supports efficacy with long term treatment.

1.3 Ginkgo biloba

The products can improve cognitive performance and function in people with dementia. Ginkgo biloba has been used in traditional Chinese medicines. However, Ginkgo causes bleeding when combined with aspirin or warfarin. People with dementia who uses Ginkgo received information about interaction with other prescribed drugs.

2. Nonpharmacological Intervention

Non-pharmacological interventions were therapeutic intervention to manage behavioral and psychological symptoms of dementia patients. (Dyer, Harrison, Laver, Whitehead, & Crotty, 2018; Shaji et al., 2018a).

2.1 Behavior management

Behavior management was used to reflex structured, systematically applied and normally time-limited intervention. The behavior management intervention was carried out by caregivers or care home staff under the handling of expertise professionals (Scottish Intercollegiate Guidelines Network, 2006; Shaji et al., 2018a).

2.2 Cognitive stimulation

Cognitive stimulation is defined as “engagement in a range of activities and discussions (usually in a group) aimed at general enhancement of cognitive and social functioning” (Clare & Woods, 2004). Cognitive stimulation intervention can be recreational activities, or formal. This intervention produced a positive clinical impact on cognitive function among people with dementia (Scottish Intercollegiate Guidelines Network, 2006; Shaji et al., 2018a).

2.3 Environmental design

The residential unit can influence people with dementia by causing anxiety, disorientation, and relentlessness. The environmental design detail includes:

- Combining small-size units.
- Separating the group of residents such as non-cognitively impaired from dementia patients.
- Including respite care as a complement to home care.
- Relocating residence as a complete unit rather than individually if necessary.
- Including non-institutional designs around the facility and in the dining room.
- Control stimulation levels.
- Combining higher light levels.
- To reduce frequent and unwanted exiting by covering fire exit bars and doorknobs.
- Combining therapeutic design features in outdoor areas.
- Making toilets more visible to reduce bowel accidents.
- Removing factors that increase or trigger stress when bathing.

(Scottish Intercollegiate Guidelines Network, 2006; Shaji et al., 2018a).

2.4 Multisensory stimulation and combined therapies

People with dementia have an alteration of several sensory; therefore, an intervention designed to deal with a single sense has less gaining effects. A variety of equipment was used to create a multisensory environment. Moreover, several interventions such as massage, aromatherapy with essential oils, music therapy were combined with an intervention (Scottish Intercollegiate Guidelines Network, 2006; Shaji et al., 2018a).

2.5 Reality Orientation Therapy

The purpose of ROT was a reorientation of the person using continuous stimulation and repetitive orientation to the environment. ROT intervention may slow cognitive decline. The intervention may be done formally or informally. The therapy should be used by a skilled practitioner, on an individualized basis, with people disorientated in time, place and person (Scottish Intercollegiate Guidelines Network, 2006; Shaji et al., 2018a).

2.2 Dementia caregiver

2.2.1 Definition of caregiver

Caregiver is the person who provides direct care, looks after or helps with personal care and home management of another family member (Eliopoulos, 2010).

The person assisting another person who increasingly requires constant care. The informal caregiver is defined as the person who provides care to assist with personal activities of daily living and/or personal instrumental activities of daily living, without payment, and whose relationship to the care recipient is due to personal attachment (Loboprabhu, Molinari, & Lomax, 2006).

Informal caregiver refers to activities and experience involved in providing help and assistance to relatives or friends who are unable to provide for themselves (Pearlin, Mullan, Semple, & Skaff, 1990)

Caregivers is an adult family member or another individual, who is an informal provider of in-home and community care to people who need caring. The different types of caregivers classified by the level of responsibility and tasks of caregivers. Caregivers can be classified into three categories (Stone, Cafferata, & Sangl, 1987).

1) primary caregivers who have complete responsibility for caring of the recipient. They have the highest level of responsibility for care recipients and carried out the largest number of caregiving tasks. They provided care with another assist or alone (Stone et al., 1987).

2) primary caregivers whose efforts are supplemented by either informal or formal assistance (Stone et al., 1987). The study of Dilworth-Anderson, Williams, & Cooper (1999) called secondary caregivers. These caregivers are people who provided a task at a level like a primary caregiver. However, they did not the same level of responsibility and making decisions about the care recipient (Dilworth-Anderson, Williams, & Cooper, 1999).

3) secondary caregivers who do not have primary responsibility for the care recipient (Stone et al., 1987). The study of Dilworth-Anderson, et. al (1999) called secondary caregivers. Tertiary caregivers were caregivers who had little or no responsibility for making decisions about the care recipient (Dilworth-Anderson et al., 1999).

In Asian countries were strongly influenced by Confucianism and Buddhism. Caring for older parents was a major duty of family members, especially the son or daughter. Caregiving was a sign of duty and loyalty. The family was usually considered as the primary source of support for people suffering from dementia. Mature children were expected to take responsibility for caring for their older parents (Chan, 2010). In Thai culture, caregivers were the spouse or close relatives who live in the same home.

Most dementia caregivers were female. Ninety-five percent of dementia caregivers are caring for more than 12 hours per day. The majority of dementia caregivers have no experience for caring dementia patients. The activities that take a long time for caring were assisting activities of daily living, preventing accidents, and management of behavioral problems of dementia patients, respectively. In addition,

the activities that dementia caregivers find difficult for caring were preventing accidents, assist in activities of daily living, and management of the behavioral problem of dementia patients respectively (Siritipakorn & Muangpaisan, 2015).

In Thailand, the study of Lamlianpon (2015) showed dementia caregivers lasted 11.3 hours per day for caring patients (Lamlianpon, 2015).

2.2.2 The role of caregiver

- Caregivers provide a wide range of responsibilities. Most of the home care among the elderly and patients was managed by a family member or family caregiver. In family, there were examples of typical tasks for caring for the recipients as follows: (Eliopoulos, 2010; Family Caregiver Alliance; Shaji et al., 2018a).

- Assist to shop and buy groceries.
- Clean house, does laundry.
- Prepare the food, assist with feeding tubes.
- Assist a family member to get dressed, take a shower and take medicine.
- Assist with transferring the elderly or the ill in and out of bed.
- Assist with physical therapy, assist with other medical processes.
- Makes an appointment with the medical professionals and take them to the hospital or clinic.
- Talks with the doctors, health care team, and others to understand what needs to be done.
- Handle a crisis or medical emergency.
- Emotional care by listening and talking with the elderly and the ill.

Providing care with love.

The caregiver assists older adults and the family member with chronic conditions every day. The goals of dementia caregivers, caring for the elderly with dementia were listed below: (Lake Region State College, 2006).

- Prevent the elderly with dementia from physical injury.
- Maintain independence as long as possible.
- Focus on the ability of the elderly with dementia and provide physical and mental activities that they can do.
- Support the person's dignity and self-esteem at all times.

2.2.3 Strategies of caring for people with dementia

Care's strategies for people with dementia were as follow (Alzheimer's Disease International, 2016)

1. Cooking: The ability to cook for a person with dementia may be lost in the middle stage. Therefore, a person with dementia that lives alone has a higher risk of injury.

Suggestions

- Assess how well the person with dementia can cook for themselves.
- Labeling of the kitchen cabinets and drawers.
- Provide simple suggestion by written instructions.
- Install safety equipment, consider changing from gas to electricity.
- Remove sharp utensils.
- Provide meals, or meal service, and try to see that enough nutritious food is eaten.

2. Driving: Person with dementia is judgment impaired and reactions are slowed. Therefore, it may be dangerous for driving a car.

Suggestions: Discuss the subject with the person and suggest them to use public transportation, appropriately

3. Bathing and personal hygiene: The person with dementia may forget to take a bath, or may have forgotten what to do. In this situation, it is important to offer assistance in respect of the dignity of the person.

Suggestions

- Maintain the person's former routine for washing as much as possible
- Try to make bathing a pleasant and relaxing situation
- Make the task as simple as possible
- If the person refuses to bathe, try again once their mood is better. Try to

convince the person to bath even if they refuse it.

- Check oral hygiene
- Try to let the person help themselves as much as possible.
- Cover the private areas while bathing to help the person feel less

embarrassed

- Safety is important, having support such as rails, non-slip mats can be helpful.
- If bathing always leads to conflict, a stand-up wash might be better
- If the problem continues, try to get someone else to help.

4. Dressing: people with dementia usually does not remember how to dress and don't know when they need to change. They usually dress inappropriately when out in public.

Suggestions:

- Give 2 choices of outfit
- Arrange clothes in the order it needs to be worn
- Select clothes that are easy to wear
- Repeat clothes if necessary
- Use rubber or non-slippery shoes

5. Difficulty Sleeping- dementia patients usually get agitated during the night this could be very tiring for the care partner

Suggestions:

- Try to not allow sleeping during the day
- Taking long walks and physical activities during the day should be

encouraged

- Try to make it easy going and comfortable during bedtime

6. Clinging- people with dementia usually likes to follow the person they are with everywhere. This can be quiet distressing and hard to handle. They usually feel this way because they are afraid that they would be left alone.

Suggestions:

- Have them be occupied with something when you're not around
- Finding someone to come help to give yourself some privacy

7. Accusing of theft -- dementia patients are forgetful and they tend to forget where they have placed their items. Most of the time they will accuse others of their missing items and this is because they have lost their sense of control and memory.

Suggestions:

- Try to notice if the person has a place where they like to hide their items
- Try to keep a copy of the necessary items such as keys
- Check the dustbin before emptying it
- Be gentle with responding to the person's accusation, try not to be defensive
- Help the person find their lost items
- Try to distract the person by going for walks or eating snacks a few minutes after looking for the lost items.

8. Toilet and incontinence -dementia patients may not understand when to go to the toilet or what to do in the toilet

Suggestions:

- Have a schedule for going to the toilet
- Making the toilet doors more visible by using bright and prominent colors for the walls, writing large letters on the doors and visible toilet seats.
- Toilet door should always be left open
- Choose clothes that can be easily removed
- Limit drinking before bedtime

9. Eating- dementia patient usually forgets if they have eaten, and how to use utensils. They might have problems chewing or swallowing and might need to be fed.

Suggestions:

- Remind the person on how to eat
- Use finger food, it can be easier to manage and less messy when eating
- To prevent choking and being messy, cut the food into small bites. In later cases might have to puree the food.

- Remind to eat slowly.
- The person might not be alert if the food is hot or cold and could burn their mouth.
- Learn techniques to help with swallowing
- Serve small portions of food per time.

10. Repetitive behavior- a person with dementia may be forgetful and therefore they may repeat their questions and actions.

Suggestions:

- try to distract them by having someone listen or hear what they saying
- list the answers of the frequently asked questions
- give hugs and show affection to the person

11. Wandering – this is a worrying problem that needs to be managed

Suggestions:

- people with dementia usually wander around the house and the neighborhood and tend to get lost therefore safety is a big concern when in public places.

- try to have the person's identity card with them at all times
- Look at the security of the house by making sure the person cannot go out without you knowing maybe through modern technology and devices.
- If a person is found to try not to be angry by speaking calmly and reacting with acceptance.

- Keeping a recent photograph could be helpful in case the person gets lost and you need to ask for help.

The communication technique is one of the care strategies. People with dementia who progress through the later stage, communication will become increasingly difficult. The techniques to help communicate with people with dementia are as follows: (Eggenberger, Heimerl, & Bennett, 2013; Lake Region State College, 2006).

Verbal

- Use the name and nouns/person's name/simple sentences.
- Speak slower and give more time for responding.
- Make your message have a positive aspect.
- Be specific if a question needs to be asked.
- When giving directions give it one at a time.
- Speak the individual as an adult, not as a child.
- Logic and reasons should not be used.
- Helping with finding words.
- Be patient and reassuring when answering questions.
- The word "Don't you remember" should not be used.
- Go along with the individual's reality.
- Repeat what the individual said.
- Speaking about the past is okay.
- Make the conversation specific.
- Conversation should continue even if there is no feedback.

Non-verbal

- Ensure and maintain eye contact.
- Carefully listen to the words and observe the actions of the individual.
- Speak in a pleasant tone do not speak in high pitch.

- Use facial expressions appropriately.
- Use body movements as gestures.
- Body language signs for understanding such as fear frustration and anger must be observed.

The information needed for informal caregivers with chronic health conditions was information about etiology, diagnosis, general prognosis, availability of services for caregivers and care recipients (Washington et al., 2011). The study in Thailand revealed the top three caregivers' needs were caregiver education and training, telephone line provided for caregiver consultation and special system in a hospital provided for dementia patients to have rapid access to see a doctor. Around 30 percent of dementia caregiver needed home visits from healthcare professionals (Muangpaisan et al., 2010).

2.2.4 Problems of dementia caregiver

More than 80% of the elderly with dementia needed care most of the time. In addition, the elderly with dementia needed care much more than the elderly without dementia (Vaingankar et al., 2016). Dementia is one of the most challenging age-related illnesses for caregivers (Huang et al., 2011). Most of the people with dementia need caring from other people such as family caregivers. A family caregiver is a person that does not receive money for providing care. The term 'informal caregiver' is used interchangeably with 'family caregiver' (Donelan et al., 2002; Hollander, Lui, & Chappell, 2009)

The most common behavioral problems in people with dementia are memory loss, repeating a question, insomnia, loss activities of daily living and irritability lead to burden for caregivers (Muangpaisan et al., 2010). Many studies have shown dementia caregiver was more stressful than caregivers taking care of persons with a physical disability and the elderly person (Tremont, 2011; Vaingankar et al., 2016). Both formal and informal caregivers are expected to assume increased responsibility

as the patient with dementia deteriorates. Associated with the increasing lifespan across communities, caregivers will over time be confronted by increases in dementia-related symptoms and extended disease progression. The projected increase in the duration of lifespan and the associated progressive deterioration of persons with dementia will lead to increased stress and burden on both formal and informal caregivers. Dementia caregivers can lead to an increased risk of physical health problems. It is proposed that the chronic stress associated with not getting enough sleep, poor nutrition, immunological and hormone functioning thereby increasing susceptibility to illness (Tremont, 2011). The level of circulating inflammatory markers among family dementia caregivers was higher than the noncaregiving controls. Therefore, caregivers were likely to experience more stress than noncaregiving controls (Gouin et al., 2012). Furthermore, more than 50% of caregivers of patients with dementia have shown high level of anxiety and depression. Especially, patients with longer duration of dementia, greater severity of dementia, and lower education levels significantly differ in anxiety and depression mean scores (García-Alberca et al., 2011).

The caregivers have an impact on daily life. Around 65% of the caregivers reported having altered sleeping and eating habits (Irfan, Irfan, Ansari, Qidwai, & Nanji, 2017). Furthermore, adult caregivers in Thailand have problem with physical health and mental health burden (Yiengprugsawan, Harley, Seubsman, & Sleight, 2012). These problems are all affected by the role of caregivers. The caregiver has an anxiety rate of 12% and depression at 8%. The factor that predicted anxiety was inadequate income. The factor that predicted depression was disinhibition (Lamlianpon, 2015). A caregiver has an increased risk of burden, stress, depression, and other health complications. Caregiver that stresses and has low level of self-efficacy was significantly related to pro-inflammatory cytokine interleukin (IL-6). In contrast, caregivers that stresses and has high level of self-efficacy were not significantly related to IL-6 (Mausbach et al., 2011). The high level of self-efficacy

related to the perception of caregiver shows positive aspects for caring experience (Semiatina & O'Connor, 2012). Around 62% of dementia caregivers admitted to displaying some form of abusive behavior to a person with dementia within the past month. Verbal abuse was the most common and physical abuse was less common (Yan, 2014; Yan & Kwok, 2011). Psychological abuse was the most common form of abuse among older adults. Prevalence ranging of psychological abuse is 27.9 percent to 62.3 percent. In contrast, physical abuse has been estimated to affect 3.5-23.1 percent of older adults with dementia (Dong, Chen, & Simon, 2014).

In China, there is a case study that found 18% of family caregivers having verbally or physically abused the care recipients. Moreover, reports found more abusive behaviors in caregiver who has higher level of stress (Yan & Kwok, 2011). The degree of elderly abuse was significantly associated with caregiver burden, lower-level cognitive function, depression, anxiety, spending more hours caregiving, experiencing more abusive behavior from the individual and higher caregiver burden (Dong et al., 2014). Family caregivers who spent more days co-residing with the care recipients and lacked any assistance from a domestic helper observed more agitated behaviors in the care recipients, and/or reported a higher level of caregiver stress, resulting in more abusive behaviors. (Yan & Kwok, 2011).

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2.3 The transactional theory of stress and coping (TTSC)

The transactional theory of stress and coping (TTSC) was proposed by Lazarus and Folkman in 1984 and it explained the mental process which influences the stressors. The transactional theory of stress and coping focuses on the psychological response of a person. The theory deals with how a person copes with stressful situations. Lazarus and Folkman's theory defined stress is "a transaction between the person and the environment that is appraised by the person as taxing or exceeding his

or her resources and endangering his or her well-being". There were major concepts: stress, appraisal, and coping (Lazarus & Folkman, 1984).

Cognitive appraisal

Cognitive appraisal happens when a person considers two major factors that majorly contribute to his response to stress. The two factors including

- 1) the threatening tendency of the stress to individuals, and
- 2) the assessment of resources required to minimize, tolerate or eradicate the stressor and the stress it produces.

The cognitive appraisal can be divide into two types. The first type is primary appraisal and the other type is secondary appraisal.

Primary Appraisal People will ask questions like, "What does this stressor and/or situation mean?" and "How can it influence me?" Three answers to these questions include 1) this not important 2) this is good 3) this is stressful. The second part of primary appraisal is classified as to whether the stressor or situation is a treat, a challenge or a harm-loss.

1) Secondary Appraisal

The secondary appraisal happens simultaneously with the primary appraisal. It involves feelings related to dealing with the stressor. People feel like, "I can do it if I do my best", "I will try whether my chances of success are high or not" and, "If this way fails, I can always try another method" indicates positive secondary appraisal. On the other hand, these statements like, "I can't do it; I know I will fail", "I will not do it because no one believes I can" and, "I won't try because my chances are low" indicate negative secondary appraisal.

Coping

Coping is defined as a process of "constantly changing and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. There are two forms of coping"

1) Problem-focused coping

People will use problem-focused coping when they feel they have control over the situation, thus can manage the source of the problem. There are four steps to manage the stress

- Define the problem
- Generate alternative solutions
- Learn new skills to deal with stressors
- Reappraise and find new standards of behavior

2) Emotional focused coping

People feel as they cannot manage the source of the problem they will use emotional focused coping. It involves strategies for controlling stress.

- Avoiding
- Distancing
- Acceptance
- Seeking Medical Support

The literature review demonstrated the most common behavioral problems in people with dementia were memory loss, repeating a question, insomnia, loss of daily living activities and irritability that leads to problems for caring. Dementia caregivers have many problems for caring for people with dementia. Therefore; dementia caregivers consider the problem from caring for people with dementia majorly contribute to their response to stress. Caregivers classified the situation of caring dementia caregiver is a treat, a challenge or a harm-loss. Dementia caregivers evaluate perceived control of the situation and resources available to the individual. They may feel like, "I can do it if I do my best" or "I can't do it; I know I will fail". The judgment of the positive or negative appraisal and continuous evaluation is based on new information received from the environment, and person during the situation. Dementia caregivers considered suitable strategies to be implemented in a specific situation. The forms of coping consist of problem-focused coping and emotional focused coping. They can take one or two forms of coping.

The intervention can be supported positive appraisal by encouraging caregiver to feel like, “I can take care of people with dementia by myself”, “I will try to care for people with dementia whether my chances of success are high or not”, and “If I can’t care for people with dementia, I can always try another method”. Moreover; the intervention will guide the dementia caregiver to use specific coping strategies by teaching and counseling for controlling emotional response to the problem. In the part of problem-focused coping, the intervention consists of assisted caregivers to define the major problem, teaching new skills for caring patients and new skills to dealing with problems, create and suggest general alternatives and trying to find new ways for a solution the problems.

2.4 Burden in dementia caregiver

Sherwood et al., (2005) defined caregiving burden as a “multidimensional biopsychosocial reaction, arising from the imbalance of caring demands in areas such as caregivers’ personal time, social roles, physical and emotional status, financial resources, and formal care resources available for undertaking multiple roles” (Sherwood, Given, Given, & Eye, 2005).

The caregiving burden is considered a negative reaction to the impact of providing care for the social, occupational and personal roles of caregivers (Given, Kozachik, Collins, DeVoss, & Given, 2001).

Zarit et al. (1986) defined caregiver burden as “the degree to which a carer’s emotional or physical health, social life or financial status had suffered as a result of caring for their relative” (Zarit, Todd, & Zarit, 1986).

In this systematic review article, caregiver burden referred to ‘a high level of physical, psychological, emotional, behavioral, and financial burden that may be experienced by informal caregivers who are caring for people with dementia, main factors of caregiver burden among the informal caregivers of people with dementia living in the community (Chiao, Wu, & Hsiao, 2015).

The caregiver burden was a multidimensional phenomenon that consists of 4 major domains of care. The four domains of care were as follows: (Papastavrou, Kalokerinou, Papacostas, Tsangari, & Sourtzi, 2007).

1) the framework of care (characteristics of the caregiver, type of the dyadic relationship and availability of social support)

2) the stressful situations of caregiving, which may be primary (such as the problematic behavior of the patient) or secondary (such as other commitments of the caregiver).

3) factors that moderate the perception of stress such as coping strategies and management of care

4) the consequences of caregiving for the general well-being of the caregiver

Risk factors for caregiver burden include female sex, low educational attainment, residence with the care recipient, higher number of hours spent caregiving, depression, social isolation, financial stress, and lack of choice in being a caregiver (Adelman, Tmanova, Delgado, Dion, & Lachs, 2014). The systematic review showed factors of caregiver burden including patient characteristics and caregiver characteristics. The details are as follows (Chiao et al., 2015)

1. Patient characteristics as factors of caregiver burden

Patient characteristics consist of three categories. The details are as follows;

1.1 Behavioral or psychological factors, including functional status, the prevalence of behavioral disturbances and levels of neuropsychiatric symptoms. Patients with dementia with a poor functional status, a high prevalence of behavioral disturbances and a high level of neuropsychiatric symptoms were associated with their primary family caregivers experiencing a greater burden from their caregiving.

1.2 Disease-related factors, including the severity of dementia, type of dementia and duration of the illness. These factors associated with their family caregivers experiencing a greater burden from their caregiving.

1.3 Levels of education among patients with dementia were recognized as the patient's socio-demographical factor of caregiver burden. Patients with dementia with lower levels of education were correlated to their primary family caregivers experiencing a greater burden from their caregiving.

2. Caregiver characteristics as factors of caregiver burden

Caregiver characteristics were grouped into three categories. The details are as follows;

2.1 Caregiver socio-demographic factors, including monthly income, gender, educational level, cohabitation with the patient and ethnicity, caregivers with low monthly income, female gender, low educational level, cohabitation with the patient and non-Hispanic Caucasian ethnicity were associated with experiencing a greater burden from their caregiving.

2.2 Psychological factors, including psychological health, perceived well-being, depressive symptoms, religious, coping skills, self-sufficiency for symptom management, anxiety, aggressiveness, and authoritarianism. Caregivers who had poor psychological health, poorly perceived well-being, high depressive symptoms, poor religious coping skills, poor self-sufficiency for symptom management, high anxiety, aggressiveness, and authoritarianism experienced a greater burden from their caregiving.

2.3 Caregiving-related factors, including patient care load and family functioning- caregivers who had a relatively heavy patient care load and poor family functioning experienced a greater burden from their caregiving.

Overall, 62% of the caregivers reported experiencing a burden associated with dementia care. Most caregivers reported mild to moderate burden (43%) or little to no burden (38%) (Tang et al., 2013). The study of Gonçalves-Pereira, Carmo, da Silva, Papoila, Mateos, & Zarit, (2010) founded 38.8 percent caregiver experienced a “severe burden” while 13.8 percents indicated a low level of burden (Gonçalves-Pereira et al., 2010). The most burden among caregivers was time-dependent burden. The factors

related to burden of caregivers were poor cognitive function and caring of patients with low ability to do daily life activities, being spouse, low education (Mekawichai & Saetang, 2013). In Thailand, the study of Siritipakorn & Muangpaisan stated factors associated with burden among family caregivers of dementia patients in Siriraj hospital were impairment in doing activities of daily living and behavioral psychological symptoms of dementia in dementia patients (Siritipakorn & Muangpaisan, 2015).

2.5 Quality of life in dementia caregiver

Quality of life is an important goal of treatment in chronic illness. It affects family members, society and community.

2.5.1 Definition of quality of life

Quality of life is “the degree to which the experience of an individual's life satisfies that individual's wants and needs (both physical and psychological)” (Kerce, 1992).

Quality of life is an individual's perception of their position in life in the context of the culture and value systems in which they live in regards to their goals, expectation, standards, and concerns. It is a broad-ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment (The WHOQOL Group, 1997).

The quality of life has defined three perspectives: 1) the quality of one's living condition 2) the satisfaction with living conditions, and 3) a combination of both living conditions and satisfaction (Borthwick-Duffy, 1992).

2.5.2 Quality of life in dementia caregiver

Dementia caregivers experienced a significantly lower quality of life, as evidenced by significant decreases in the social functioning dimension (Andrieu et al., 2007). There is a negative correlation between burden and QOL. It means as the burden increases QOL becomes poorer. This burden, affect their physical, psychological, social relationship, and environmental QOL (Srivastava et al., 2016).

Study of Lamliangpon (2015) showed the level of quality of life among major informal caregivers was good; however, the level of quality of life among major informal caregivers was lower than the general Thai people in six dimensions especially in role limitation due to physical and emotional problem (Lamlianpon, 2015). Likewise, the study of NurFatihah et. al. (2013) revealed generally caregivers experienced physical and mental health problems as demonstrated by the lower mean score of the physical composite score (PCS) and mental composite score (MCS). However, the caregiver had a significantly poor physical composite score as compared to mental composite score. The factors associated with the quality of life among dementia caregivers were the behavioral problem of the care recipients, employment, and taking care of severe types of dementia patients. In detail, the factor associated with mental composite score was a behavioral problem of the care recipients. The factor related to physical composite scores were employment and severity of dementia (NurFatihah et al., 2013).

The study of Asawutmangkul, Jaiklom, & Boonyapat (2015) reveals physical dimension has a lower quality of life scores after providing pharmaceutical. The physical dimension associated with caring for a long time. However, the overall average qualities of life for caregivers both before and after providing pharmaceutical care were higher than United State Criteria. (Asawutmangkul, Jaiklom, & Boonyapat, 2015). The literature review demonstrated the effect of the factor on the quality of life including behavioral and depressive symptoms of dementia patients, dependence on basic activities of daily life, low cognitive function, use of antipsychotic medication,

caregiver burden (Mougias, Politis, Lyketsos, & Mavreas, 2011), education levels of family caregivers (Sousa et al., 2013), the living situation of the person with dementia, functional impairment of the person with dementia (Sousa et al., 2013).

2.6 Knowledge of dementia caregiver

Knowledge of dementia caregivers is an understanding of the basic knowledge of dementia and how to care for people with dementia. It is needed for dementia caregivers to know information about knowing the diagnosis, knowledge about dementia, pharmacological therapy, correct cognitive and behavioral disorder management and how to cope with stress. Dementia caregivers need to develop effective communication skills between caregivers and persons with dementia. (Rosa et al., 2010). Moreover, the majority of family caregivers had little access to information about the terminal nature of dementia (Andrews, McInerney, Toye, Parkinson, & Robinson, 2015).

In almost half of the systematic review revealed there are poor and have limited level of knowledge. There is a misconception that dementia is a normal part of elderly people. Other studies showed the participants had only a fair to moderate level of knowledge about dementia. Knowledge about risk factors, causes, the difference between Alzheimer's disease and dementia, treatment, and prevention was poor (Cahill, Pierce, Werner, Darley, & Bobersky, 2015).

From the systematic review, factors correlated to knowledge were age, ethnicity, education, and sex. The education level was associated with knowledge. People who had high education were being more accurately informed. Sex associates with knowledge, women tend to be better informed about Alzheimer's disease and dementia (Cahill et al., 2015).

Knowledge/information is an important factor that has an impact on stress on caregivers. Lack of knowledge about dementia causes dementia caregivers to not estimate patient's abilities which may lead to emotional problems (Sorensen & Conwell, 2011). Dementia caregivers who lack understanding about dementia disease may not care well and be at risk for caregiver burden. Moreover, dementia caregivers who has knowledge were shown to have better decision-making processes (Innes et al., 2011). Caring for a person with dementia requires knowledge of caring dementia. Caregivers who perceived adequate knowledge about dementia is associated with lower levels of caregiver burden (Schindler et al., 2012).

Psychoeducational approaches had improving knowledge of dementia caregivers. However, these effects are present only if the interventions call for active participation and behavior management skills-building (Sorensen & Conwell, 2011). Continuous support groups had increase emotional support and knowledge of dementia caregivers. They accept the behaviors of dementia patients. They can share their knowledge and experience of caring for dementia patients among group members (Churaitatsanee, 2014). Tan, Jennings, Ramirez, Kofman, & Ercoli (2016) studied the one-day intensive boot camp on knowledge. The intensive boot camp was an interactive session, including home safety, behavior management, stress reduction, and care transitions topics. There were significantly improved self-reported knowledge of dementia caregivers (Tan, Jennings, Ramirez, Kofman, & Ercoli, 2016). Likewise, the study showed an effect on boot camp training. The boot camp program was organized as an interactive large and small group breakout sessions with an interspersed panel discussion. The result revealed after training boot camp programs, knowledge of dementia caregivers and the knowledge of dementia caregiving principles and techniques improved (Tan et al., 2019).

2.7 Social support of dementia caregiver

Social support refers to “any type of communication that enables individuals to feel that they have control over a situation, or to any type of social resources that are available to them by non-professional, such as groups or family and friends (Cohen, Underwood, & Gottlieb, 2015). Another definition, social support refers to a “network of family, friends, neighbors and community members that is available in times of need to offer psychological, physical and financial help”(Kohler et al., 2015). Social support expressed as formal or informal relationships, with verbal and nonverbal communication can improve a person’s ability to manage his health status with self-esteem dignity and a sense of belonging (Kourakos, Kafkia, & Minasidou, 2016).

Caregivers that were caring for patients with a chronic deteriorating disease demands social support. Caregivers when received support from a person, they feel understood emotionally. Therefore, they were able to talk more openly about difficulties (Keyes et al., 2016). The subjective burden has been negatively associated with perceived social support and received support. Caregivers who perceived and received high support experience showed less subjective burden (Del-Pino-Casado, Frías-Osuna, Palomino-Moral, Ruzafa-Martínez, & Ramos-Morcillo, 2018).

For patients, types of support provided to Alzheimer’s Disease patients consist of emotional support, esteem support, network support, information support, and physical support. Emotional support of patients can help support the mood of the individual and not try to solve the problem of deteriorating cognitive function. Esteem support encourages a person to take some action and convince them to perform the selected action. Esteem support can increase confidence and decrease the feeling of stress of dementia patients. Network support reflects that people are not alone. People have a network of existing people to help in the situation. Information support is necessary to be provided for both patients and their caregivers. Finally, physical

support is needed when the patients are in the later stage and they could not be self-sufficient (Kourakos et al., 2016).

The social support can reduce the psychological and non-psychological disease burden. (Han et al., 2014). A systematic review showed the categories of four social support intervention consisted of befriending and peer support, family support and social network interventions, support groups, and remote interventions using the internet or telephone (Dam, de Vugt, Klinkenberg, Verhey, & van Boxtel, 2016). Psychosocial intervention can help dementia caregivers in problem-solving and coping strategies. This is beneficial in terms of reducing the caregiver's burden (Chen, Huang, Yeh, Huang, & Chen, 2015).

2.8 Intervention for dementia caregiver

The literature review shows the effect of the intervention on many outcomes such as stress, self-efficacy, upset, quality of life. Caregivers who have some break from caring can reduce depression, burden, and anger. Group support intervention can reduce depression, increase knowledge, social support, coping ability of caregivers. Interventions for individual caregivers' levels have benefited by decreasing depression, stress, and burden (Lopez-Hartmann, Wens, Verhoeven, & Remmen, 2012). Common intervention components include general education, support groups, behavior therapy, psychotherapy and counseling, and respite. Psychoeducational Intervention Program (PIP) can decrease caregiver burden and improve the quality of life of dementia caregivers (Martín-Carrasco et al., 2009). Likewise, the psychoeducational interventions showed better burden results (Martin-Carrasco, Ballesteros-Rodriguez, Dominguez-Panchon, Munoz-Hermoso, & Gonzalez-Fraile, 2014).

There were several interventions for dementia caregivers. Internet-based Caregiver Support Service was used for decreasing burden in Chinese Canadian family caregivers of elderly people with dementia. This program consists of an online caregiver information handbook and an exchange of e-mails between caregivers and professional clinicians. The result revealed nonusers had an increase in burden score while users had a decrease in burden score (Chiu & Eysenbach, 2010). Dementia caregiver in the USA who received Internet-Based Savvy Caregiver or ISBC felt more confident in skills of care and communication with their family. In addition, they found the program convenient, useful, and interesting (Lewis, Hobday, & Hepburn, 2010). The study of Van der Roest (2010) demonstrated dementia caregivers in the community who received a DEMentia-specific dynamic interactive social chart or DEM-DISC had a higher feeling of competence than caregivers who did not receive DEM-DISC. Moreover, participants reported DEM-DISC easy to learn and relatively user friendly (van der Roest, Meiland, Jonker, & Dröes, 2010).

A training dementia caregiver for using and collecting information was important. Torp et al study training programs on how to use and collect information from the internet despite people with dementia or stroke. All computers were connected online. There was videophone contact between participants, call center run by professionals who provided support on the use of ICT. The result reported after training program caregivers used the ICT service, more social contacts and increase support and less need for information about chronic illness and caring (Torp, Hanson, Hauge, Ulstein, & Magnusson, 2008). Caregivers' burden was decreased in people who received family education programs but gradually increased in the control group (Pahlavanzadeh, Heidari, Maghsudi, Ghazavi, & Samandari, 2010). Multi-component interventions were the interventions consisting of a combination of various forms of interventions such as information, education, psychoeducation, support skills training and coping strategies, environmental adaptations for the person with dementia. Multicomponent interventions seem to be more effective than interventions targeting

one aspect of caregiver functioning. Similarly, fixed interventions are less efficacious than those tailored to caregivers' specific needs (Huis in het Veld et al., 2015; Tremont, 2011). Characteristics of effective interventions include being psychotherapeutic, multicomponent, tailored to the specific needs of the caregiver, and of adequate duration. Interventions that have more generic educational components tend to increase caregivers' knowledge about dementia, although they have lesser significant impact on caregivers distress and burden. A psychotherapeutic component was added to intervention to help caregivers apply strategies learned in the intervention and/or address barriers to making changes. Therefore, psychosocial interventions can reduce the negative consequences for family caregivers of individuals with dementia (Tremont, 2011).

The effectiveness of multicomponent interventions on caregiver burden, depression, quality of life, mood and sense of competence (Huis in het Veld et al., 2015). There were several multicomponent interventions for dementia caregivers. Dementia caregivers who received Telephone Tracking-Nursing Home (FITT-NH) showed a significant reduction in feelings of guilt related to placement and reported more positive perceptions of interactions with staff compared to standard care. (J. D. Davis, G. Tremont, D. S. Bishop, & R. H. Fortinsky, 2011). Kwok, Lam, & Chung, (2012) developed case management for dementia caregivers. The program was supported by the case manager via home visits and phone calls, home-based cognitive stimulation activities for the people with dementia and a telephone hotline to access the case manager. An occupational therapy advised on coping strategies, skills training, and behavioral management linked the person with local services. At the 4-month follow-up, the depression decreased significantly for the intervention group but not for the control group. At the 12-month follow-up, the General Health Questionnaire (GHQ) scores for caregivers in the intervention group improved significantly (Kwok, Lam, & Chung, 2012). The coping strategies intervention can decrease caregiver burden in the intervention group. The program consists of

improving knowledge of dementia, providing information regarding support services, techniques to manage patient or cognitive difficulties, support in relaxation and coping, and establishing a caregiver self-support system. After the end of the program, the intervention group's mean score decreased by 7.2 points, and the control group's increased by 2.2 points (Chen et al., 2015).

The intensive boot camp was significantly improving self-reported knowledge of dementia caregiver (Tan et al., 2016). The multicomponent program included three components (group psychoeducation, brief group cognitive behavioral therapy, and group support sessions). The program showed statistically significant improvement in the caregivers' dementia-related knowledge compared to controls (Shata, Amin, El-Kady, & Abu-Nazel, 2017). The 6-month dementia care program found, there were statistically significant differences in caregiver burden and quality of life between the intervention and control group (Chien & Lee, 2010). The multicomponent was a statistically significant drop in the caregivers' burden compared to controls (Shata et al., 2017).

The study in Thailand, the group counseling intervention in an out-patient setting for caregivers can improve in the neuropsychiatric symptoms of persons with dementia when compared with the control group (Senanarong et al., 2004). Caregivers who received Home Environmental Arrangement and Progressive Muscle Relaxation Program had significantly lower stress than before receiving program and caregiver in the control group that received usual care at the statistically significant level of .05 (Worakhunphiset & Sasat, 2015). Cognitive therapy programs had significantly reduced the level of stress among caregivers of patients with dementia (Chaichanettee, 2010). Likewise, giving information about an Anapanasti program can decrease the stress level among dementia caregivers (Pongpaew & Sasat, 2011). Dementia caregivers who received the providing pharmaceutical care had a good quality of life especially the mental health dimension. However, the comparison of quality of life both before and after providing pharmaceutical care, the study revealed that the

physical dimension has a low quality of life score. The result reflects the physical burden of dementia caregivers care for a long time (Asawutmangkul et al., 2015).

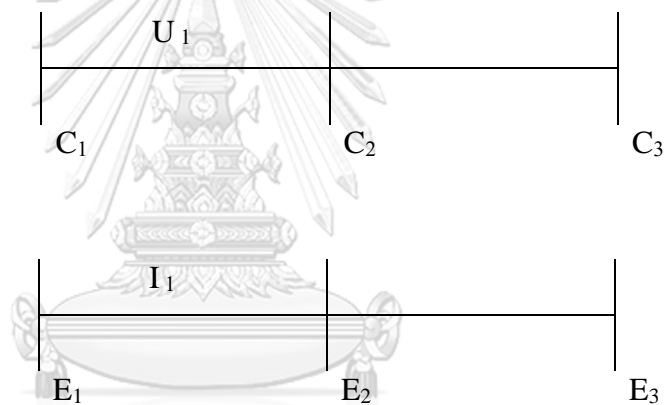


CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study is a quasi-experimental study with two group comparisons. The purpose of this study is to examine the effect of home visit and telephone tracking program on knowledge, caregiver burden, and quality of life among dementia caregivers compared with routine care.



C1 refers to the pretest in the control group

C2 refers to the 1st posttest in the control group

C3 refers to the 2nd posttest or follow up in the control group

E1 refers to the pretest in the intervention group

E2 refers to the 1st posttest (immediately at the end of the program) in the intervention group

E3 refers to the 2nd posttest or follow up (3 months after the end of the program) in the intervention group

I1 refers to the home visit and telephone tracking program for the intervention group.

U1 refers to the routine for the control group.

3.2 Study Area

The setting for this study is the dementia clinic of Ratchaburi Hospital, Ratchaburi Province. The participants of this study are dementia caregivers in the dementia clinic of Ratchaburi Hospital, Ratchaburi Province.

People in Ratchaburi Province are semi-urban, semi-rural people. Ratchaburi hospital is a hospital in the 5th health region. The province is in 5th public health region which consists of Ratchaburi, Nakhonpathom, Suphanburi, Kanchanaburi, Samut Sakorn, Samut Songkhram, Petchaburi, and Prachuap Kiri Khan. The hospitals in 5th health region around Bangkok are Nakhonpathom, Suphanburi, Kanchanaburi, Samut Sakorn, Samut Songkhram. Ratchaburi hospital has a dementia clinic. On the other hand, four hospitals in the 5th health region have no dementia clinic.

The purpose of selecting Ratchaburi hospital was the provincial government hospital around Bangkok that it has a dementia clinic.

3.3 Study population

The percentage of the elderly in Ratchaburi province is 18% that is higher than the percentage of elderly in Thailand. Moreover, the number of dementia patients in Ratchaburi province is around 30% that higher than the percentage of people with dementia in Thailand (Yimyam & Yamsakul, 2013)

The caregivers who visited the outpatient department in the dementia clinic, Ratchaburi hospital, Ratchaburi Province were selected to do intervention and control group. The number of dementia patients who visited the dementia clinic during 2017 was around 130-140 cases. Around 80% of people that visited dementia clinic were dementia caregiver who gets medicines instead of patients, 15% was patient and caregivers that came together, and 5% was patients that came alone. The participants in the intervention received home visit and telephone tracking program training.

3.4 Sampling Technique

The coming days by the appointment of dementia caregivers are Monday, the 2nd and the 4th week of the month. The sampling techniques that were used for this study are as follows:

Step 1 - The days by appointment (Monday, the 2nd and the 4th week of the month.) were allocated at random between intervention group and control group by lottery.

Therefore, the participants of the intervention and control group were separated by a day of appointment to prevent contamination. The doctor makes an appointment to meet every 1st month or 2nd month or 3rd month. If the participants do not come on the appointment day, they can come to the clinic within 7-10 days because they have to see the doctor to receive the medication.

Month	1 st week on Monday	2 nd week on Monday	3 rd week on Monday	4 th week on Monday
1	-	Control group	-	Experimental group
2	-	Control group	-	Experimental group
3	-	Control group	-	Experimental group

Step 2 - Dementia caregivers in outpatient departments who screened data from patient files were purposively selected to do intervention and control groups by inclusion criteria.

3.5 Sample and Sample size

G power program version 3.0.10 was used for calculating sample size. Mean and standard deviation from the study of Tremont, Davis, Bishop, & Fortinsky (Tremont, Davis, Bishop, & Fortinsky, 2008) was taken for calculating sample size by G power program. Tremont, Davis, Bishop, & Fortinsky study the effect of telephone-delivered psychosocial intervention on the burden in dementia caregivers. The sample size in each group was 26. To define sample size in each group was 26 and add 20% attrition rate. The total sample size is 31 participants per group.

3.6 Eligibility Criteria

The data was collected during the months from November 2018 to July 2019. Inclusion and exclusion criteria of dementia caregivers were used for both the intervention and control group as follow:

3.6.1 Inclusion criteria

1. Male or female caregivers over 20 years old.
2. Caring for a relative, family member or close relationships with reported significant memory loss or deterioration in cognitive abilities for at least 6 months.
3. Primary caregiver who were investing at least 6 hours per day in caregiving activities.
4. They have a telephone or mobile phone.
5. Plan to remain in the area as primary caregiver not less than 8 months.
6. To allow the researcher to make home visits and telephone calls.

3.6.2 Exclusion criteria

1. They rejected to participate in the program.
2. Formal caregiver who worked in a nursing home.

3. They are diagnosed with uncontrolled physical illness or psychiatric illness by a doctor.
4. They cannot communicate, read and write in Thai language.

3.7 Measurement Tools

The measurement tools in this study are comprised of two parts:

Part 1. The instrument for data collection

1) Questionnaires for assessing demographic data

1.1 Demographic characteristics questionnaire:

The demographic characteristics questionnaire consisted of items of demographic. The demographic questions were information about age, gender, marital status, education level, employment status, occupation, income, underlying of caregiver, relationship to elderly with family or caregiver, duration of caring, caregivers' length of caregiving, information about formal or informal assistance with caregiving, number of members in the household of the caregiver.

1.2 Revised Thai version of the Multi-dimensional Scale of Perceived Social Support (MSPSS)

Multidimensional Scale of Perceived Social Support (MSPSS) was developed by Zimet et al (1988). The questionnaire is intended to measure an individual perceives social support from three sources (significant others, family, and friends). The questionnaire demonstrates good to excellent internal consistency and reliability with Cronbach's alpha was 0.81-0.98 (Clara, Cox, Enns, Murray, & Torgrudc, 2003; Pedersen, Spinder, Erdman, & Denollet, 2009; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS questionnaire was translated into Thai language by Wongpakaran, Wongpakaran & Ruktrakul (2011) and confirmatory factor analysis of revised version of the Thai multidimensional scale of perceived social support (Tinakon Wongpakaran, Wongpakaran, Sirirak, Arunpongpaisal, & Zimet, 2018) The internal

consistency of the scale was good, with a Cronbach's alpha coefficient of questionnaire was 0.87-0.91 (T. Wongpakaran, Wongpakaran, & Ruktrakul, 2011). The MSPSS contains 12 items rated on a seven-point Likert scale. The scale with scores ranging from 'very strongly disagree' (1) to 'very strongly agree' (7). In this research, the questionnaire is used for assessing social support from family, significant others and friend. The range of scores is 12-84 points. The high score represents high social support from family, significant others and friend. The total score classified into 3 levels.

Low social support	12-36	points
Moderate social support	37-60	points
High social support	61-84	points

2) Questionnaires related to research outcomes

2.1 Dementia Knowledge Assessment Tool Version Two

Dementia Knowledge Assessment Tool Version Two (DKAT2) was developed by Toyce, et.al (2014). "The DKAT2 is used to measure dementia knowledge of family carers and aged care staff with a greater emphasis on late-stage dementia" (Toye et al., 2014). There are 21 questions about knowledge of dementia. There was a three-point scale (true / false/ don't know). The total score of knowledge is 21 points that means the correct answer will be scored 1 point, incorrect and don't know answers will be scored 0 point. The range of scores is 0-21 points. The high score represents high knowledge. The total score of caregivers' knowledge classified into 3 levels.

Poor	0-13	points	(<60%)
Moderate	14-17	points	(60-80%)
High	18-21	points	(>80%)

This questionnaire was originally written in English. A forward translation from English into Thai by a researcher and backward translation by a Thai independent translator who is a native English speaker was completed. In this research, the Dementia Knowledge Assessment Tool Version 2 is used for assessing knowledge of dementia caregivers. The questionnaire showed Cronbach alpha coefficient was 0.94.

2.2 Thai Burden Interview for Caregivers of Patients with Chronic Illness

The questionnaire was developed by Zarit, Reever, & Bach-Peterson (1980). There are 22 items for assessing the feeling of caregiver on the impact of caregiving on emotional and physical health functioning, social life and financial status (Zarit, Reever, & Bach-Peterson, 1980). The range of scores is 0-88 points. The high score represents high burden. Each item on the interview is a statement which the caregiver is asked to endorse using a 5-point scale. The response options range is 0-4. The details are as follows;

0	=	Never
1	=	Rarely
2	=	Sometimes
3	=	Quite frequently
4	=	Nearly always

Zarit Burden Interview was translated into Thai language for caregivers of patients with chronic illness and quality analysis by Toonsiri, Sunsern, & Lawang (2011). The Cronbach Alpha Coefficient of the questionnaire was 0.92 (Toonsiri, Sunsern, & Lawang, 2011). In Thailand, the questionnaire was used for measuring caregiver burden among caregivers of Alzheimer's and dementia patients at the department of psychiatry in King Chulalongkorn Memorial Hospital (Rakkhamnuan & Lueboonthavatchai, 2012; Silpakit, Silpakit, & Chomchuen, 2014). The ZBI questionnaire was divided cut-offs of total score as follows: (Hébert, Bravo, & Prévile, 2000; Rankin, Haut, Keefover, & Franzen, 1994)

- Total score was lower than 21 – little or no burden
- Total score varied from 21 to 40 – mild to moderate burden
- Total score ranged from 41 to 60 - moderate to severe burden
- Total score was higher than 61 - severe burden

In this research, the Zarit Burden Interview is used for assessing the burden of dementia caregivers. The questionnaire showed Cronbach alpha coefficient was 0.90.

2.3 The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI).

The World Health Organization Quality of Life (The WHOQOL Group)-BREF was developed by the World Health Organization. The WHOQOL-BREF questionnaire is well-known and widely used tool for measure quality of life. The WHOQOL-BREF questionnaire comprises of 26 items. A total of 24 items are divided for measuring 4 domains (physical health, psychological health, social relationship, and environment). Moreover, there are 2 items to measure the overall quality of life and general health. There is a five-point rating scale (1 to 5). The range of score is 26-130 points and it was divided cut-offs of total score as follow:

Total score range from 26-60	=	low quality of life
Total score range from 61-95 point	=	moderate quality of life
Total score range from 96-130 point	=	good quality of life

This questionnaire was used to measure the quality of life among Thai dementia caregivers in the outpatient department of Ramathibodi Hospital, Prasat Neurological Institute (Sangsarawad, Lagampan, & Chansirikarnjana, 2012), older caregivers of elderly stroke patients attending the Neurological Medicine and Surgery Clinic and the Out Patient Department at Chiang Mai Neurological Hospital (Kunyodying, Pothiban, & Khamplosiri, 2015). The WHOQOL-BREF questionnaire was translated into Thai language by Mahuntirunkul, et.al. (1998). The Cronbach's alpha coefficient of the World Health Organization Quality of Life - Thai

(WHOQOL-BREF-THAI) was 0.846 (Mahuntnirunkul, Tantipiwattanasakool, Poompisanchai, Wongsuwan, & Prommanajirangkool, 1998). In this research, the WHOQOL-BREF-THAI is used for assessing the quality of life of dementia caregivers.

3) Questionnaires for home visit and telephone tracking program

3.1 Revised Memory and Behavior Problem Checklist (RMBPC)

Revised Memory and Behavior Problem Checklist (RMBPC) was developed by Terri et al (1992). The RMBPC is a 24 items checklist that requires caregivers to rate the frequency of problem behavior and memory difficulties in patients during the previous week and caregiver rating of their reaction to each of the behavioral problems (Teri et al., 1992). It is a self-administered caregiver questionnaire. High scored showed higher frequency of problem behavior and memory, and reaction to these problems. The scales measure for frequency of the problem and reaction to it. There are five-point scale (0 to 4) for frequency of behavioral problem and reaction to the problems. If the question score is 9 (don't know/not applicable), exclude it from the sum and item count. The details are as follows;

Frequency Ratings:

0 = never occurred

1 = not in the past week

2 = 1 to 2 times in the past week

3 = 3 to 6 times in the past week

4 = daily or more often

9 = don't know/not applicable

Reaction Ratings:

0 = not at all

1 = a little

2 = moderately

3 = very much

4 = extremely

9 = don't know/not applicable

This questionnaire was originally written in English. It was translated into Thai by Ondee, Panitrat, Pongthavornkamol, Senanarong, Harvath, & Nittayasudhi (2013). The study of Ondee, et. al. (2013) demonstrated the reliability of the instrument was 0.93. (Ondee et al., 2013). The questionnaire measured memory and behavioral problems among Taiwanese patients with Alzheimer's disease (Fuh, Liu, Wang, Wang, & Liu, 2005) and Thai persons with dementia (Ondee et al., 2013). In this research, the questionnaire is used for assessing the problem of dementia patients. The information from the questionnaire will be implemented during home visit and telephone tracking program.

3.2 Clinical Dementia Rating (CDR)

Clinical Dementia Rating or CDR was developed at Washington University School of Medicine, first published in 1982 and revised in 1993 (Morris, 1997). CDR is a semi-structured interview with primary caregivers and individuals with dementia. The questionnaire has six categories, including Memory, Orientation, Judgement and Problem-solving, Community Affairs, Home and Hobbies, and Personal Care.

Scores in each category are combined to obtain a composite score ranging from 0 through 3. The global CDR is derived from the scores in each of the six categories. Memory (M) is considered as the primary category and all others are secondary.

Primary category	Secondary category
Memory (M)	<ul style="list-style-type: none"> - Orientation - Judgment and Problem-solving, Community Affairs - Home and Hobbies - Personal Care.

The guideline for interpretation the result is as follows;

1. If at least three secondary categories are given the same score as memory. CDR score is the score of memory.

2. If three or more secondary categories are given a score greater or less than the memory score. CDR score is the major of secondary categories on whichever side of M has a greater number of secondary categories.

3. If three secondary categories are scored on one side of memory and two secondary categories are scored on the other side of memory. CDR score is the score of memory.

4. If memory score is 0.5 and three or more secondary categories are scores greater than or equal to 1. CDR score is 1 point.

5. If the memory score is zero, CDR score is zero. Except for or more secondary categories are score greater than or equal to 1. CDR is 1 point.

There is a five-point rating scale of CDR.

0	=	no impairment
0.5	=	questionable dementia
1	=	mild dementia
2	=	moderate dementia
3	=	severe dementia

In this research, the questionnaire is used for assessing the stage and severity of dementia. The information from the questionnaire will be implemented during home visit and telephone tracking program.

Part 2: Home visit and telephone tracking program

Home visit and telephone tracking program is a multi-component program.

The program was developed base on the transactional theory of stress and coping (TTSC) and literature reviews. The program consists of group education sessions, home visits, and telephone tracking. The duration of the program is 8 weeks. The details of the program are shown in the appendix and the summary of the program as follows:

Activity 1 “Education session” (1st week)

- The participants received summary group education about knowledge of dementia by a researcher. The researcher has the opportunity to ask questionable issues.
- The researcher asks permission for home visit and telephone tracking and makes an appointment (date and time) with participants for home visit.

Activity 2 “first home visit” (2nd week)

- Researcher recheck the stage of dementia of people with dementia by observing the record in the intervention form.
- To assess the home environment of dementia caregivers and recommendations about home arrangement.
- Researcher and research assistance interview dementia caregivers about the major problems of dementia caregivers.
- To summarize the major problem of caregivers and recommendation strategies for problem-solving.
- The researcher makes an appointment (date and time) with participants for telephone tracking.

Activity 3 “telephone tracking once a week” (3rd to 7th week)

The dementia caregiver received telephone contacts once a week. Telephone tracking focuses on tailored the discussion topic to the specific needs of the caregiver, providing dementia education, emotional support, directing caregivers to appropriate resources, encouraging caregivers to attend to their physical emotional and social needs, teaching caregiver's strategies to cope with ongoing problems. Telephone tracking follow a similar protocol

- 1) Introduction and identify the purpose of the call
- 2) Assessment of dementia caregiver's current status. The researcher identifies positive and negative changes since the last contact.

3) Assessment of key areas. The researcher assesses and notes any changes in each key area of functioning. The researcher reinforces the need to appraise and reappraise these issues.

4) Review of other issues and identify other issues that could be problematic

5) The researcher provides support and assistance to assist caregivers to solve problems and try to use family resources.

6) To summarize the major problem of caregiver and recommendation strategies for problem-solving.

7) The researcher made an appointment (date and time) with participants for telephone tracking.

Activity 4 “second home visit” (8th week)

- The team researcher re-evaluated the home environment and recommendation about home arrangement.

- Research asked caregivers to describe how they handle difficulties over the last month and encourages the caregiver to continue to develop and utilize adaptive coping strategies.

- Continuing strategies to cope with the remaining problems of dementia caregivers.

- To recommend support service or health care team (dementia clinic at Ratchaburi hospital) to continue the care for people with dementia and dementia caregivers.

- Issue of termination by allowing caregivers to anticipate home visit and telephone tracking contacts when coming to the end.

- To remind the appointment.

Activity 5 “Post-test I” (8th or 9th week): The participants were received collecting data (post-test II) by questionnaires or interviews.

Activity 6 “Post-test II or Follow up” (3 months after the end of the program): The participants were received collecting data (post-test II) by questionnaires or interviews.

3.8 Testing of Measurement Quality

3.8.1 Content validity

The home visit and telephone tracking program and questionnaires were validated by 5 qualification experts. The IOC of Dementia Knowledge Assessment Tool Version 2 is 0.71. After recommendations from 5 experts, the Dementia Knowledge Assessment Tool Version 2 and the program are revised by the researcher.

The standard questionnaire, Clinical Dementia Rating(CDR), Revised Memory and Behavior Problem Checklist (RMBPC), Thai Burden Interview for Caregivers of Patients with Chronic Illness, Revised-Thai version of the Multi-dimensional Scale of Perceived Social Support (r-T-MSPSS) and WHOQOL-BREF do not validate by experts.

3.8.2 Reliability

1) The home visit and telephone tracking program were implemented by two focus group discussions (Rauf, Baig, Jaffery, & Shafi, 2014). People in the first focus group discussion was the health care team in Primary Care Hospital. People in the second focus group discussion is dementia caregiver. Each focus group had 4-5 participants. The researcher interviewed the member in the focus group following guiding questions that were understanding and recommendation of details and appropriateness. Suggestions from these health care teams and dementia caregivers were incorporated in the revision of the program.

2) The questionnaires were implemented in the trial study with 30 qualified dementia caregivers. After the questionnaires, was calculated by Cronbach alpha.

- The Cronbach's alpha coefficient of the Revised-Thai version of the Multi-dimensional Scale of Perceived Social Support (r-T-MSPSS) was 0.75.

- The Cronbach's alpha coefficient of Dementia Knowledge Assessment Tool Version Two was 0.94.

- The Cronbach's alpha coefficient of Thai Burden Interview for Caregivers of Patients with Chronic Illness was 0.90.

- The Cronbach's alpha coefficient of The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI) was 0.96.

- The Cronbach's alpha coefficient of Revised Memory and Behavior Problem Checklist (RMBPC) was 0.82.

3.9 Data Collection

This study aims to evaluate the effectiveness of home visit and telephone tracking program to knowledge, caregiver burden, and quality of life among dementia caregivers, Ratchaburi, Thailand. Three trained research assistants were running the program. The training course took 3 hours, 3 times by researcher and registered psychiatric nurse.

3.9.1 Preparation phase: Research Assistant Training Course

The three research assistants (RA) are registered nurses or public health officers who graduated with a bachelor's degree in Public Health or Nursing. They were educated on the basic principle of home visit and counseling techniques in the bachelor's degree.

Three research assistants have received training courses by researchers. The training course includes research objectives, content of home visit and telephone

tracking program, knowledge about people with dementia and how to care for them, coping strategies, and counseling techniques, data collection skills. This course was set 1 month before the recruitment process at the dementia clinic, Ratchaburi hospital.

Research assistance who pass the training course and evaluate the process of data collection were assigned 10-11 participants for data collection. The researcher observes the research assistance throughout the process of data collection in the first and second participants. The researcher was rechecking the quality of data collection by meeting research assistances every 2 weeks.

3.9.2 Data collection phase

1. The researcher submitted the introduction letter issued by College of Public Health Sciences, Chulalongkorn University to the head of Ratchaburi hospital, Ratchaburi Province for requesting data collection.

2. All dementia caregivers who visited dementia clinics were screened from the data in the patient files by a researcher at the dementia clinic.

3. The dementia caregivers who met inclusion criteria were selected for the intervention and control group. The participants of the intervention and control group were separated by a day of the appointment to prevent contamination.

4. Dementia caregivers were recruited even if the dementia patient had any kind of chronic disease before and during the study.

5. The researcher introduced themselves to the dementia caregivers, and informed them about the objective, then described the purpose and the procedures of the study. After the participants listened and read the information sheet, they signed a consent obtained from those subjects who met the criteria and agreed to participate.

1 Intervention group

1.1 Activity 1 (1st week) “Pre-test and education session (20-30minutes)”

- The participants were received collecting data (pretest) by self-administered questionnaires. The questionnaire consists of demographic data questionnaire, Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health

Organization Quality of Life - Thai (WHOQOL-BREF-THAI), Revised Memory and Behavior Problem Checklist (RMBPC) and Revised-Thai version of the Multi-dimensional Scale of Perceived Social Support (r-T-MSPSS).

- The participants received group education about knowledge of dementia by a researcher at the dementia clinic.
- The researcher asked permission for home visit and telephone tracking and made an appointment (date and time) with participants for home visit.

1.2 Activity 2 (2nd week) “first home visit”

- Researchers rechecked the stage of dementia of people with dementia by observing and using Clinical Dementia Rating (CDR).
- To assess the home environment of dementia caregivers and recommendations about home arrangement.
- The participants will receive tailored the knowledge topic to the specific needs of the caregiver by team research at home.
- Researchers and researchers assistant interview dementia caregivers about the major problems of dementia caregivers.
- To summarize major problems of caregiver and recommendation strategies for problem solving.
- The researcher makes an appointment (date and time) with participants for telephone tracking.

1.3 Activity 3 (3rd to 7th week) “telephone tracking once a week”

The dementia caregiver received telephone contacts once a week. Telephone tracking focuses on tailored the discussion topic to the specific needs of the caregiver, providing dementia education, emotional support, directing caregivers to appropriate resources, encouraging caregivers to attend to their physical emotional and social needs, teaching caregiver's strategies to cope with ongoing problems.

1.4 Activity 4 (8th week) “second home visit”

- Team researcher re-evaluated home environment and recommendation about home arrangement.
- Research asking caregivers to describe how they handle difficulties over the last month and encourages the caregiver to continue to develop and utilize adaptive coping strategies.
- Continuing strategies to cope with the remaining problems of dementia caregivers.
- To recommend support service or health care team (dementia clinic at Ratchaburi hospital) to continue caring for people with dementia and dementia caregivers.
- Issue of termination by allowing caregivers to anticipate home visit and telephone tracking contacts when coming to the end.
- To remind the appointment.

1.5 Activity 5 (8th week) “Post-test I”

- The participants received collecting data (post-test I) by questionnaires. The questionnaire consists of Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI)

1.6 Activity 5 (3 months after the end of the program or week 20) “Post-test II or follow up”

- The participants received collecting data (post-test II or follow up) by questionnaires. The questionnaire consists of Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI).

- For the participants who did not come back for the second and third assessments, the researcher called the participants to inquire about problems as to why they did not come to the appointment and invited them to visit the appointment of the dementia clinic. The participants who did not come back to the dementia clinic within 1 month, researchers excluded those participants from the study.

2. Control group

2.1 Activity 1 (1st week) “Pre-test”

- The participants were received collecting data (pretest) by self-administered questionnaires. The questionnaire consists of demographic data questionnaire, Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI), Revised Memory and Behavior Problem Checklist (RMBPC), Revised-Thai version of the Multi-dimensional Scale of Perceived Social Support (r-T-MSPSS) and Clinical Dementia Rating (CDR)

2.2 Activity 2 (2nd week to 8th week) “Routine care”

- The participants received routine care from nurses at the dementia clinic. The routine care provided advice on the problem of the patient at the clinic on the appointment day.

2.3 Activity 3 (8th week) “Post-test I”

- The participants received collecting data (post-test I) by questionnaires. The questionnaire consists of Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI)

- To give a gift.

2.4 Activity 4 (3 months after the post test I or week 20) “Post-test II or follow up”

- The participants received collecting data (post-test II) by questionnaires. The questionnaire consists of Dementia Knowledge Assessment Tool Version Two, Thai Burden Interview for Caregivers of Patients with Chronic Illness, The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI)
- The participants received a gift and booklet for caring for patients with dementia.
- The participants who do not come back for the second and third assessment, the researcher called the participants to inquire about problems for not coming to the appointment and invites them to visit the appointment of dementia clinic. The participants who do not come back to the dementia clinic within 1 month, researchers excluded those participants from the study.

Noted: Routine care is the usual care provided by a dementia clinic nurse which consists of querying the symptoms of dementia patients. Moreover, the nurse will give advice when the dementia caregiver has a question about a patient.

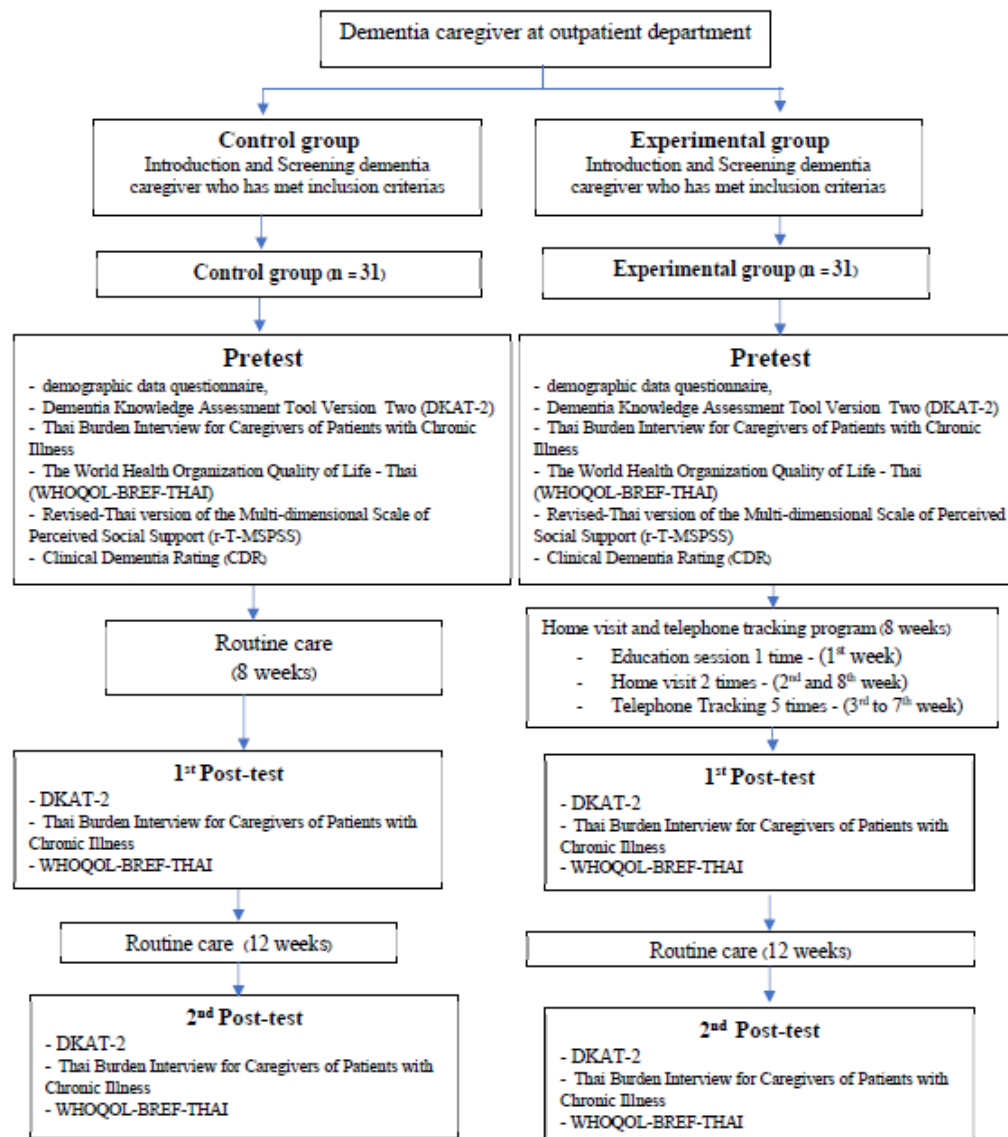


Figure 2.1 Process of intervention

3.10 Data Analysis

After collecting data through questionnaires conducted by the researcher and checking for completeness, the data were analyzed by using SPSS (Statistic Package of Social Science) program version 16. The data were analyzed as follows:

3.10.1 Descriptive analysis

Descriptive statistics including frequency, proportion, percentage, mean, maximum, minimum and standard deviation were used for analysis.

3.10.2 Statistical analysis

1) T-test (continuous data) and Chi-Square (categorical data) were used to test of homogeneity of categorical data between intervention and control group.

2) Repeat measures ANOVA was used to compare group means on a caregiver burden across repeated measurements of time.

3) Mann-Whitney Test was used to compare group means on a dependent variable knowledge and quality of life between intervention and control group.

4) Friedman Test and Dunn's test were used to compare group means on a dependent variable knowledge and quality of life within the group.

Statistical significance was considered at $p\text{-value} < 0.05$.

3.11 Protection of Human Subject

Preparation phase

1. The intervention protocol was approved by the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University and Ethical Committee of Ratchaburi Hospital.

2. After gaining permission from Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University and Ethical Committee of Ratchaburi Hospital, the investigator submitted a letter of introduction from the College of public health sciences, Chulalongkorn

University to the Director of Ratchaburi hospital to access the hospital data and request data collection.

3. After getting permission from the director of Ratchaburi hospital, the researcher met the head of the outpatient department of psychiatry to explain the objectives and methods of data collection.

Collecting data phase

1. The research team introduced themselves as a research team and they did not reveal that they are health personnel because potential participants might be afraid and refuse to participate in the project.

2. The researcher made the first contact and introduced herself to the subjects, then described the purpose and procedures of the study, including the length of the program, possible risks, and benefits to the participants. To maintain confidentiality, numbers were assigned to identify the subject and their information was kept in a locked file during the study. After the subject listened and read the information sheet, signed consent was obtained from those subjects who met the inclusion criteria and agreed to participate.

3. The participants are free to refuse to answer any questions they prefer not to discuss and can ask questions or stop the interviews at any time.

4. Process of home visit and telephone tracking program

4.1 Pretest and education session

The researcher implemented collecting data and set education sessions during waiting for doctors at the outpatients' department. The subject is free to refuse to answer any questions or stop the intervention at any time.

4.2 Home visit

The researcher asked permission for home visit and made an appointment with the dementia caregiver. While visiting the house, the researcher tried to control the time and ask for permission before evaluating the home environment. The subject is free to refuse to answer any questions or stop the intervention at any time.

4.3 Telephone tracking

The researcher asked permission for telephone tracking and made an appointment with the dementia caregiver and try to control time. The subject is free to refuse to answer any questions or stop the intervention at any time.

4.4 1st and 2nd Post test The researcher implemented collecting during waiting for doctors at the outpatients' department. The subject is free to refuse to answer any questions or stop the intervention at any time.

5. A code number on the questionnaires was applied to protect confidentiality. The dementia caregivers were informed that they do not identify their names or other data in any published reports of this research. Only researchers could access all hard copies of questionnaires and notes. All signed consent forms were kept in a separate location.

6. The participants in the intervention group and control group received a reward (a total of 300 baht for intervention group and total of 100 baht for control group).

CHAPTER IV

RESEARCH RESULTS

The purpose of this study was to examine the effect of home visit and telephone tracking program on knowledge, burden, and quality of life among dementia caregivers compared with usual care. The results were presented into two sections: socio-demographic characteristics of dementia caregivers and hypothesis testing results.

4.1 Socio-demographic characteristics and data of the participants

The sixty-two dementia caregivers were recruited into this study. There were 31 caregivers of the intervention and control groups. Two participants were excluded from this study (one patient of each group) because 1 dementia patient in the intervention group died, and 1 dementia caregiver in the control group didn't follow up and couldn't be contacted during the follow-up period (20th week).

Table 1 Demographic characteristics of intervention group and control group

Characteristics	Intervention Group		Control Group		<i>P-value</i>
	Group		(n = 31)		
	(n = 31)				
	n	%	n	%	
Gender					
Male	8	25.8	4	12.9	0.19 ^a
Female	23	74.2	27	87.1	
Age					
20-40 years	2	6.5	3	9.7	0.86 ^b
41-60 years	24	77.4	24	77.4	
≥ 60 years	5	16.1	4	12.9	

Characteristics	Intervention Group (n = 31)		Control Group (n = 31)		P-value
	n	%	n	%	
Marital status					
Single	11	35.5	7	22.6	0.41 ^a
Married	17	54.8	17	54.8	
Divorced/Separated/ Widowed	3	9.7	7	22.6	
Education level					
Primary school	12	38.7	8	25.8	0.49 ^a
High school	11	35.5	15	48.4	
Bachelor's degree	8	25.8	8	25.8	
Employment Status					
Full time	17	54.8	17	54.8	0.91 ^b
Part time	3	9.7	4	12.9	
Not Employed/ Retired	11	35.5	10	32.3	
Occupation					
Merchant	5	16.1	8	25.8	0.54 ^b
Farmer	10	32.3	11	35.5	
Employment/ Employee	6	19.4	7	22.6	
Government officer	3	9.7	2	6.5	
Unemployment//Retired	7	22.6	3	9.7	

^a Chi-square test, ^b Fisher exact test

The socio-demographic characteristics of dementia caregivers were presented in Table 1. The majority of both groups were female, 41-60 years, married, full-time workers. The age of participants ranged from 24 to 74 years, with a mean of 53.06 years of the intervention group (SD = 8.71) and 52.52 years of the control group (SD = 9.58). The participation in the intervention and control group were not different in terms of gender, age, marital status, education level, employment status, occupation at p-value greater than 0.05.

Table 2 Data related to caregiver for caring dementia patients of intervention group and control group.

Characteristics	Intervention Group (n = 31)		Control Group (n = 31)		<i>P-value</i>
	n	%	n	%	
Underlying					
Yes	15	48.4	11	35.5	
No	16	51.6	20	64.5	0.30 ^a
Relationship to care recipient					
Spouse	5	16.1	5	16.1	
Son	6	19.4	3	9.7	
Daughter	15	48.4	18	58.1	
Relative	3	9.7	2	6.5	
Friend / Adopt child / Neighbor	2	6.5	3	9.7	0.87 ^b
Length of time as a caregiver					
0-3 years	13	41.9	6	19.4	
3.1-6 years	10	32.3	10	32.3	
6.1-9 years	5	16.1	11	35.5	
More than 9 years	3	9.7	4	12.9	0.17 ^b
Time for caring (hour/day)					
6-12 hours	29	93.6	31	100	
More than 12 hours	2	6.4	0	0	0.26 ^b

^a Chi-square test, ^b Fisher exact test

Table 2. Data related to caregiver for caring dementia patients of intervention group and control group.

Characteristics	Intervention Group (n = 31)		Control Group (n = 31)		<i>P-value</i>
	n	%	n	%	
Family members that assist caring for the individual					
Yes	19	61.3	20	64.5	0.79 ^a
No	12	38.7	11	35.5	
Responsible for caring for other patients					
Yes	10	32.3	8	25.8	0.58 ^a
No	21	67.7	23	74.2	
Number of people in the house					
2	5	16.1	1	3.2	0.94 ^b
3	10	32.3	6	19.4	
4	6	19.4	9	29.0	
5	6	19.4	4	12.9	
More than 5	4	12.9	11	35.5	

^a Chi-square test, ^b Fisher exact test

The participation in intervention and control group were not different in terms of underlying, relationship to care recipient, length of time as a caregiver, time for caring dementia patient, family members that assist caring for the individual, other caregiver responsibilities for anyone else, number of people in house and stage of dementia of patients p-value greater than 0.05. The majority of both groups were the daughter of dementia patients, there are family members that assist in caring for patients, and not responsible for caring for other patients.

Table 3 Demographic data of the sample-statistical analysis of income.

Characteristics	n	Minimum	Maximum	Mean	SD	<i>P-value</i>
Income (bahts)						
Intervention group	31	1,000	25,000	11661.29	7013.54	0.79 ^c
Control group	31	6,000	20,000	12064.52	4734.17	

^c T-test

The income of participants ranges from 1000 to 25000 baht, with the mean of 11661.29 baht of the intervention group (SD = 7013.54) and 12064.52 baht of the control group (SD = 4734.17). There were no significant differences in income at p-value greater than 0.05.

Table 4 Data of dementia patients

Characteristics	Intervention Group		Control Group		<i>P-value</i>
	(n = 31)		(n = 31)		
	n	%	n	%	
Stage of dementia					
Mild dementia	8	25.8	8	25.8	0.94 ^a
Moderate dementia	18	58.1	17	54.8	
Severe dementia	5	16.1	6	19.4	

^a Chi-square test

The majority of the stage of dementia of patients in both groups were moderate dementia. There were no significant differences in income at p-value greater than 0.05.

Table 5 Age of dementia patients of the sample-statistical analysis of income.

Characteristics	n	Minimum	Maximum	Mean	SD	P-value
Age of dementia patients (years)						
Intervention group	31	60	91	74.87	8.08	0.45 ^c
Control group	31	67	90	76.55	6.96	

^c T-test

The age of dementia patients ranges from 60 to 91 years, with the mean of 74.87 years of the intervention group (SD = 8.08) and 76.55 years of the control group (SD = 6.96). There were no significant differences in income at p-value greater than 0.0

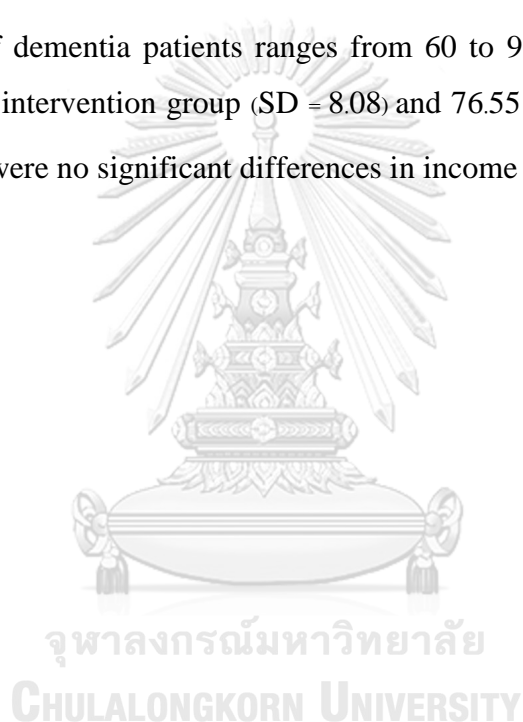


Table 6 The sample-statistical analysis of the individual perceives social support from three resources, frequency of problem in dementia patients, and caregiver's reaction to the problem in dementia patients.

Characteristics	n	Minimum	Maximum	Mean	SD	P-value
Individual perceives social support from three resource						
Intervention group	31	41.00	54.00	47.81	3.07	0.840 ^c
Control group	31	41.00	52.00	47.32	2.94	
The frequency of problem behavior and memory difficulties in dementia patients.						
Intervention group	31	43.00	61.00	53.68	3.87	0.460 ^c
Control group	31	45.00	59.00	54.35	3.41	
The caregiver's reaction to problem behavior and memory difficulties in dementia patients.						
Intervention group	31	39.00	58.00	51.84	4.22	0.395 ^c
Control group	31	45.00	59.00	53.29	3.39	

^c T-test

The score of individual perceives social support from three resources of participants from 41 to 54, with the mean of 47.81 of the intervention group (SD = 3.07) and 47.82 of the control group (SD = 2.94). The social support from three resources of all participants in the intervention and control group was moderate social support. The frequency of problem behavior and memory difficulties in dementia patients of participants range from 43 to 61, with the mean of 53.68 of the intervention group (SD = 3.87) and 54.35 of the control group (SD = 3.41). The caregiver's reaction to problem behavior and memory difficulties in dementia patients ranges from 39 to 59,

with a mean of 51.84 of the intervention group (SD = 4.22) and 53.29 of the control group (SD = 3.39). There were no significant differences of individual perceives social support from three resources, frequency of problem in dementia patients, and caregiver's reaction to the problem in dementia patients at p-value greater than 0.05.

4.2 Comparison of knowledge scores among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within groups and between groups at baseline, at the end of the program (week 8) and the 3rd month after the end of the program implementation (week 20).

Normality was tested for knowledge score at baseline, week 8 and 20 by Shapiro-Wilk test statistic. Knowledge scores were non-normal distribution. Mann-Whitney Test was used for comparing the score between groups. Friedman Test and Dunn's test were used for comparing the knowledge score within group.

Table 7 Mean and standard deviation of knowledge score between intervention and control group

Group and Time	N	Mean	Sd.	Mean Rank
Intervention				
Baseline	31	10.23	1.995	1.033
Week 8	30	13.63	1.650	2.417
Week 20	30	13.77	1.633	2.550
Control				
Baseline	31	10.35	1.889	1.567
Week 8	31	10.97	2.057	2.150
Week 20	30	11.13	2.113	2.383

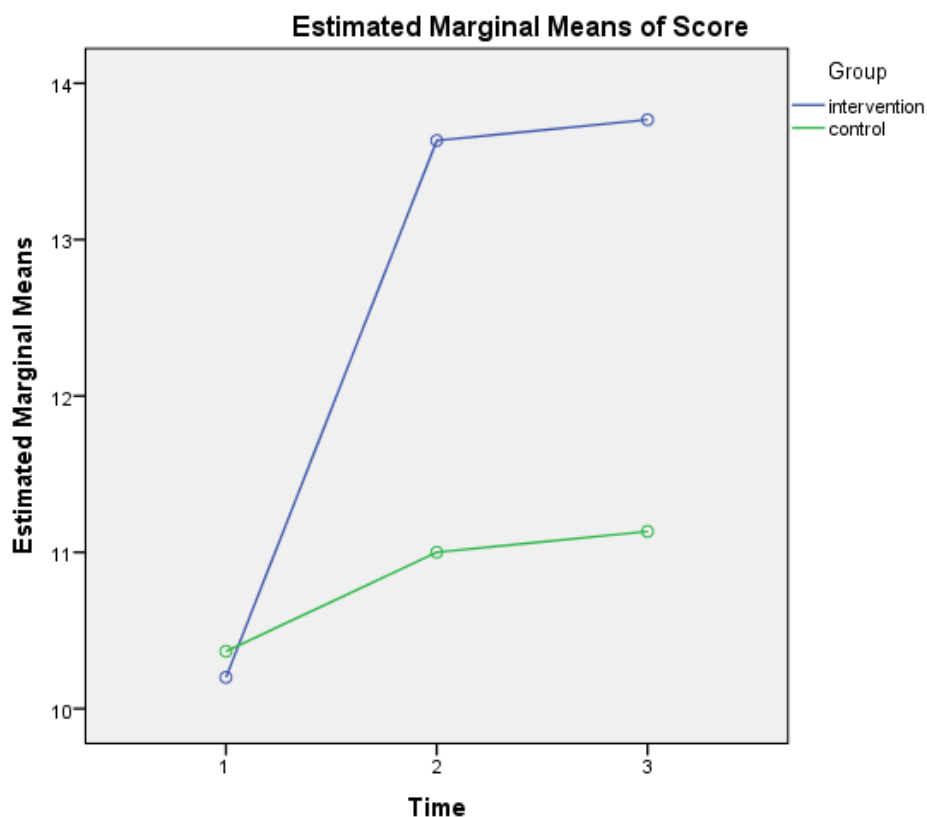


Figure 4.1 Mean of knowledge score

The comparison of mean and standard deviation of knowledge scores in intervention group showed that, at baseline, the mean score was 10.23. After the program implementation or week 8, the mean score of knowledge increased to 13.63. At week 20, the mean score of knowledge increased to 13.77. The baseline of knowledge scores of control group was 10.35. After the program implementation of week 8, the mean score of knowledge increased from 10.35 to 10.97 and increased to 11.13 at week 20.

Mean of Rank of intervention and control group was tested By Friedman test. There was the significance of mean of rank ($p < .001$) at p-value 0.05. Dunn's test was used to test the differences within the group according to the test duration.

Table 8 Comparison of knowledge score at baseline, week 8 and week 20.

Group	Test stat	Df.	P	Time	Test stat	Sd. error	Sd. Test stat	P-value
(Within group)				(Within group)				
Intervention	55.802	2	<0.001*	Baseline-Week 8	-1.383	0.258	-5.358	<.001*
				Baseline-Week 20	-1.517	0.258	-5.874	<.001*
				Week 8- Week 20	-0.133	0.258	-0.516	1.000
Control	17.148	2	<0.001*	Baseline- Week 8	-0.583	0.258	-2.259	.072
				Baseline-Week 20	-0.717	0.258	-2.776	.017*
				Week 8- Week 20	-0.133	0.258	-0.516	1.000

Intervention group, there were significant differences in knowledge score between baseline and week 8 ($p < .001$), baseline and week 20 ($p < .001$) at p-value greater than 0.05. In the control group, there were significant differences in knowledge score between baseline and week 20 ($p < .001$) at p-value greater than 0.05.

Table 9 Comparison of knowledge score between intervention and control at baseline, week 8 and week 20.

Group (Between group)	N	Mean Rank	Sum of Ranks	Mann- Whitney U	Df.	<i>P-value</i>
Baseline						
Intervention	31	30.774	954.000	458.000	1	.748
Control	31	32.226	999.000			
Week 8						
Intervention	30	41.833	1255.000	140.000	1	<.001*
Control	31	20.516	636.000			
Week 20						
Intervention	30	40.617	1218.500	146.500	1	<.001*
Control	30	20.383	611.500			

There were no significant differences in knowledge score between intervention and control group at baseline ($p = 0.748$) at p -value greater than 0.05. There were significant differences in knowledge score between intervention and control group at week 8 ($p < .001$) and week 20 ($p < .001$) at p -value greater than 0.05.

4.3 To compare caregiver burden among dementia caregivers that were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, at the end of the program (week 8) and the 3rd month after the end of the program implementation (week 20).

Normality was tested for caregiver burden at baseline, week 8 and 20 by Shapiro-Wilk test statistic. The caregiver burden was a normal distribution. Repeated measure ANOVA was used to compare group means on caregiver burden across repeats measurements of time.

Table 10 Comparison of caregiver burden at baseline, week 8 and week 20.

Time	Group	Mean	Sd.
Baseline	Intervention	45.67	12.155
	Control	47.33	13.515
	Total	46.50	12.771
Week 8	Intervention	43.27	10.751
	Control	49.37	11.842
	Total	46.32	11.628
Week 20	Intervention	44.00	9.986
	Control	50.07	11.441
	Total	47.03	11.077

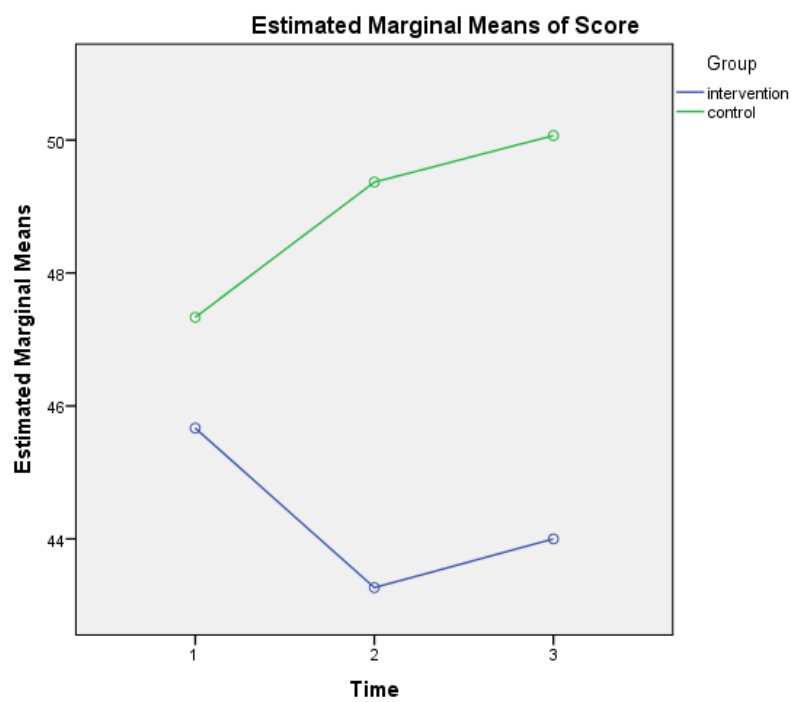


Figure 4.2 Mean of caregiver burden score

The comparison of the mean and standard deviation of caregiver burden in the intervention group showed that, at baseline, the mean score was 45.67. After the program implementation or week 8, the mean score of caregiver burden decreased to 43.27. At week 20, the mean score of caregiver burden increased to 44.00. The baseline of caregiver burden of the control group was 47.33. After the program implementation of week 8, the mean score of caregiver burden increased from 47.33 to 49.37 and increased to 50.07 at week 20.



Table 11 Comparison group means on caregiver burden across repeated measurements of time.

Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig</i>
Caregiver burden					
Between times (Group)	318.935	1	318.953	2.394	0.127
Subjects x time (Experimental error)	7727.026	58	133.225		

There was no statistically significant difference between groups as demonstrated by ANOVA ($F(1,58) = 2.394, p = 0.127$).

4.4 To compare the quality of life among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, at the end of the program (week 8) and the 3rd month after the end of the program implementation (week 20).

Normality was tested for quality of life score at baseline, week 8 and 20 by Shapiro-Wilk test statistic. The quality of life score was non-normal distribution. Mann-Whitney Test was used for comparing the score between groups. Friedman Test and Dunn's test was used for comparing the quality of life scores within the group.

Table 12 Mean and standard deviation of Quality of life between intervention and control group at baseline, week 8 and week 20.

Group and Time	N	Mean	Sd.	Mean Rank
Intervention				
Baseline	31	85.03	9.803	1.200
Week 8	30	88.13	8.835	2.667
Week 20	30	87.07	8.816	2.133
Control				
Baseline	31	86.52	9.212	2.817
Week 8	31	79.65	7.838	1.883
Week 20	30	77.87	6.658	1.300

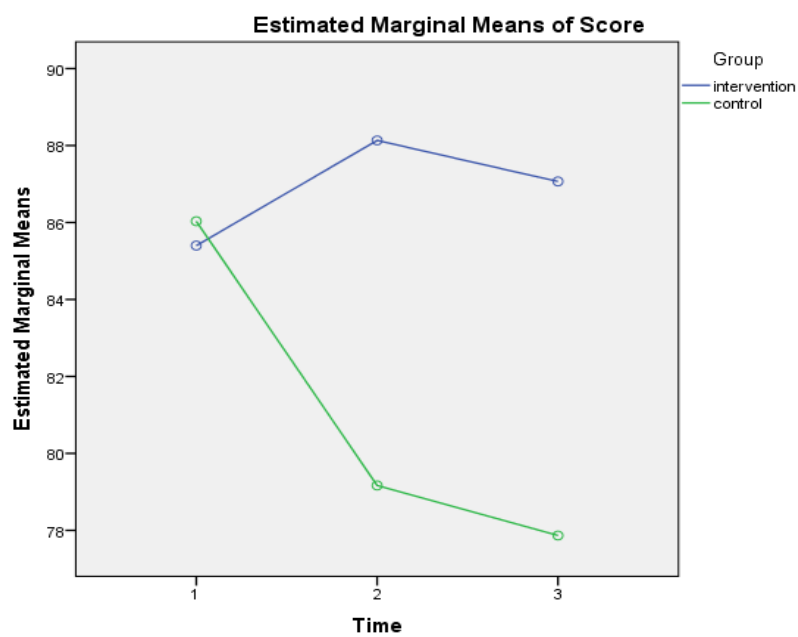


Figure 4.3 Mean of quality of life

The comparison of the mean and standard deviation of quality of life scores in intervention group showed that, at baseline, the mean score was 85.03. After the program implementation or week 8, the mean score of quality of life increased to 88.13. At week 20, the mean score of quality of life increased to 87.07. The baseline of quality of life scores of control group was 86.52. After the program implementation of week 8, the mean score of quality of life decreased from 86.52 to 79.65 and decreased to 77.87 at week 20.

Mean of Rank of intervention and control group was tested By Friedman test. There was significance of mean of rank ($p < .001$) at p-value 0.05. Dunn's test was used to test the differences within the group according to the test duration.

Table 13 Comparison of Quality of life within group at baseline, week 8 and week 20.

Group (Within group)	Test stat	Df.	P	Time (Within group)	Test stat	Sd. error	Sd. Test stat	P-value
Intervention	43.130	2	<.000*	Baseline - Week 8	-1.467	0.258	-5.680	<.001*
				Baseline - Week 20	-0.933	0.258	-3.615	.001*
				Week 8- Week 20	0.533	0.258	2.066	.117
Control	46.308	2	<.000*	Baseline - Week 8	-0.933	0.258	3.615	.001*
				Baseline - Week 20	1.517	0.258	5.874	<.001*
				Week 8- Week 20	0.583	0.258	2.259	.072

Intervention group, there were significant differences in quality of life score between baseline and week 8 ($p < .001$), baseline and week 20 ($p = .001$) at p-value greater than 0.05. In the control group, there were significant differences in quality of life score between baseline and week 20 ($p = .001$), week 8 and week 20 ($p < .001$) at p-value greater than 0.05.

Table 14 Comparison of Quality of life between intervention and control group at baseline, week 8 and week 20.

Group (Between group)	N	Mean Rank	Sum of Ranks	Mann- Whitney U	Df.	<i>P-value</i>
Baseline						
Intervention	31	29.774	923.000	427.000	1	.451
Control	31	33.226	1030.000			
Week 8						
Intervention	30	39.217	1176.500	218.500	1	<.001*
Control	31	23.048	714.500			
Week 20						
Intervention	30	39.783	1193.500	171.500	1	<.001*
Control	30	21.217	636.500			

There were no significant differences in quality of life score between intervention and control group at baseline ($p = 0.451$) at p-value greater than 0.05. There were significant differences in quality of life score between intervention and control group at week 8 ($p < .001$) and week 20 ($p < .001$) at p-value greater than 0.05.

CHAPTER V

DISCUSSION, CONCLUSION & RECOMMENDATIONS

5.1 Discussion

5.1.1 Characteristics of dementia caregiver

The mean age of dementia caregivers was 53.06 years of the intervention group and 52.52 years of the control group. Most of the caregivers were female and daughter of the patients. The result was consistent with other research in Thailand (Lamlianpon, 2015; Sittironnarit, Emprasertsuk, & Wannasewok, 2020). Most of the caregivers graduated from primary school and high school. The mean income was 11661.29 baht per month of the intervention group and 12064.52 baht of the control group. This result is different from the study of Lamlianpon (2015) and Sittironnarit, Emprasertsuk, & Wannasewok (2020). The studies of Lamlianpon (2015) and Sittironnarit, Emprasertsuk, & Wannasewok (2020) revealed that most of the dementia caregivers graduated with a Bachelor's degree and the mean monthly income was more than 25,000 baht (Lamlianpon, 2015; Sittironnarit et al., 2020). The education level of people in Ratchaburi province was lower than in Bangkok and the metropolitan areas. Universal education was enacted into law in Thailand a long time ago. Implementation was a prolonged process and involved several changes in the educational system that impacted the level of education (United Nations Population Fund Country Office in Thailand, 2011). The problem of semi-urban, semi-rural is that it lacks education opportunities (Thasana, 2015). The income of dementia caregivers in Ratchaburi province is lower than in Bangkok and the metropolitan area. Likewise, the statistic from the National Statistical Office showed the average monthly income per household from 2006 – 2015 of Ratchaburi province was lower than Bangkok and metropolitan areas (National Statistical Office, 2015). Dementia caregivers spend time

for caring persons with dementia on an average of 7-8 hours /day. Time for caring for persons with dementia was lesser than reported in the Alzheimer' Association. The primary dementia caregiver spends an average of 9 hours/day for caring for persons with dementia (Alzheimer's Association, 2014).

5.1.2 To compare knowledge among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, the end of the program and 12th week after the end of program implementation.

The results found a more significant increase in intervention group of the knowledge score of dementia caregiver following the home visit and telephone tracking program, compared to the control group at 8 weeks ($p < .001$) and 20 weeks ($p < .001$). A part of this program was education. Dementia caregivers were educated about caring for dementia patients. The study of Cahill, Pierce, Werner, Darley, & Bobersky (2015) showed poor to very limited knowledge level. The understanding of dementia is a normal part of aging, dementia is normal for the elderly. Knowledge about risk factors, causes, treatments, and prevention was poor. (Cahill et al., 2015). Therefore, a part of education consists of the content of risk factors, causes, and treatments.

High education level was found associated with high knowledge level (Cahill et al., 2015). The level of education in this study was lower than the study in urban people of Lamlianpon (2015) and Sittironnarit, Emprasertsuk, & Wannasewok (2020). However, the knowledge of home visit and telephone tracking program is the knowledge that is provided for dementia caregivers and it is not a standard curriculum but tailored to the specific needs of the caregiver. They can inquire about problems of dementia patients and additional information on dementia care throughout the program.

The results were consistent with other researchers who employed the multicomponent program in dementia caregivers. Tan, Jennings, Ramirez, Kofman, & Eyrcoli (2016) studied the one-day intensive boot camp on knowledge. The intensive boot camp was an interactive session, including home safety, behavior management, stress reduction, and care transitions topics. There were significantly improved self-reported knowledge of dementia caregivers (Tan et al., 2016). Likewise, on the study of the effect of boot camp training. The boot camp program was organized as an interactive large and small group breakout sessions with an interspersed panel discussion. The result revealed after training boot camp programs, the knowledge of dementia caregiving principles and techniques improved (Tan et al., 2019). The multicomponent program included three components (group psychoeducation, brief group cognitive behavioral therapy, and group support sessions). The program showed statistically significant improvement in the caregivers' dementia-related knowledge compared to controls (Shata et al., 2017).

In the control group, there were significant differences in the knowledge score between baseline and week 20 at p-value greater than 0.05. At 8th weeks, the mean score of knowledge increased from 10.35 to 10.97 and increased to 11.13 at week 20. The slow increase of knowledge score in control group was due to participants in control group that received knowledge from many sources, such as the internet, brochure at the dementia clinic, etc. Moreover, some participants in the control group asked about the problem of dementia patients from nurses in the dementia clinic and they received knowledge and advice about the care for dementia patients. Whereas the result showed that while the dementia caregivers in the intervention group are still participating in the program, the knowledge was dramatically increased, and the knowledge increased slowly when the program was ending. Therefore, the home visit and telephone tracking program can increase knowledge.

5.1.3 To compare caregiver burden among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, the end of program and 12th week after end of program implementation.

The home visit and telephone tracking program is based on the transactional theory of stress and coping. A part of this program was counseling about how dementia caregivers cope with stressful situations. The caregivers considered the major problem from caring for people with dementia that contribute to their response to stress. Caregivers classified the situation of caring dementia caregiver is a treat, a challenge or a harm-loss. A positive or a negative appraisal was considered as a suitable strategy to be implemented in a specific situation. Therefore, the participants had a decrease in caregiver burden score.

The results found the caregiver burden score of dementia caregiver burden in intervention group was decreased while the caregiver burden score of dementia caregiver in control group was increased. However, there is no significance in intervention group of the caregiver burden scores of dementia caregivers following the home visit and telephone tracking program, compared to the control group. The results were consistent with the case management program, there was no significance in intervention and control group. The case management included assessment and continual support by case manager via home visit and telephone (Kwok et al., 2012).

The results were inconsistent with the study of Chen, Huang, Yeh, Huang, & Chen (2015). The coping strategies intervention including problem-solving skills, knowledge of dementia, social resource, and emotional support. The result revealed the intervention group's mean score of caregiver burden decreased, while that for the control group increased. Likewise, dementia caregivers who received group cognitive-behavioral intervention had lower burden score than the control group. The goal of group support intervention is to introduce family caregivers to a variety of cognitive-behavioral strategies that caregivers can use to manage their negative feeling. There is

a structured classroom format in a small group (6-10 participants per group)(Arango-Lasprilla et al., 2014).

Chien & Lee (2010) studied the effect of a 6-month dementia care program for the Chinese dementia caregiver. The 6-month dementia care program consisting of need assessment and preparation for 1 month and education and supportive care for 5 months. The results found the caregiver burden of dementia caregivers in intervention group was decreased while the caregiver burden score of dementia caregivers in control group was increased. Moreover, there were statistically significant differences between intervention and control group (Chien & Lee, 2010). The study of Shata, Amin, El-Kady, & Abu-Nazel, (2017) founded multicomponent was a statistically significant drop in the caregivers' burden compared to controls (Shata et al., 2017).

The results showed after the program implementation or week 8, the caregiver burden score was decreased. On the other hand, at the follow-up or 20 weeks, the caregiver burden score was increased. The results showed that while the dementia caregivers are still participating in the program, the caregiver burden was decreased. However, the caregiver burden was increasing when the program ended, and the participants did not participate in the program. The level of burden of dementia caregivers decreased with home visit and telephone tracking program; however, there was no significance between intervention and control group.

The literature review reported the most predictive of caregiver burden was neuropsychiatric symptoms (Sörensen & Conwell, 2011). The prospective study revealed caregivers burden continuously increased from little at baseline to mild at follow-up. The increased caregiver burden is associated with the increase of neuropsychiatric symptoms and behavior abnormalities of a person with dementia, disability of a person with dementia and patient's need for help in daily living (Ransmayr et al., 2018). For this study, dementia caregivers may have difficulties revealing the problems because dementia patients present various behavioral problems. Moreover, there are new problems all along with the symptoms worsening.

This is important for the program of dementia caregiver. It must explain the lack of sustainability and provide continuous support for families with dementia subjects.

Reducing the caregiver burden should increase the duration of the program by adding other activities into the program. The planning for the community to continuously take care of dementia caregivers is important. In addition, the other research studies obtained different results in decreasing caregiver burden in dementia caregiver have been carried out using different intervention methods, such as coping strategies, cognitive-behavioral intervention, group discussion, classroom session (Arango-Lasprilla et al., 2014; Chen et al., 2015; Chien & Lee, 2010). These activities should be added to programs that reduce the caregivers burden.

5.1.4 To compare the quality of life among dementia caregivers who were receiving home visit and telephone tracking program and receiving routine care within group and between group at baseline, the end of the program and 12th week after the end of the program implementation.

The home visit and telephone tracking program was based on the transactional theory of stress and coping (TTSC) and literature review. Caregivers' quality of life revealed a negative association with the behavioral problems of persons with dementia (Zucchella, Bartolo, Bernini, Picascia, & Sinforiani, 2015). The program had an increased quality of life. Dementia caregivers received help to consider the problem of persons with dementia and judgment appraisal is a suitable strategy to be implemented to their situation. In addition, they received suitable knowledge and coping strategies for solving problems.

The results found a significant increase in intervention group of the quality of life score of dementia caregiver following the home visit and telephone tracking program, compared to the control group at 8 weeks ($p < .001$) and 20 weeks ($p = .001$). The intervention helped dementia caregivers identify the stress and problems and helped caregivers develop appropriate problem-solving solutions. The results were consistent with many studies. The home-based caregiver training program significantly

improved caregivers' quality of life (Kuo et al., 2017). The 6-month dementia care program for the Chinese dementia caregiver that improved the quality of life of dementia caregivers. The results showed the quality of life of dementia caregivers in intervention group which increased while the quality of life of dementia caregivers in control group was decreased. Moreover, there were statistically significant differences between intervention and control group (Chien & Lee, 2010). The systematic review showed that multicomponent intervention may improve the competence of family caregivers. The competence of the dementia caregiver is important to promote the health and quality of life of the caregivers (Ying et al., 2018).

On the other hand, the case management program is not significant in quality of life between intervention and control group (Kwok et al., 2012). Multicomponent Care Coordination Intervention on Dementia Caregivers revealed no differences between groups from baseline to 18 months (Tanner et al., 2013).

Informal dementia caregivers who were living at home reported high levels of caregiver burden and less quality of life compared to the informal dementia caregiver who was living in institutional long term care facilities (Bleijlevens et al., 2015). For this study, the quality of life was better not only because of the knowledge they learned from participating in the intervention but also because it motivated their changes in attitudes and behavior towards dementia care and counseling and on ways to take care of their relative with dementia.

5.1.5 Discussion on research findings

Home visit and telephone tracking program is the multicomponent program. This program consists of tailored education and discussion topics to the specific needs of the caregiver, coping strategies and home arrangement. However, a part of home arrangement of this program may not be suitable for dementia caregivers in the semi-urban, semi-rural area. The literature review is different between urban and semi-urban, semi-rural populations. There is a difference in demographic characteristics,

such as age, education level and income (Lamlianpon, 2015; Sittironnarit et al., 2020). These factors affect the result of the program. Many factors are affecting caregiver burden. There is an association between three caregiver stressors (knowledge of caregiver, perception of caregivers of the behavioral problems among care recipient, and activities of daily living) and caregiver burden (Scott, 2013). The problems of semi-urban, semi-rural community are the lack of access to health services, economic problems, lack of information sources and lack of education opportunities (Thasana, 2015). The income and education level of dementia caregivers in Ratchaburi Province is lower than caregivers in urban areas (Lamlianpon, 2015; Sittironnarit et al., 2020). Moreover, the population in Ratchaburi Province had household expenses and household debt increasing (Strategy and Information Group for Provincial Development, 2563). Likewise, assessing and asking information from the research team found that they did not want to change the home environment because they did not want to pay for home arrangement.

When the research team recommended the dementia caregiver on how to arrange the home environment, it was found that the dementia caregiver was able to comply with very little. The result was inconsistent with the study in Thailand of Worakhunphiset & Sasat (2015) which revealed family caregivers who received Home Environmental Arrangement had significantly lower stress than before receiving program and caregiver in control group that received usual care (Worakhunphiset & Sasat, 2015). However, the participants in the study of Worakhunphiset & Sasat are people in Bangkok that are urban people while this study is of the semi-urban participants.

This program was developed from the literature review in Thailand and other countries. After the implementation of the program, there is a part of home arrangement that is not suitable for dementia caregivers and the context of a semi-urban, semi-rural community. Therefore, the need for assessment for dementia caregivers in semi-urban, semi-rural is important for developing the program.

5.2 Conclusion

The objective of this study was to determine the effect of home visit and telephone tracking programs on knowledge, caregiver burden, and quality of life among dementia caregivers. A quasi-experimental design was adopted. The study comprises intervention and control group from dementia clinic, Ratchaburi hospital. The days of appointment (Monday, the 2nd and the 4th week of the month.) was allocated randomly between intervention group and control group. Both groups were selected by purposive technique. The total sample size is 31 participants per group. Home visit and telephone tracking program is a multicomponent program. The program was developed based on the transactional theory of stress and coping (TTSC) and literature reviews. The program consists of the group education session, home visit, and telephone tracking. The duration of the program is 8 weeks. The intervention group received a home visit and telephone tracking program while the control group received usual care. Data was collected at baseline, immediately after the end of the program, and three months after the end of the program by questionnaires to compare the knowledge, caregiver burden, and quality of life of dementia caregivers.

The majority of both groups were female, 41-60 years, daughter of dementia patients and graduated from primary school and high school. The sociodemographic data of dementia caregivers, level of knowledge, caregiver burden, and quality of life among dementia caregivers before receiving the home visit and telephone tracking program are similar between intervention and control group ($p > .05$). The results indicated the knowledge score and quality of life of intervention group were found significantly higher than control group following the intervention immediately after the end of the program or week 8 ($p < .001$) and three months after the end of the program or week 20 ($p < .001$). The caregiver burden score of dementia caregiver in intervention group decreased while the caregiver burden score of dementia caregiver in control increased at week 8 ($p < .001$). The caregiver burden score of both groups was decreased at week

20. However, there was no statistically significant difference between groups as demonstrated by ANOVA ($F(1.58) = 2.394$, $p = 0.127$).

5.3 Limitation of This Study

There were several limitations of this study as follows:

5.3.1 The study used a quasi-experimental study design; therefore, the limitation of the design was that it could not control all the external co-intervention and external confounders. Moreover, it assumes the characteristics of the experimental and control group are equivalent.

5.3.2 There is routine care that is regular care from doctors and nurses in the dementia clinic. The routine care consists of assessment, recommendations about caring for dementia patients, and doctors examination. Some participants in the control group received knowledge and advice about the care for dementia patients from nurses in the dementia clinic.

5.3.3 This study used a single-blinded design. The dementia caregiver was blinded to the intervention that they received.

5.4 Recommendations

5.4.1 Recommendations for implementation

1) Policy

Health providers should consider including a home visit and telephone tracking program practice in the protocols for dementia clinics and health promoting hospitals. There should be coordination between dementia clinics in hospitals and health promoting hospitals to increase the effectiveness of caring for dementia caregivers. Furthermore, dementia caregivers discussion about care experience is while they wait to see a doctor. The discussion of dementia caregivers is an exchange of care experience and knowledge between them. Therefore, the hospital should

consider arranging an area or activity to exchange experience in dementia caregiver-patient care.

2) Community level

The home visit and telephone tracking program can be adjusted to be a part of routine care. A part of home visit is to use the nurses and village health volunteers to take care of dementia caregivers. A part of telephone tracking to use by nurses at the dementia clinic. It can make the program easier to implement and it's not expensive. Moreover, the program can be adjusted to be suitable for the subdistrict administration organization for the use of home visit and supporting caregivers.

3) Individual level

Home visit and telephone tracking program showed good results when the dementia caregiver tells the problem, their needs for help and tries to follow the instructions. The building of an effective relationship with dementia patients is extremely important. The program should be cooperating with community nurses because nurses working in the caregiver area will know the living conditions of the family they are in charge of. Moreover, most dementia caregivers are already familiar with the nursing staff in their area which results in good relationship building.

5.4.2 Recommendation for further research

1) This study did not show a significant difference in caregiver burden between intervention and control group; therefore, increase the duration of the program and activities should be added to programs that reduce the caregiver burden.

2) The results are not practical to all dementia caregivers because the study is in Ratchaburi province which is a semi-urban, semi-rural area. A repeated study with dementia caregivers in other areas is therefore recommended.

3) The program should be conducted with dementia caregivers in other areas to confirm its effectiveness and acceptability.

4) The program should be considering the temperament of dementia caregivers. The temperament helps in understanding the adaptation and adjustment in dealing with complex situations and personalities commonly found in caring patients. Therefore, understanding temperament is important for caregivers.

5) The qualitative research should be conducted with dementia caregivers in the semi-urban, semi-rural area for improving the intervention and understanding the context and needs of dementia caregivers.

Disclosure

The authors report no conflicts of interest in this work.



REFERENCES

- Adelman, R. D., Tmanova, L. L., Delgado, D., Dion, S., & Lachs, M. S. (2014). Caregiver burden: A clinical review. *JAMA*, *311*(10), 1052-1060. doi:10.1001/jama.2014.304
- Alzheimer's Association. (2014). 2014 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, *10*(2), e47-e92. doi:https://doi.org/10.1016/j.jalz.2014.02.001
- Alzheimer's Association. (2019). 2019 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, *15*(3), 321-387. doi:https://doi.org/10.1016/j.jalz.2019.01.010
- Alzheimer's Association. (2015). 2015 Alzheimer's disease facts and figures. Retrieved from http://www.alz.org/facts/downloads/facts_figures_2015.pdf
- Alzheimer's Disease International. (2014). *World Alzheimer Report 2014 Dementia and Risk Reduction AN ANALYSIS OF PROTECTIVE AND MODIFIABLE FACTORS*. Retrieved from London:
- Alzheimer's Disease International. (2016). *Help for care partners of people with dementia Practical tips on managing dementia*
- Andrews, S., McInerney, F., Toye, C., Parkinson, C.-A., & Robinson, A. (2015). Knowledge of Dementia: Do family members understand dementia as a terminal condition? *Dementia (London, England)*, *16*. doi:10.1177/1471301215605630
- Andrieu, S., Rive, B., Guilhaume, C., Kurz, X., ScuvÉE-Moreau, J., Grand, A., & Dresse, A. (2007). New assessment of dependency in demented patients: Impact on the quality of life in informal caregivers. *Psychiatry and Clinical Neurosciences*, *61*(3), 234-242. doi:10.1111/j.1440-1819.2007.01660.x
- Arango-Lasprilla, J. C., Panyavin, I., Merchan, E. J. H., Perrin, P. B., Arroyo-Anllo, E. M., Snipes, D. J., & Arabia, J. (2014). Evaluation of a Group Cognitive-Behavioral Dementia Caregiver Intervention in Latin America. *American Journal of Alzheimer's Disease & Other Dementias®*, *29*(6), 548-555. doi:10.1177/1533317514523668
- Asawutmangkul, T., Jaiklom, C., & Boonyapat, N. (2015). The Study of Quality of Life

- of Dementia Caregivers and results after providing Pharmaceutical Care. *Journal of the department of medical services*, 40(1), 65-73.
- Bień, B., Wojszel, B., & Sikorska-Simmons, E. (2007). Rural and Urban Caregivers for Older Adults in Poland: Perceptions of Positive and Negative Impact of Caregiving. *The International Journal of Aging and Human Development*, 65(3), 185-202. doi:10.2190/AG.65.3.a
- Bleijlevens, M. H. C., Stolt, M., Stephan, A., Zabalegui, A., Saks, K., Sutcliffe, C., ... Consortium, t. R. (2015). Changes in caregiver burden and health-related quality of life of informal caregivers of older people with Dementia: evidence from the European RightTimePlaceCare prospective cohort study. *Journal of Advanced Nursing*, 71(6), 1378-1391. doi:10.1111/jan.12561
- Borthwick-Duffy, S. A. (1992). Mental retardation in the year 2000. In L. Rowitz (Ed.), *Quality of life and quality of care in mental retardation*. Berlin: Springer-Verlag.
- Cahill, S., Pierce, M., Werner, P., Darley, A., & Bobersky, A. (2015). A Systematic Review of the Public's Knowledge and Understanding of Alzheimer's Disease and Dementia. *Alzheimer disease and associated disorders*, 29. doi:10.1097/WAD.0000000000000102
- Chaichanettee, S. (2010). *The Effects of a Cognitive Therapy Program for stress on the caregivers of patients with dementia*. (degree of master). Ramkhamhaeng University,
- Chan, S. W. C. (2010). Family Caregiving in Dementia: The Asian Perspective of a Global Problem. *Dementia and Geriatric Cognitive Disorders*, 30(6), 469-478. Retrieved from <http://www.karger.com/DOI/10.1159/000322086>
- Cheewirote, P., Subgranon, R., Paokanha, R., & Kangchai, W. (2010). Effects of Empowerment Program on Power Perception and Caregiving Practice among Caregivers of Older Persons with Dementia. *The Journal of Faculty of Nursing Burapha University*, 108, 71-88.

- Chen, H. M., Huang, M. F., Yeh, Y. C., Huang, W. H., & Chen, C. S. (2015). Effectiveness of coping strategies intervention on caregiver burden among caregivers of elderly patients with dementia. *Psychogeriatrics*, 15(1), 20-25.
doi:10.1111/psyg.12071
- Chiao, C. Y., Wu, H. S., & Hsiao, C. Y. (2015). Caregiver burden for informal caregivers of patients with dementia: A systematic review. *International Nursing Review*, 62(3), 340-350. doi:10.1111/inr.12194
- Chien, W. T., & Lee, I. Y. M. (2010). Randomized controlled trial of a dementia care programme for families of home-resided older people with dementia. *Journal of Advanced Nursing*, 67(4), 774-787.
- Chiu, T. M., & Eysenbach, G. (2010). Stages of use: consideration, initiation, utilization, and outcomes of an internet-mediated intervention. *BMC Medical Informatics and Decision Making*, 10(1), 73. doi:10.1186/1472-6947-10-73
- Churaitatsanee, S. (2014). Reflection on lesson learned from the group support in family caregiver of Dementia patients. *Thai Journal of Nursing*, 63(4), 5-11.
- Clara, I. P., Cox, B. J., Enns, M. W., Murray, L. T., & Torgrudc, L. J. (2003). Confirmatory factor analysis of the multidimensional scale of perceived social support in clinically distressed and student samples. *J Pers Assess*, 81(3), 265-270.
doi:10.1207/s15327752jpa8103_09
- Clare, L., & Woods, R. T. (2004). Cognitive training and cognitive rehabilitation for people with early-stage Alzheimer's disease: A review. *Neuropsychological Rehabilitation*, 14(4), 385-401.
- Cohen, S., Underwood, L. G., & Gottlieb, B. H. (2015). *Social Support Measurement and Intervention A Guide for Health and Social Scientists*: Oxford University Press.
- Dam, A. E. H., de Vugt, M. E., Klinkenberg, I. P. M., Verhey, F. R. J., & van Boxtel, M. P. J. (2016). A systematic review of social support interventions for caregivers of people with dementia: Are they doing what they promise? *Maturitas*, 85, 117-

130. doi:<https://doi.org/10.1016/j.maturitas.2015.12.008>

Davis, J. D., Tremont, G., Bishop, D. S., & Fortinsky, R. H. (2011). A telephone-delivered psychosocial intervention improves dementia caregiver adjustment following nursing home placement. *Int J Geriatr Psychiatry*, 26(4), 380-387.

doi:10.1002/gps.2537

Davis, J. D., Tremont, G., Bishop, D. S., & Fortinsky, R. H. (2011). A telephone-delivered psychosocial intervention improves dementia caregiver adjustment following nursing home placement. *Int J Geriatr Psychiatry*, 26(4), 380-387.

doi:10.1002/gps.2537

Del-Pino-Casado, R., Frías-Osuna, A., Palomino-Moral, P. A., Ruzafa-Martínez, M., & Ramos-Morcillo, A. J. (2018). Social support and subjective burden in caregivers of adults and older adults: A meta-analysis. *PloS one*, 13(1), e0189874-e0189874.

doi:10.1371/journal.pone.0189874

Dilworth-Anderson, P., Williams, S. W., & Cooper, T. (1999). Family Caregiving to Elderly African Americans: Caregiver Types and Structures. *Journal of Gerontology*, 54(4), s237-s241.

Donelan, K., Hill, C. A., Hoffman, C., Scoles, K., Feldman, P. H., Levine, C., & et al. (2002). Challenged to care: informal caregivers in a changing health system. *Health Affairs*, 21, 222-231.

Dong, X., Chen, R., & Simon, M. A. (2014). Elder Abuse And Dementia: A Review Of The Research And Health Policy. *Health Affairs*, 33(4), 642-649.

doi:10.1377/hlthaff.2013.1261

Downs, M., & Bowers, B. (2014). *Excellence in Dementia Care: Research into Practice* (Vol. 2nd). London: Mc Graw Hill Education.

Duong, S., Patel, T., & Chang, F. (2017). Dementia: What pharmacists need to know.

Canadian pharmacists journal : CPJ = Revue des pharmaciens du Canada : RPC, 150(2), 118-129. doi:10.1177/1715163517690745

- Dyer, S. M., Harrison, S. L., Laver, K., Whitehead, C., & Crotty, M. (2018). An overview of systematic reviews of pharmacological and non-pharmacological interventions for the treatment of behavioral and psychological symptoms of dementia. *International Psychogeriatrics*, 30(3), 295-309. doi:10.1017/S1041610217002344
- Eggenberger, E., Heimerl, K., & Bennett, M. I. (2013). Communication skills training in dementia care: a systematic review of effectiveness, training content, and didactic methods in different care settings. *International Psychogeriatrics*, 25(3), 345-358. doi:10.1017/S1041610212001664
- Eliopoulos, C. (2010). *Gerontological Nursing*. Philadelphia: Lippincott Williams & Wilkins.
- Family Caregiver Alliance. Caregiving. Retrieved from <https://www.caregiver.org/print/22137>
- Foundation of Thai Gerontology Research and Development Institute. (2013). Situation of The Thai Elderly 2013. Retrieved from <http://thaitgri.org/index.php/report/English>.
- Fuh, J.-L., Liu, C.-Y., Wang, S.-J., Wang, H.-C., & Liu, H.-C. (2005). Revised Memory and Behavior Problems Checklist in Taiwanese Patients With Alzheimer's Disease. *International Psychogeriatrics*, 11(2), 181-189. doi:10.1017/S1041610299005736
- García-Alberca, J. M., Lara, J. P., & Berthier, M. L. (2011). Anxiety and Depression in Caregivers are Associated with Patient and Caregiver Characteristics in Alzheimer's Disease. *The International Journal of Psychiatry in Medicine*, 41(1), 57-69. doi:10.2190/PM.41.1.f
- Given, B. A., Kozachik, S., Collins, C. E., DeVoss, D. N., & Given, C. W. (2001). Caregiver role strain. In M. L. Maas, K. C. Buckwalter, & T. Tripp-Reime (Eds.), *Nursing care of older adults: diagnoses, outcomes & interventions*. St. Louis, Mo: Mosby.
- Gonçalves-Pereira, M., Carmo, I., da Silva, J. A., Papoila, A. L., Mateos, R., & Zarit, S. H.

- (2010). Caregiving experiences and knowledge about dementia in Portuguese clinical outpatient settings. *International Psychogeriatrics*, 22(2), 270-280. doi:10.1017/S1041610209991050
- Gouin, J.-P., Glaser, R., Malarkey, W. B., Beversdorf, D., & Kiecolt-Glaser, J. (2012). Chronic stress, daily stressors, and circulating inflammatory markers. *Health Psychology*, 31(2), 264-268.
- Gouras, G. K. (2014). Dementia. In *Reference Module in Biomedical Sciences*: Elsevier.
- Group Health. (2009). *Dementia and Cognitive Impairment Diagnosis and Treatment Guideline*.
- Han, J. W., Jeong, H., Park, J. Y., Kim, T. H., Lee, D. Y., Lee, D. W., ... Kim, K. W. (2014). Effects of social supports on burden in caregivers of people with dementia. *Int Psychogeriatr*, 26(10), 1639-1648. doi:10.1017/s1041610214001331
- Hébert, R., Bravo, G., & Prévile, M. (2000). Reliability, Validity and Reference Values of the Zarit Burden Interview for Assessing Informal Caregivers of Community-Dwelling Older Persons with Dementia. *Canadian Journal on Aging / La Revue canadienne du vieillissement*, 19(4), 494-507. doi:10.1017/S0714980800012484
- Hollander, M. J., Lui, G., & Chappell, N. L. (2009). Who cares and how much? The imputed economic contribution to the Canadian Healthcare System of middle-aged and older unpaid caregivers providing care to the elderly. *Healthcare Quarterly* 12, 42-49.
- Huang, S.-S., Lee, M.-C., Liao, Y.-C., Wang, W.-F., & Lai, T.-J. (2011). Caregiver burden associated with behavioral and psychological symptoms of dementia (BPSD) in Taiwanese elderly. *Archives of Gerontology and Geriatrics*, 55(1), 55-59. doi:10.1016/j.archger.2011.04.009
- Huis in het Veld, J. G., Verkaik, R., Mistiaen, P., van Meijel, B., & Francke, A. L. (2015). The effectiveness of interventions in supporting self-management of informal caregivers of people with dementia; a systematic meta review. *BMC Geriatrics*,

15(1), 147. doi:10.1186/s12877-015-0145-6

- Innes, A., Morgan, D., & Kostineuk, J. (2011). Dementia care in rural and remote settings: A systematic review of informal/family caregiving. *Maturitas*, 68(1), 34-46.
doi:<https://doi.org/10.1016/j.maturitas.2010.10.002>
- Irfan, B., Irfan, O., Ansari, A., Qidwai, W., & Nanji, K. (2017). Impact of Caregiving on Various Aspects of the Lives of Caregivers. *Cureus*, 9(5), e1213-e1213.
doi:10.7759/cureus.1213
- Jen-Hau, C., Kun-Pei, L., & Yen-Ching, C. (2009). Risk Factors for Dementia. *Journal of the Formosan Medical Association*, 108(10), 754-764.
doi:[http://dx.doi.org/10.1016/S0929-6646\(09\)60402-2](http://dx.doi.org/10.1016/S0929-6646(09)60402-2)
- Kawitu, K., Siri, S., Sujirarat, D., & Chakrbhandu-Na-Ayutaya, S. (2015). *Prevalence and Associated Factors with Dementia in Elderly; Lampang Province*. Paper presented at the 34th The National Graduate Research Conference, Khon kaen.
- Kerce, E. W. (1992). *Quality of life: Meaning, Measurement, and Models*. Retrieved from California: file:///C:/Users/HP/Downloads/ADA250813.pdf
- Keyes, S. E., Clarke, C. L., Wilkinson, H., Alexjuk, E. J., Wilcockson, J., Robinson, L., ... Cattan, M. (2016). "We're all thrown in the same boat ...": A qualitative analysis of peer support in dementia care. *Dementia (London)*, 15(4), 560-577.
doi:10.1177/1471301214529575
- Kitamura, T., Tanimoto, C., Oe, S., Kitamura, M., & Hino, S. (2019). Familial caregivers' experiences with home-visit nursing for persons with dementia who live alone. *Psychogeriatrics*, 19(1), 3-9. doi:10.1111/psyg.12352
- Kohler, B. A., Sherman, R. L., Howlader, N., Jemal, A., Ryerson, A. B., Henry, K. A., ... Penberthy, L. (2015). Annual Report to the Nation on the Status of Cancer, 1975-2011, Featuring Incidence of Breast Cancer Subtypes by Race/Ethnicity, Poverty, and State. *J Natl Cancer Inst*, 107(6), djv048. doi:10.1093/jnci/djv048
- Kourakos, M., Kafkia, T., & Minasidou, E. (2016). Social Support and Care for Patients

- with Alzheimer's Disease in the Community. *International Journal of Caring Sciences*, 9.
- Kunyodying, T., Pothiban, L., & Khamplosiri, T. (2015). Dependency of the elderly with stroke, caregiver burden, social support, and quality of life among older caregivers. *Nursing Journal*, 42, 107-117.
- Kuo, L. M., Huang, H. L., Liang, J., Kwok, Y. T., Hsu, W. C., Su, P. L., & Shyu, Y. L. (2017). A randomized controlled trial of a home-based training programme to decrease depression in family caregivers of persons with dementia. *J Adv Nurs*, 73(3), 585-598. doi:10.1111/jan.13157
- Kwok, T., Lam, L., & Chung, J. (2012). Case management to improve quality of life of older people with early dementia and to reduce caregiver burden. *Hong Kong Med J*, 18 Suppl 6, 4-6.
- Lake Region State College. (2006). *Training for Caregivers of Individuals With Dementia*(pp. 29). Retrieved from <https://www.silverstonegroup.com/wp-content/uploads/2014/05/sample-training-caregivers-of-individuals-with-dementia.pdf>
- Lamlanpon, P. (2015). Anxiety-depression and quality of life in dementia caregivers. *Journal of Mental Health of Thailand*, 23(2), 112-124.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing.
- Lewis, M. L., Hobday, J. V., & Hepburn, K. W. (2010). Internet-Based Program for Dementia Caregivers. *American Journal of Alzheimer's Disease & Other Dementias®*, 25(8), 674-679. doi:10.1177/1533317510385812
- Loboprabhu, S. M., Molinari, V. A., & Lomax, J. W. (2006). *Supporting the caregiver in dementia: A guide for Health Care Professionals*. . Baltimore, Maryland: The Johns Hopkins University Press.
- Lopez-Hartmann, M., Wens, J., Verhoeven, V., & Remmen, R. (2012). The effect of

- caregiver support interventions for informal caregivers of community-dwelling frail elderly: a systematic review. *International Journal of Integrated Care*, 12, 1-16.
- Mahuntnirunkul, S., Tantipiwattanasakool, W., Poompisanchai, V., Wongsuwan, K., & Prommanajirangkool, R. (1998). Comparison of the WHOQOL-100 and the WHOQOL-BREF (26 items). *Journal of Mental Health of Thailand*, 5(3), 1-15.
- Martin-Carrasco, M., Ballesteros-Rodriguez, J., Dominguez-Panchon, A. I., Munoz-Hermoso, P., & Gonzalez-Fraile, E. (2014). Interventions for caregivers of patients with dementia. *Actas Esp Psiquiatr*, 42(6), 300-314.
- Martín-Carrasco, M., Martín, M. F., Valero, C. P., Millán, P. R., García, C. I., Montalbán, S. R., ... Vilanova, M. B. (2009). Effectiveness of a psychoeducational intervention program in the reduction of caregiver burden in alzheimer's disease patients' caregivers. *Int J Geriatr Psychiatry*, 24(5), 489-499. doi:10.1002/gps.2142
- Mausbach, B. T., Känel, R. v., Roepke, S. K., Moore, R., Patterson, T. L., Mills, P. J., ... Grant, I. (2011). Self-efficacy Buffers the Relationship between Dementia Caregiving Stress and Circulating Concentrations of the Proinflammatory Cytokine Interleukin-6. *Am J Geriatr Psychiatry*, 19(1), 64-71.
- Meiner, S. E. (2011). *Gerontologic Nursing* (4th Ed.). United States of America: ELSEVIER.
- Mekawichai, P., & Saetang, S. (2013). Caregiver Burden among Thai Dementia Patients' Caregivers. *J Psychiatr Assoc Thailand*, 58(1), 101-110.
- Miller, C. A. (2009). *Nursing for wellness in older adult* (5th Ed.). Philadelphia: Wolters Kluwer Health/Lippincott William & Wilkins.
- Morris, J. C. (1997). Clinical dementia rating: a reliable and valid diagnostic and staging measure for dementia of the Alzheimer type. *Int Psychogeriatr*, 9 Suppl 1, 173-176; discussion 177-178. doi:10.1017/s1041610297004870
- Mougiyas, A. A., Politis, A., Lyketsos, C. G., & Mavreas, V. G. (2011). Quality of life in

dementia patients in Athens, Greece: predictive factors and the role of caregiver-related factors. *International Psychogeriatrics*, 23(3), 395-403.

doi:10.1017/S1041610210001262

Muangpaisan, W., Praditsuwan, R., Assanasen, J., Srinonprasert, V., Assantachai, P.,

Intalapaporn, S., ... Pisansalakij, D. (2010). Caregiver Burden and Needs of

Dementia Caregivers in Thailand: A Cross-Sectional Study. *J Med Assoc Thai*

93(5), 601-607.

National Collaborating Centre for Mental, H. (2007). National Institute for Health and

Clinical Excellence: Guidance. In *Dementia: A NICE-SCIE Guideline on*

Supporting People With Dementia and Their Carers in Health and Social Care.

Leicester (UK): The British Psychological Society & The Royal College of

Psychiatrists.

National Statistical Office. (2015). Average Monthly Expenditure Per Household by

Region and Province: 2006 - 2015 Retrieved from

<http://service.nso.go.th/nso/web/statseries/statseries11.html>

NurFatihah, O. A., Rahmah, M. A., Rosnah, S., Ismail, D., Khadijah, S., & ShEzat, S.

(2013). Quality Of Life among Caregivers of Elderly With Dementia and Its

Associated Factors. *Journal of Nursing and Health Science*, 1(2), 7-13.

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 Int J Nurs Res*, 17(2), 167-180.

Pahlavanzadeh, S., Heidari, F. G., Maghsudi, J., Ghazavi, Z., & Samandari, S. (2010). The

effects of family education program on the caregiver burden of families of

elderly with dementia disorders. *Iran J Nurs Midwifery Res*, 15(3), 102-108.

Papastavrou, E., Kalokerinou, A., Papacostas, S. S., Tsangari, H., & Sourtzi, P. (2007).

Caring for a relative with dementia: family caregiver burden. *Journal of*

Advanced Nursing, 58(5), 446-457. doi:10.1111/j.1365-2648.2007.04250.x

- Papastavrou, E., Tsangari, H., Karayiannis, G., Papacostas, S., Efstathiou, G., & Sourtzi, P. (2011). Caring and coping: The dementia caregivers. *Aging & Mental Health*, 15(6), 702-711. doi:10.1080/13607863.2011.562178
- Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the Stress Process: An Overview of Concepts and Their Measures. *The Gerontologist*, 30(5), 583-594. doi:10.1093/geront/30.5.583
- Pedersen, S. S., Spinder, H., Erdman, R. A., & Denollet, J. (2009). Poor perceived social support in implantable cardioverter defibrillator (ICD) patients and their partners: cross-validation of the multidimensional scale of perceived social support. *Psychosomatics*, 50(5), 461-467. doi:10.1176/appi.psy.50.5.461
- Pongpaew, W., & Sasat, S. (2011). The effect of giving information about an Anapanasti program on stress in caregivers of older people with dementia. *Journal of Nursing Science Chulalongkorn University*, 23(3), 28-42.
- Qu, Q. M., Qiao, J., Han, J. F., Yang, J. B., Guo, F., Luo, G. G., ... Wu, C. B. (2005). [The incidence of dementia among elderly people in Xi' an, China]. *Zhonghua Liu Xing Bing Xue Za Zhi*, 26(7), 529-532.
- Rakkhamnuan, S., & Lueboonthavatchai, P. (2012). Behavioral and Psychological Symptoms of Dementia (BPSD) and Caregiver Burden among Caregivers of Alzheimer's Dementia Patients at Department of Psychiatry, King Chulalongkorn Memorial Hospital. *J Psychiatr Assoc Thailand* 57(3), 335-346.
- Rankin, E. D., Haut, M. W., Keefover, R. W., & Franzen, M. D. (1994). The establishment of clinical cutoffs in measuring caregiver burden in dementia. *Gerontologist*, 34(6), 828-832.
- Ransmayr, G., Hermann, P., Sallinger, K., Benke, T., Seiler, S., Dal-Bianco, P., ... Schmidt, R. (2018). Caregiving and Caregiver Burden in Dementia Home Care: Results from the Prospective Dementia Registry (PRODEM) of the Austrian Alzheimer Society. *Journal of Alzheimer's Disease*, 63, 103-114.

doi:10.3233/JAD-170657

Rauf, A., Baig, L., Jaffery, T., & Shafi, R. (2014). Exploring the trustworthiness and reliability of focus groups for obtaining useful feedback for evaluation of academic programs. *Education for Health*, 27(1), 28-33. doi:10.4103/1357-6283.134303

Ray, S., & Davidson, S. (2014). Dementia and cognitive decline: A review of the evidence.

Razani, J., Corona, R., Quilici, J., Matevosyan, A., Funes, C., Larco, A., ... Lu, P. (2014). The Effects of Declining Functional Abilities in Dementia Patients and Increases in Psychological Distress on Caregiver Burden Over a One-Year Period. *Clinical Gerontologist*, 37(3), 235-252. doi:10.1080/07317115.2014.885920

Rosa, E., Lussignoli, G., Sabbatini, F., Chiappa, A., Di Cesare, S., Lamanna, L., & Zanetti, O. (2010). Needs of caregivers of the patients with dementia. *Archives of Gerontology and Geriatrics*, 51(1), 54-58.
doi:https://doi.org/10.1016/j.archger.2009.07.008

Rosdinom, R., Zarina, M. Z. N., Zanariah, M. S., Marhani, M., & Suzaily, W. (2013). Behavioural and psychological symptoms of dementia, cognitive impairment and caregiver burden in patients with dementia. *Preventive Medicine*, 57, Supplement, S67-S69. doi:http://dx.doi.org/10.1016/j.ypmed.2012.12.025

Sangsarawad, C., Lagampan, S., & Chansirikarnjana, S. (2012). Determinants of the quality of life among elderly people with dementia. *Journal of gerontology and geriatric medicine*, 12(3), 23-34.

Schindler, M., Engel, S., & Rupprecht, R. (2012). The Impact of Perceived Knowledge of Dementia on Caregiver Burden. *GeroPsych: The Journal of Gerontopsychology and Geriatric Psychiatry*, 25, 127. doi:10.1024/1662-9647/a000062

Scott, C. B. (2013). Alzheimer's Disease Caregiver Burden: Does Resilience Matter? *Journal of Human Behavior in the Social Environment*, 23(8), 879-892.

doi:10.1080/10911359.2013.803451

Scottish Intercollegiate Guidelines Network. (2006). *Management of patients with dementia: A national clinical guideline*. Retrieved from <http://www.sign.ac.uk/pdf/sign86.pdf>

Semiatina, A. M., & O'Connor, M. K. (2012). The relationship between self-efficacy and positive aspects of caregiving in Alzheimer's disease caregivers *Aging & Mental Health* 16(6), 683-688.

Senanarong, V., Jamjumras, P., Harmphadungkit, K., Klubwongs, M., Udomphanthurak, S., Pongvarin, N., ... Cummings, J. L. (2004). A counseling intervention for caregivers: effect on neuropsychiatric symptoms. *Int J Geriatr Psychiatry*, 19(8), 781-788. doi:10.1002/gps.1123

Shaji, K. S., Sivakumar, P. T., Rao, G. P., & Paul, N. (2018a). Clinical Practice Guidelines for Management of Dementia. *Indian journal of psychiatry*, 60(Suppl 3), S312-S328. doi:10.4103/0019-5545.224472

Shaji, K. S., Sivakumar, P. T., Rao, G. P., & Paul, N. (2018b). Clinical Practice Guidelines for Management of Dementia. *Indian journal of psychiatry*, 60(Suppl 3), S312-S328. doi:10.4103/0019-5545.224472

Shata, Z. N., Amin, M. R., El-Kady, H. M., & Abu-Nazel, M. W. (2017). Efficacy of a multi-component psychosocial intervention program for caregivers of persons living with neurocognitive disorders, Alexandria, Egypt: A randomized controlled trial. *Avicenna journal of medicine*, 7(2), 54-63. doi:10.4103/2231-0770.203610

Sherwood, P. R., Given, C. W., Given, B. A., & Eye, A. v. (2005). Caregiver Burden and Depressive Symptoms. *Journal of Aging and Health*, 17(2), 125-147. doi:10.1177/0898264304274179

Silpaanan, D. (2016). Prevalence of dementia in the elderly in Bangkruay Hospital Nonthaburi Province. *Journal of Medical and Public Health Region*

4, 6(1), 1-10.

Silpakit, O., Silpakit, C., & Chomchuen, R. (2014). Mindfulness-based care for dementia
Journal of Mental Health of Thailand, 22(1), 26-37.

Siritipakorn, P., & Muangpaisan, W. (2015). Associated factors of caregiver burden
among family caregivers of dementia patients in a geriatric clinic, Siriraj
hospital. *Journal of Nursing Science & Health*, 38(2), 54-64.

Sittironnarit, G., Emprasertsuk, W., & Wannasewok, K. (2020). Quality of life and
subjective burden of primary dementia caregivers in Bangkok, Thailand. *Asian
Journal of Psychiatry*, 48, 101913. doi:<https://doi.org/10.1016/j.ajp.2019.101913>

Sorensen, S., & Conwell, Y. (2011). Issues in dementia caregiving: effects on mental and
physical health, intervention strategies, and research needs. *Am J Geriatr
Psychiatry*, 19(6), 491-496. doi:10.1097/JGP.0b013e31821c0e6e

Sörensen, S., & Conwell, Y. (2011). Issues in dementia caregiving: effects on mental and
physical health, intervention strategies, and research needs. *Am J Geriatr
Psychiatry*, 19(6), 491-496. doi:10.1097/JGP.0b013e31821c0e6e

Sousa, M. F. B., Santos, R. L., Arcoverde, C., Simões, P., Belfort, T., Adler, I., ...
Dourado, M. C. N. (2013). Quality of life in dementia: the role of non-cognitive
factors in the ratings of people with dementia and family caregivers.
International Psychogeriatrics, 25(7), 1097-1105.

doi:10.1017/S1041610213000410

Srivastava, G., Tripathi, R. K., Tiwari, S. C., Singh, B., & Tripathi, S. M. (2016). Caregiver
Burden and Quality of Life of Key Caregivers of Patients with Dementia. *Indian
Journal of Psychological Medicine*, 38(2), 133-136. doi:10.4103/0253-
7176.178779

Stone, R., Cafferata, G. L., & Sangl, J. (1987). Caregivers of the Frail Elderly: A National
Profile. *The Gerontologist*, 27(5), 616-626. doi:10.1093/geront/27.5.616

Strategy and Information Group for Provincial Development. (2563). Five-year provincial

development plan 2016-2020. Retrieved from <http://www.ratchaburi.go.th/plan-2551/>

Tan, Z. S., Jennings, L., Ramirez, K., Kofman, Y. B., & Ercoli, L. (2016). CAREGIVER KNOWLEDGE AND PERCEIVED COMPETENCE FOLLOWING AN INTENSIVE DEMENTIA CAREGIVING TRAINING COURSE. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 12(7), P266.

doi:10.1016/j.jalz.2016.06.477

Tan, Z. S., Soh, M., Knott, A., Ramirez, K., Ercoli, L., Caceres, N., ... Jennings, L. A. (2019). Impact of an Intensive Dementia Caregiver Training Model on Knowledge and Self-Competence: The Improving Caregiving for Dementia Program. *JAGS*, 67(6), 1306. doi:10.1111/jgs.15821

Tang, B., Harary, E., Kurzman, R., Mould-Quevedo, J. F., Pan, S., Yang, J., & Qiao, J. (2013). Clinical Characterization and the Caregiver Burden of Dementia in China *VALUE IN HEALTH REGIONAL ISSUES* 2 118 -126.

Tanner, J. A., Black, B. S., Johnston, D., Hess, E., Rabins, P. V., Lyketsos, C., & Samus, Q. (2013). Effectiveness of a Multicomponent Care Coordination Intervention on Dementia Caregivers in the Community - a Randomized Control Trial. *The American Journal of Geriatric Psychiatry*, 21(3), S97-S98. doi:10.1016/j.jagp.2012.12.129

Teri, L., Truax, P., Logsdon, R., Uomoto, J., Zarit, S., & Vitaliano, P. P. (1992). Assessment of behavioral problems in dementia: The Revised Memory and Behavior Problems Checklist. *Psychology and Aging*, 7(4), 622-631.

Thasana, P. (2015). Community Context Under the Semi-Urban, Semi-Rural Society. *The Far Eastern University academic journals*, 9(1), 7-15.

The WHOQOL Group. (1997). *WHOQOL-Measuring Quality of Life*. Retrieved from http://www.who.int/mental_health/media/68.pdf

Toonsiri, C., Sunsern, R., & Lawang, W. (2011). Development of the Burden Interview

- for Caregivers of Patients with Chronic Illness. *Journal of Nursing and Education*, 4(1), 62-75.
- Torp, S., Hanson, E., Hauge, S., Ulstein, I., & Magnusson, L. (2008). A pilot study of how information and communication technology may contribute to health promotion among elderly spousal carers in Norway. *Health Soc Care Community*, 16(1), 75-85. doi:10.1111/j.1365-2524.2007.00725.x
- Toye, C., Lester, L., Popescu, A., McInerney, F., Andrews, S., & Robinson, A. L. (2014). Dementia Knowledge Assessment Tool Version Two: Development of a tool to inform preparation for care planning and delivery in families and care staff. *Dementia*, 13(2), 248-256. doi:10.1177/1471301212471960
- Tremont, G. (2011). Family Caregiving in Dementia. *Medicine and health, Rhode Island*, 94(2), 36-38. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3487163/>
- Tremont, G., Davis, J. D., Bishop, D. S., & Fortinsky, R. H. (2008). Telephone-Delivered Psychosocial Intervention Reduces Burden in Dementia Caregivers. *Dementia (London, England)*, 7(4), 503-520. doi:10.1177/1471301208096632
- Tremont, G., Davis, J. D., Papandonatos, G. D., Ott, B. R., Fortinsky, R. H., Gozalo, P., ... Bishop, D. S. (2015). Psychosocial telephone intervention for dementia caregivers: A randomized, controlled trial. *Alzheimer's & Dementia*, 11(5), 541-548. doi:<https://doi.org/10.1016/j.jalz.2014.05.1752>
- United Nations Population Fund Country Office in Thailand. (2011). *Impact of demographic change in Thailand*. Bangkok: United Nations Population Fund Country Office in Thailand,.
- Vaingankar, J. A., Chong, S. A., Abdin, E., Picco, L., Jeyagurunathan, A., Zhang, Y., ... Subramaniam, M. (2016). Care participation and burden among informal caregivers of older adults with care needs and associations with dementia. *International Psychogeriatrics*, 28(2), 221-231. doi:10.1017/S104161021500160X

- van der Roest, H. G., Meiland, F. J. M., Jonker, C., & Dröes, R.-M. (2010). User evaluation of the DEMentia-specific Digital Interactive Social Chart (DEM-DISC). A pilot study among informal carers on its impact, user friendliness and, usefulness. *Aging & Mental Health*, 14(4), 461-470. doi:10.1080/13607860903311741
- Washington, K. T., Meadows, S. E., Elliott, S. G., & Koopman, R. J. (2011). Information needs of informal caregivers of older adults with chronic health conditions. *Patient Education and Counseling*, 83 37-44.
- Wei, C.-J., Cheng, Y., Zhang, Y., Sun, F., Zhang, W.-s., & Zhang, M.-y. (2014). Risk factors for dementia in highly educated elderly people in Tianjin, China. *Clinical Neurology and Neurosurgery*, 122, 4-8.
doi:http://dx.doi.org/10.1016/j.clineuro.2014.04.004
- Wichai, A. (2016). *Thailand national health and examination survey 2014*. Nonthaburi: Health Systems Research Institute.
- Wongpakaran, T., Wongpakaran, N., & Ruktrakul, R. (2011). Reliability and Validity of the Multidimensional Scale of Perceived Social Support (MSPSS): Thai Version. *Clin Pract Epidemiol Ment Health*, 7, 161-166.
doi:10.2174/1745017901107010161
- Wongpakaran, T., Wongpakaran, N., Sirirak, T., Arunpongpaisal, S., & Zimet, G. (2018). Confirmatory factor analysis of the revised version of the Thai multidimensional scale of perceived social support among the elderly with depression. *Aging & Mental Health*, 22(9), 1149-1154. doi:10.1080/13607863.2017.1339778
- Worakhunphiset, K., & Sasat, S. (2015). The Effect of Home Environmental Arrangement and Progressive Muscle Relaxation Program on Stress in Caregivers of Older People with Dementia. *Kuakarun Journal of Nursing* 22(1), 82-97.
- World Health Organization. (2012). *Dementia: A public health priority*. . Geneva: World Health Organization.

- World Health Organization. (2015). The epidemiology and impact of dementia: current state and future trends. Retrieved from http://www.who.int/mental_health/neurology/dementia/en/
- Yan, E. (2014). Abuse of older persons with dementia by family caregivers: results of a 6-month prospective study in Hong Kong. *Int J Geriatr Psychiatry*, 29(10), 1018-1027. doi:10.1002/gps.4092
- Yan, E., & Kwok, T. (2011). Abuse of older Chinese with dementia by family caregivers: an inquiry into the role of caregiver burden. *Int J Geriatr Psychiatry*, 26(5), 527-535.
- Yiengprugsawan, V., Harley, D., Seubsman, S.-a., & Sleigh, A. C. (2012). Physical and mental health among caregivers: findings from a cross-sectional study of Open University students in Thailand. *BMC Public Health*, 12(1), 1111. doi:10.1186/1471-2458-12-1111
- Yimyan, U., & Yamsakul, N. (2013). A survey of Dementia in the elderly in Damnoensaduak district, Ratchaburi province. *Primary Health Care Division Journal*, 9(1), 29-37.
- Ying, J., Wang, Y., Zhang, M., Wang, S., Shi, Y., Li, H., ... Sun, J. (2018). Effect of multicomponent interventions on competence of family caregivers of people with dementia: A systematic review. *Journal of Clinical Nursing*, 27(9-10), 1744-1758. doi:10.1111/jocn.14326
- Zarit, S. H., Reever, K. E., & Bach-Peterson, J. (1980). Relatives of the Impaired Elderly: Correlates of Feelings of Burden. *The Gerontologist*, 20(6), 649-655. doi:10.1093/geront/20.6.649
- Zarit, S. H., Todd, P. A., & Zarit, J. M. (1986). Subjective Burden of Husbands and Wives as Caregivers: A Longitudinal Study1. *The Gerontologist*, 26(3), 260-266. doi:10.1093/geront/26.3.260
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional

Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41. doi:10.1207/s15327752jpa5201_2

Zucchella, C., Bartolo, M., Bernini, S., Picascia, M., & Sinforiani, E. (2015). Quality of Life in Alzheimer Disease: A Comparison of Patients' and Caregivers' Points of View. *Alzheimer Disease & Associated Disorders*, 29(1), 50-54.
doi:10.1097/wad.0000000000000050



APPENDIX

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A: Questionnaires



Demographic Information

The following questions asks about you, the caregiver and your household situation.

Please circle the answer which is most applicable to you

1. Gender

- ☐ Male
- ☐ Female

2. Age.....years

3. Marital status

- ☐ Single
- ☐ Married
- ☐ Divorced/Separated
- ☐ Widowed

4. Education level

- ☐ High school
- ☐ Vocational/Technical School
- ☐ Bachelor's degree
- ☐ Master's degree or higher

5. Employment Status

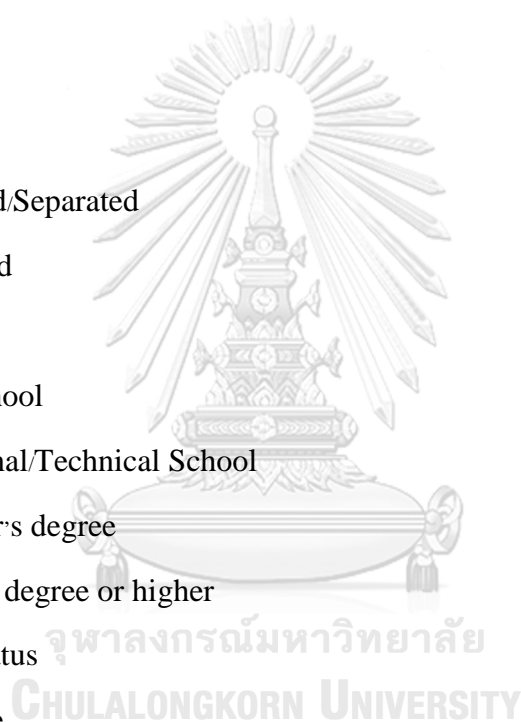
- ☐ Full-time
- ☐ Part-time
- ☐ Not Employed
- ☐ Retired

6. Occupation

7. Income.....

8. How would you rate your overall health?

- ☐ Excellent
- ☐ Good



☐ Fair

☐ Poor

9. Do you have underlying

☐ Yes Specify.....

☐ No

10. Relationship to care recipient

☐ Spouse

☐ Son

☐ Daughter

☐ Friend

☐ Other (specify).....

11. Length of time as caregiver.....

12. Time for caring (hour/day).....

13. Are there any other family members that assist you in caring for the individual?

☐ Yes

☐ No

14. Do you have other caregiver responsibilities for anyone else?

☐ Yes Who.....

☐ No

15. How many other people live in your house.....

Dementia Knowledge Assessment Tool Version Two

Please read each statement carefully and place a tick in the box to show if you agree or disagree with the statement, or if you don't know.

It is important to tick only one box (yes, no, or don't know) for every statement.

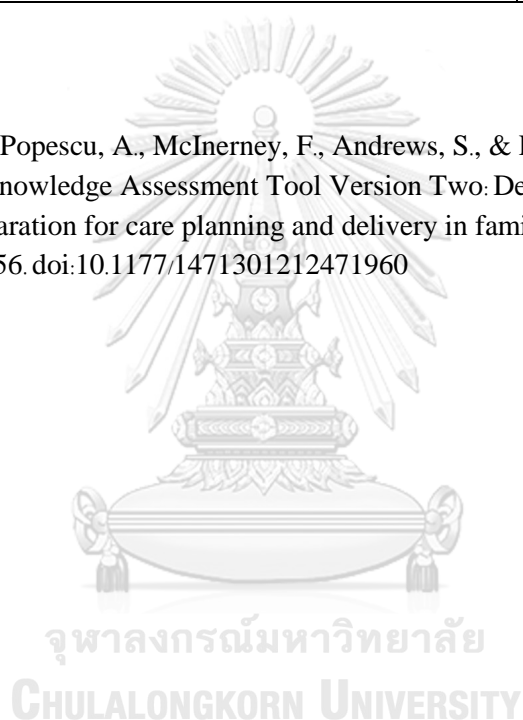
Question	Yes	No	don't know
1.Dementia occurs because of changes in the brain.	✓		
2.Brain changes causing dementia are often progressive.	✓		
3.Alzheimer's disease is the main cause of dementia.	✓		
4.Blood vessel disease can also cause dementia.	✓		
5.Confusion in an older person is almost always due to dementia.		✓	
6.Only older adults develop dementia.	✓		
7.Knowing the likely cause of dementia can help to predict its progression.	✓		
8.Incontinence always occurs in the early stages of dementia.		✓	
9.Dementia is likely to limit life expectancy.	✓		
10.When a person has late stage dementia, families can help others to understand that person's needs.	✓		

Question	Yes	No	don't know
11. People who have dementia may develop problems with visual perception (understanding or recognizing what they see).	✓		
12. Sudden increases in confusion are characteristic of dementia		✓	
13. Uncharacteristic distressing behaviors may occur in people who have dementia (e.g., aggressive behavior in gentle person).	✓		
14. Difficulty swallowing occurs in late dementia.	✓		
15. Movement (e.g., walking, moving in a bed chair) is limited in late stage dementia.	✓		
16. Changing the environment (e.g., putting on CD, opening or closing the blinds) will make no difference to person who has dementia.		✓	
17. When a person who has dementia is distressed, it may help to talk to them about their feelings.	✓		
18. It is important to always correct a person who has dementia when they are confused.		✓	
19. A person who has dementia can often be supported to make choices (e.g., what clothes to wear).	✓		

Question	Yes	No	don't know
20.It is possible to tell if person who is in the later stages of dementia is in pain.		✓	
21.Exercise can sometimes be of benefit to people who have dementia.	✓		

Reference

Toye, C., Lester, L., Popescu, A., McInerney, F., Andrews, S., & Robinson, A. L. (2014). Dementia Knowledge Assessment Tool Version Two: Development of a tool to inform preparation for care planning and delivery in families and care staff. *Dementia*, 13(2), 248-256. doi:10.1177/1471301212471960



The Zarit Burden Interview

Please circle the response the best describes how you feel

- 0 = Never
- 1 = Rarely
- 2 = Sometimes
- 3 = Quite frequently
- 4 = Nearly always

Question	Score				
1. Do you feel that your relative asks for more help than he/she needs?	0	1	2	3	4
2. Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?	0	1	2	3	4
3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
4. Do you feel embarrassed over your relative's behavior?	0	1	2	3	4
5. Do you feel angry when you are around your relative?	0	1	2	3	4
6. Do you feel that your relative currently affects our relationships with other family members or friends in a negative way?	0	1	2	3	4

Question	Score				
7. Are you afraid what the future holds for your relative?	0	1	2	3	4
8. Do you feel your relative is dependent on you?	0	1	2	3	4
9. Do you feel strained when you are around your relative?	0	1	2	3	4
10. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
11. Do you feel that you don't have as much privacy as you would like because of your relative?	0	1	2	3	4
12. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13. Do you feel uncomfortable about having friends over because of your relative?	0	1	2	3	4
14. Do you feel that your relative seems to expect you to take care of him/her as if you were the only one he/she could depend on?	0	1	2	3	4
15. Do you feel that you don't have enough money to take care of your relative in addition to the rest of your expenses?	0	1	2	3	4
16. Do you feel that you will be unable to take care of your relative much longer?	0	1	2	3	4

Question	Score				
17. Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
18. Do you wish you could leave the care of your relative to someone else?	0	1	2	3	4
19. Do you feel uncertain about what to do about your relative?	0	1	2	3	4
20. Do you feel you should be doing more for your relative?	0	1	2	3	4
21. Do you feel you could do a better job in caring for your relative?	0	1	2	3	4
22. Overall, how burdened do you feel in caring for your relative?	0	1	2	3	4

Interpretation of Score:

0 - 21 little or no burden

21 - 40 mild to moderate burden

41 - 60 moderate to severe burden

61 - 88 severe burden

Reference

Zarit, S. H., Reever, K. E., & Bach-Peterson, J. (1980). Relatives of the Impaired Elderly: Correlates of Feelings of Burden. *The Gerontologist*, 20(6), 649-655. doi:10.1093/geront/20.6.649

THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL)-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	How would you rate your quality of life?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	An extreme amount
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5
20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

		Never	Seldom	Quite often	Very often	Always
26.	How well are you able to get around?	5	4	3	2	1

Do you have any comments about the assessment?

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	Domain 1	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ $\square + \square + \square + \square + \square + \square + \square$	a. =	b. =	c. =
28.	Domain 2	$Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)$ $\square + \square + \square + \square + \square + \square$	a. =	b. =	c. =
29.	Domain 3	$Q20 + Q21 + Q22$ $\square + \square + \square$	a. =	b. =	c. =
30.	Domain 4	$Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25$ $\square + \square + \square + \square + \square + \square + \square + \square$	a. =	b. =	c. =

Multi dimensional Scale of Perceived Social Support (MSPSS).

Instructions:

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
1. There is a special person who is around when I am in need.							
2. There is special person with whom I can share joys and sorrows.							
3. My family really tries to help me.							
4. I get the emotional help & support. I need from my family.							
5. I have a special person who is a real source of comfort to me.							
6. My friends really try to help me.							
7. I can count							

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
on my friends when things go wrong.							
8. I can talk about my problems with my family.							
9. I have friends with whom I can share my joys and sorrows.							
10. There is a special person in my life who cares about my feelings.							
11. My family is willing to help me make decisions.							
12. I can talk about my problems with my friends.							

Reference

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41.
doi:10.1207/s15327752jpa5201_2

Revised Memory & Behavior Problem Checklist

Instructions: The following is a list of problems people/patients with a memory loss sometimes have. Please indicate if any of these problems have occurred during the past week. If so, how much has this bothered or upset you when it happened?

Use the following scales for the frequency of the problem and your reaction to it. Please read the description of the ratings carefully.

Frequency Ratings:

0 = never occurred

1 = not in the past week

2 = 1 to 2 times in the past week

3 = 3 to 6 times in the past week

4 = daily or more often

9 = don't know/not applicable

Reaction Ratings:

0 = not at all

1 = a little

2 = moderately

3 = very much

4 = extremely

9 = don't know/not applicable

Please answer all the questions below. Check one box from 0-9 for both Frequency and Reaction.

Frequency	Reaction	
0 1 2 3 4 9	0 1 2 3 4 9	1. Asking the same question over and over
0 1 2 3 4 9	0 1 2 3 4 9	2. Trouble remembering recent events (e.g., items in the newspaper or on TV).
0 1 2 3 4 9	0 1 2 3 4 9	3. Trouble remembering significant past events
0 1 2 3 4 9	0 1 2 3 4 9	4. Losing or misplacing things.
0 1 2 3 4 9	0 1 2 3 4 9	5. Forgetting what day it is.

Frequency	Reaction	
0 1 2 3 4 9	0 1 2 3 4 9	6. Starting, but not finishing, things.
0 1 2 3 4 9	0 1 2 3 4 9	7. Difficulty concentrating on a task
0 1 2 3 4 9	0 1 2 3 4 9	8. Destroying property.
0 1 2 3 4 9	0 1 2 3 4 9	9. Doing things that embarrass you.
0 1 2 3 4 9	0 1 2 3 4 9	10. Waking you or other family members up at night.
0 1 2 3 4 9	0 1 2 3 4 9	11. Talking loudly and rapidly.
0 1 2 3 4 9	0 1 2 3 4 9	12. Appears anxious or worried.
0 1 2 3 4 9	0 1 2 3 4 9	13. Engaging in behavior that is potentially dangerous to self or others.
0 1 2 3 4 9	0 1 2 3 4 9	14. Threats to hurt oneself.
0 1 2 3 4 9	0 1 2 3 4 9	15. Threats to hurt others.
0 1 2 3 4 9	0 1 2 3 4 9	16. Aggressive to others verbally.
0 1 2 3 4 9	0 1 2 3 4 9	17. Appears sad or depressed.
0 1 2 3 4 9	0 1 2 3 4 9	18. Expressing feelings of hopelessness or sadness about the future (e.g., “Nothing worthwhile ever happens”, “I never do anything right”).
0 1 2 3 4 9	0 1 2 3 4 9	19. Crying and tearfulness.
0 1 2 3 4 9	0 1 2 3 4 9	20. Commenting about death of self or others (e.g., “Life isn’t worth living”, “I’d be better off dead”).
0 1 2 3 4 9	0 1 2 3 4 9	21. Talking about feeling lonely.
0 1 2 3 4 9	0 1 2 3 4 9	22. Comments about feeling worthless of being a burden to others.
0 1 2 3 4 9	0 1 2 3 4 9	23. Comments about feeling like a failure, or about not having any

Frequency	Reaction	
		worthwhile accomplishments in life.
0 1 2 3 4 9	0 1 2 3 4 9	24. Arguing, irritability, and/or complaining.

Reference

Teri, L., Truax, P., Logsdon, R., Uomoto, J., Zarit, S., & Vitaliano, P. P. (1992). Assessment of behavioral problems in dementia: The Revised Memory and Behavior Problems Checklist. *Psychology and Aging*, 7(4), 622-631.



CLINICAL DEMENTIA RATING (CDR)

CLINICAL DEMENTIA RATING (CDR):	0	0.5	1	2	3
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	Impairment				
	None 0	Questionable 0.5	Mild 1	Moderate 2	Severe 3
Memory	No memory loss or slight inconsistent forgetfulness	Consistent slight forgetfulness; partial recollection of events; "benign" forgetfulness	Moderate memory loss; more marked for recent events; defect interferes with everyday activities	Severe memory loss; only highly learned material retained; new material rapidly lost	Severe memory loss; only fragments remain
Orientation	Fully oriented	Fully oriented except for slight difficulty with time relationships	Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere	Severe difficulty with time relationships; usually disoriented to time, often to place	Oriented to person only
Judgment & Problem Solving	Solves everyday problems & handles business & financial affairs well; judgment good in relation to past	Slight impairment in solving problems, similarities, and differences	Moderate difficulty in handling problems, similarities, and differences; social judgment usually maintained	Severely impaired in handling problems, similarities, and differences; social judgment usually	Unable to make judgments or solve problems

	Impairment				
	None 0	Questionable 0.5	Mild 1	Moderate 2	Severe 3
	performance			impaired	
Community Affairs	Independent function at usual level in job, shopping, volunteer and social groups	Slight impairment in these activities	Unable to function independently at these activities although may still be engaged in some; appears normal to casual inspection	No pretense of independent function outside home Appears well enough to be taken to functions outside a family home	
Home and Hobbies	Life at home, hobbies, and intellectual interests well maintained	Life at home, hobbies, and intellectual interests slightly impaired	Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned	Only simple chores preserved; very restricted interests, poorly maintained	No significant function in home
Personal Care	Fully capable of self-care		Needs prompting	Requires assistance in dressing, hygiene, keeping of personal effects	Requires much help with personal care; frequent incontinence

Reference

Morris, J. C. (1997). Clinical dementia rating: a reliable and valid diagnostic and staging measure for dementia of the Alzheimer type. *Int Psychogeriatr*, 9 Suppl 1, 173-176; discussion 177-178. doi:10.1017/s1041610297004870

Appendix B: Questionnaires (in Thai)

แบบสอบถามข้อมูลทั่วไป

คำถามต่อไปนี้เป็นคำถามเกี่ยวกับข้อมูลทั่วไปของท่านและรายละเอียดในการดูแลผู้ป่วยสมองเสื่อม กรุณาตอบคำถามต่อไปนี้ให้สมบูรณ์ที่สุด

1. เพศ

☐ ชาย

☐ หญิง

2. อายุ.....ปี

3. สถานภาพสมรส

☐ โสด

☐ สมรส

☐ หย่าร้าง/แยกกันอยู่

☐ หม้าย

4. ระดับการศึกษา

☐ ประถมศึกษา

☐ มัธยมศึกษา

☐ ปริญญาตรี

☐ ปริญญาโท หรือสูงกว่า

5. สถานะภาพการทำงาน

☐ ทำงานเต็มเวลา

☐ ทำงานไม่เต็มเวลา

☐ ไม่ได้ทำงาน

☐ เกษียณอายุ

6. อาชีพ

7. รายได้ต่อเดือน.....บาท

8. คุณมีโรคประจำตัวหรือไม่

☐ มี ระบุ.....

☐ ไม่มี

9. ความสัมพันธ์กับผู้ป่วย

- ☐ คู่สมรส
- ☐ บุตรชาย
- ☐ บุตรสาว
- ☐ ญาติพี่น้อง
- ☐ เพื่อน
- ☐ อื่นๆ (ระบุ).....

10. ท่านมีโรคประจำตัวหรือไม่

- ☐ มี ระบุ.....
- ☐ ไม่มี

11. ท่านดูแลผู้ป่วยมาเป็นเวลา.....ปี.....เดือน

12. ระยะเวลาที่ใช้ในการดูแลผู้ป่วย.....ชั่วโมงต่อวัน

13. มีบุคคลอื่นที่ช่วยท่านในการดูแลผู้ป่วยหรือไม่?

- ☐ ใช่ ระบุ.....
- ☐ ไม่ใช่

14. ท่านมีผู้หน้าที่ในการดูแลบุคคลอื่นอีกหรือไม่?

- ☐ ใช่ ระบุ.....
- ☐ ไม่ใช่

15. ครอบครัวของท่านมีสมาชิกจำนวน.....คน

แบบประเมินความรู้เกี่ยวกับโรคสมองเสื่อม (Dementia Knowledge Assessment Tool
version 2)

คำถาม	ใช่	ไม่ใช่	ไม่ แน่ใจ
1. ภาวะสมองเสื่อมเกิดจากการเปลี่ยนแปลงภายในสมอง	✓		
2. การเปลี่ยนแปลงภายในสมองมักทำให้โรคสมองเสื่อมเป็นมากขึ้น	✓		
3. โรคอัลไซเมอร์เป็นสาเหตุหลักของภาวะสมองเสื่อม	✓		
4. โรคหลอดเลือดเป็นสาเหตุหนึ่งที่ทำให้เกิดภาวะสมองเสื่อมได้	✓		
5. ผู้สูงอายุที่มีภาวะสับสนมักมีสาเหตุมาจากภาวะสมองเสื่อม		✓	
6. โรคสมองเสื่อมเกิดในผู้สูงอายุเท่านั้น	✓		
7. การรู้สาเหตุที่ทำให้เกิดภาวะสมองเสื่อมจะช่วยให้การทำนายการดำเนินโรคของภาวะสมองเสื่อมได้	✓		
8. ผู้ที่มีภาวะสมองเสื่อมในระยะแรกจะพบปัญหาเรื่องกลืนปัสสาวะ อุจจาระไม่ได้เสมอ		✓	
9. ผู้ที่มีภาวะสมองเสื่อมจะอายุไม่ยืน	✓		
10. ครอบครัวสามารถที่จะช่วยให้คนอื่นเข้าใจความต้องการของผู้สูงอายุที่มีอาการสมองเสื่อมรุนแรงได้	✓		
11. ผู้ที่มีภาวะสมองเสื่อมจะมีปัญหาเกี่ยวกับการรับรู้ด้านการมองเห็น	✓		
12. ภาวะสับสนอย่างเฉียบพลันพบได้ในผู้ที่มีภาวะสมองเสื่อม		✓	
13. การเปลี่ยนแปลงพฤติกรรมที่พบไม่บ่อยซึ่งอาจเกิดขึ้นได้ในผู้ที่มีภาวะสมองเสื่อม (เช่น พฤติกรรมก้าวร้าวในคนที่อ่อนโยน)	✓		

คำถาม	ใช่	ไม่ใช่	ไม่ แน่ใจ
14. ผู้ที่มีภาวะสมองเสื่อมในระยะท้ายจะพบปัญหาเกี่ยวกับการกลืน	✓		
15. ผู้ที่มีภาวะสมองเสื่อมในระยะท้ายจะมีปัญหาในการเคลื่อนไหว	✓		
16. การเปลี่ยนสภาพแวดล้อมไม่ทำให้ผู้ที่มีภาวะสมองเสื่อมรู้สึกถึงความแตกต่าง		✓	
17. เมื่อผู้ที่มีภาวะสมองเสื่อมมีความกังวล สามารถช่วยเหลือได้โดยพูดคุยเกี่ยวกับความรู้สึก	✓		
18. เมื่อผู้ที่มีภาวะสมองเสื่อมมีภาวะสับสนต้องรีบช่วยแก้ไข		✓	
19. เราสามารถช่วยกระตุ้นผู้ที่มีภาวะสมองเสื่อมให้เลือกรูปแบบต่างๆที่ใช้ในชีวิตประจำวันได้	✓		
20. เป็นไปไม่ได้ที่จะบอกว่าผู้ที่อยู่ในระยะท้ายของภาวะสมองเสื่อมมีอาการเจ็บปวด		✓	
21. การออกกำลังกายอาจเป็นประโยชน์ต่อผู้ที่มีภาวะสมองเสื่อม	✓		

แบบวัดภาระในการดูแลผู้ป่วยเรื้อรัง

เลือกตอบโดยพิจารณาข้อความในแต่ละข้อที่ตรงกับความรู้สึกของตนเองมากที่สุด มีเกณฑ์การให้คะแนนในแต่ละข้อ ดังนี้

ประจำ	ได้	4 คะแนน
บ่อยครั้ง	ได้	3 คะแนน
บางครั้ง	ได้	2 คะแนน
นานๆครั้ง	ได้	1 คะแนน
ไม่เคยเลย	ได้	0 คะแนน

คำถาม	คะแนน				
1. ท่านรู้สึกว่าผู้ป่วยร้องขอความช่วยเหลือมากกว่าความต้องการจริง	0	1	2	3	4
2. ท่านรู้สึกว่าท่านไม่มีเวลาเพียงพอสำหรับตัวเอง เนื่องจากว่าใช้เวลาในการดูแลผู้ป่วยมากไม่มีเวลาเป็นของตนเอง	0	1	2	3	4
3. ท่านรู้สึกมีความเครียดทั้งงานที่ต้องดูแลผู้ป่วยและงานอื่นที่ต้องรับผิดชอบ	0	1	2	3	4
4. ท่านรู้สึกอึดอัดใจต่อพฤติกรรมของผู้ป่วย	0	1	2	3	4
5. ท่านรู้สึกหงุดหงิดใจ หรือโกรธ ขณะที่อยู่ใกล้ผู้ป่วย	0	1	2	3	4
6. ท่านรู้สึกว่าผู้ป่วยทำให้ความสัมพันธ์ของท่านกับสมาชิกในครอบครัวหรือเพื่อนแย่ลง	0	1	2	3	4
7. ท่านรู้สึกกลัวเกี่ยวกับสิ่งที่จะเกิดขึ้นในอนาคตกับผู้ป่วยซึ่งเป็นญาติของท่าน	0	1	2	3	4
8. ท่านรู้สึกว่าผู้ป่วยต้องพึ่งพาท่าน	0	1	2	3	4
9. ท่านรู้สึกตึงเครียดขณะที่อยู่ใกล้ผู้ป่วย	0	1	2	3	4
10. ท่านรู้สึกว่าสุขภาพของท่านไม่ค่อยดี เนื่องมาจากการดูแลผู้ป่วย	0	1	2	3	4
11. ท่านรู้สึกว่าท่านไม่มีความเป็นส่วนตัวเท่าที่ต้องการ เนื่องจากการดูแลผู้ป่วย	0	1	2	3	4

คำถาม	คะแนน				
12. ท่านรู้สึกว่าคุณไม่สามารถมีสังคมได้ตามปกติ เนื่องจากการดูแลผู้ป่วย	0	1	2	3	4
13. ท่านรู้สึกไม่สะดวกในการติดต่อ/คบหากับเพื่อน เนื่องมาจากการดูแลผู้ป่วย	0	1	2	3	4
14. ท่านรู้สึกว่าผู้ป่วยคาดหวังในตัวท่านมาก เหมือนมีท่านคนเดียวเท่านั้นที่พึ่งพาได้	0	1	2	3	4
15. ท่านรู้สึกว่าท่านไม่มีเงินเพียงพอที่จะดูแลผู้ป่วย	0	1	2	3	4
16. ท่านรู้สึกว่า ท่านจะไม่สามารถอดทนดูแลผู้ป่วยได้อีกไม่นาน	0	1	2	3	4
17. ท่านรู้สึกว่าท่านไม่สามารถควบคุมจัดการชีวิตตนเองได้ ตั้งแต่ดูแลผู้ป่วย	0	1	2	3	4
18. ท่านอยากที่จะเลิกดูแลผู้ป่วยซึ่งเป็นญาติของท่านและให้คนอื่นมาดูแลแทน	0	1	2	3	4
19. ท่านรู้สึกว่าไม่มีอะไรที่มั่นคงแน่นอนเกี่ยวกับสิ่งที่ทำให้ผู้ป่วย	0	1	2	3	4
20. ท่านรู้สึกว่าท่านควรจะได้รับ การดูแลจากญาติคนอื่น	0	1	2	3	4
21. ท่านรู้สึกว่าท่านน่าจะดูแลญาติของท่านได้ดีกว่านี้	0	1	2	3	4
22. โดยภาพรวมท่านรู้สึกว่า การดูแลผู้ป่วยเป็นภาระสำหรับท่าน	0	1	2	3	4

การแปลผลคะแนน

- 0 - 21 คะแนน ไม่รู้สึกมีภาระการดูแลหรือรู้สึกมีภาระการดูแลเล็กน้อย
- 21 - 40 คะแนน รู้สึกมีภาระการดูแลน้อยถึงปานกลาง
- 41 - 60 คะแนน รู้สึกมีภาระการดูแลปานกลางถึงมาก
- 61 - 88 คะแนน รู้สึกมีภาระการดูแลมากที่สุด

แบบวัดคุณภาพชีวิตขององค์การอนามัยโลกชุดย่อฉบับภาษาไทย

คำถามต่อไปนี้จะถามว่าคุณรู้สึกอย่างไรกับคุณภาพชีวิต สุขภาพ หรือด้านอื่น ๆ ในชีวิตของคุณ ดิฉัน/ กระจกผมจะอ่านแต่ละคำถาม พร้อมกับคำตอบที่เป็นตัวเลือกให้คุณฟัง โปรดเลือกคำตอบที่คุณพบว่าเหมาะสมที่สุดถ้าคุณไม่แน่ใจเกี่ยวกับคำตอบในแต่ละคำถาม คำตอบแรกที่คุณคิดจะเป็นคำตอบที่ดีที่สุด

โปรดระลึกถึง มาตรฐาน ความหวัง ความยินดี และความสนใจของคุณเอง เราจะถามถึงความคิดที่คุณมีเกี่ยวกับชีวิตของคุณเองในช่วง 4 อาทิตย์ที่ผ่านมา

		ไม่ดีอย่าง มาก	ไม่ดี	ปาน กลาง	ดี	ดีมาก
1.	คุณให้คะแนนคุณภาพชีวิตของคุณอย่างไร?	1	2	3	4	5

		ไม่พอใจ มาก	ไม่พอใจ	เฉยๆ	พอใจ	พอใจ มาก
2.	คุณพอใจเกี่ยวกับสุขภาพของคุณอย่างไร ?	1	2	3	4	5

คำถามต่อไปนี้ จะถามเกี่ยวกับประสบการณ์ของคุณ ในบางสิ่งบางอย่างว่ามีอย่างน้อยแค่ไหน ในช่วง 4 อาทิตย์ ที่ผ่านมา

		ไม่เลย	เล็กน้อย	ปานกลาง	มาก	มากที่สุด
3.	คุณมีความรู้สึกเจ็บปวดทางร่างกายจนไม่สามารถที่จะทำในสิ่งที่คุณอยากทำอย่างน้อยเพียงใด ?	5	4	3	2	1
4.	คุณต้องการ การบำบัดทางการแพทย์อย่างน้อยแค่ไหน เพื่อให้สามารถปฏิบัติภารกิจประจำวันได้ ?	5	4	3	2	1
5.	คุณมีความสุขในการดำเนินชีวิตมากน้อยแค่ไหน ?	1	2	3	4	5
6.	คุณรู้สึกว่าชีวิตของคุณมีความหมายมากน้อยแค่ไหน ?	1	2	3	4	5

จุฬาลงกรณ์มหาวิทยาลัย

		ไม่เลย	เล็กน้อย	ปานกลาง	มาก	มากที่สุด
7.	คุณสามารถที่จะมีสมาธิได้ดีเพียงใด ?	1	2	3	4	5
8.	คุณรู้สึกว่าชีวิตประจำวันของคุณปลอดภัยมากน้อยแค่ไหน ?	1	2	3	4	5
9.	คุณรู้สึกว่าสิ่งแวดล้อมของคุณมีสุขอนามัยอย่างไร ?	1	2	3	4	5

คำถามต่อไปนี้ จะถามเกี่ยวกับสิ่งที่คุณได้รับประสบ หรือ สามารถจะทำบางสิ่งบางอย่างได้
สมบูรณ์ครบถ้วนอย่างไร ในช่วง 4 อาทิตย์ที่ผ่านมา

		ไม่เลย	เล็กน้อย	ปาน กลาง	ส่วน ใหญ่	ได้ สมบูรณ์
10.	คุณมีพลังงานเพียงพอในการดำเนิน ชีวิตประจำวันหรือไม่ ?	1	2	3	4	5
11.	คุณสามารถที่จะยอมรับรูปร่าง หน้าตาของตนเองหรือไม่ ?	1	2	3	4	5
12.	คุณมีเงินเพียงพอที่จะสนองความ ต้องการของตนเองได้หรือไม่ ?	1	2	3	4	5
13.	คุณได้รับข้อมูลที่ความต้องการในการ ดำเนินชีวิตประจำวันอย่างไร	1	2	3	4	5
14.	คุณมีโอกาสที่จะทำกิจกรรมยามว่าง อย่างน้อยแค่ไหน ?	1	2	3	4	5

CHULALONGKORN UNIVERSITY

		ไม่ดี อย่าง มาก	ไม่พอใจ	ปาน กลาง	ดี	ดีมาก
15.	คุณสามารถที่จะไปไหนมาไหนได้ดี เพียงใด ?	1	2	3	4	5

		ไม่พอใจ มาก	ไม่ พอใจ	เฉยๆ	พอใจ	พอใจ มาก
16.	คุณพอใจกับการนอนหลับของคุณ อย่างไร ?	1	2	3	4	5
17.	คุณพอใจกับความสามารถของคุณใน การดำเนินกิจกรรมในชีวิตประจำวัน อย่างไร ?	1	2	3	4	5
18.	คุณพอใจกับความสามารถในการ ทำงานของคุณอย่างไร ?	1	2	3	4	5
19.	คุณพอใจกับตัวของคุณเองอย่างไร ?	1	2	3	4	5
20.	คุณพอใจกับความสัมพันธ์ส่วนตัวของคุณ อย่างไร ?	1	2	3	4	5
21.	คุณพอใจกับชีวิตเพศของคุณอย่างไร ?	1	2	3	4	5
22.	คุณพอใจเกี่ยวกับการสนับสนุนที่คุณ ได้รับจากเพื่อนๆ อย่างไร ?	1	2	3	4	5
23.	คุณพอใจเกี่ยวกับสภาพที่อยู่อาศัยของคุณ อย่างไร ?	1	2	3	4	5
24.	คุณพอใจเกี่ยวกับการที่คุณสามารถ เข้าถึงการบริการทางด้านสุขภาพ อย่างไร ?	1	2	3	4	5
25.	คุณพอใจเกี่ยวกับการเดินทางของคุณ อย่างไร ?	1	2	3	4	5

		ไม่เคย เลย	น้อย ครั้ง	ค่อนข้าง บ่อย	บ่อยมาก	ตลอดเวลา
26.	คุณมีความรู้สึกในด้านลบ เช่น ความรู้สึกเศร้า ผิดหวัง วิตก กังวล หดหู่ใจบ่อยครั้งแค่ไหน ?	5	4	3	2	1

คุณมีข้อคิดเห็นเกี่ยวกับการประเมินหรือไม่ ?

[ตารางต่อไปนีควรทำให้ครบถ้วนหลังการสัมภาษณ์เสร็จสิ้นแล้ว] ผู้สัมภาษณ์ไม่ต้องทำส่วนนี้

		สมการสำหรับการคำนวณคะแนนในส่วนต่าง ๆ	คะแนน ดิบ	คะแนนที่แปลง ได้*	
				4-20	0-100
27.	ส่วนที่ 1	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ $\square + \square + \square + \square + \square + \square + \square$	a. =	b:	c:
28.	ส่วนที่ 2	$Q + 5Q + 6Q + 7Q + 11Q - 6 + 19Q(26)$ $\square + \square + \square + \square + \square + \square$	a. =	b:	c:
29.	ส่วนที่ 3	$Q20 + Q21 + Q22$ $\square + \square + \square$	a. =	b:	c:
30.	ส่วนที่ 4	$Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25$ $\square + \square + \square + \square + \square + \square + \square + \square$	a. =	b:	c:

แบบสอบถามพฤติกรรมที่เป็นปัญหาของผู้ที่มีภาวะสมองเสื่อม

คำแนะนำ แบบสอบถามต่อไปนี้เป็นรายการปัญหาที่พบในผู้ป่วยที่มีการสูญเสียความจำ กรุณา
ระบุว่าปัญหาเหล่านี้เกิดขึ้นในช่วงสัปดาห์ที่ผ่านมาหรือไม่ หากว่าเกิดขึ้นคุณรู้สึกใส่ใจหรืออารมณ์เสีย
มากน้อยเพียงใด

ใช้ความถี่ต่อไปนี้เพื่อตอบความถี่ของปัญหาและการตอบสนองของคุณ กรุณาอ่านรายละเอียด
ในการให้คะแนนอย่างละเอียด

การให้คะแนนความถี่:

- 0 = ไม่เคยเกิดขึ้น
1 = ไม่เกิดในสัปดาห์ที่ผ่านมา
2 = เกิด 1-2 ครั้งในสัปดาห์ที่ผ่านมา
3 = เกิด 3-6 ครั้งในสัปดาห์ที่ผ่านมา
4 = เกิดเกือบทุกวันหรือทุกวัน
9 = ไม่ทราบ
ประเมินได้

การให้คะแนนของปฏิกิริยาของคุณ:

- 0 = ไม่รู้สึกเลย
1 = รู้สึกเล็กน้อย
2 = รู้สึกปานกลาง
3 = รู้สึกมาก
4 = รู้สึกอย่างมาก
9 = ไม่ทราบ/ไม่สามารถ

ปฏิกิริยาเกิดบ่อย เพียงใด	คุณรู้สึกใส่ใจหรือ อารมณ์เสียมากน้อย เพียงใด	ปัญหา
0 1 2 3 4 9	0 1 2 3 4 9	1.ถามคำถามเดียวกันซ้ำแล้วซ้ำอีก
0 1 2 3 4 9	0 1 2 3 4 9	2.มีปัญหาในการจดจำเหตุการณ์ล่าสุด (เช่น รายการในหนังสือพิมพ์ หรือรายการโทรทัศน์)
0 1 2 3 4 9	0 1 2 3 4 9	3.ปัญหาในการจดจำเหตุการณ์ในอดีตที่ สำคัญ
0 1 2 3 4 9	0 1 2 3 4 9	4.การสูญเสียหรือผิดวัตถุประสงค์
0 1 2 3 4 9	0 1 2 3 4 9	5.การลืมวัน
0 1 2 3 4 9	0 1 2 3 4 9	6.สามารถเริ่มต้นได้ แต่ไม่สามารถทำงานจบได้

ปฏิกิริยาเกิดบ่อย เพียงใด	คุณรู้สึกใส่ใจหรือ อารมณ์เสียมากน้อย เพียงใด	ปัญหา
0 1 2 3 4 9	0 1 2 3 4 9	7. มีความยุ่งยากในการทำงาน
0 1 2 3 4 9	0 1 2 3 4 9	8. ทำลายทรัพย์สิน
0 1 2 3 4 9	0 1 2 3 4 9	9. ทำสิ่งที่ทำให้คุณลำบาก
0 1 2 3 4 9	0 1 2 3 4 9	10. ปลุกคุณหรือสมาชิกในครอบครัวคนอื่นๆ ตอนกลางคืน
0 1 2 3 4 9	0 1 2 3 4 9	11. พูดเสียงดังและรวดเร็ว
0 1 2 3 4 9	0 1 2 3 4 9	12. มีท่าทีกระวนกระวายหรือวิตกกังวล
0 1 2 3 4 9	0 1 2 3 4 9	13. มีส่วนร่วมในพฤติกรรมที่เป็นอันตรายต่อ ตนเองหรือผู้อื่น
0 1 2 3 4 9	0 1 2 3 4 9	14. เป็นภัยคุกคามต่อตนเอง
0 1 2 3 4 9	0 1 2 3 4 9	15. เป็นภัยคุกคามต่อคนอื่น
0 1 2 3 4 9	0 1 2 3 4 9	16. ก้าวร้าวต่อผู้อื่นด้วยวาจา
0 1 2 3 4 9	0 1 2 3 4 9	17. มีท่าทางเสียใจหรือซึมเศร้า
0 1 2 3 4 9	0 1 2 3 4 9	18. แสดงความรู้สึกสั่นหึงหรือเศร้าหมอง เกี่ยวกับอนาคต (เช่น ไม่มีอะไรคุ้มที่เกิดขึ้น ฉันไม่เคยทำอะไรถูกต้อง)
0 1 2 3 4 9	0 1 2 3 4 9	19. ร้องไห้และมีน้ำตา
0 1 2 3 4 9	0 1 2 3 4 9	20. แสดงความคิดเห็นเกี่ยวกับความตายของ ตนเองหรือคนอื่น (เช่น ใช้ชีวิตไม่คุ้มค่า ฉัน ควรตายดีกว่า)
0 1 2 3 4 9	0 1 2 3 4 9	21. พูดเกี่ยวกับความรู้สึกเหงา โดดเดี่ยว

ปฏิกิริยาเกิดบ่อย เพียงใด	คุณรู้สึกใส่ใจหรือ อารมณ์เสียมากนัก เพียงใด	ปัญหา
0 1 2 3 4 9	0 1 2 3 4 9	22. แสดงความคิดเห็นเกี่ยวกับความรู้สึกไร้ค่า และการเป็นภาระแก่ผู้อื่น
0 1 2 3 4 9	0 1 2 3 4 9	23. ความคิดเห็นเกี่ยวกับความรู้สึกเหมือน ล้มเหลวหรือความสำเร็จที่ไม่คุ้มค่าในชีวิต
0 1 2 3 4 9	0 1 2 3 4 9	24. มีการโต้เถียง กระทั่งกระทบกระทั่ง และบ่น



แบบสอบถามความรู้สึกหลากหลายมิติเกี่ยวกับความช่วยเหลือทางสังคม
(ฉบับปรับปรุงภาษาไทย)

ทีมผู้วิจัยสนใจว่าคุณรู้สึกอย่างไรเกี่ยวกับข้อความต่างๆ เหล่านี้ โปรดอ่านแต่ละข้อความ
อย่างตั้งใจและบอกว่าคุณรู้สึกอย่างไรในข้อความแต่ละข้อ

	ไม่ เห็นด้วย อย่างมาก	ไม่ เห็นด้วย	ค่อนข้าง ไม่เห็น ด้วย	เฉยๆ	ค่อนข้าง เห็นด้วย	เห็น ด้วย	เห็นด้วย อย่าง มาก
1. มีบุคคลพิเศษที่คอย ช่วย หากฉันต้องการ ความช่วยเหลือขึ้นมา							
2. มีบุคคลพิเศษที่ สามารถร่วมทุกข์ร่วมสุข กับฉันได้							
3. ครอบครัวของฉัน พยายามช่วยฉันจริงๆ							
4. ฉันได้รับการสนับสนุน และช่วยเหลือทางด้าน จิตใจจากครอบครัว ตามที่ฉันต้องการ							
5. ฉันมีบุคคลพิเศษซึ่ง เป็นผู้ที่ให้ความสบายใจ จริงๆ แก่ฉัน							
6. เพื่อนของฉันพยายาม ช่วยฉันจริงๆ							
7. ฉันสามารถพึ่งพา อาศัยเพื่อนได้เมื่อมี							

	ไม่ เห็นด้วย อย่างมาก	ไม่ เห็นด้วย	ค่อนข้าง ไม่เห็น ด้วย	เฉยๆ	ค่อนข้าง เห็นด้วย	เห็น ด้วย	เห็นด้วย อย่าง มาก
ปัญหาขึ้นมา							
8. ฉันสามารถเล่าปัญหา ของฉันให้ครอบครัวฟังได้							
9. ฉันมีเพื่อนผู้ซึ่ง สามารถร่วมทุกข์ร่วมสุข กับฉันได้							
10. มีบุคลิพิเศษในชีวิต ที่คอยห่วงใยความรู้สึก ของฉัน							
11. ครอบครัวของฉัน เต็มใจที่จะช่วยฉันในการ ตัดสินใจ							
12. ฉันสามารถเล่าปัญหา ของฉัน给朋友ฟังได้							

แบบทดสอบความรุนแรงของสมองเสื่อม

	ระดับการสูญเสียและคะแนน CDR				
	ไม่มีการ สูญเสีย 0	สงสัยว่ามี การสูญเสีย 0.5	สูญเสียเล็กน้อย 1.0	สูญเสียปานกลาง 2.0	สูญเสียอย่าง รุนแรง 3.0
ความจำ (M)	ไม่มีการ สูญเสีย ความจำหรือ มีการ หลงลืม เล็กน้อย ซึ่งเกิดขึ้น ไม่สม่ำเสมอ	มีการหลงลืม เล็กน้อย เกิดขึ้น อย่าง สม่ำเสมอ ทวนความจำ เกี่ยวข้อง กับเหตุการณ์ ที่ผ่านมา ไม่ได้ไม่ ทั้งหมด	มีการสูญเสีย ความจำปาน กลาง โดยเฉพาะ อย่างความจำ เกี่ยวกับ เหตุการณ์ที่เพิ่ง ผ่านไปไม่ นาน (Recent Memory) และ มีผลกระทบต่อ การประกอบ กิจวัตร ประจำวัน	มีการสูญเสีย ความจำอย่าง รุนแรง, ความจำที่ เกิดขึ้นใหม่สูญเสีย ไปอย่างรวดเร็ว เก็บไว้ได้ เพียง บางส่วน คงเหลือ แต่ความจำ เกี่ยวกับสิ่งที่ฝังใจ หรือตั้งใจเรียนรู้	มีการสูญเสีย ความจำอย่าง รุนแรง เก็บ ความจำที่เกิดขึ้น ใหม่ไม่ได้ อาจมี ความจำเดิม เหลืออยู่บ้างใน ลักษณะ ประปราย ซึ่งไม่ สามารถปะติดปะ ต่อเป็นเรื่องราว ได้
การรู้จักวัน เวลา, สถานที่ และ บุคคล (O)	รู้จักวัน เวลา, สถานที่ และ บุคคล อย่างถูกต้อง	รู้จักวัน เวลา , สถานที่ และ บุคคลอย่าง ถูกต้อง ยกเว้น มีความลำบาก เล็กน้อยใน การบอกเวลา ที่คาบเกี่ยวกัน	มีความลำบาก ปานกลางในการ บอกเวลาที่คาบ เกี่ยวกัน รู้จัก สถานที่ที่อยู่ใน ปัจจุบันแต่อาจ ไม่รู้จักสถานที่ บางแห่งที่ คุ้นเคยมาก่อน	มีความลำบากมาก ในการบอกเวลาที่ คาบเกี่ยวกัน, ปกติ จะไม่รู้จัก วัน,เวลา, และ บ่อยครั้งที่ไม่ รู้จักสถานที่	ไม่รู้จักวันเวลา และสถานที่เลย แต่ยังรู้จักบุคคล ที่คุ้นเคย

	ระดับการสูญเสียและคะแนน CDR				
	ไม่มีการ สูญเสีย 0	สงสัยว่ามี การสูญเสีย 0.5	สูญเสียเล็กน้อย 1.0	สูญเสียปานกลาง 2.0	สูญเสียอย่าง รุนแรง 3.0
การ ตัดสินใจ และการ แก้ปัญหา (PS)	แก้ปัญหาที่ เกิดขึ้น ทุกวันได้ , สามารถ ทำงาน ทำ ธุรกิจ กิจกรรมทาง การเงินได้ ดี มีการ ตัดสินใจที่ดี เมื่อเทียบกับ อดีตที่ผ่านมา	มีความลำบาก เล็กน้อยใน การแก้ปัญหา ที่เกี่ยวข้องกับ การแยกแยะ สิ่งที่คล้ายกัน หรือแตกต่าง กัน	มีความลำบาก ปานกลางในการ แก้ปัญหา ที่ เกี่ยวข้องกับการ แยกแยะสิ่งที่ คล้ายกันหรือ แตกต่างกัน แต่ การตัดสินใจ เกี่ยวกับงาน สังคมยังคงเป็น ปกติ	มีความลำบากมาก ในการแก้ปัญหา ที่ เกี่ยวข้องกับการ แยกแยะสิ่งที่ คล้ายกันหรือ ต่างกัน การ ตัดสินใจเกี่ยวกับ การทำกิจกรรม ทางสังคมมีความ ผิดพลาดบ่อย	ไม่สามารถ ตัดสินใจ และแก้ปัญหา ใด ๆ ได้เลย
การเข้า สังคม (CA)	สามารถ ทำงานหรือ ประกอบ กิจกรรมนอก บ้านได้เอง ตามปกติ เช่น การ ประกอบ อาชีพ, การ จับจ่ายซื้อ ของ การ ช่วยเหลือ สังคม และ บำเพ็ญ	มีความลำบาก เล็กน้อยใน การ ทำงาน หรือประกอบ กิจกรรมนอก บ้านด้วย ตนเอง	ไม่สามารถ ทำงาน หรือประกอบ กิจกรรมนอก บ้านได้ด้วย ตนเองทั้งหมด ต้องมีบุคคลอื่น ช่วยเหลือในบาง กิจกรรม	ไม่สามารถทำ กิจกรรมนอกบ้าน ใด ๆ ได้เองโดย ปราศจากบุคคล อื่นช่วยเหลือ	ไม่สามารถทำ กิจกรรมนอก บ้านใด ๆ ได้เลย แม้จะมีบุคคลอื่น ช่วยเหลือ

	ระดับการสูญเสียและคะแนน CDR				
	ไม่มีการ สูญเสีย 0	สงสัยว่ามี การสูญเสีย 0.5	สูญเสียเล็กน้อย 1.0	สูญเสียปานกลาง 2.0	สูญเสียอย่าง รุนแรง 3.0
	ประโยชน์				
การใช้ ชีวิตที่ บ้านและ งาน อดิเรก (HH)	สามารถ ทำงานบ้าน งานอดิเรก หรืองาน อื่นที่สนใจได้ ตาม ปกติ	มีความลำบาก เล็กน้อยในการ ทำงาน บ้าน งาน อดิเรก หรืองานอื่นที่ สนใจ	มีความลำบากใน การทำงานบ้าน งานอดิเรกหรือ งาน อื่น ที่สนใจ ทำ ได้เฉพาะงานที่ ไม่ยุ่งยาก ซับซ้อน	สามารถทำได้ เฉพาะงานบ้านที่ ง่าย ๆ เท่านั้น ส่วนงานอดิเรก และงานอื่นที่สนใจ จะทำแทบไม่ได้ เลย	ไม่สามารถ ทำงาน บ้าน งานอดิเรก และงานอื่น สนใจใด ๆ ได้เลย
การดูแล ตนเอง (PC)	สามารถทำ กิจวัตร ประจำวันใน การดูแล ตนเองได้ ตามปกติ	สูญเสีย สามารถใน การทำกิจวัตร ประจำ วันในการดูแล ตนเองเล็กน้อย	การทำกิจวัตร ประจำ วันในการดูแล ตนเองต้องมี บุคคลอื่น ชี้แนะ	ต้องมีบุคคลอื่น ช่วย เหลือในการทำ กิจวัตรประจำวัน หลักในการดูแล ตนเอง เช่น การ แต่งกาย การทำ ความสะอาด ร่างกาย	ต้องการบุคคล อื่นช่วยเหลือ อย่างมาก ในการทำกิจวัตร ประจำวันหลักใน การดูแลตนเอง รวมถึง การขับถ่าย

Appendix C: Home visit and telephone tracking program.



Home visit and telephone tracking program.

Home visit and telephone tracking program is a multicomponent program. The program was developed based on the transactional theory of stress and coping (TTSC) and literature reviews.

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
1st week Pre-test (30-45 minutes)				
1. To describe the objectives and details of the research. 2. To assess the data of dementia caregivers.	-	-	<u>Introduction</u> - Information of study - Informed consent <u>Tool</u> - Inform consent - Questionnaires 1) Demographic characteristics questionnaire 2) Dementia Knowledge Assessment Tool version 2 (DKAT2) 3) Thai Burden Interview for Caregivers of Patients with Chronic Illness 4) The World Health Organization Quality of Life - Thai (WHOQOL-BREF-THAI)	
1st week Education session (20-40 minutes)				
To educated about dementia and	Information and	-	1. The participants received a summary of group	- Participants had increased

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
caring for people with dementia.	education		<p>education about knowledge of dementia by the researcher. The researcher has the opportunity to ask questionable issues.</p> <p>Topic: Knowledge about dementia (teaching new skills for caring patients)</p> <ul style="list-style-type: none"> - What is dementia? - Causes of dementia. - Problems of dementia people and guidelines of the solution. - Problems in dementia caregivers. - To prepare for caring for dementia patients. - Self-care of dementia caregivers. <p>2. The researcher asks permission for home visit and telephone tracking and makes an appointment (date and time) with participants for home visit.</p> <p><u>Tool</u></p> <p>- Power point</p>	knowledge of caring for people with dementia.

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			- Booklet	
2nd week “Home visit” (45-90 minutes)				
<ul style="list-style-type: none"> - To assess the stages of dementia. - To assess home environment and recommendations about home arrangements. - To assess problems and summarize the major problems of dementia caregiver - To teach skills for caring patients. - To consult coping strategies. 	<ul style="list-style-type: none"> - Home arrangements - Coping strategies - Tailored the education and discussion topic to the specific needs of the caregiver. 	<ul style="list-style-type: none"> - Cognitive appraisal - Coping 	Home visit <ol style="list-style-type: none"> 1. The researcher rechecks the stages of dementia of people with dementia by Clinical Dementia Rating (CDR) 2. To assess the home environment. <ul style="list-style-type: none"> - To assess home environment of dementia caregivers. - Recommendation about home arrangements. 3. To assess the major problem of caregiver <ul style="list-style-type: none"> - The researcher and research assistant interview the dementia caregivers about major problems of dementia caregivers by using the BATHE technique. <p><u>The BATHE technique</u> B - Background: What is going on in your life?</p>	<ul style="list-style-type: none"> - Participants had increased knowledge of caring for people with dementia and home arrangement. - Participants know their major problems and were able to use strategies to cope with problems.

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			<p>A - Affect: How do you feel about that?</p> <p>T - Trouble: What troubles you about that?</p> <p>H - Handling: How are you handling that?</p> <p>E - Empathy: That must be very difficult for you?</p> <ul style="list-style-type: none"> - The researcher and research assistant assisting caregivers to define the major problem. - The researcher and research assistant assessing problems of dementia caregiver by Revised Memory and Behavior Problem Checklist (RMBPC) <p>4. Psychosocial support and teaching skills for caring patients</p> <ul style="list-style-type: none"> - To teach skills for caring for patients - To encourage caregivers to attend their physical emotional and social needs. - To teach caregivers 	

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			<p>strategies to cope with ongoing problems of dementia caregivers.</p> <ul style="list-style-type: none"> - To create and guide dementia caregivers on the use of specific coping strategies. <p>Tool</p> <ol style="list-style-type: none"> 1. Notebook 2. Questionnaires <ul style="list-style-type: none"> - Clinical Dementia Rating (CDR) - Revised Memory and Behavior Problem Checklist (RMBPC) (page 48) 	
3rd to 7th week Telephone tracking once a week (15-25 minutes)				
<ul style="list-style-type: none"> - Assessing major problems of dementia caregivers and consulting about coping strategies. - To teaching skills for caring for patients. - To discussion topic to the specific needs of the 	<ul style="list-style-type: none"> - Coping strategies - Tailored the discussion topic to the specific needs of the caregiver. 	<ul style="list-style-type: none"> - Cognitive appraisal - Coping 	<p>Telephone tracking</p> <p>The intervention delivered over telephone by researcher and research assistant. Telephone tracking was designed to reduce burden and increase knowledge in caregivers.</p> <p>Dementia caregivers have received telephone contacts that focus on providing dementia</p>	<ul style="list-style-type: none"> - Participants had increased knowledge of caring for people with dementia. - Participants know their major problems and were able to be using

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
caregiver.			<p>education, emotional support, directing caregivers to appropriate resources, encouraging caregivers to attend to their physical emotional and social needs, teaching caregiver's strategies to cope with ongoing problems.</p> <p>Telephone tracking follow a similar protocol</p> <ol style="list-style-type: none"> 1) Introducing and identifying the purpose of the call. 2) Assessment of dementia caregiver's current status. The researcher identifies positive and negative changes since the last contact. 3) Assessment of key areas. The researcher assesses and takes notes of any changes in each key area of functioning such as health functioning, mood, family support. The researcher reinforces the need to appraise and 	strategies to cope with problems.

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			<p>reappraise these issues.</p> <p>4) Review of other issues and identifying other issues that could be problematic.</p> <p>5) Intervention:</p> <p>The researcher provides support and assistance to assist caregivers to solve problems and try to use family resources.</p> <p>To create and guide dementia caregiver to use specific coping strategies</p> <p>6) Continuing education:</p> <p>The researcher provides a chance for caregivers to ask questions about dementia or the care recipient.</p> <p>Noted: The researcher record details from each telephone tracking including duration, and problems of dementia caregivers, topic that requires follow for the next telephone tracking.</p> <p><u>Tool</u></p> <p>1. Telephone</p> <p>2. Information record form -</p>	

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			Dementia caregiver	
8th week “Home visit” (45-90 minutes)				
<ul style="list-style-type: none"> - To assess remaining problems and encourages the caregiver to continue to develop and utilize adaptive coping strategies. - To notify the caregiver that it's the end. 	<ul style="list-style-type: none"> - Home arrangement - Coping strategies to the specific needs of the caregiver. - Tailored the education topic to the specific needs of the caregiver. 	<ul style="list-style-type: none"> - Cognitive appraisal - Coping 	<ol style="list-style-type: none"> 1. The team researcher assesses home environment. 2. Continuing strategies to cope with ongoing problems of dementia caregivers. 3. Issue of termination by allowing caregivers to anticipate home visit and telephone tracking contacts when coming to the end. <ul style="list-style-type: none"> - The researchers ask caregivers to describe how they handle difficulties over the last month, rather than finding changes in key areas. - The researcher encourages the caregiver to continue to develop and utilize adaptive coping strategies. - The researcher recommends about home arrangements. - To recommend support service or health care team 	<ul style="list-style-type: none"> - participants are confident in using strategies to cope with their problems by themselves.

Objective	Multicomponent program	The transactional theory of stress and coping	Content / Tool	Outcome
			<p>(dementia clinic at Ratchaburi hospital) to continue care for people with dementia and dementia caregivers.</p> <p>- To remind about the appointment.</p> <p><u>Tool</u></p> <p>1. Information record form - Dementia caregiver</p>	

Appendix D: Question Guideline for Focus Group Discussion

Focus group discussion

Purpose statement

To determine the suitability and ability to be used in real situation of home visit and telephone tracking program.

Question guide for dementia caregiver

1. How do you think about the detail and content of home visit and telephone tracking program? Please explain.
2. How do you think about the time spent of home visit and telephone tracking program? Please explain.
3. How do you think about the content and detail of booklet “Dementia care guide for caregiver”? Please explain.
4. Do you have other recommendations about home visit and telephone tracking program? Please explain.

Question guide for health care team in Primary Care Hospital.

1. How do you think about the detail and content of home visit and telephone tracking program. Please explain.
2. How do you think about the time spent of home visit and telephone tracking program. Please explain.
3. How do you think about the content and detail of booklet “Dementia care guide for caregiver” Please explain.
4. If you have to bring the home visit and telephone tracking program to use with dementia caregiver, which part do you think you will modify? How do you modify it?
5. Do you have other recommendations about home visit and telephone tracking program? Please explain.

Appendix E: Information record form - Dementia caregiver (In Thai)
and Home environment assessment form (In Thai)



แบบประเมินสภาวะแวดล้อมภายในบ้าน (Home environment assessment form)

1. สิ่งแวดล้อมภายในบ้าน

1.1 โครงสร้างบ้าน (House structure)

- ☐ พื้น (The floor of the house)
 - ☐ วัสดุที่ใช้ในการปูพื้นไม่ลื่น
 - ☐ พื้นหรือเสื่อ/พรมสีเรียบ และติดเทปกาวที่เสื่อ/พรมเช็ดเท้า
- ☐ บันได (Stairs)
 - ☐ มีราวจับตลอดแนวตั้งแต่ขั้นแรกจนถึงขั้นสุดท้าย
 - ☐ วัสดุไม่ทำให้เกิดการลื่นได้ง่าย
 - ☐ ติดตั้งแถบกันลื่นบริเวณขั้นบันได
 - ☐ ใช้สีที่แตกต่างกับสีพื้นในขั้นแรกและขั้นสุดท้าย
- ☐ ประตู (Door)
 - ☐ ติดกระดิ่งที่ประตูทางเข้า ประตูรั้ว
 - ☐ ไม่ควรติดตั้งใช้คอปประตู
 - ☐ ที่ล็อคประตูควรติดตั้งระดับใกล้เคียงกับพื้น กลอนประตูควรหุ้มวัสดุ
- ☐ หน้าต่าง (Window) ควรมียารกัน

1.2 ลักษณะภายในบ้าน (Inside the house)

- ☐ ห้องนั่งเล่น (Living room)
 - ☐ จัดเฟอร์นิเจอร์มีความเหมาะสม
 - ☐ ติดตั้งรูปถ่ายหรือภาพอดีต
 - ☐ มีกระดานบันทึกดีไวท์ผนังห้อง มีบอร์ดตารางแสดงวันนัดหมาย
 - ☐ มีนาฬิกาที่บอกวัน เวลา
 - ☐ มีเบอร์โทรฉุกเฉิน
- ☐ ห้องครัวหรือพื้นที่สำหรับรับประทานอาหาร (Kitchen)
 - ☐ ควรลดการวางของบนเคาน์เตอร์ที่อาจทำให้เกิดความสับสนในการใช้งาน
 - ☐ มีที่วางน้ำที่สังเกตได้ง่าย
 - ☐ การใช้ตู้เก็บของเหนือเคาน์เตอร์แบบไม่มีบานปิด

- ☐ ห้องน้ำและส่วนอาบน้ำ (Toilet / shower room)
 - ☐ ควรจัดสิ่งของเครื่องใช้ให้เป็นระเบียบเรียบร้อย
 - ☐ มีตู้เก็บของใช้ในห้องน้ำ
 - ☐ มีพรมเช็ดเท้า มีแผ่นยางกันลื่นในห้องน้ำ
 - ☐ มีตะกร้าทิ้งกระดาษชำระหรือขยะ
 - ☐ มีการยกระดับโถสุขภัณฑ์
 - ☐ มีเครื่องช่วยในการพยุงตัว
 - ☐ สีของที่นั่งสุขภัณฑ์ตัดกับสีห้อง
 - ☐ มีที่นั่งอาบน้ำ / มีราวจับในส่วนอาบน้ำ
 - ☐ มีแสงสว่างที่เพียงพอ
- ☐ ห้องนอน (Bedroom)
 - ☐ ลดเสียงที่ดังและแสงที่จ้าเกินไป
 - ☐ มีน้ำดื่มอยู่ภายในห้องนอน
 - ☐ มีทางที่สามารถเดินได้รอบเตียงนอน
- ☐ ติดตั้งไฟให้แสงสว่างในเวลากลางคืนบริเวณบันได และทางเดิน

1.3 การจัดระเบียบภายในบ้าน (Home organization)

- ☐ การจัดวางสิ่งของ
 - ☐ จัดวางสิ่งของที่เป็นระเบียบให้สามารถหยิบใช้ได้
 - ☐ มีตู้เก็บของที่สามารถล็อกได้
 - ☐ สิ่งของตามทางเดินไม่ให้เกิดขวางทางเดิน เก็บสิ่งของที่อาจทำให้การเดินล้ม
 - ☐ เก็บวัตถุมีพิษที่มีลักษณะคล้ายผลิตภัณฑ์อาหาร ของมีคมต่างๆให้เรียบร้อย
- ☐ เฟอร์นิเจอร์ จัดในตำแหน่งที่ไม่กีดขวางทางเดิน หรือทางเข้าออกอื่น
- ☐ เก้าอี้มีพนักแขน เพื่อช่วยในการลุกนั่ง
- ☐ ติดตั้งอุปกรณ์กันกระแทกตามมุมเฟอร์นิเจอร์ ตู้ลิ้นชัก ทุกชั้นภายในบ้าน
- ☐ ติดเทปกาวยึดตามเหลี่ยมคมของเฟอร์นิเจอร์
- ☐ ปกปิดวัสดุที่มีลักษณะมันวาวหรือกระจกสะท้อน
- ☐ มีความสะอาดภายในบ้านและภายในห้องต่างๆ

2. สิ่งแวดล้อมภายนอกบ้าน (Outside the house)

- ☐ อากาศถ่ายเทได้สะดวก
- ☐ ลดเสียงที่ดังและแสงที่จ้าเกินไป
- ☐ มีรั้วกัน



Appendix F: Booklet for dementia caregiver

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

การดูแล
ผู้ป่วยสมองเสื่อม
สำหรับญาติ





4. มีटरวัดเปลี่ยนง่ายและรวดเร็ว
5. ความสามารถในภาระกิจอื่นๆ และ การที่คนมีปัญหาหลง คัดสินใจผิดพลาดน้อยขึ้น
6. บุคลิกภาพเปลี่ยนแปลงไป เช่น มีบุคลิกภาพที่มั่นใจยิ่งขึ้น ในงานประจำวัน

ระยะของการระดมความเห็น

1. ระยะแรกมีความจำเป็นที่จะต้อง สืบเสาะหาสิ่งที่พบเจอ ผู้ที่เกี่ยวข้องสามารถเข้ามาช่วยชี้แจง สามารถดำเนินการได้ทันทีว่าเหตุการณ์ที่เกิดขึ้น อาจพบว่ามีเรื่องอื่นที่เกี่ยวข้องที่ไม่ค่อยได้ใช้ ในจุดนี้ หรือมีการดำเนินการตามขั้นตอนอื่นๆ
2. ระยะกลางเริ่มมีการสืบเสาะมากขึ้น เริ่มดูข้อมูลความทรงจำเกี่ยวกับเหตุการณ์ต่างๆ เริ่มเขียนเพื่อนหรือญาติ ถ้าสิ่งที่ไม่สามารถทำได้ การดูเอกสารที่เกี่ยวข้องกับประวัติประจำวันวันก่อนๆ อาจพบว่ามีการพบเห็นหรือพบเจอ
3. ระยะสุดท้ายความจำเป็นจะลดลงมาก (ถ้าเขียนเอกสารไว้ก่อนก็ได้) ไม่สามารถทำต่อได้ประจำวันได้ด้วยความสนใจ หรืออาจไม่พบ พบเจอของบางอย่างไม่ถูกต้อง นอกเหนือจากนี้ จำเป็นต้องได้รับการดูแลตลอด 24 ชั่วโมง

ปัญหาที่พบในผู้เกี่ยวข้องเนื่องมาจากการช่วยเหลือ

ปัญหาเกี่ยวกับการดูแลความจำเป็นในการปฏิบัติกิจวัตรประจำวัน

1. ปัญหาการดูแลผู้พิการอย่าง

ความเชื่อมโยงระหว่างทางเดินจิตใจกับโครงสร้างร่างกายเมื่อมีอายุมากขึ้น เมื่อรวมกับการทางสมองจึงทำให้เกิดปัญหาต่อทักษะในการปฏิบัติกิจวัตรประจำวัน ในระยะแรก ผู้เกี่ยวข้องจะมีปัญหามากมาย ไร้ ระยะเวลาจะเริ่มดูข้อมูลเกี่ยวกับความจำเป็นในการช่วยเหลือตนเอง เช่น การอาบน้ำแต่งตัว การรับประทานอาหาร หรือไปห้องน้ำอาจไม่สามารถทำได้เอง

แนวทางการจัดการกับปัญหา

1. ถ้าผู้เกี่ยวข้องทำงานหรือทำกิจกรรมได้ ควรปล่อยให้ทำต่อไป เพราะช่วงคงที่คนต่างๆ และทำให้ผู้เกี่ยวข้องเห็นว่ามีความจำเป็นที่ไม่ได้เป็นภาระ ซึ่งจะช่วยลดภาระทางจิตใจ สำหรับประเด็นความจำเป็นที่ผู้เกี่ยวข้องทำไม่ได้เกิดจากความจำเป็นที่ผู้เกี่ยวข้อง หรือผู้ดูแล ต้องคอยระวังดูแลและเอาใจใส่
2. ให้ผู้เกี่ยวข้องทำกิจวัตรประจำวันต่างๆ เช่น ซักผ้า ซักเสื้อผ้า
3. คิดค่าใช้จ่าย และขีดความสามารถกับเรื่องของผู้เกี่ยวข้อง
4. จัดสถานที่ให้ผู้เกี่ยวข้องอยู่ใกล้กับสิ่งอำนวยความสะดวก ไม่เป็นอุปสรรคต่อการเดินไปมา
5. การจัดการน้ำต้องดูแลให้เพียงพอ





6. ผู้ป่วยบางรายที่คุ้นเคยกับการใช้โทรศัพท์จะกลับมานั่งไม่ถนัดใช้โทรศัพท์ส่งไปเพื่อส่งข้อความถึงมีปาลา สมุดบันทึก เบอร์โทรศัพท์ที่สำคัญและจำเป็นสำหรับผู้ป่วย เช่น เบอร์สมาชิกในครอบครัว เบอร์โรงพยาบาล โรงพยาบาลใกล้ที่พักหรือบ้าน โทรศัพท์

2. การแต่งตัว

ผู้ป่วยมักจะไม่ได้รับรู้ถึงสิ่งที่ได้ทำใหม่ ไม่ทราบว่าจะต้องทำอะไรบ้าง ไม่ทราบว่าจะต้องทำอะไรบ้าง ไม่รู้ว่าจะต้องทำอะไรบ้าง ไม่รู้ว่าจะต้องทำอะไรบ้าง

แนวทางการจัดการกับปัญหา

1. ช่วยเหลือเรื่องเสื้อผ้าให้ได้อย่างเหมาะสม
2. บอกหรือช่วยบอกว่าเป็นคำสั่งที่ถูกต้อง
3. สถานการณ์ที่จะทำได้เป็นขั้นตอนง่ายๆ
4. ถ้าผู้ป่วยยังไม่เข้าใจควรให้เวลาไม่ต่อเนื่อง
5. พยายามหลีกเลี่ยงสิ่งที่ทำให้ผู้ป่วยเครียด



3. การอาบน้ำ

ผู้ป่วยมักจะไม่รู้ว่าจะอาบน้ำอย่างไรหรือผู้ป่วยรู้สึกว่าการอาบน้ำเป็นเรื่องที่ยากลำบาก การอาบน้ำ และอาบน้ำอย่างง่าย

แนวทางการจัดการกับปัญหา

1. พยายามลดเวลาอาบน้ำของผู้ป่วยลงให้เหลือเพียงครึ่งชั่วโมง และอาบน้ำอย่างง่าย
2. ถ้าผู้ป่วยยังไม่ยอมอาบน้ำในขณะนั้น อาจลองหาเวลาออกไปเดินเล่นหรือจากอารมณ์ที่เครียด
3. แจ้งผู้ป่วยล่วงหน้าว่ากำลังจะอาบน้ำ และพยายามทำอย่างเป็นขั้นตอนง่ายๆ
4. ทำความสะอาด และทำความสะอาดน้ำให้ผู้ป่วย และลองดูว่าผู้ป่วยไม่รู้สึกว่าอาบน้ำเป็นเรื่องที่ยากลำบาก
5. การอาบน้ำโดยใช้น้ำอุ่นจะเป็นวิธีที่ช่วยผู้ป่วยได้
6. ระดมความคิดจากทีม เช่น พยายามหาเวลาอาบน้ำให้ผู้ป่วยในช่วงเวลาที่ผู้ป่วยไม่เหนื่อยเกินไป
7. อาจมีผู้ใช้ห้องน้ำและพยายามหาเวลาอาบน้ำให้ผู้ป่วยในช่วงเวลาที่ผู้ป่วยไม่เหนื่อยเกินไป
8. ถ้าผู้ป่วยยังไม่ยอมอาบน้ำให้ผู้ป่วยดูว่าผู้ป่วยไม่รู้สึกว่าอาบน้ำเป็นเรื่องที่ยากลำบาก

4

4. การขับถ่าย

ผู้ปกครองจะไม่รู้ว่าเมื่อไหร่จะใช้ห้องน้ำ การหาคำสั่งนี้ไม่พบ เข้าไปในห้องน้ำแล้วไม่รู้ว่าจะทำอย่างไรการเข้าใจคิดว่าเข้ามาในห้องน้ำแล้ว การกลั้นปัสสาวะหรืออุจจาระไม่ได้ ทำให้ผู้ปกครองอึดอัดและปัสสาวะไม่เป็นกิจ

แนวทางการจัดการกับปัญหา


1. พยายามสังเกตเวลาขับถ่ายให้เป็นเวลา หรือใกล้ถึงเวลาขับถ่ายให้ผู้ปกครองเข้าห้องน้ำเป็นเวลาโดยขณะกำลังรับประทานอาหาร
2. พูดคุยเรื่องการดื่มน้ำ สวมใส่ในปริมาณที่เหมาะสม ประมาณ 6-8 แก้วว่าดื่มน้ำหรือดื่มน้ำมากเกินไปจนเข้าห้องน้ำบ่อยเกินไปหรือไม่
3. จัดเวลานั่งถ่ายร่วมกับผู้ปกครอง เพื่อประมาณเวลาที่เข้าห้องน้ำ
4. อำนวยความสะดวกในการเดินเข้าห้องน้ำ เช่น เปิดไฟไว้ในห้องน้ำ และวางพื้นไปห้องน้ำสำหรับเรื่องหนัก สัญญาณ มีคนบอกกล่าวไปห้องน้ำให้รีบวิ่งเข้าห้องน้ำ และผู้ปกครองต้องรีบเข้าห้องน้ำให้เร็วขึ้น
5. พูดคุยกับเพื่อนที่เข้าห้องน้ำให้เพื่อนช่วยเตือน
6. การจัดการของเสียของผู้ปกครองอย่างเหมาะสม และใกล้ห้องน้ำ วางถังไปห้องน้ำให้เหมาะสม ไม่มีกลิ่นเหม็น มีถังปิดสนิท ไม่ค่อยคว่ำ
7. เมื่อผู้ปกครองได้พูดเป็นรูปเป็นร่างแล้ว เช่น ใช้สามเหลี่ยมชี้ให้เห็นว่าไม่ควรคว่ำหรือคว่ำ
8. รับผิดชอบการขับถ่ายเป็นหน้าที่ของตัวเอง มีบทบาทในการขับถ่าย
9. หากมีความจำเป็น ควรมีกระดาษทิชชูในห้องน้ำสาธารณะ หรือใช้กระดาษทิชชูส่วนตัว

5. พฤติกรรมการไม่รับประทานอาหาร

การไม่รับประทานอาหารของผู้ปกครองเด็กเล็ก อาจเกิดจากผู้ปกครองไม่สามารถจัดการรับประทานอาหาร การใช้ชีวิตเร่งรีบ ความสามารถในการกลืน การดื่มน้ำมากเกินไป หรืออาจไม่ได้กำลังเข้าสู่กระบวนการผลิตอาหารที่มีคุณภาพดีจากอาหารที่ปรุงสุกแล้วหรืออาหารที่ปรุงสุกแล้ว

แนวทางการจัดการกับปัญหา

1. เมื่อพบปัญหาการไม่รับประทานอาหารของผู้ปกครอง ควรเป็นความเข้าใจไปก่อนแล้วค่อยหาวิธีแก้ไขและปรับพฤติกรรม
2. จัดบรรยากาศ เวลา สถานที่ ในการรับประทานอาหารให้เหมาะสมกับความต้องการของเด็ก
3. จัดอาหารให้เป็นเวลา




5

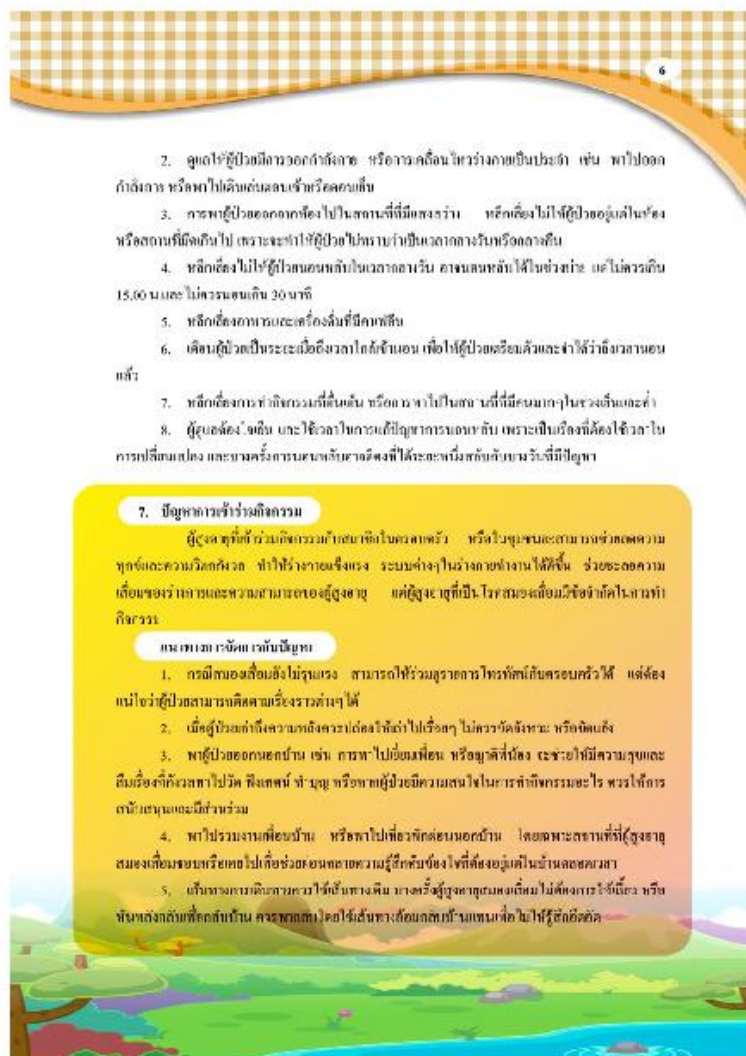
4. จัดอาหารที่มีประโยชน์ มีโปรตีนสูง สดชื่น และผ่านกระบวนการผลิตจากโรงงานผลิต และจัดอาหารให้ผู้ป่วยรับประทาน
5. จัดอาหารให้ผู้ป่วยรับประทานได้ง่าย เช่น หั่นเป็นชิ้นพอดีคำและหั่นเป็นหลอด อาหารอ่อนที่เคี้ยว และกลืนง่าย ไม่ควรจัดอาหารที่ปนเปื้อนหรือสกปรก
6. จัดสถานที่ให้เหมาะสม ไม่ควรมีสิ่งไปรบกวนความสนใจจากการรับประทานอาหาร ได้แก่ กลิ่นฉุน เสียงทีวี หรือคนมาพบ
7. รับประทานอาหารร่วมกับผู้ป่วย และไปให้กำลังใจ
8. จัดอาหารให้ผู้ป่วยรับประทาน
9. ดูแลพฤติกรรมการรับประทานอาหาร ไม่รับประทาน
10. กรณีที่ผู้ป่วยมีโรคประจำตัว เช่น โรคเบาหวาน หรือโรคความดันโลหิตสูง ให้จัดอาหาร ที่มีเกลือต่ำ หรืออาหารหวานจัด
11. จัดอาหารให้ผู้ป่วยรับประทาน
12. อาหารบนโต๊ะไม่ควรมีกลิ่นคาวหรือเหม็น เพราะอาจทำให้ผู้ป่วยไม่สนใจ
13. หลีกเลี่ยงการให้ผู้ป่วยรับประทานอาหารที่มีรสเค็มจัด ซึ่งอาจทำให้ผู้ป่วยมีรสเค็ม ควรให้ผู้ป่วยรับประทานอาหารที่มีรสจืดหรือรสอ่อน และไม่ควรให้ผู้ป่วยรับประทานอาหารที่มีรสเค็มจัด
14. เลือกอาหารที่ชอบ มีคุณค่าทางโภชนาการสูง
15. ปรับปรุงสถานที่รับประทานอาหารให้เหมาะสมกับกิจวัตรประจำวัน หรือตามความต้องการของผู้ป่วย
16. ผู้ป่วยอาจรับประทานอาหารได้เอง หรือผู้ดูแลควรให้ความช่วยเหลือในการรับประทานอาหาร หากผู้ป่วยไม่สามารถรับประทานอาหารได้เอง ควรให้ผู้ดูแลช่วยรับประทานอาหารให้ผู้ป่วยรับประทานได้สะดวก
17. ประเมินผลของผู้ป่วยเรื่องการรับประทานอาหาร สามารถวัดผลก่อนและหลังการรับประทานอาหารได้ ผู้ป่วยมีพฤติกรรมการรับประทานอาหาร ให้ผู้ป่วยรับประทานอาหารได้เองหรือให้ผู้ดูแลช่วยรับประทานอาหาร
18. ใช้สารทำความสะอาดในเวลากินอาหาร เช่น น้ำดื่มที่มีรสจืด น้ำดื่มอุ่น น้ำดื่มเย็น
19. ปรับปรุงสถานที่รับประทานอาหารให้ผู้ป่วยรับประทานอาหารได้สะดวก

6. พฤติกรรมไม่เหมาะสมในการรับประทานอาหาร

ปัญหาเรื่องอาหารและโภชนาการของผู้ป่วยที่มีอาการอ่อนแอ

1. ดูแลให้ผู้รับประทานอาหารเป็นปกติ





7

ปัญหาชีวิตกับการลงมือ

1. ปัญหาการลืมรับประทานยา

ผู้ป่วยมักลืมว่ารับประทานยาไปแล้วหรือยัง ทำให้มีปัญหาเรื่องการเจาะยา หรือการรับประทานยาเกินขนาด

แนวทางการจัดการกับปัญหา

1. การรีเช็คก่อนยาเพื่อใช้ในสารกำกับผลการรับประทานยา โคสมรภะยาสามเวลา ยืนรับ หรืออาทิตย์สามระดับความจำของผู้ป่วย และผู้ดูแลควรตรวจสอบปริมาณของยาจากกล่อง
2. การใช้เทคนิคปลูกฝังช่วยเตือนความจำของผู้ป่วย

2. การตามค่าตามซ้ำ

ผู้ป่วยมักจะมีอาการเวียนศีรษะ อาจเนื่องมาจากไม่ได้ ว่าจะรับค่าตามซ้ำอะไร หรือจำไม่ได้ว่าได้ ตามซ้ำแล้วและอาการนี้บอกถึงความวิตกกังวล และร่างกายให้สัญญาณได้เกิดอาการความสามารถในการจำลดลง หรือการมีสมาธิยากขึ้นเกี่ยวกับเรื่องหรือเหตุการณ์ต่างๆ

แนวทางการจัดการกับปัญหา

1. พยายามเตือนชมชวนสนใจ ชวนคุยเรื่องอื่น ไม่ควรกดดันตัวเองหรือทบทวนในเรื่องนั้นอีก
2. หากผู้ป่วยยังสามารถอ่านหนังสือ และเข้าใจได้ ให้ผู้ดูแลเขียนข้อความ หรือคำสอนไว้กับผู้ป่วยเก็บไว้
3. การดูชุดอุปกรณ์บนตัวผู้ป่วยนั้นโดยผู้ช่วย

3. การลืมสิ่งของ

ปัญหาที่พบบ่อย คือ การลืมของ การขอยืมของ การขอยืมของจากผู้อื่นว่าขอยืม

แนวทางการจัดการกับปัญหา




1. จาวมีของสำรอง เช่น ถ้วยแก้ว หรือกล่องใส่ของไปทิ้ง
2. ไม่ควรซื้อของหรือของของของ ของเป็นของของของของของไปทิ้งถึงถึงถึง

4. การลืมการนัดหมายของแพทย์ที่นัดหมาย

เป็นเรื่องง่าย ที่เกิดในผู้ป่วย ไม่ได้ ว่าเป็นการนัดหมาย หรือการนัดหมายที่นัดหมายได้ถูก ได้กำหนดวันนัดไป

แนวทางการจัดการกับปัญหา

1. ใช้ปฏิทินขนาดเล็กไว้ที่ริมเตียงหรือข้างเตียง หากมีการนัดหมายวันนัดของนัดวันนัดวันไป



2. ควรกระตุ้นให้ผู้สูงอายุของตนเองได้ทำกิจกรรมหรือช่วยเหลือตัวเองบ้างวันหนึ่งเป็นวันละ 1-2 ครั้ง หรือ 3-4 ครั้ง หรือจะแนะนำไปให้ใช้ผลิตภัณฑ์ที่สนับสนุนการมีสุขภาพและความสะดวกสบายต่างๆ เอาไว้

5. ปัญหาเรื่องการเดินทางเรื่องเวลาและสถานที่

ผู้สูงอายุที่มีความลำบากเรื่องเวลาและสถานที่ เช่น ผู้สูงอายุเดินทางคนเดียวและนั่งรถคนเดียว หรือไปทำงาน หรือคิดว่าโรงพยาบาล คือ บ้านตนเอง

แนวทางการจัดการกับปัญหา

1. ทำป้ายบอกเวลาและสถานที่เดินทาง วางไว้ริมเตียงนอนในตำแหน่งที่สามารถมองเห็นได้ง่าย
2. ผู้ดูแลคอยเตือนย้ำให้ผู้สูงอายุต้องตรงเวลา
3. จัดข้าวของเครื่องใช้ภายในบ้านให้อยู่ในสภาพดีและปลอดภัยสำหรับผู้สูงอายุได้

6. ปัญหาด้านการสื่อสาร

ผู้สูงอายุมีปัญหาด้านการสื่อสาร โดยเริ่มจากการเขี่ยพจนานุกรมหรือตัวอักษรในชุดอักษร แล้วถามชื่อคน ถึงของ และสถานที่ต่างๆ ไม่ได้ เช่น เมื่อถามการดูแลร่างกายขึ้นอาจพูดได้แค่ 2-3 คำ หรือพูดคำเดียวหนึ่งซ้ำไปมา

แนวทางการจัดการกับปัญหา

1. สัมผัสภาษามือท่าทาง การแสดงออกของผู้ป่วย และช่วยเหลือเสริมแรงให้ผู้สูงอายุต้องการสื่อสาร
2. ผู้ป่วยบ่นว่าเขี่ยพจนานุกรมหรือตัวอักษรไม่ได้ หรือมีปัญหาเรื่องการได้ยิน จึงต้องแนะนำเขาได้ชื่อของผู้ป่วยที่ได้ในชั้นเรียนหรือไม่มี รวมถึงใช้คำพูดหรือท่าทางต่างๆ ขณะที่พูดช่วยผู้ป่วย
3. ผู้ป่วยที่ใส่ฟันปลอม ต้องตรวจสอบว่าฟันปลอมอยู่ในสภาพที่กระชับ เพราะหากฟันปลอมหลวมจะทำให้พูดไม่ชัด
4. สื่อสารกับผู้ป่วยด้วยประโยคง่ายๆ ชัดเจน กระชับ และควรมีความสอดคล้องในการใช้เวลากับผู้ป่วยในการได้สอน และควรมีภาษาท่าทางเช่น การสบตา การยิ้ม
5. กรณีที่ผู้ป่วยมีอาการรุนแรงจนไม่สามารถเข้าใจ การเขียนหรือพูดคุยกับผู้ป่วยก็จะมีภาวะแนะนำด้วยหรือด้วยสื่ออื่นๆ ที่เกี่ยวข้อง

ปัญหาเกี่ยวกับพฤติกรรม

1. ความผิดปกติของพฤติกรรม

ความผิดปกติของพฤติกรรมที่พบบ่อย ได้แก่ พฤติกรรมก้าวร้าว ถ่มน้ำลายใส่ผู้อื่น หรือจะโง่ๆ เฟื่องเฟื่องไปเสีย หมดจะ ฯลฯ ซึ่งปัญหาเหล่านี้มักเกิดกับผู้สูงอายุที่มีภาวะสมองเสื่อม



แนวทางการวิจัยคือ เว้นมีเหตุ...

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2. ผู้ดูแลควรประเมินโดยผู้วิญญูว่า ไม่พร้อมหรือไม่ถึงขั้นที่จำเป็น

3. เป้าหมายความสนใจ ขอบผู้วิญญูอยู่เบื้องต้นเพื่อให้ได้ทราบก่อนถึงอาการเหล่านี้

5. ปัญหาการทดลอง

ผู้วิญญูซึ่งบ่งชี้ระดับปานกลางจะเริ่มอ้างถึงตนเองไม่ได้ ผู้วิญญูจึงกังวลที่ตนเองไม่ได้ หากเพื่อนไม่ขอ สันนิษฐานว่าไปบ้านผู้อื่น

แนวทางการจัดการกับปัญหา

1. ภาชนะที่วางควรมีป้ายชื่อ หรือภาชนะที่ติดฉลากให้ตรงกับชื่อ น้ำ หรือของที่ใส่ ควรบอกชื่อให้หรือแสดงว่าให้สิ่งของ
2. ผู้วิญญูที่เข้มงวด สามารถออกไปทำกิจกรรมนอกบ้านได้ ควรนิยาม ข้อควรระวัง หรือ โพรโทคอล ที่เกี่ยวข้องกับการใช้ภาชนะ

6. พฤติกรรมของเพื่อนที่ผิดปกติ

เมื่อสถานการณ์ที่ผู้วิญญูขึ้นชีวิต ไปสู่ภาวะที่ผิดปกติ และพยายามประจบประแจงหรือหลอกลวงในสถานที่เดิมๆ แต่ในปัจจุบันไม่มีกิจกรรมหรือสถานที่ที่พำนักแล้ว

แนวทางการจัดการกับปัญหา

1. นำผู้วิญญูกลับมาสู่ภาวะสถานะที่ผู้วิญญูมีความสุขภาพ หากิจกรรมให้ผู้วิญญูทำเพื่อความเพลิดเพลิน
2. หากผู้วิญญูมีสติและสามารถสื่อสาร หรือให้ผู้วิญญูเขียนสิ่งที่ต้องการหาเพื่อนหรือเพื่อนที่พำนักแล้ว

ผลกระทบของโรคของเพื่อนต่อผู้ดูแล

1. ด้านจิตใจและความรู้สึกของผู้ดูแลที่สนใจ เนื่องจากผู้วิญญูในระยะเวลาที่ผ่านไปอาจมีหรือขาดใจหรือขาดใจไม่ได้ มีพฤติกรรมที่ผิดปกติไป การสังเกตผู้วิญญูอย่างละเอียด ทำให้ผู้ดูแลรู้สึกกังวล เบื่อหน่าย โกรธ หรือเห็นใจถึงสิ่งที่เขาทำ
2. ด้านร่างกายจากการทำงานหนักของผู้ดูแลที่ดูแลผู้วิญญูอย่างต่อเนื่อง เกิดความเหนื่อยล้าได้
3. ด้านสัมพันธ์กับครอบครัวและผู้ดูแลที่สนใจจากผู้วิญญูที่ดูแลอย่างต่อเนื่อง อาจทำให้ผู้ดูแลเกิดความเครียด
4. ด้านเศรษฐกิจ ขาดรายได้หรือขาดรายได้จากการทำงาน ไม่สามารถประกอบอาชีพได้ปกติ เพราะต้องมาดูแลผู้วิญญูที่ป่วย ซึ่งเป็นการสิ้นเปลืองค่าใช้จ่ายให้ผู้ดูแลเกิดความเครียด

- [illegible]



5. การพูดคุยกับเพื่อนใหม่ หรือคนที่ไม่ค่อยคุ้นเคย เพื่อเพิ่มข้อมูลใหม่ ๆ ให้กับตนเอง
6. ร่วมพูดคุยแลกเปลี่ยนข้อดีข้อเสียในประเด็นใหม่ๆ เพื่อเปิดกว้างรับรู้ข้อมูลใหม่ๆ

องค์กรให้ความรู้และความช่วยเหลือผู้เปราะบางและผู้ดูแล

1. สายด่วนปรึกษา-มีอาสาสมัครด้านการดูแลผู้เปราะบางด้วย

วัน	เบอร์โทรศัพท์
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อังคาร	08-9459-6134
พุธ	08-1805-3199
พฤหัสบดี	0-2538-2239
ศุกร์	0-2580-1438
เสาร์	08-1931-5392, 0-2573-0597
อาทิตย์	08-9777-1148

2. หน่วยงานที่ประสานให้ความช่วยเหลือเรื่องคนขาย

- ผู้ดูแลผู้พิการคนขาย เจ้าหน้าที่ตำรวจจะนำส่งไปยังสถานแรกรับคนไร้ที่พึ่ง มูลนิธิช่วยเหลือคนไร้ที่พึ่ง ศูนย์ประสานใจ โทร. 1900
- ศูนย์ข้อมูลคนขายเพื่อต่อต้านการค้ามนุษย์ มูลนิธิกระจกเงา โทร. 029-52236-7



เรียนรู้ร่วมกัน รู้ทันสมองเสื่อม



เอกสารอ้างอิง

กรมสุขภาพจิต, กรมการแพทย์ และกรมพัฒนาการแพทย์แผนไทยและการแพทย์ทางเลือก กระทรวงสาธารณสุข. (2555). คู่มือการดูแลผู้ป่วยสมองเสื่อมสำหรับเจ้าหน้าที่ในโรงพยาบาลส่งเสริมสุขภาพตำบล. กรุงเทพฯ: บริษัท นีออนส์ ฟันลิซซิง จำกัด.

สิริบทว จันทวิภาณุชน. (ม.ป.ป.). ความรู้เรื่องสมองเสื่อม สำหรับประชาชน. กรุงเทพฯ: สมาคมผู้ดูแลผู้ป่วยสมองเสื่อม (ประเทศไทย).

สมาคมผู้ดูแลผู้ป่วยสมองเสื่อม. คู่มือคัดคนหายประเลห์สมองเสื่อม. กรุงเทพฯ.

ศูนย์สมเด็จพระสังฆราชญาณสังวรเพื่อผู้สูงอายุ และกรมการแพทย์. (2554). คู่มือความรู้และการดูแลผู้ป่วยโรคสมองเสื่อม สำหรับญาติและผู้ดูแล. กรุงเทพฯ: บริษัท นีออนส์ ฟันลิซซิง จำกัด.



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