Effectiveness of Thai Integrated Care Program for Older Adults with Dementia in the Community: A Quasi-experimental Study

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Abstract: As the number of older adults with dementia is growing worldwide, a variety of services are required to maintain their independent living in the community. The purpose of this quasi-experimental study was to examine the effectiveness of the Thai Integrated Care Program for Dementia. Two health promoting hospitals in the North East region of Thailand were purposively selected, and then randomly assigned into the experiment or comparison group. A total of 20 older adults with dementia from outpatients' clinics in each hospital and their caregivers were recruited. The intervention group received a 3-month program in addition to usual care, but the comparison group received only usual care. Instruments used to collect the data were the Mini Mental State Examination-Thai version 2002, Basic Activities of Daily Living, Chula Activity of Daily Living Index, Quality of Life-Alzheimer's Disease, Neuropsychiatric Inventory Questionnaire, and the Zarit Burden Interview. Data was analyzed with paired t-test and Wilcoxon signed rank test.

Results revealed that at post-intervention the quality of life of those in the intervention group remained, but in the comparison group this was less than before the intervention. Caregiver burden from the intervention group was significantly lesser than before the intervention and the comparison group. However, there were no significant differences in cognitive and physical functions, and the behavioral and psychological symptoms of dementia between the two groups. We conclude that this program has good potential to maintain quality of life and reduce caregiver burden. Nurse administrators in Thailand need to develop a system to have a nurse case manager or an advanced practice nurse manage the integrative care collaboration with other health professionals to improve the outcomes of dementia management.

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Introduction

Dementia has become a significant public health problem worldwide because of its prevalence and impact. The estimated number of people with dementia has increased to be nearly double every 20 years.[1] More

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people live longer and we need to better identify and diagnose rising numbers of people with dementia. In 2018, there were 50 million people with dementia worldwide, and this is projected to be 82 million in 2030, and 152 million by 2050.[2] In Thailand, the prevalence of dementia in older people ≥60 years has increased two-fold every ten years. In 2016, older adults with dementia in Thailand were estimated to increase from 617,000 to be 1,350,000 by 2037.[3]

Dementia has enormous impacts on individuals, family members, communities and the health care systems depending on its severity, stage and the availability of resources. People with mild-stage dementia generally experience disorientation in time and place and are generally involved in complex tasks, while moderate-stage dementia presents significant memory deficits, impaired decision making, judgment and problem solving, personality and behavioral change, communication problems and difficulty in completing routine tasks. The severe stage presents with profound memory deficits, behavioral and psychological symptoms of dementia (BPSD) and increased assistance is required with activities of daily living (ADL).[4] Quality of life (QOL) of older people with cognitive impairment is related to their dependency and physical function.[5] In addition, increased caregiver burden is related to decline in the ADL capability of the person with dementia.[6] The behavioral and psychological symptoms of dementia, poor cognitive function and caregiver burden have been associated with increased rates of institutionalization.[7] We argue that to reduce such burden, care needs to be integrated.

Literature Review and Conceptual Framework

According to the World Health Organization (WHO), integrated care is defined as "an approach to strengthen people-centered health systems through the promotion of the comprehensive delivery of quality services across the life-course, designed according to the multidimensional needs of the population and the individual and delivered by a coordinated multidisciplinary team of providers working across settings and levels of care."[8(p.4)] From the literature reviewed, integrated care for older people includes comprehensive assessment, a multidisciplinary team approach and case management.[9]

Several intervention studies have reported positive effects on people with dementia and caregivers, for example, a program conducted by multidisciplinary teams in Hong Kong showed improvement in patient symptoms and reduce caregiver burden.[10] Mutual group support, information giving, sharing and discussion has been found to improve caregivers' QOL.[11] In Georgia, USA, a multi-component intervention showed a reduction in depression and caregiver burden, and decreased health problems in patients.[12] Some integrated care programs have employed multilevel, multimodal, demand-driven and patient-centered strategies with older people with dementia and showed that the average score of cognitive function (MMSE) significantly increased.[13] In Japan, a group program consisting of group exercise and cognitive stimulation was found to improve the QOL of older people with dementia.[14]

Most studies in Thailand have examined the prevalence of, and factors associated with, dementia and caregiver burden and some program implementation focused only on caregivers.[15] However, studies about models of care and effective programs for older people with dementia in Thai communities are limited.

Although WHO guidelines for dementia care services recommend that community and primary care are the main focus of dementia care service,[16] management of dementia in Thailand, including early diagnosis, treatment, behavioral and psychological symptoms management, and rehabilitation, are only available at tertiary and specialized care level.[17] Without specific dementia care service at primary and secondary care levels, older adults and their families have poor outcome and low access to dementia services. One out of six Thai older adults are diagnosed by medical doctors and about 25% of these receive treatment at tertiary care settings.[18] According to a preliminary study in a Thai community by the primary investigator (PI), clinical outcomes, caregivers' health problems and access to health care service for dementia were of concern to family caregivers. Non-pharmacological interventions such as cognitive training for dementia are limited in communities. Thus, integrated care that includes a variety of dimensions of care and specific to person-centered care has been found to improve health utility, reduce caregiver burden, and improve clinical outcomes of people with dementia who live in the community.[13,19]

Our 12-week Thai Integrated Care Program for Dementia (TICPD) was developed by the PI for older adults with dementia using evidence-based integrated care, employing a multilevel, multimodal, demand-driven, and patient-centered strategy design.[20] Case management remained an important element. Collaboration between health care providers and multidisciplinary team were required[21] and we coordinated with key stakeholders between the community, local organizations, and the health sector. The TICPD consisted of (1) screening and needs assessment, (2) a multidisciplinary team, including a nurse case manager, family medicine doctor, a physiotherapist, and village health volunteers, (3) skill training for older adults and family (behavior & stress management; cognitive and sensory rehabilitation program), (4) self-management support (monitoring, counseling & consultation), and (5) case management (home visit, collaboration and follow up).

This study was conducted to determine the effects of the integrated care program on cognitive and physical function, BPSD and the QOL of older adults with dementia, and caregiver burden. These outcomes were assessed before and after the program implementation.

Hypothesis: Immediately after completing the 12-week TICPD, cognitive and physical functions, and QOL in the experimental group would be significantly higher, and BPSD and caregiver burden would be significantly lower than before the intervention and that of the comparison group.

Methods

Design: Quasi-experimental, with a 2-group, pretest-posttest research design.

Study setting: Two health promoting hospitals in two sub-districts in Northeastern Thailand were purposively selected as study settings because they had a higher number of older adults with dementia, had similar usual care service for dementia, and their municipalities' administrator and primary care providers agreed to participate in the study. Older adults with dementia who lived in one sub-district were randomly assigned to be an intervention group whereas those living another sub-district were assigned to a comparison group. This avoided contamination or sharing of information between groups.

Sample: The sample size and the power of test were determined and calculated by G Power software. When using the effect size at 0.6, analysis of t-test, a significant level of 0.05, and the power of test at 0.80, an actual power of test was 0.82, a minimum sample size of 17 was required for each group.[22] To deal with possible drop out, two participants (10%), were added to each group, making up a sample of 19 older adults with dementia and 19 family caregivers for each group. A total of 40 people meeting the selection criteria initially participated in the research. Inclusion criteria for older adults were aged ≥60 years, diagnosed with dementia, registered at the selected PCUs, and had a family caregiver. Exclusion criteria for older adults with dementia were: having physical disabilities, unable to perform activities of daily living and could not communicate verbally. Their family caregivers were recruited on the criteria of being ≥18 years, able to read and write, and willing to participate in this study. Exclusion criteria were being diagnosed with mental illness and having disability. After 3 months, only 38 participants and their family caregivers remained, two of whom were moved out of their communities. **(Figure 1)**

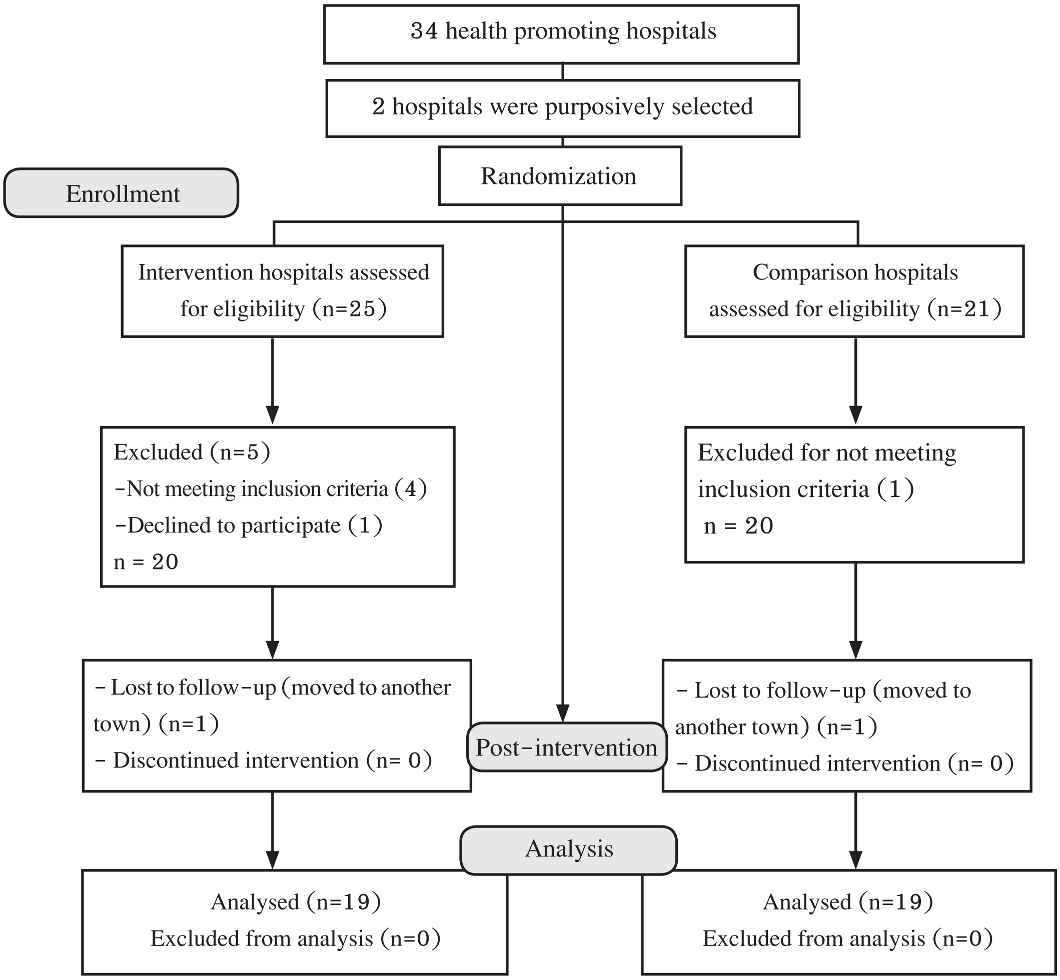

Figure 1 Flow diagram of participants

Ethical considerations: This study was approved by the human research committees of the Faculty of Public Health, Mahidol University (MUPH 2015-109), and study hospital (047/2015). The older adults with dementia and their caregivers were informed about the study's purpose, procedure, benefits, risk and rights by the PI. If older adults were unable to give consent, their caregivers were asked for permission. Signed consent forms were used to confirm the participants' agreement with the study. The information obtained from the participants was kept confidential. Whether or not they were willing to participate in the study, the participants were assured that their decision would not affect the health care services they received. A decision to stop participating in the study would not affect the relationship between the participants and health care providers or any service available.

Research Instruments: There were two sets of instruments used in this study.

1) Two demographic questionnaires developed by the PI. The data collected from older adults with dementia were age, gender, marital status, and educational level, while the caregivers' information included age, gender, marital status, educational level and occupation.

2) Six instruments used to collect measurable outcomes:

The Mini Mental State Examination-Thai Version 2002 (MMSE-Thai 2002) was used to measure cognitive function. It was developed by the Institute of Geriatric Medicine[17] for screening for dementia. It consists of 11 items: orientation for time (0-5), orientation for place (0-5), registration (0-3), attention/calculation (0-5), recall (0-3), naming (0-2), repetition (0-1), verbal command (0-3), written command (0-1), writing (0-1), and visuo-construction (0-1). The range of possible MMSE scores is 0-30 with scores >23 reflecting normal cognitive function. Scores 19-23 are defined as having cognition impairment. Scores <19 are defined as having moderate cognition impairment.

The Basic Activities of Daily Living (BADL) was used to measure physical function in terms of self-care tasks or the ability of older people to manage their own personal care. In this study, BADL were measured by Barthel Index (BI), which is utilized by the Health Department, Ministry of Public Health.[23] It consists of 10 items: feeding (scale 0-2), grooming (scale 0-1), transfer (scale 0-3), toilet use (scale 0-2), mobility (scale 0-3), dressing (scale 0-2), stairs (scale 0-2), bathing (scale 0-1), bowels (scale 0-2), and bladder (scale 0-2). Total possible scores ranged from 0-20, with lower scores indicating greater impairment in the ADL.

The Chula ADL Index was used to measure physical function as the abilities of older adults to live independently in community.[24] The instrument is comprised of 5 complex activities: walking outdoors (scale 0-3), cooking (scale 0-2) heavy housework, iron clothes, clean a house (scale 0-1), money exchange (scale 0-1), and using public transportation (scale 0-2). The older person is asked if in previous month whether they undertook these activities and at what level. Possible scores range 0-9. A lower score indicates a lower level of functional ability, while a higher score indicates higher functional independence.

The Quality of Life -Alzheimer's Disease (QOL-AD) was translated into Thai by Buasi and Permsuwan.[25] The items focus on physical health, energy, mood, living status, memory, family, marriage, friends, self as a whole, ability to do chores around the house, ability to do things for fun, money, and life as a whole.[26] The score of each item is rated as poor=1, fair=2, good=3, excellent=4. Possible scores range from 13-52. In this study, the Cronbach's alpha coefficient was 0.73.

The Neuropsychiatric Inventory Questionnaire (NPI-Q) is a comprehensive assessment of psychopathology in patients with dementia. This NPI-Q was translated into Thai and applied in the Dementia Clinic, Faculty of Medicine, King Chulalongkorn Memorial Hospital. It covers 10 behavioral characteristics: delusions, hallucinations, agitation/aggression, depression/dysphoria, anxiety, elation/euphoria, apathy/indifference, disinhibition, irritability/lability and aberrant motor behavior. Severity is rated as 1 = mild (produces little distress in the patient) to 3 = severe (very disturbing to the patient and difficult to redirect). Distress is rated as 0 = not at all to 5 = very severely or extremely. The Cronbach's alpha coefficient of 0.87 was acceptable.

The Zarit Burden Interview (ZBI) is often used to measure the subjective burden among caregivers of adults with dementia. In Thailand, the ZBI was translated into Thai and used to interview caregivers of patients with chronic diseases.[27] It was used to evaluate the caregivers' burden. The burden interview conducted in Thai comprised 22 questions and was divided into 4 domains: personal strain, privacy conflict; guilt, and uncertain attitudes. The scale of each item rated scores from 0 = never to 4= nearly always, scores could range from 0-88. In this study the Cronbach's alpha coefficient was 0.78.

Thai Integrated Care Program for Older Adults with Dementia (TICPD)

This program was developed by the PI based on a literature review of integrated care programs for patients with dementia using the WHO guidelines. The TICPD aimed to improve cognitive and physical function, QOL, behavior symptoms, and family burden of the older adults with dementia. The program components were: (1) three sessions of 2-hour education/training program for caregivers and health volunteers; (2) self-management support for patients and caregivers; (3) rehabilitation program; (4) case management; and (5) home health care by the multidisciplinary team. These components represented the clinical integration at the micro-level. The program was implemented through the cooperation of the multidisciplinary team including nurses, family medicine practitioner, physiotherapist, community leader and village health volunteers. Moreover, it was implemented through the cooperation of the community health center, the sub-district health promotion hospital and local government organizations. The cooperation between organizations and multidisciplinary team represented the professional and organizational integration. Intervention tools composed of an education program for health care professionals and the dementia care team, an education program for caregivers, case management plan, counseling support for caregivers, and a rehabilitation program for older people with dementia. The content of the program was examined by three experts: a psychiatrist, a medical doctor, and a public health nurse. The details of the program and its implementation are shown in **Table 1**

Table 1 Program and activities for older adults with dementia

Week/session Time schedule	Content and activities	Key actors
Preparation: Increasing community awareness (5 weeks)	- Dementia screening and needs assessment - Coordination with key stakeholders between community, local organization, and health sector - Development of multidisciplinary team and care plan	PI , MDT, Community leaders & Local government authority
Week 1: Session 1.1: Obtain baseline data (at HPH) (40 minutes)	**Session 1.1** Introduction of program Data collection at Non Communicable Disease clinic	PI & RAs
session 1.2: promote capacity building (at HPH) 2-hr/session (3 sessions)	**Session 1.2** Education and skill training program for caregivers, health volunteers, and community leader	Experts from hospitals.
Week 2, 6, 10: session2: Ensure integrated care for older adults with dementia (at home) (20-min/week)	Self-management support for caregivers; counseling support, face to face counseling at home and telephone counseling	PI
Week 3, 7, 11: session 3: Stimulate the cognitive and physical functions (at community) 1-hr/week	Rehabilitation program - Cognitive stimulation: guessed pictures of flowers and fruit, classified the types of the card of flowers, fruit and housewares, drawing, and molding. - Physical exercise at home: recreation activities, cross movement exercise, and muscle stretch exercises.	PI & MDT
Week 4, 8, 12: session 4: Follow-up, manage and support (at home) 1-hr/week	- Home visit by nurse case manager, public health nurse, physiotherapist, family medicine doctor, community leader and village health volunteer: Remind to perform rehabilitation activities, giving more information depend on individual's needs, plan for further visit	PI & MDT
Week 12: session 5: (at home) 1 hour/visit	- Follow up and evaluate effects - Data collection and refer to the primary care settings	PI & RAs

PI = Primary Investigator, MDT= Multidisciplinary team, HPH=Health Promoting Hospital, RAs = Research Assistants

Routine/usual care provided to people with dementia included vital signs checkups, medical treatment, and health education. The comparison group received usual care from health care professionals at a dementia clinic once a month at a tertiary hospital. They were screened for dementia the same as the intervention group at the primary health care unit and then referred for investigation and were treated in a tertiary care unit by a psychiatrist of a tertiary hospital (Maharat Nakhonratchasiam Hospital) or a specialized hospital (Nakhon Ratchasiama Rajagarindra Psychiatric Hospital).

Data Collection: Data were collected during October 2016 to June 2017. After the IRB approval, the TICPD was implemented by the PI. Data were collected at baseline prior to program implementation. The intervention group received a 3-month integrated care program, whereas the comparison received usual care. After immediately completing the 12 weeks program, cognitive function, physical functions, behavioral and psychological symptoms, and quality of life of older people with dementia and caregiver burden were assessed by the PI and two research assistants using questionnaires.

Data analysis: Data were analyzed by SPSS program version 18. Descriptive statistics were used to describe the demographic data. The Chi-square test and Fisher's exact test were used to test the difference of demographic characteristic between the intervention and the comparison group. The frequency and percentage were used to describe the means of ADLs, MMSE score, severity and frequency of BPSD and levels of caregiver burden. The distribution of data was tested for normality by using the Kolmogorov-Smirnov test. The difference in data between the intervention and comparison groups was analyzed using the Independent t-test and the Mann Whitney U test. The difference in data before and after program implementation was analyzed using paired t-test and Wilcoxon Sign Rank test. Significance level was p-value less than 0.05.

Results

The characteristics of participants

After 12 weeks of completing the program, 19 older adults with dementia data and their family caregivers from the intervention and comparison group remained for data analysis.

As shown in **Table 1**, the majority of the participants with dementia in both the intervention and comparison group were female, age >80 years, had completed primary education, were widows or divorced, lived with their relatives, used to work as employee, mostly in agriculture or were merchants. For caregivers, the majority were female and with the mean age in the intervention group and comparison group 51.73 and 61.89 years respectively; had completed primary education, worked as employee, merchant and or in agriculture. The two groups were not significantly different in all these demographic data.

Effects of the TICPD

As shown in **Tables 3 and 4**, the MMSE of the older adults with dementia pre- and immediately post-intervention among both groups were not different. Physical function measured as BADL and IADL were reduced in both groups after the intervention, whereas there were no differences in BADL and IADL of older adults with dementia between pre- and immediately post- intervention among both groups.

The mean scores of QOL of the intervention and comparison groups measured before the intervention were 32.68 and 33.47, respectively. Mean scores of QOL of these two groups after three months were 32.63 and 31.26, respectively. The QOL of the intervention group remained stable but that of the comparison group was less than before intervention ($p < 0.01$).

Behavioral and psychological symptoms of dementia were measured in terms of severity and distress. After 12 weeks, there were no differences in severity of BPSD pre- and immediately post-intervention among both groups, and the levels of distress of BPSD did not change in groups.

Table 2 Demographic characteristics of older adults with dementia and their caregivers

Demographic data	**Intervention n (%)**	**Comparison n (%)**	**p-value (2-tailed)**
Older adults with dementia			
Gender			0.15^a
Male	3 (15.79)	8 (42.11)	
Female	16 (84.2)	11 (57.89)	
Age Mean ± SD (years)	78.26 ± 8.17	82.10 ± 5.91	0.11^c
60-79 years	9 (47.37)	6 (31.58)	
≥80 years	10 (52.63)	13 (68.42)	
Educational level			0.18^b
Primary school	18 (94.74)	14 (73.68)	
Secondary school and higher	1 (5.26)	5 (26.32)	
Marital status			0.12^b
Married	2 (10.53)	7 (47.37)	
Widow/Divorced	17 (89.47)	12 (52.63)	
Living arrangement			0.41^b
Couple	2 (10.53)	5 (16.32)	
Relatives/ Caregivers	17 (89.47)	14 (73.68)	
Gender			1.00^b
Male	3 (15.79)	3 (15.79)	
Female	16 (84.21)	16 (84.21)	
Age Mean ± SD	51.73 ±10.75	61.89 ± 11.28	< 0.01^c
Educational level			0.74^a
Primary school	11 (57.89)	10 (52.63)	
Secondary school and higher	8 (42.11)	9 (47.37)	
Marital status			1.00^b
Single, Widow/ Divorced	4 (21.05)	5 (23.32)	
Married	15 (78.95)	14 (73.68)	
Occupation			0.72^a
None	6 (31.58)	5 (26.31)	
Work (Employee, Merchant, Agriculture, other)	13 (68.42)	14 (73.68)	

a: Chi-square Test b : Fisher's Exact Test c : Independent t- test

Table 3 Comparison of IADL and QOL between pre-and immediately post- intervention among the two groups

Variables	**Group**	**M (SD)**	**M (SD)**	**p-value**
		Before	**After**	
IADL	Intervention gr	4.36 (0.64)	4.15 (0.68)	0.46 ^{b}
	Comparison gr	4.10 (0.49)	3.89 (0.53)	0.10 ^{b}
QOL	Intervention gr	32.68 (0.95)	32.63 (0.86)	0.96 ^{b}
	Comparison gr	33.47 (0.93)	31.26 (1.08)	< 0.01 ^{b}

b: paired t-test

Table 4 Comparison of outcome variables between pre-and immediately post- intervention among the two groups

Level of outcomes (After − Before)	Number	Mean Rank	Z	p-value
MMSE				
Intervention group				
Negative ranks	3	6.00	-1.69	0.09
Positive ranks	9	6.67		
Ties	7			
Comparison group				
Negative ranks	7	5.86	-0.72	0.47
Positive ranks	4	6.25		
Ties	8			
BADL				
Intervention group				
Negative ranks	4	3.38	-1.62	0.10
Positive ranks	1	1.50		
Ties	14			
Comparison group				
Negative ranks	4	2.5	-1.84	0.07
Positive ranks	0	0		
Ties	15			
BPSD (severity)				
Intervention group				
Negative ranks	6	7.00	-1.49	0.14
Positive ranks	4	3.25		
Ties	9			
Comparison group				
Negative ranks	7	5.57	-1.19	0.23
Positive ranks	3	5.33		
Ties	9			
BPSD (distress)				
Intervention group				
Negative ranks	6	6.75	-1.33	0.18
Positive ranks	4	3.73		
Ties	9			
Comparison group				
Negative ranks	8	6.81	-1.24	0.21
Positive ranks	4	5.88		
Ties	7			
Caregiver Burden				
Intervention group				
Negative ranks	14	121	-2.749	< 0.01
Positive ranks	2	15		
Ties	3			
Comparison group				
Negative ranks	4	17	-2.231	0.03
Positive ranks	10	88		
Ties	5			

After 12 weeks the caregiver burden in the intervention group was significantly less than before the intervention (p<0.01), whereas caregiver burden in the comparison group was higher than before the intervention (p<0.05). As shown in **Table 5,** the caregiver burden was not different between both groups before intervention, but after 12 weeks, the caregiver burden in the intervention group was significantly less than the comparison group (p<0.05). However, there were no differences in MMSE, BADL, IADL, BPSD, and QOL of older adults with dementia between both groups before intervention.

In summary, the TICPD applied with older adults with dementia and their caregivers showed a reduction of caregiver burden but no significant changes in the clinical outcomes of older adults with dementia.

Table 5 Comparison of outcome variables between intervention and comparison groups before and immediately after program

Variables	Intervention group		Comparison group		p-value
	M(SD)	**Mean rank**	**M(SD)**	**Mean rank**	
MMSE					
Before	-	18.53	-	20.47	0.59*
After	-	20.21	-	18.79	0.69*
BADL					
Before	-	18.13	-	20.87	0.41*
After	-	18.79	-	20.21	0.68*
IADL					
Before	4.36 (2.77)	-	4.10 (2.15)	-	0.56**
After	4.15 (2.91)	-	3.89 (2.30)	-	0.65**
QOL					
Before	32.68 (4.17)	-	33.47 (4.06)	-	0.56**
After	32.63 (3.75)		31.26 (4.76)	-	0.33**
BPSD (Severity)					
Before	-	16.79	-	22.21	0.13*
After	-	16.71	-	22.29	0.12*
BPSD (Distress)					
Before	-	16.76	-	22.24	0.13*
After	-	16.63	-	22.37	0.11*
Caregiver burden					
Before	-	19.37	-	19.63	0.95*
After	-	15.53	-	23.47	0.03*

*Mann-Whitney U test, ** Independent t-test

Discussion

The burden of caregivers was reduced in the intervention group which was similar to the effect of an 8-week program of multimodal cognitive function and physical rehabilitation. This program was conducted by a multidisciplinary team for people with mild dementia and their caregivers and reduced caregiver burden after participating in the program.[28] Similar to coping programs for caregivers of elderly people with dementia, these strategies significantly reduced burden of caregivers in the intervention group while significantly increasing the burden in the comparison group.[29] Furthermore, it seems likely that the effects of a short-term rehabilitation program for patients with dementia and a psycho-educational program for caregivers conducted in an Alzheimer therapy center could reduce the burden for male caregivers.[30] Also, caregiver burden was reduced with multicomponent psycho-educational interventions related to a combined dementia education, skill training, and coping strategies and volunteers integrated in a care team.[31] Similarly, a program that included individualized support for informal caregivers, psycho-educational, skill training, and multicomponent interventions, stabilized the caregiver burden of the intervention group but the burden increased in the control group.[32] In contrast, another study applied community-based dementia care and coordinated interventions to identify needs and individualize care, provide coordination referrals, linked to health and community services and monitored caregivers and older people with memory disorders at home. Even though no differences of burden were found in both intervention and comparison groups, the caregiver burden was slightly increased in the comparison group.[33] Caregiver burden can be reduced from several interventions including dementia education and communication strategies such as respect, compliance, distraction and therapeutic lies.[34] In this study, the reduced caregiver burden might be related to education and counseling programs with those of techniques and adequate support for caregivers.

After three months of intervention, the QOL of older adults with dementia in the intervention group did not change while the QOL of participants in the comparison group significantly decreased. There was no difference in QOL after intervention between the two groups. Similarly, the QOL (WHOQOL) of patients with AD participating in multiple training modalities comprising Tai Chi, calligraphy and drawing did not change after their joining activities for 12 sessions and no differences of WHOQOL were observed in both intervention and comparison groups.[35] Also, the results from physical exercise for individuals with dementia showed the maintaining of QOL in the intervention group, but reduced in the comparison group.[36] Another short-term rehabilitation program and a psycho-educational program was provided to patients with dementia and their caregivers also showed no changes of QOL after four weeks of implementation and three-month follow-up, and no differences were found between intervention and comparison groups.[37] These results showed that short-term interventions and frequency of performing activities were insufficient to improve QOL life of older adults with dementia.

Similarly, the results from Individual Cognitive Stimulation Therapy (ICST) demonstrated negative results regarding the QOL of people with mild to moderate dementia.[38] The QOL of this study contrasted with Kim's study demonstrating that older people with mild dementia who were trained in cooking and physical activity after 10 sessions showed improved QOL.[39] This might be explained in that the activities of the integrated care program in this study were unfamiliar to the experiences of older adults with dementia and short the time duration of program caused no change in QOL.

This study found no significant difference in cognitive function among older adults with dementia, similar to the outcomes of multimodal cognitive and physical rehabilitation programs conducted by a multidisciplinary team. In these eight-week programs, designed for people with mild dementia, participants showed no difference in cognitive function.[28] Similarly, individual cognitive stimulation therapy did not affect cognition.[38] A short duration of training and less frequent sessions might have caused a lack of significant difference of MMSE after the intervention similar to that the cognitive function (MMSE) did not change among older adults with dementia who were trained in a 12-session program (twice weekly for six weeks) using Tai Chi, calligraphy and drawing.[35] No change in MMSE might be related to the type of activities that were unfamiliar to older adults. The flower guess game in this study was not suitable for male participants. It might have reduced motivation and caused less intention and low adherence to activity leading to no change in clinical outcomes of older adults with dementia.

This study found no effect on physical function of patients with dementia who were trained in a physical activity program, compared to a previous study which employed passive, motor-assisted or active resistive training of the legs as well as the change of direction (forward, reverse) every five minutes.[40] In this latter study, patients were trained for 30 minutes/three times weekly for 12 weeks and completed 27 to 30 training sessions. Moreover, the ADLs of the participants in the intervention group did not improve, similar to the study of the 3-4 week of rehabilitative program and a psycho-educational program could not improve ADLs.[30] Adherence to the intervention and type of activity might be another reason for improving ADLs. No change in this study might relate to some participants who did not practice or exercise as scheduled in the program.

Limitations and Recommendations for Future Research

This study was conducted with a small sample size so studies with a larger number of participants are warranted. Some limitations were identified as duration of the program, selection bias, severity of dementia, and co-morbidity of the participants. Further study should emphasize more on the micro-level of person-centered care, focusing on key activities and duration of interventions. The effects of this program might need to be tested and re-examined, including long-term clinical outcomes, satisfaction, cost, and service utilization, before implementation in practice.

Conclusion and Implications for Nursing Practice

The TICPD consisting of education program for caregivers, self-management support, case management, and rehabilitation care can maintain QOL and improve family burden for older adults with dementia. Thus, nurse administrators need to develop nursing systems to have a nurse case manager or advanced practice nurse to manage the integrative care collaboration with other health professionals to improve the outcomes of dementia management. In addition, integration and collaboration need to be established between local government authorities, mental health facilities, primary care units, and the community to promote the quality of life of older adults with dementia and their families.

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ผลของโปรแกรมการดูแลแบบบูรณาการสำหรับผู้สูงอายุที่มีภาวะสมองเสื่อมในชุมชน:การศึกษากึ่งทดลอง

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บทคัดย่อ: จำนวนผู้สูงอายุที่มีภาวะสมองเสื่อมเพิ่มขึ้นทั่วโลกและเกิดความต้องการการดูแลที่หลากหลายเพื่อคงไว้ซึ่งความสามารถในการดำรงชีวิตในชุมชน การวิจัยครั้งนี้เป็นการศึกษาแบบกึ่งทดลองมีวัตถุประสงค์เพื่อทดสอบผลของโปรแกรมการดูแลแบบบูรณาการ โรงพยาบาลส่งเสริมสุขภาพ 2 แห่งได้รับการเลือกแบบเฉพาะเจาะจงเพื่อเป็นพื้นที่ในการศึกษา จากนั้นสุ่มเลือกให้เป็นพื้นที่สำหรับกลุ่มทดลองและกลุ่มเปรียบเทียบ กลุ่มผู้สูงอายุที่มีภาวะสมองเสื่อม จำนวน 20 คน และผู้ดูแลจากแผนกผู้ป่วยนอกในแต่ละโรงพยาบาลได้รับการคัดเลือกเข้าการศึกษา โดยกลุ่มทดลองได้รับการดูแลแบบบูรณาการนอกเหนือจากการดูแลตามปกติ เป็นเวลา 3 เดือน ในขณะที่กลุ่มเปรียบเทียบได้รับการดูแลตามปกติเพียงอย่างเดียว เครื่องมือที่ใช้ในการเก็บข้อมูล ได้แก่ แบบทดสอบสมรรถภาพสมองฉบับภาษาไทย แบบประเมินความสามารถในการทำกิจวัตรประจำวัน แบบประเมินความสามารถในการดำเนินชีวิตประจำวัน แบบประเมินคุณภาพชีวิตสำหรับผู้สูงอายุที่มีภาวะสมองเสื่อม แบบสอบถามอาการประสาทจิตเวชฉบับภาษาไทย และแบบสัมภาษณ์ภาระการดูแล วิเคราะห์ผลการวิจัยโดยใช้ Paired t-test and Wilcoxon Signed Rank test

ผลการศึกษาพบว่าหลังการทดลอง คุณภาพชีวิตของผู้สูงอายุที่มีภาวะสมองเสื่อมในกลุ่มทดลองมีค่าคงที่ แต่ในกลุ่มเปรียบเทียบมีค่าลดลงอย่างมีนัยสำคัญทางสถิติ ผู้ดูแลในกลุ่มทดลองมีภาระการดูแลลดลงหลังจากการทดลองและมีค่าน้อยกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ อย่างไรก็ตามไม่พบว่ามีความแตกต่างของการทำงานด้านสมองและด้านร่างกาย รวมถึงอาการทางพฤติกรรมและความผิดปกติทางจิตของกลุ่มตัวอย่างที่มีภาวะสมองเสื่อมทั้ง 2 กลุ่ม สรุปได้ว่าการดูแลแบบบูรณาการมีผลในการรักษาระดับคุณภาพชีวิตของผู้ป่วยและลดภาระของผู้ดูแล ผู้บริหารด้านการพยาบาลในประเทศไทยจำเป็นต้องพัฒนาระบบให้มีพยาบาลจัดการกรณีหรือพยาบาลปฏิบัติการขั้นสูงในการจัดการดูแลแบบบูรณาการร่วมกับผู้เชี่ยวชาญด้านสุขภาพอื่นๆ เพื่อปรับปรุงผลในการจัดการภาวะสมองเสื่อม

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คำสำคัญ: ผู้ดูแล ชุมชน สมองเสื่อม โปรแกรมการดูแลแบบบูรณาการ ผู้สูงอายุ

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