科技部補助專題研究計畫成果報告
期末報告

利用群體軌跡分析探討照顧居住在社區失能老人的非正式照顧者之照護負荷

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中 文 摘 要 ： 老化失能是持續的過程。當老年人的日常生活功能退化，照護人員將負擔更多的照護責任。本研究目的為確認照護負荷隨著照護期間時間變化的模式並釐清非正式照護者和失能老人對於照護負荷時間變化相關的特質為何。本研究亦比較家庭照護者和外籍看護工對照護負荷預測因子之差異。

這是一個二年期的研究計畫。本計畫自民國103年九月開始收集第一波資料。截至目前為止，有59對(45%)家庭照護者及失能長輩和72對(55%)外籍看護工及失能長輩參與此研究。在照護者與失能長輩的關係分數中，家庭照顧者組的平均分數為7.85分而外籍看護工組為8.68分。在照顧者憂鬱分數上，家庭照顧者組的平均憂鬱分數為10.76分而外籍看護工組的憂鬱分數則為3.57分。此外，在所有的非正式照護者中，家庭照顧者組其照護者負荷的平均分數為34.49分而外籍看護工組其照護者負荷的平均分數為17.43分。由此顯示，家庭照顧者的照護負荷及憂鬱指數皆比外籍看護工來的高出2-3倍之多。為避免早期將長輩送至照護機構，辨認照顧居住在社區中失能長輩的照護負荷預測因子是很重要的。藉由辨別出影響照護者負荷的預測因子，健康照護專業人員能傳遞適當幫助以減輕照護者負荷，並改善居住在社區中失能長輩的照護品質。

中 文 關 鍵 詞 ： 照護負荷, 失能老人, 非正式照護者

英 文 摘 要 ： Aim: The purposes of this research were to identify patterns of change over time in caregiver burden throughout the course of caregiving, and to clarify the informal caregiver and disabled elderly characteristics that are associated with caregiver burden trajectories over time. In addition, a comparison of predictors of caregiver burden between family caregivers and foreign caregivers were also be conducted.

Background: Disability for the elderly is an ongoing process. Both formal and informal caregivers are expected to assume increased responsibility to care for the elderly as their functions decline. Caring for the elderly is a stressful and difficult task. This task often places a major burden on caregivers. However, since informal caregivers tend to lack professional knowledge and have limited care-related training to perform the activities needed to meet the needs of the elderly, it is likely that they will experience a greater care-induced burden. In addition, various care related tasks and duties could occur unexpectedly. Patterns of caregiver burden throughout the course of caregiving may vary. Furthermore, it is a logical assumption that the caregivers will experience more burdens if they come from different countries with different languages and different culture.

Methods: This study was a two-year research project. A longitudinal study design was used to examine patterns of change over time in caregiver burden throughout the course

of caregiving. Additionally, a convenience sampling method was applied.

Results: A total of 131 pairs of caregiver-older people dyads were recruited for this study. The final results indicated that there was a significant difference of caregiver burden between foreign and family caregivers. Foreign caregivers experienced almost twice lower caregiver burden than family caregivers.

Conclusions: It is important to identify predictors of caregiver burden in regard to disabled elderly living in the community to prevent early nursing home placement. Health care professionals play an essential role in supporting the informal caregivers. By identifying all the predictors that influencing caregiver burden, health care professionals can deliver appropriate assistance to relieve caregiver burden and to improve the quality of caregiving of disabled elderly living in the community.

INTRODUCTION

Statement of the Problem

With the life expectancy increasing worldwide, the aging population will increase. Consequently, caring for this population will be a challenging issue. This challenge will affect not only the families of the elderly but also their health care professionals. Disability for the elderly is an irreversible process. Both formal and informal caregivers are expected to assume increased responsibility to care for the elderly as the activities of daily living (ADLs) functional declines. Consequently, caring for the elderly is a stressful and difficult task. This task often places a major burden on caregivers. The term "caregiver burden (CB)" is most often used to describe this phenomenon.

Informal caregivers are non-professional people (such as a family member, friend, or paid caregiver) who are the frontline providers to provide care in a home setting for another person and who usually deliver care to people with disabilities. These caregivers provide most of the assistance and supervision that are necessary to fulfill the basic needs of the disabled elderly living in the community. Because informal caregivers tend to lack professional knowledge and have limited care-related training to perform the activities needed to meet the needs of the elderly, it is likely that they will experience a greater care-induced burden. Furthermore, it is a logical assumption that the caregivers will experience more burdens if they come from different countries with different languages as well as different culture. They will experience not only care-induce burden, but also burdens from language barriers, cultural differences, and so on. On the other hand, the elderly who are cared for by those informal caregivers may cause adverse health outcomes such as increased risks of mortality and hospitalization, or even receive a poor quality of care if the informal caregivers experience heavier CB. Therefore, there is a need to identify factors influencing CB in order to receive a better quality of care among community-dwelling elderly Taiwanese.

To date, existing literatures that associated with CB were mainly focus on informal caregivers who were cared for by people with dementia (Hirakawa et al., 2008; Conde-Sala et al., 2010; Mohamed, Rosenheck, Lyketsos, & Schneider, 2010), and memory impaired seniors (Chumbler, Grimm, Cody, & Beck, 2003). Limited issues had been raised on CB that was associated with informal caregivers who were cared for by disabled elderly living in the community. In addition, most studies of informal caregiving have targeting on cross-sectional relationships between the provision of care and burden at specific points in time; with little attention has been paid to examine the patterns of CB throughout the course of caregiving. Understanding how the caregiving burden changes over time is important in order to providing interventions that can offer timely and appropriate support for informal caregivers.

Purpose of the Study

To our knowledge, only one research has been done to characterize psychological patterns among family caregivers of care recipients with primary malignant brain tumors (Choi et al., 2012), but none of the research has been conducted targeting on the patterns of CB among informal caregivers with community-dwelling disabled elderly population. Therefore, the purposes of this research were to (1) identify patterns of change over time in CB throughout the course of caregiving, and (2) clarify the informal caregiver and disabled elderly characteristics that are associated with CB trajectories over time. In addition, a comparison of predictors of CB between family caregivers and foreign caregivers were also be conducted.

Background

The concept of CB is complicated and multidimensional. Zarit (1986) defined CB 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". Dang, Badiye, and Kelkar (2008) proposed that CB involves the overall physical, psychological, emotional, and financial toll of providing care. The reduction of CB can prevent the deterioration of caregiver health as well

as can reduce adverse health outcomes for care recipients (Kuzuya et al., 2011). Therefore, it will be essential to explore factors related to CB to achieve a better quality of life for the caregivers and receive a better quality of care for disabled elderly Taiwanese living in the community.

Theoretical based Patterns of Caregiver Burden

Informal caregiving for disabled elderly is an ongoing process. Various care related tasks and duties could occur unexpectedly. Therefore, patterns of caregiver burden throughout the course of caregiving may vary. Understand how burdens change over time is important in order to designing interventions that can provide timely and appropriate support for those caregivers. Two hypotheses could explain how informal caregivers cope with burden over time. The first hypothesis is adaptation hypothesis (Helson, 1964), which proposed that the caregivers experience high levels of psychological burden in the beginning of caregiving. The psychological burden levels will be lower with times as caregivers have adapted the situations from gaining caregiving skills and coping skills. The second hypothesis is wear-and-tear theory (Townsend et al., 1989). According to the wear-and-tear theory of caregiving, the experienced caregivers display more negative outcomes since the ongoing stress, the accumulating care demands, the progression of the diseases from care receivers, and the psychological well-being from caregivers. Caregiving is a dynamic process. Understanding how caregiver burden changes over times is crucial important.

Predictors of Caregiver Burden

Although some positive effects of elderly caregiving have been identified (Yamamoto-Mitani et al., 2003; Lee, Yoo, & Jung, 2010), most studies have reported adverse outcomes from this type of caregiving. Several studies have discussed the CB among the disabled elderly from different perspectives. Two main dimensions are identified: the characteristics of the patient and the characteristics of the caregiver. Literature review articles have summarized the specific patient-related factors for the CB associated with the elderly as

degree of difficulty with ADLs, lower levels of education, cohabitation with the patients, and long duration of the illness in the patient. In contrast, the caregiver-related factors for the CB associated with the elderly are gender, age, relationship with the elderly, and the caregiver's physical status and coping strategies (Burns & Rabins, 2000; Etters et al., 2008). The detailed discussion is provided below.

The characteristics of the patient. Several predictors of CB for the characteristics of the patient have been confirmed. Physical functional status as well as cognitive functional status for the elderly has been found to be strong predictors in some research. Elderly with severe functional disability was associated with their primary family caregivers experiencing a greater burden from their caregiving (Grunfeld et al., 2004; Yeh & Bull, 2011; Doan, et al., 2012; Rodakowski, Kamel, Bond, & Froelicher, 2012; Skidmore, Rogers, & Schulz, 2012). Impaired cognitive functional status for the elderly has also been confirmed to be associated with CB from their primary caregivers, especially for those elderly who were suffering from dementia (Hirakawa et al., 2008; Conde-Sala et al., 2010; Mohamed, Rosenheck, Lyketsos, & Schneider, 2010). Furthermore, residential status was another factor influencing CB (Conde-Sala et al., 2010; Rodakowski, Skidmore, Rogers, & Schulz, 2012). Caregivers had higher levels of CB when they were cohabitation with the patients.

The characteristics of the caregiver. Several predictors of CB for the characteristics of the caregiver have been identified. Relationship with care receiver was one of the important predictors of CB. In Chumbler, Grimm, Cody, & Beck's (2003) research, they found that adult daughters had greater CB scores compared to other relatives; whereas care recipient's spouse was identified to perceive highest CB among family caregiving in other studies (Casado & Sacco, 2012). Psychological responses of caregiver have also been verified to be associated with CB. For instance, caregivers with high depressive symptoms were found to be suffer from heavier CB (Davis and Tremont, 2007; Yeager et al., 2010; Kuzuya et al., 2011). Furthermore, personal attributes of caregiver were also confirmed to be correlated to

CB. Rodakowski, Skidmore, Rogers, & Schulz (2012) found that perceived social support was an important factor associated with burden in caregivers. High levels of social integration and received social support were associated with lower CB. In addition, Yeh & Bull (2011) also confirmed that a lack of family support was a significant predictor of family CB.

Demographic characteristics of the caregivers have been identified to be influence caregiving burden. Female caregivers usually experienced heavier CB comparing to male gender (Kim et al., 2009; Skarupski et al., 2009; Yeager et al., 2010). Self-reported health status has also been confirmed to be a predictor of CB (Casado & Sacco, 2012; Kamel, Bond, & Froelicher, 2012; Rodakowski, Skidmore, Rogers, & Schulz, 2012; Limpawattana et al., 2013). Caregivers with poor general health status indicated experiencing higher CB.

Contrary results of the age of the caregiver as a factor of caregiver burden are also been identified. Some studies reported a younger caregiver experienced a heavier CB, whereas others proposed an older caregiver experienced a heavier CB. This could be due to the fact that caregiver's age may not linear associate with caregiver burden. It might present different patterns throughout the process of caregiving. For example, younger caregivers may have less experience in caregiving, which results in heavier caregiver burden. As the care situation progresses, they could adjust the situation and learn more skills in caregiving. At this time point, they may experience less caregiver burden. However, with caregiver age increasing, they need to take more role responsibilities and to fulfill accumulative care demands. Consequently, caregivers may lead to increasing feelings of burdensome. This phenomenon can be explained by both the adaptation-level theory (Helson, 1964) and the wear-and-tear hypothesis (Townsend et al., 1989), in which it is consistent with the theory that we proposed for this study.

Group-based Trajectory Modeling of Caregiver Burden

Limited studies have explored the individual patterns of caregiver burden among caregivers over time. Usually, longitudinal data are summarized at serial time points for

pre-defined groups, such as repeated measures ANOVA (Hudson et al., 2008; Northouse et al., 2007), and correlation coefficients between mean outcomes at different time points (Carter, 2006). The theoretical assumption for these analyses is that the caregivers behave homogeneously over time. However, there could be misleading results if the population includes distinct subgroups (Nagin, 2005). Group-based trajectory modeling, or says trajectory analysis, estimates patterns over time and identifies unobserved subgroups of individuals with similar trajectories at the same time. This is based on finite mixture modeling of unobserved subpopulations. Hypotheses with regard to trajectory patterns and the number of trajectory groups could be examined by using maximum likelihood (Choi et al., 2012). For example, Choi et al. applied trajectory analysis to characterize psychological distress patterns in family caregivers. The results of the study showed that most caregivers learned to adjust and cope with the demands of the care situation over time. However, some caregivers did not adapt over time, but continue to experience levels of moderate to high feelings of burden. Furthermore, the study confirmed that group-based trajectory modeling was an effective technique to estimate distinct trajectories of longitudinal caregiver psychological burden.

METHODS

Subjects.

Dyads of disabled elderly and the informal caregivers were recruited from communities. Informal caregivers of this study included family caregivers and foreign caregivers. Inclusion criteria for family caregivers in this study included: (1) provision of practical support to disabled older family members (65 years or older) living in the community on a daily basis for at least eight hours per day for over six consecutive months, (2) fluency in Mandarin or local Taiwanese dialect, and (3) demonstrated no severe cognitive impairments. Inclusion criteria for foreign caregivers in this study

included: (1) provision of practical support to disabled elderly (65 years or older) living in the community on a daily basis for at least eight hours per day for over six consecutive months, (2) able to communicate in Mandarin or local Taiwanese dialect, and (3) worked in Taiwan legally. Informal caregivers were excluded if the care recipients were (1) less than 65 years old, (2) with the scores of ADL higher than 60, (3)institutionalization, (4) had severe cognitive impairments, and (5) a lack of ability to communicate verbally.

Study Design

This is a two-year research project. A longitudinal study design was applied to examine the informal caregiver and disabled elderly characteristics that were associated with CB trajectories over time. A convenience sampling method was used for data collection. G-Power Analysis Computer Software was used to calculate sample size. The significance level was set at .05 for α for a two-tailed test, power (1-ß) at .8, which yielded a sample size of 50 participants. 131informal caregivers and 131 community-dwelling disabled elderly of each type of caregivers were recruited for this study.

Procedures

The research was held in several community health care centers as well as senior centers in western Taiwan. Permission from IRB was obtained from the institution (CS 14071). Informal caregivers and disabled elderly, who were both interested in attending this research, were invited to participate in this research. Contact information was gathered after their participation. The data were collected at 1, 3, 6, and 12 months of the 1-year follow-up period. Baseline data collection was performed after obtaining the consent forms from the participants. Demographic data sheet along with questionnaires were provided to research participants. The information about a clear explanation of the intent of this research, assuring confidentiality by coding each instrument with a number and no names needed to participate for this research, and having the right to choose for them whether to participate and/or drop from this research anytime were provided at each time of interview. In addition, participants,

especially for those who were illiterate or have vision or physical difficulties, were encouraged to schedule an appointment with the principal investigator or research assistants to help them fill out the questionnaires if needed. The follow-up surveys were held through telephone interviews. Finally, the data were entered into a personal computer that belongs to the principal investigator.

Measurements

Caregivers. Baseline caregiver sociodemographic data included age, gender, relationship with the elderly, duration of care, income, and years of education were collected. In addition, personal attributes of caregiver, including perceived social support and self-rated health status, were also gathered at baseline. Perceived social support was measured using Multidimensional Scale of Perceived Social Support (MSPSS). MSPSS was designed by Zimet et al. (1988) to measure perceived support from family, friends, and a significant other, or global perceived support. It is a 12-items 7-point Likert-type self-administered scale, in which ranging from 1 (very strongly disagree) to 7 (very strongly agree), with higher scores suggesting greater levels of perceived social support. Although a cut-off score was not available for the MSPSS, as a score of 65 was applied to use as a point of reference for a 'high or low perception of social support' in one research (WA Perinatal Mental Health Unit, 2009). Internal consistencies of MSPSS and its subscales were excellent, with Cronbach's alphas of .85 to .91. A strong test-retest reliability over a 2- to 3-month interval (r= .72 to .85) was also presented. Self-rated health status was measured by Chinese Health Questionnaire (CHQ-12). The CHQ-12, which developed by Cheng and Williams (2000), has been widely used in community in Taiwan. High CHQ-12 scores showed probable psychiatric morbidity. At the cutoff point of 2/3, the sensitivity of 79.7% and a specificity of 83.6% were presented.

Furthermore, psychological responses of caregiver, including depression and caregiver burden, were collected for data collection. To measure depression, a Chinese version of the Geriatric Depression Scale-short form (GDS-SF) was administered to participants. The

GDS-SF, which consisted of 15 yes/no questions, was developed for older individuals. The yes/no format was used instead of a Likert-type scale to reduce participant fatigue and the potential effects of deteriorated concentration (Sheikh & Yesavage, 1986). Scores for the GDS-SF ranged from 0 to 15. A cut-off point of equal to or greater than five was used in several studies to define depression in Taiwan (Fuh et al., 1997; Lin et al., 2005). Therefore, a cut-off point of equal or greater than five was used in this research. The GDS-SF has been used in a Chinese population and was found to have a sensitivity of 96.3% and a specificity of 87.5% for identifying depression (Lee et al., 1993) indicating the GDS-SF had a good sensitivity for identifying people with depression and a good specificity for correctly ruling out people who did not have depression.

The outcome variable of CB was gathered at baseline as well as at each follow-up. CB was measured by Chinese version of Zarit Burden Interview (CZBI). The CZBI included 22 items with a 5-point Likert-type scale, ranging from 0 (never) to 4 (nearly always). The total scores for CZBI were from 0 to 88, with higher scores indicating increased CB. CZBI was reported to have an internal consistency of .89 (Cronbach's alpha coefficient) and an intraclass correlation correlation of .88 (test-retest reliability) for identifying CB by Ko, Liu, & Huang (2008).

Care Recipient. The elderly's sociodemographic data, residential status, physical functional status, and cognitive functional status were collected at baseline. Mini-Mental State Examination (MMSE) and Activities of Daily Living (ADLs; including Basic ADLs and Instrumental ADLs) scales were applied to examine cognitive functions as well as physical functions.

For measuring high physical functional status, participants were asked if they could perform the following seven ADLs: bathing, dressing, eating, using the toilet, moving from bed to chair, grooming, or walking across a room. ADLs scale was a widely used instrument in Taiwan. The scale scores ranged from 0 to 100, with a higher score indicating a better

functional independency. A score of 80 or above was defined as physical and functional independency. The ADLs scale demonstrated strong reliability in the research of Cummings and colleagues (2003), for which Cronbach's alpha equaled to 0.86. In addition, to examine cognitive functional status, the Chinese Mini-Mental State Examination (CMMSE) scale was applied. CMMSE was a brief 30-point scale with a cut-off point of 24 that was widely used to screen for cognitive impairment in Taiwan. It was first proposed by Folstein et al. in 1975, and was translated to Chinese version of CMMSE by Guo et al. in 1988. International consistency was reported as .86 in Dai, Yip, Huang, & Lou's (1999) research.

Data Analysis

Data were analyzed by using SAS version 9.0 and SAS Proc Traj. To select a best trajectory model, caregivers with only one time point measurements were excluded from the model to preserve the longitudinal aspect of the analyses. Other statistical criteria for examining the best fitting model included four log-likelihood statistics (Akaike's Information Criterion, AIC; Bayesian Information Criterion, BAIC; the sample-size adjusted BIC, ssBIC; and the consistent AIC, CAIC), and three classification statistics (classification likelihood criterion, CLC; integrated classification likelihood adjusting the BIC, ICL-BIC, and entropy). Smaller values of AIC, BIC, ssBIC, and CAIC indicated better models. Furthermore, entropy was an index used to classify accuracy based on posterior probabilities, with higher values indicating better classification. In addition, associations between trajectory groups were assessed using chi-square tests. Weighted binary logistic regression for outcomes with two trajectory groups and weighted multinomial logistic regression for outcomes with more than two trajectory groups were also applied to identify predictors of trajectory groups. To reduce collinearity between predictors, continuous predictors were centered at their respective means. Furthermore, multicollinearity was be examined by variance inflation factor scores.

RESULTS

Description of the Sample

A total of 131 pairs of caregiver-recipient participants were recruited from the target healthcare centers. The first wave of data was applied to conduct the statistical analysis so far. Among the caregiver participants, 37.3% were males and 62.7% were females in the family caregiver group and all foreign caregivers were females. Most caregivers were married in foreign caregiver and family caregiver groups (62.5%, 76.3%, respectively).

A comparison of the types of caregiving and summaries of the socio-demographic variables were presented in Tables 1. Table 1 shows that 59 (45%) of the participants were cared for by family members and 72 (55%) were cared for by foreign caregivers. Approximately 39% of family caregivers (n=23) had high school level of education and approximately 48.6% of foreign caregivers (*n*=35) had high school level of education. A majority of participants in both foreign and family caregiver groups (62.5% and 76.3%, respectively) were married. The majority of family caregiver participants (61%) had more than 4 years of care duration with their family members, while the majority of foreign caregiver participants (70.8%) had 6 months to 2 years of care duration with their care recipients. With regarding to the nationality of foreign caregivers, most of them came from Indonesia (n=59, 81.9%) and Vietnam (n=10, 13.9%). The mean relationship-with-care receiver score was 8.68 in the foreign caregiver group and 7.85 in the family caregiver group. The mean self-perceived social support score was 55.33 in the foreign caregiver group and 53.76 in the family caregiver group. The mean depression score was 3.57 in the foreign caregiver group and 10.76 in the family caregiver group. In addition, the mean CZBI score was 17.43 in the foreign caregiver group and 34.49 in the family caregiver group.

Table 2 presented the differences of demographic data and caregiver burden. As shown in Table 2, monthly income (*t*=2.032, *p*< .05) of family caregiver and nationality (*t*=17.799, *p*< .001) were significantly different between the groups.

DISCUSSION

According to the baseline data, the results of this study indicated that there was a significant difference of caregiver burden between foreign and family caregivers. Foreign caregivers experienced almost twice lower caregiver burden than family caregivers. This result consisted with Chiao, Wu, & Hsiao's (2015) review article and another study (Lin, Tsai, Wang, Hwang, & Fuh, 2012), which concluded that family caregivers experienced the greatest burden compared with other informal caregivers or foreign caregivers. Kinship relationships usually put caregivers on heavier caregiving burden (Chumbler et al., 2003). The caregiver burden may lead to a lower quality of care and leading over time to abuse or neglect for the care recipients (Kuzuya et al., 2011). Therefore, it will be crucial to release the CB of the caregivers if the disabled older people families want to receive better quality of care. Interventions directed toward the reduction of CB are necessary to improve quality of care, delay long-term care placement, prevent the deterioration of caregiver health, and reduce care recipient adverse health outcomes (Kuzuya et al., 2011).

Further, a significant difference of depression score between foreign and family caregivers was existed. Family caregivers experienced almost three times higher depression scores than foreign caregivers. Caregivers' depressive symptoms were associated with the depressive mood of the care recipients (Izawa et al., 2010). More attention should be placed on this issue if the older Taiwanese want to receiver better quality of care. In addition, this study result may be used as a reference for families whose family members need long-term care when considering hiring foreign caregivers as an alternative option to Taiwanese caregivers.

CONCLUSION

Longitudinal data that describe the natural response to care demands were important for

designing and implementing interventions that targeting on specific caregivers with high risk of CB. This research explored patterns of change over time in CB throughout the course of caregiving as well as informal caregiver and disabled elderly characteristics that were associated with CB trajectories over time. The major contributions of the research results to the clinical practice as well as nursing research were:

Clinical Practice

The study results help the public as well as health professionals to re-examine predictors influencing CB among informal caregivers. The research results were also helpful in knowing if foreign caregivers could be suffering from heavier CB than that of Taiwanese family caregiver. It is essential for nurses to identify factors that associated with informal CB in developing a plan of care that reduced the burden. By identifying predictors of CB, interventions could be designed to release CB and improving caregiver well-being; consequently, it could also delay long-term care placement and prevent the deterioration of caregiver health as well as to reduce care recipient adverse health outcomes.

Nursing Research

The research results help to build up the patterns of caregiving burden database among informal caregivers, to provide a theoretical model of CB of informal caregivers with disabled elderly, and to provide a scientific evidence for nursing researchers to investigate a feasible nursing intervention related to releasing CB, especially among foreign caregiver population. It was also helpful to provide clinical nurses a basic knowledge background about predictors associated with CB for family caregivers as well as foreign caregivers, which help them design and conduct an evidenced-based educational program in reducing CB for informal caregivers in Taiwan.

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Table 1. Demographic data

Variables	Foreign Caregiver (N=72)			Family Caregiver (N=59)		
	N	%	Average±SD	N	%	Average±SD
Age						
20-30	31	43.1		1	1.7	
31-50	41	56.9		27	45.8	
50+				31	52.5	
Sex						
Male				22	37.3	
Female	72	100.0		37	62.7	
Marital Status						
Married	45	62.5		45	76.3	
Never married	22	30.6		11	18.6	
Divorced, Separated, Widowed	5	6.9		3	5.1	
Educational Level						
Elementary School, Junior High School	33	45.8		20	33.9	
High School	35	48.6		23	39.0	
College or higher	4	5.6		16	27.1	
Religion						
Buddhism, Taoism	9	12.5		49	83.1	
Christian, Catholics	5	6.9		2	3.4	
Others	58	80.6				
None				8	13.6	
Care Duration						
6 months-2years	51	70.8		14	23.7	
2-4 years	16	22.2		9	15.3	
4+ years	5	6.9		36	61.0	
Monthly Income						
NT.10,000 or less	3	4.2		34	57.6	
NT. 10,000+	69	95.8		25	42.4	
Nationality						
Vietnam	10	13.9				

	n	%	mean ± SD	n	%	mean ± SD
Indonesia	59	81.9				
The Philippine	3	4.2				
Taiwan				59	100	
Relationship with Primary Caregiver	8.68	1.287	8.68 ± 1.29	7.85	2.05	7.85 ± 2.05
MSPSS			55.33 ± 12.49			53.76 ± 14.69
High perception of social support	17	23.6		15	25.4	
Low perception of social support	55	76.4		44	74.6	
GDS-SF			3.57 ± 3.41			10.76 ± 8.17
Not depressed	65	90.3		24	40.7	
Depressed	7	9.7		20	33.9	
				6	10.2	
				6	10.2	
				3	5.1	
CHQ-12			3.56 ± 5.92			4.73 ± 2.61
CZBI			17.43 ± 10.24			34.49 ± 14.01

Table 2. Differences between demographic data and caregiver burden

Variables	Foreign Caregiver					Family Caregiver				
	N	Mean±SD	F	t	P	N	Mean±SD	F	t	P
Age										
20-30 years old	31	16.42±9.48		-.726	.470	1	24.00			
31-50 years old	41	18.19±10.84				27	34.04±16.05	.329		.721
50+ years old						31	35.23±12.33			
Sex										
Male						22	31.78±12.46		-1.152	.254
Female	72	17.43±10.24				37	36.11±14.79			
Marital Status										
Married	45	17.20±10.54				45	34.22±14.08			
Never married	22	17.23±10.13	.221		.802	11	33.73±15.51	.374		.690
Divorced, Separated, Widowed	5	20.40±9.45				3	41.33±7.51			
Educational Level										
Elementary School, Junior High School	33	18.82±11.46				20	38.25±11.09			
High School	35	17.17±8.94	1.973		.147	23	30.52±12.46	1.726		.187
College or higher	4	8.25±6.45				16	35.50±18.22			
Religion										
Buddhism, Taoism	9	22.56±16.09				49	34.94±13.04			
Christian, Catholics	5	22.40±20.08	2.201		.118	2	26.50±10.61	.353		.704
Others	58	16.21±7.63				0				
None	0					8	33.75±20.60			
Care Duration										
6 months-2years	51	16.82±9.80				14	34.07±14.31			
2-4 years	16	18.81±13.00	.304		.739	9	36.67±14.99	.124		.884
4+ years	5	19.20±3.27				36	34.11±14.02			
Monthly Income										
NT.10,000 or less	3	14.67±3.79		-.475	.636	34	37.59±13.03		2.032	.047*
NT. 10,000+	69	17.55±10.43				25	30.28±14.46			
Nationality										
Foreign caregiver	72	17.43±10.24		-7.799	.000*	59	34.49±14.01			

科技部補助計畫衍生研發成果推廣資料表

科技部補助計畫	計畫名稱: 利用群體軌跡分析探討照顧居住在社區失能老人的非正式照顧者之照護負荷
	計畫主持人: 喬佳宜
	計畫編號: 103-2314-B-040-002-　　　　學門領域: 護理

　　　　　　　　　　無研發成果推廣資料

103年度專題研究計畫成果彙整表

計畫主持人：喬佳宜			計畫編號：103-2314-B-040-002-		
計畫名稱：利用群體軌跡分析探討照顧居住在社區失能老人的非正式照顧者之照護負荷					

成果項目				量化	單位	質化 （說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等）
國內	學術性論文	期刊論文		0	篇	
		研討會論文		0		
		專書		0	本	
		專書論文		0	章	
		技術報告		0	篇	
		其他		0	篇	
	智慧財產權及成果	專利權	發明專利 申請中	0	件	
			發明專利 已獲得	0		
			新型/設計專利	0		
		商標權		0		
		營業秘密		0		
		積體電路電路布局權		0		
		著作權		0		
		品種權		0		
		其他		0		
	技術移轉	件數		0	件	
		收入		0	千元	
國外	學術性論文	期刊論文		0	篇	
		研討會論文		0		
		專書		0	本	
		專書論文		0	章	
		技術報告		0	篇	
		其他		0	篇	
	智慧財產權及成果	專利權	發明專利 申請中	0	件	
			發明專利 已獲得	0		
			新型/設計專利	0		
		商標權		0		
		營業秘密		0		
		積體電路電路布局權		0		
		著作權		0		
		品種權		0		
		其他		0		

	技術移轉	件數	0	件	
		收入	0	千元	
參與計畫人力	本國籍	大專生	1	人次	
		碩士生	0		
		博士生	0		
		博士後研究員	0		
		專任助理	0		
	非本國籍	大專生	0		
		碩士生	0		
		博士生	0		
		博士後研究員	0		
		專任助理	0		
其他成果 （無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。）					

科技部補助專題研究計畫成果自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現（簡要敘述成果是否具有政策應用參考價值及具影響公共利益之重大發現）或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估
   ■達成目標
   □未達成目標（請說明，以100字為限）
   　　□實驗失敗
   　　□因故實驗中斷
   　　□其他原因
   說明：

2. 研究成果在學術期刊發表或申請專利等情形（請於其他欄註明專利及技轉之證號、合約、申請及洽談等詳細資訊）
   論文：□已發表　□未發表之文稿　■撰寫中　□無
   專利：□已獲得　□申請中　■無
   技轉：□已技轉　□洽談中　■無
   其他：（以200字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性，以500字為限）

   It is important to identify predictors of caregiver burden in regard to disabled elderly living in the community to prevent early nursing home placement. Health care professionals play an essential role in supporting the informal caregivers. By identifying all the predictors that influencing caregiver burden, health care professionals can deliver appropriate assistance to relieve caregiver burden and to improve the quality of caregiving of disabled elderly living in the community.

4. 主要發現
   本研究具有政策應用參考價值：■否　□是，建議提供機關
   （勾選「是」者，請列舉建議可提供施政參考之業務主管機關）
   本研究具影響公共利益之重大發現：■否　□是
   說明：（以150字為限）