

A Pilot Randomized, Controlled Trial of the Effectiveness of a Psychoeducational Intervention on Family Caregivers of Patients With Advanced Cancer

Mabel Leow, BSc (Hons), Sally Chan, PhD, MSc, BSc, RN, FAAN,
and Moon Fai Chan, PhD, CStat

Family members are expected to take on the responsibilities of caring for their sick relatives in Asian societies, such as Singapore, that highly value filial piety (Chow, 2009). However, caring for a person with advanced cancer is physically and emotionally challenging. Physically, the person with advanced cancer has complex needs and requires extensive care from the caregiver. Emotionally, the caregiver has to deal with the patient's impending death (Tsigaropoulos et al., 2009). Caregivers may experience significant stress, and some suffer from depression and decreased quality of life (QOL) (Hudson, Thomas, Trauer, Remedios, & Clarke, 2011).

The World Health Organization ([WHO], 1996) has defined QOL as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (p. 5). In end-of-life care, QOL is one of the key indicators for service evaluation (WHO, 2015). Therefore, interventions should be targeted at improving caregivers' QOL.

Generally, the literature supports psychoeducational interventions for improving caregivers' QOL (Harding & Higginson, 2003; Hudson, Remedios, & Thomas, 2010). However, several knowledge gaps were identified (Harding & Higginson, 2003; Hudson et al., 2010). Harding and Higginson (2003) commented on the lack of rigorous design in many reviewed studies with small sample sizes. A review by Hudson et al. (2010) reported that, despite an increase in the quality and quantity of intervention studies, psychosocial support for caregivers in palliative care was still in its early stages. In the Singapore context, to the best of the researchers' knowledge, no study on psychoeducational interventions for caregivers of a person with advanced cancer has been conducted.

Prior to the current study, the researchers conducted a study to understand the QOL and experiences of

Purpose/Objectives: To evaluate the effectiveness of a psychoeducational intervention, the Caring for the Caregiver Programme (CCP).

Design: A pilot randomized, controlled trial, two-group pretest, and repeated post-tests.

Setting: Four home hospice organizations and an outpatient clinic in Singapore.

Sample: 80 caregivers were randomized into experimental and standard care groups.

Methods: Outcomes were measured at baseline, week 4, and week 8 after the intervention. The standard care group received routine home hospice care, and the intervention group received the CCP in addition to routine care.

Main Research Variables: Quality of life (QOL), social support, stress and depression, self-efficacy in self-care, closeness with the patient, rewards, and knowledge.

Findings: Compared to the standard care group, the intervention group reported significantly higher QOL, social support satisfaction and number of supported people, closeness with the patient, self-efficacy in self-care, rewards of caregiving, and knowledge, and lower stress and depression.

Conclusions: The CCP had positive effects on family caregivers of patients with advanced cancer.

Implications for Nursing: A psychoeducational intervention potentially could help caregivers cope with the demands of caregiving.

Key Words: family caregivers; home hospice care; psychoeducational intervention; palliative care

ONF, 42(2), E63–E72. doi: 10.1188/15.ONF.E63-E72

caregivers (Leow, Chan, & Chan, 2014). Caregivers' QOL remained constant over a period of two months without any intervention, and social support satisfaction was essential in improving caregivers' QOL. In addition to requiring help to cope with stress and negative emotions (Funk et al., 2010), the literature also suggested that caregivers need information and improved

communication with the patient (Allen, Hilgeman, Ege, Shuster, & Burgio, 2008; Kwak, Salmon, Acquaviva, Brandt, & Egan, 2007). Therefore, those components were included in the intervention.

Bandura (1985) defined self-efficacy as people's perceptions of their capabilities to cope with unpredictable and stress-producing situations. Bandura had four strategies to increase self-efficacy—personal mastery, vicarious experiences, verbal persuasion, and physiologic feedback. In the area of cancer and palliative care, self-efficacy theory has been applied in symptom management (Given et al., 2006; Kurtz, Kurtz, Given, & Given, 2005). Self-efficacy strategies have the potential to be used in interventions to help caregivers improve their self-efficacy in managing their situation. The current study is the first of its kind, using a self-efficacy framework to develop a psychoeducational intervention for caregivers of patients with advanced cancer.

The current study aimed to evaluate the effectiveness of a psychoeducational intervention, the Caring for the Caregiver Programme (CCP), to enhance the QOL of family caregivers. The researchers hypothesized that caregivers in the intervention group would have higher QOL, social support satisfaction and number of supported people, self-efficacy in self-care, closeness with the patient, rewards of caregiving (RC), and knowledge about information on advanced care planning and community resources, and lower stress and depression compared to caregivers who received standard care.

Methods

The current study was a pilot randomized, controlled trial (RCT) with pre- and post-test measures. Participants were randomized to receive standard care from home hospice providers or standard care plus the CCP, after completion of baseline data. Two post-test measures were obtained at weeks 4 and 8 after the intervention.

A convenience sample of family caregivers was recruited from four home hospice organizations and the outpatient clinic at the National Cancer Centre in Singapore. All caregivers of newly admitted and current patients who were willing to participate in the study were recruited, and the

duration of admission into home hospice was taken into account. Inclusion criteria were: family caregiver of a person with advanced (stage IV) cancer receiving home hospice care who has a prognosis of at least three months based on the estimation of the primary physician; spend at least 20 hours a week with the patient; able to understand and communicate in English; and aged older than 21 years. Exclusion criteria were: domestic helpers and caregivers with known mental health problems or cognitive impairment.

QOL was the primary outcome. Power analysis was based on the effect size of the first 50 participants, their percentage of change in QOL (baseline versus post-test), and t-test results. A medium effect size of 0.4, according to Cohen's (1988) conventions, was assumed. Taking into account an anticipated 35% dropout rate, 80 participants were required. Of the first 50 participants, 12 of 26 in the standard care group did not complete both post-tests, compared to 7 of 24 in the intervention group. Therefore, more participants were allocated to the standard care group (n = 42) than the intervention group (n = 38).

Ethics approval was sought from the National University of Singapore Institutional Review Board (IRB) and SingHealth' Centralised IRB. The purpose and content of the current study were explained to the participants. They were informed that participation was voluntary and they could withdraw from the study at any time. Confidentiality of their identities and research data also was ensured.

Participants randomly were allocated into the standard care or intervention group. A computerized

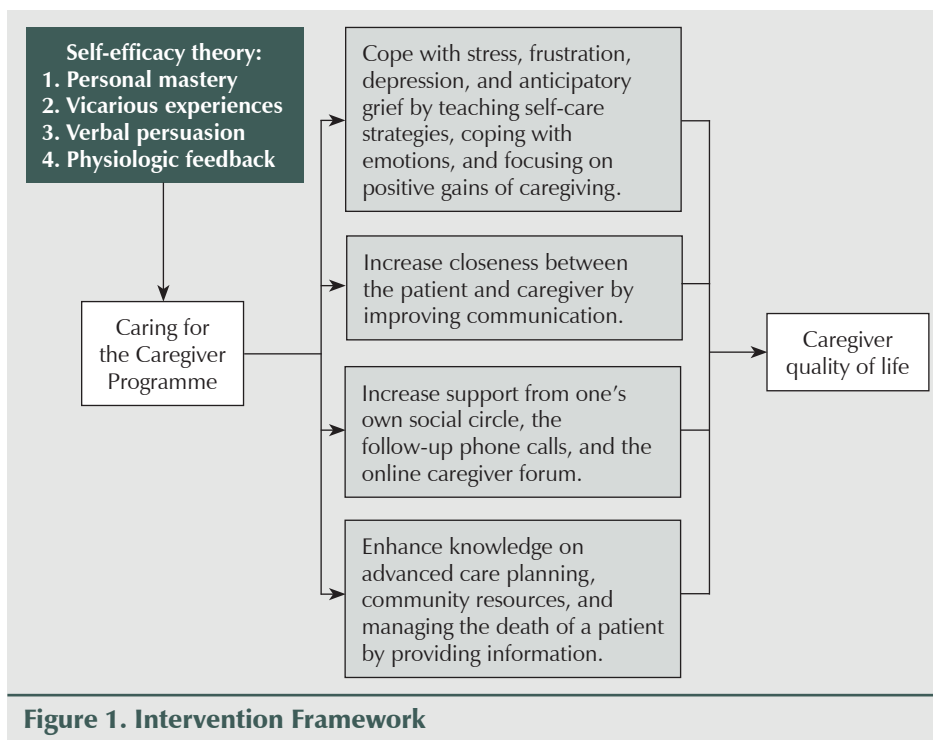


Figure 1. Intervention Framework

Cope with stress, frustration, depression, and anticipatory grief

Video compact disc (VCD)

- Information on signs of stress and burnout
- Self-care strategies and focusing on caregiving gains
- Management of frustration with the patient and family members
- Information on stages of anticipatory grief and managing emotions

Discussion of care plan (40 minutes)

- To understand frequent causes of stress and worry, and to discuss strategies to cope with the stress and worry
- To discuss types of relaxing activities the caregivers used to enjoy, and to discuss suitable times that they can engage in the activity
- To understand frequent causes of frustration and strategies to overcome them
- To discuss ways to cope with depression and anticipatory grief (e.g., talk to family members or friends when feeling sad)
- Information on signs of stress and burnout

Follow-up phone call (15–30 minutes)

- To ask whether the caregiver had commenced the care plan, implemented strategies to relieve stress, reduced frustration and depression, and improved their coping with caregiving
- To evaluate whether the strategies were useful for the caregiver; if not, to suggest alternate methods
- To encourage self-care and regular engagement in activities they found relaxing
- To encourage caregivers to focus on caregiving gains

Online forum (15–30 minutes)

- To provide a platform for caregivers to share information on caregiving, and to obtain advice on problems faced during caregiving

Improve communication between the patient and caregiver

VCD

- To learn methods of sharing memories with and expressing feelings to the patient

Discussion of care plan (40 minutes)

- The frequency of communicating with the patient and appropriate timing to spend more time communicating with the patient (e.g., evenings after dinner)
- To discuss strategies to communicate and share feelings with the patient (e.g., share about day with the patient)

Follow-up phone call (15–30 minutes)

- To evaluate if the communication strategies were useful for the caregiver; if not, to suggest alternate methods

Increase social support for the caregiver

VCD

- To encourage seeking practical help, emotional support, and information from family members, friends, and healthcare workers

Discussion of care plan (40 minutes)

- To understand the current source of social support (e.g., spouse)
- To discuss other possible sources of social support and how to seek support (e.g., share problems with sister when she visits the patient during weekends)

Follow-up phone call (15–30 minutes)

- To convey concern to caregivers by asking how they have been coping, and to provide social and emotional support

Online forum (15–30 minutes)

- To obtain support from other caregivers and to provide support to each other through the forum

Provide caregivers with information on advanced care planning (ACP) and community resources

VCD

- To provide information on ACP
- Community resources: respite care, home help services, websites on palliative and hospice care, caregiver programs, and management of emotions
- To identify signs of dying and provide information on what to do when the patient dies
- Bereavement support

Discussion of care plan (40 minutes)

- To understand knowledge on ACP and suggest ways to discuss ACP with the patient
- To provide information on additional community resources if required

Follow-up phone call (15–30 minutes)

- To ask the caregivers if they required any additional information on community resources

Figure 2. Aims and Content of the Intervention's Components

random number table, generated by the researchers from a Microsoft Excel® spreadsheet, was used to allocate participants into their respective groups. After participants signed the consent form, they were allocated to the standard care or intervention group based on the random number table.

Participants in the standard care group received routine care from their respective home hospice organization, which included regular weekly to monthly visits (about 30 minutes) from a home hospice nurse. The nurse also may have provided psychosocial support, such as counseling, if required by the caregiver.

Psychoeducational Intervention

The intervention group received the CCP in addition to routine care. One palliative care doctor, two palliative care nurses, and three former caregivers of a patient in home hospice care also were invited to validate the CCP prior to its commencement. To maintain

consistency, one nurse researcher delivered the CCP to all participants in the intervention group.

Bandura's (1985) self-efficacy theory guided the development of the CCP. The CCP aimed to help caregivers cope with stress, frustration, depression, and anticipatory grief; improve communication between patients and caregivers; increase social support for caregivers; and provide caregivers with information on advanced care planning and community resources. The researchers expected this to result in an increase in caregivers' QOL because they would be better able to cope with caregiving (see Figure 1).

The CCP consisted of a one-hour face-to-face session, a video clip, two follow-up phone calls, and an invitation to an online social support group. An intervention protocol was used to guide intervention delivery. The initial face-to-face session was delivered within one week of obtaining baseline measures. During the face-to-face session, the caregivers viewed the

Table 1. Caregiver Demographics in the Standard Care and Intervention Groups

Characteristic	Standard Care (n = 42)			Intervention (n = 38)			Total (N = 80)			t	p
	\bar{X}	SD	Range	\bar{X}	SD	Range	\bar{X}	SD	Range		
Age (years)	47.31	11.94	22-72	47	11.73	22-68	47.16	11.76	22-72	0.12	0.91
Caregiving duration (months)	9.78	22.21	0-144	9.22	15.68	0-78	9.52	19.27	0-144	0.13	0.9
Characteristic	n			n			n			χ^2	p
Gender										0.42	0.52
Male	15			11			26			0.63	0.43
Female	27			27			54				
Marital status										1.87	0.6
Single	18			13			31				
Married	24			25			49			9.77	0.14
Race											
Chinese	36			32			68				
Malay	3			5			8				
Indian	2			1			3				
Caucasian	1			–			1				
Religion										1.41	0.49
None	6			10			16				
Buddhist	20			7			27				
Christian	9			10			19				
Islam	3			5			8				
Taoist	1			1			2			7.16	0.31
Catholic	1			4			5				
Hindu	2			1			3				
Education level											
Primary school and below	5			4			9			7.16	0.31
Secondary school	17			11			28				
Tertiary education	20			23			43				
Relationship with patient										7.16	0.31
Child	23			23			46				
Spouse	9			11			20				
Sibling	3			–			3				
Parent	2			–			2				
Niece	–			1			1				
Daughter-in-law	4			3			7				
Grandchild	1			–			1				

20-minute video and developed a care plan with the nurse researcher to enable the intervention to be tailored to their individual needs. The discussion of the care plan required about 40 minutes. At the end of the session, caregivers' email addresses were obtained and they were invited to a caregiver forum.

The nurse researcher made two follow-up phone calls at weeks 3 and 6. During the calls, the nurse researcher reviewed the care plan with the caregiver, encouraged the caregiver to engage in self-care activities and focus on the positive gains of caregiving, and provided support. The session was guided by a protocol, and the duration varied from 15–30 minutes, according to the individual caregiver's needs. The aims and content of the teaching session are in Figure 2.

Bandura's (1985) four strategies—personal mastery, vicarious experiences, verbal persuasion, and physiologic feedback—were adopted. To achieve personal mastery, self-instructed performance was used. To

achieve self-instructed performance (e.g., coping with stress), the caregivers were provided with knowledge on the subject (e.g., signs of stress) in the video so that they would be aware that they were experiencing stress. Strategies to reduce stress (e.g., listening to music) were suggested in the video and discussed during the development of the care plan to ensure that they could be employed and the goals could be achieved. To achieve vicarious experience, the video that featured a caregiver and patient with advanced cancer was provided. Studies have found that modeling is more effective when the models in the video are similar to the targeted audience (Bandura, 1985; Clark & Lester, 2000). The video addressed issues faced by caregivers and strategies used to cope with them. Verbal persuasion to participate in self-care activities and seek social support was provided using suggestions and exhortation during the face-to-face session, follow-up phone calls, and online forum. Physiologic feedback was enhanced by

attribution, and the participants were strongly motivated to participate in activities after experiencing pleasant outcomes. Attribution was provided by the nurse researcher during the follow-up phone calls. The nurse researcher asked if the caregivers experienced better outcomes and attributed them to engaging in the suggested activities. When caregivers experienced pleasant outcomes from the CCP, they were more motivated to engage in the suggested activities.

Measures

At baseline, caregiver sociodemographic data (age, gender, marital status, race, religion, relationship to the patient, financial status, education status, household income per capita, and duration of caregiving) and patient sociodemographic data (age, gender, cancer type, time since diagnosis, and duration with home hospice) were obtained from the caregivers. Outcome measures were obtained from the caregivers at baseline, week 4, and week 8. All outcome measures have been widely used in the area of palliative care, or with caregivers of a family member with cancer, with well-established reliability and validity. Content validity of the survey questionnaires was sought from a panel of five experts in the area of palliative care (two doctors, two nurses, and one social worker), using the content validity index (Lawshe, 1975), to ensure relevance of the questionnaires in the Singapore culture for caregivers of patients in home hospice care. The questionnaires were found to have high content validity, and good psychometric properties were reported.

The Caregiver Quality of Life Index–Cancer (CQOLC) was used to measure caregivers' QOL (Weitzner, Jacobsen, Wagner, Friedland, & Cox, 1999). It consisted of 35 items in four subscales—burden, disruptiveness, positive adaptation, and financial concerns. The items were rated on a five-point Likert-type scale, with higher scores indicating better QOL. The test-retest reliability was 0.95, Cronbach alpha was 0.91, and content validity was 89%. The CQOLC was the primary outcome.

Social support was measured by the Social Support Questionnaire (Sarason, Sarason, Shearin, & Pierce, 1987), which consists of 12 items in two subscales. Six questions in each subscale measured caregivers' satisfaction level and number of support people. Items were rated on a six-point Likert-type scale. Higher scores indicated higher social support satisfaction and number of support people. Cronbach alpha was 0.91–0.93, and content validity was 92%.

Caregivers' stress and depression were measured using the depression and stress subscales from the Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995). The questionnaire consisted of 14 questions, rated on a four-point Likert-type scale. Higher scores indicated higher levels of stress and depression. Cronbach alpha was 0.9 for stress and 0.91 for depression. Content validity was 91%.

The relationship between the caregiver and patient was measured by the general closeness scale (Mangen & Westbrook, 1988), consisting of four items rated on a four-point Likert-type scale. Higher scores indicated more closeness between the caregiver and patient. Cronbach alpha was 0.85, and content validity was 90%.

Self-efficacy was measured by the self-efficacy in self-care scale (SESCS) (Steffen, McKibbin, Zeiss, Gallagher-Thompson, & Bandura, 2002). Two subscales were used—self-efficacy in obtaining respite and self-efficacy in controlling upsetting thoughts about the caregiving situation. The SESCO consisted of 10 items, rated on a 10-point Likert-type scale. Higher scores indicated higher self-efficacy. Cronbach alpha was 0.76, and content validity was 90%.

Positive gains of caregiving were measured using the RC scale (Archbold & Stewart, 1996). Five questions were removed because they focused on caregivers of older adults and of people living in a nursing home. The final questionnaire consisted of 10 questions, rated on a five-point Likert-type scale. Higher scores indicated a higher perception of positive gains. Cronbach alpha was 0.77–0.94, test-retest reliability was 0.82, and content validity was 100%.

Caregivers' perceived knowledge of advanced care planning, community resources, and managing the death of a patient was measured with six questions, rated on a five-point Likert-type scale. The questions were developed by the nurse researcher to evaluate the effectiveness of the education from the video on information about advanced care planning and community resources. The scale had content validity of 97%.

Data Collection

The current study was conducted from September 2012 to June 2013. Staff at the study venues identified

Table 2. Patient Characteristics in the Standard Care and Intervention Groups

	Standard Care (n = 42)	Intervention (n = 38)	Total (N = 80)
Cancer Type ^a	n	n	n
Lung	14	11	25
Colorectal	5	2	7
Ear, nose, and throat	2	1	3
Female reproductive	2	–	2
Liver	3	4	7
Breast	2	3	5
Stomach	1	4	5
Brain	4	2	6
Other	9	11	20

^a $\chi^2 = 6.81$; $p = 0.56$

potential participants. Those who agreed to participate in the study were referred to the research team. After the caregivers verbally agreed to participate in the study, the nurse researchers met them at a place of their convenience, provided additional details on the study, answered any questions they had, and obtained written consent. Baseline data then were obtained. The two post-test surveys were conducted by phone by a research assistant who was not part of the study team and was blinded to group allocation. The researcher also recorded if the participant received counseling from the hospice service or other sources during the study period. If the study participant received counseling during the study period, the researchers analyzed whether they had better outcomes. However, no participants received counseling for a comparison to be made.

Of the 80 recruits, 56 completed post-test 1, 47 completed post-test 2, and 43 completed both post-tests. Loss to follow-up in the intervention group at post-test 1 was largely attributed to patient death ($n = 5$), the caregiver being too busy ($n = 2$), and the caregiver being unreachable ($n = 1$). At post-test 2, loss to follow-up also was largely attributed to patient death ($n = 8$) and the caregiver being too busy ($n = 2$). In the standard care group, loss at post-test 1 was attributed to patient death ($n = 6$) and the caregiver being too busy ($n = 6$). Other reasons included the patient no longer receiving home hospice care ($n = 1$), the caregiver finding the questions intrusive ($n = 1$), and the caregiver being unreachable ($n = 2$). At post-test 2, loss to follow-up was largely attributed to patient death ($n = 15$), the caregiver being too busy ($n = 4$), and other reasons, such as the patient no longer receiving home hospice care ($n = 1$), the caregiver finding the questions intrusive ($n = 1$), and the caregiver being unreachable ($n = 2$). The retention rate was higher for post-test 2 ($\chi^2 = 8.72$, $p = 0.00$), and both post-tests ($\chi^2 = 6.66$, $p = 0.01$) in the intervention group compared to the standard care group.

Statistical Analysis

SPSS®, version 18.0, was used. Descriptive statistics were used to describe the participants' profiles. Baseline information was compared between participants in the standard care and intervention groups, using t-test and chi-square tests, to ensure homogeneity. Two-way analysis of variance, with repeated measures, was used to examine significant differences between post-test outcomes. Mauchly's Test of Sphericity was conducted, and Greenhouse-Geisser correction was performed for p values for significant values. A $p \leq 0.05$ was used to determine if results were significant (Plichta Kellar & Kelvin, 2012). An intention-to-treat method was used to manage missing data from participant dropout.

Table 3. Outcomes Comparison Between Groups

Measure	Standard Care (n = 42)		Intervention (n = 38)	
	\bar{X}	SD	\bar{X}	SD
Caregiver Quality of Life Index–Cancer				
Baseline	90.9	20.57	89.44	19.82
Week 4	84.4	20.48	100.05	17.61
Week 8	84.43	23.57	105.66	15.95
Burden subscale				
Baseline	25.93	8.38	24.53	7.32
Week 4	23.67	9.38	28.76	6.19
Week 8	24.5	9.7	30.42	5.6
Disruptiveness subscale				
Baseline	20.95	5.51	19.11	6.39
Week 4	18.79	6.32	21.11	4.70
Week 8	18.83	6.77	22.92	4.20
Positive adaptation subscale				
Baseline	14.19	6.63	17.63	6.26
Week 4	13.81	5.53	19	5.24
Week 8	13.29	5.92	19.84	5.06
Financial concerns subscale				
Baseline	8.74	3.39	7.39	4.71
Week 4	8.79	3.06	8.37	4.41
Week 8	8.19	3.77	8.47	4.51
Social support satisfaction				
Baseline	31.17	5.19	29.92	5.12
Week 4	29.81	4.88	31.21	4.73
Week 8	28.98	5.99	34.42	2.87
Social support number				
Baseline	12.5	9.06	13.32	8.97
Week 4	11	7.77	16.34	9.43
Week 8	10.62	8.16	17.13	8.88
Stress and depression				
Baseline	6.78	7.26	6.86	6.68
Week 4	9.17	9.26	4.37	4.34
Week 8	8.86	9.53	3.16	3.94
Stress subscale				
Baseline	4.31	4.23	4.76	4.06
Week 4	5.69	5.17	3.13	2.54
Week 8	5.4	5.25	2.47	2.54
Depression subscale				
Baseline	2.48	3.68	2.11	3.06
Week 4	3.48	4.64	1.24	2.16
Week 8	3.45	4.74	0.68	1.89
General closeness scale				
Baseline	12.02	3.61	12	3.17
Week 4	11.33	3.78	13.05	2.9
Week 8	10.98	3.71	13.47	2.6
Caregiver self-care self-efficacy scale				
Baseline	86.07	11.93	76.79	18.2
Week 4	78.9	18.96	84.79	13.68
Week 8	77.5	20.93	88.32	9.74
Obtaining respite scale				
Baseline	42.12	8.38	36.66	12.37
Week 4	38.88	12.38	41.21	9.11
Week 8	38.21	12.82	43.16	5.94
Controlling upsetting thoughts subscale				
Baseline	43.95	5.86	40.13	10.54
Week 4	40.02	9.21	43.58	7.71
Week 8	39.29	10.17	45.16	6.38

(Continued on the next page)

Table 3. Outcomes Comparison Between Groups (Continued)

Measure	Standard Care (n = 42)		Intervention (n = 38)	
	\bar{X}	SD	\bar{X}	SD
Rewards of caregiving				
Baseline	25.76	12.45	29.68	10.27
Week 4	24.95	13.33	33.71	8.2
Week 8	24.31	13.51	35.18	7.4
Knowledge				
Baseline	4.62	3.28	3.66	4.6
Week 4	5.33	3.55	12.58	6.07
Week 8	5.52	3.7	13.79	6.13

Results

Eighty-six participants were assessed for eligibility, and 80 were recruited (42 in the standard care group, 38 in the intervention group). Table 1 summarizes their sociodemographic data, and Table 2 summarizes the patients' characteristics. No statistically significant differences were found in the caregivers' sociodemographic data and the patients' characteristics between the standard care and intervention groups. The majority of the caregivers were females ($n = 54$) and married ($n = 49$). The caregivers' age ranged from 22–72 years, and the mean age was 47.2 years ($SD = 11.8$). The patients were aged 21–102 years, with a mean age of 69 years ($SD = 15.2$), and 25 had lung cancer.

All 38 participants in the intervention group watched the video, completed the face-to-face meeting, and completed the first follow-up phone call. Thirty-two participants received the second follow-up phone call. Only six participants who cared for a patient who passed away did not receive the follow-up phone call. Two caregivers joined the caregiver forum, but none of them posted in it. In addition, 10 caregivers visited the forum but did not register themselves.

Over the three time points, the interaction terms, between group by time, were significant for all outcomes ($p < 0.05$) (see Table 3). Participants in the intervention group showed significantly higher improvement in all seven outcome measures when compared to the standard care group. They reported significantly higher QOL ($p = 0.00$), social support satisfaction ($p = 0.00$) and number of supported persons ($p = 0.00$), closeness with the patient ($p = 0.00$), self-efficacy in self-care ($p = 0.00$), RC ($p = 0.00$), and knowledge ($p = 0.00$), and lower stress and depression ($p = 0.00$). Time effect was significant only for QOL ($p = 0.01$), the burden subscale ($p = 0.004$), RC ($p = 0.03$), and knowledge ($p = 0.00$). Group effect was significant for QOL ($p = 0.005$), the positive adaptation subscale ($p = 0.00$), social support

satisfaction ($p = 0.03$), stress and depression ($p = 0.02$), depression ($p = 0.02$), RC ($p = 0.001$), and knowledge ($p = 0.00$) (see Table 4).

Discussion

The current study aimed to evaluate the effects of a newly developed psychoeducational program for family caregivers of a person with advanced cancer. The video and follow-up phone call were well received by the caregivers. The caregivers appeared to be less receptive to the online forum. Overall, the CCP was well accepted by caregivers, and the intervention was feasible.

The CCP in the current study was found to be effective in enhancing QOL, social support, self-efficacy in self-care, closeness with the patient, and RC; reduced the caregivers' stress and negative emotions; and provided them with knowledge on advanced care planning and community resources. The higher QOL in the intervention group was a significant finding because QOL has been perceived as an important outcome indicator for patients and their caregivers in end-of-life care (WHO, 2015).

Caregivers' QOL could have been improved through targeting four areas—helping caregivers cope with stress, frustration, depression and anticipatory grief; improving caregivers' communication with the patient; providing caregivers with information on advanced care planning, community resources, and managing the death of a patient; and increasing social support. The use of Bandura's (1997) self-efficacy strategies appeared to be a useful framework in helping family caregivers.

Some past family interventions have focused on the positive aspects of caregiving (Duggleby et al., 2007; Hudson, Aranda, & Hayman-White, 2005; Kwak et al., 2007). In the current study, apart from focusing on the positive aspects of caregiving, the CCP provided caregivers with practical tips on managing frustration using case scenarios. The results suggested that the intervention was useful because the caregivers learned from the demonstration in the video and were able to apply the skills in real-life settings.

Many past family interventions did not specifically help caregivers cope with anticipatory grief (Cameron, Shin, Williams, & Stewart, 2004; Hudson et al., 2005; Walsh et al., 2007). In the current study, caregivers were provided with information on the four stages of anticipatory grief through the video. This included awareness of feelings of sadness, regretting past arguments, being afraid of the impending death of the patient, and imagining life without the patient, which are common thoughts and feelings in the face of death of a loved one (Wong & Chan, 2007). The knowledge of the phases of anticipatory grief might help caregivers understand the reasons why they were feeling sad. The attainment of personal mastery might help them cope with their grief. Future psychoeducational

Table 4. Comparison of Time and Group Effects

Variable	f	p
Caregiver Quality of Life Index–Cancer		
Time ^a	4.83	0.01
Group ^b	8.41	0.005
Time by group ^c	28.24 ^d	–
Burden subscale		
Time ^a	6.12	0.004
Group ^b	3.88	0.05
Time by group ^c	19.65 ^d	–
Disruptiveness subscale		
Time ^a	2.05	0.13
Group ^b	1.76	0.19
Time by group ^c	17.92 ^d	–
Positive adaptation subscale		
Time ^a	1.13	0.3
Group ^b	18.04	–
Time by group ^c	5.96 ^d	0.01
Financial concerns subscale		
Time ^a	2.51	0.09
Group ^b	0.34	0.56
Time by group ^c	4.2	0.02
Social support satisfaction		
Time ^a	0.13	0.83
Group ^b	5.25	0.03
Time by group ^c	17.42 ^d	–
Social support number		
Time ^a	1.7	0.2
Group ^b	1.44	0.23
Time by group ^c	14.76 ^d	–
Stress and depression		
Time ^a	1.43	0.24
Group ^b	5.35	0.02
Time by group ^c	16.55 ^d	–
Stress subscale		
Time ^a	1.87	0.17
Group ^b	3.88	0.05
Time by group ^c	16.52 ^d	–
Depression subscale		
Time ^a	0.72	0.43
Group ^b	5.74	0.02
Time by group ^c	12.48 ^d	–
General closeness scale		
Time ^a	0.57	0.51
Group ^b	3.92	0.05
Time by group ^c	17.95 ^d	–
Caregiver self-care self-efficacy scale		
Time ^a	0.64	0.49
Group ^b	0.58	0.45
Time by group ^c	30.44 ^d	–
Obtaining respite subscale		
Time ^a	1.04	0.33
Group ^b	0.08	0.78
Time by group ^c	18.12 ^d	–
Controlling upsetting thoughts subscale		
Time ^a	0.17	0.8
Group ^b	1.19	0.28
Time by group ^c	24.78 ^d	–
Rewards of caregiving		
Time ^a	4.62	0.03
Group ^b	10.97	0.001
Time by group ^c	12.6 ^d	–
Knowledge		
Time ^a	94.41	–
Group ^b	28.42	–
Time by group ^c	66.92 ^d	–

^a Main effect for time^b Main effect for group^c Interaction effect of time by group^d Mauchly's Test of Sphericity significant, Greenhouse-Geisser correction used

interventions for family caregivers of people with advanced cancer could include this component.

Caregiver-patient communication and increasing closeness with the patient seldom have been addressed in interventions for caregivers (Allen et al., 2008; Kwak et al., 2007). This component was included in the current study. The results suggested that the intervention group experienced greater closeness with the patient. Nurses can strongly encourage caregivers to consciously spend time and communicate with the patient. Increasing communication and closeness is important because it can have a positive impact on caregivers' psychological well-being (Wang, Shyu, Chen, & Yang, 2011; Yates, Tennstedt, & Chang, 1999).

The participants in the intervention group had significantly higher self-efficacy in controlling upsetting thoughts when compared to the standard care group. This could be related to information provided by the CCP and support from the follow-up phone calls. Participants in the standard care group experienced a decline in overall self-efficacy in controlling upsetting thoughts over the three time points. This decline was more prominent between baseline and post-test 1 and remained constant from post-test 1 to post-test 2. The decline in the participants' ability to control upsetting thoughts over time in the standard care group suggested that caregivers could experience an increase in upsetting thoughts over time without any intervention.

The current study found that the intervention group had a significant increase in social support and satisfaction, while those in the standard care group experienced a decline in both of those outcomes. The CCP may have encouraged caregivers in the intervention group to seek support from family members and friends.

Limitations

The intervention was conducted in English, and only participants who understood English were recruited into the study. Although English is the common language among Singaporeans, some non-English-speaking caregivers were likely to be older adults or have a lower education status. The exclusion of these caregivers could result in bias in the sample.

A random sampling method of all caregivers could not be conducted, which may lead to selection bias on participant characteristics. The current study was conducted in selected centers in Singapore that were chosen by convenience. The small sample size also could limit the generalizability of the study findings.

Implications for Practice

The CCP could be a potentially effective psychoeducational intervention for caregivers of a person with advanced cancer in home hospice care and could be

Knowledge Translation

The Caring for the Caregiver Programme (CCP) could be a potentially effective psychoeducational intervention for caregivers of a person with advanced cancer.

The CCP can be provided to all caregivers as part of standard hospice care.

The self-efficacy theory can serve as the framework for development of psychoeducational interventions for caregivers.

provided as part of standard care. The video in the CCP could be distributed to home hospice care facilities. The intervention protocol could be provided to home hospice nurses to enable them to deliver the CCP according to the guidelines. Nurses could be trained for the CCP, including the use of the video and care plan and the follow-up phone calls.

The face-to-face session of the CCP could be conducted individually or in groups, and its effects could be evaluated further. Group sessions would enable caregivers to discuss the content of the CCP and build networks and reduce resources required when compared to individual sessions.

The current study was a pilot RCT. Additional multicenter trials are needed to study the effects of the CCP. The CCP that was developed in the current study could be translated to other languages to cater to non-English-speaking caregivers. The CCP also could be extended to caregivers of patients receiving palliative care who are not in home hospice care, and

the impact of the intervention could be evaluated. The CCP that was developed in the current study also could be implemented in other Asian countries with slight modification, and its effects and acceptability could be evaluated.

Conclusion

The current study is the first clinical evaluation of a psychoeducational intervention in Singapore and the Asian region for caregivers of a person with advanced cancer. It was a pilot RCT to examine the short- and long-term effects of the CCP. The results of the current study supported that the CCP could be a promising intervention for family caregivers. It could be incorporated into standard care and be part of home hospice services. The CCP could be implemented in other centers in Singapore and other Asian regions with its effects further evaluated.

The authors gratefully acknowledge the healthcare professionals and former caregivers who gave feedback on the CCP, the staff at the study venue for assisting in participant recruitment, and all the participants in the study.

Mabel Leow, BSc (Hons), is a research nurse at the National Skin Centre in Singapore; Sally Chan, PhD, MSc, BSc, RN, FAAN, is a professor and head in the School of Nursing and Midwifery at the University of Newcastle in New South Wales in Australia; and Moon Fai Chan, PhD, CStat, is an associate master in the Lui Che Woo College at the University of Macau in China. This study was supported by a grant from the Lien Centre for Palliative Care (R-545-000-050-720). Leow can be reached at mabel.leow@nus.edu.sg, with copy to editor at ONFEditor@ons.org. (Submitted August 2014. Accepted for publication October 1, 2014.)

References

- Allen, R.S., Hilgeman, M.M., Ege, M.A., Shuster, J.L., Jr., & Burgio, L.D. (2008). Legacy activities as interventions approaching the end of life. *Journal of Palliative Medicine*, 11, 1029–1038. doi:10.1089/jpm.2007.0294
- Archbold, P., & Stewart, B. (1996). *Family caregiving inventory*. Portland, OR: Oregon Health Sciences University.
- Bandura, A. (1985). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Worth Publishers.
- Cameron, J.I., Shin, J.L., Williams, D., & Stewart, D.E. (2004). A brief problem-solving intervention for family caregivers to individuals with advanced cancer. *Journal of Psychosomatic Research*, 57, 137–143. doi:10.1016/S0022-3999(03)00609-3
- Chow, N. (2009). Filial piety in Asian Chinese communities. In K. Sung & B.J. Kim (Eds.), *Respect for the elderly: Implications for human service providers* (pp. 319–324). Lanham, MD: University Press of America.
- Clark, M.C., & Lester, J. (2000). The effect of video-based interventions on self-care. *Western Journal of Nursing Research*, 22, 895–911. doi:10.1177/019394590002200805
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Routledge.
- Duggleby, W., Wright, K., Williams, A., Degner, L., Cammer, A., & Holtslander, L. (2007). Developing a living with hope program for caregivers of family members with advanced cancer. *Journal of Palliative Care*, 23, 24–31.
- Funk, L., Stajduhar, K., Toye, C., Aoun, S., Grande, G., & Todd, C. (2010). Part 2: Home-based family caregiving at the end of life: A comprehensive review of published qualitative research (1998–2008). *Palliative Medicine*, 24, 594–607. doi:10.1177/0269216310371411
- Given, B., Given, C.W., Sikorskii, A., Jeon, S., Sherwood, P., & Rahbar, M. (2006). The impact of providing symptom management assistance on caregiver reaction: Results of a randomized trial. *Journal of Pain and Symptom Management*, 32, 433–443. doi:10.1016/j.jpainsymman.2006.05.019
- Harding, R., & Higginson, I.J. (2003). What is the best way to help caregivers in cancer and palliative care? A systematic literature review of interventions and their effectiveness. *Palliative Medicine*, 17, 63–74. doi:10.1191/0269216303pm667oa
- Hudson, P.L., Aranda, S., & Hayman-White, K. (2005). A psychoeducational intervention for family caregivers of patients receiving palliative care: A randomized controlled trial. *Journal of Pain and Symptom Management*, 30, 329–341. doi:10.1016/j.jpainsymman.2005.04.006
- Hudson, P.L., Remedios, C., & Thomas, K. (2010). A systematic review of psychosocial interventions for family carers of palliative care patients. Retrieved from <http://bit.ly/1ySNEI2>

- Hudson, P.L., Thomas, K., Trauer, T., Remedios, C., & Clarke, D. (2011). Psychological and social profile of family caregivers on commencement of palliative care. *Journal of Pain and Symptom Management, 41*, 522–534. doi:10.1016/j.jpainsymman.2010.05.006
- Kurtz, M.E., Kurtz, J.C., Given, C.W., & Given, B. (2005). A randomized, controlled trial of a patient/caregiver symptom control intervention: Effects on depressive symptomatology of caregivers of cancer patients. *Journal of Pain and Symptom Management, 30*, 112–122. doi:10.1016/j.jpainsymman.2005.02.008
- Kwak, J., Salmon, J.R., Acquaviva, K.D., Brandt, K., & Egan, K.A. (2007). Benefits of training family caregivers on experiences of closure during end-of-life care. *Journal of Pain and Symptom Management, 33*, 434–445. doi:10.1016/j.jpainsymman.2006.11.006
- Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*, 563–575. doi:10.1111/j.1744-6570.1975.tb01393.x
- Leow, M.Q., Chan, M.F., & Chan, S.W. (2014). Predictors of change in quality of life of family caregivers of patients near the end of life with advanced cancer. *Cancer Nursing, 37*, 391–400.
- Lovibond, S.H., & Lovibond, P.F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney, Australia: Psychology Foundation.
- Mangen, D.J., & Westbrook, G.J. (1988). Measuring intergenerational norms. In D.J. Mangen, V.L. Bengtson, & P.H. Landry (Eds.), *Measurement of intergenerational relations* (pp. 187–206). Thousand Oaks, CA: Sage.
- Plichta Kellar, S., & Kelvin, E. (2012). *Munro's statistical methods for health care research* (6th ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*, 497–510. doi:10.1177/0265407587044007
- Steffen, A.M., McKibbin, C., Zeiss, A.M., Gallagher-Thompson, D., & Bandura, A. (2002). The revised scale for caregiving self-efficacy: Reliability and validity studies. *Journals of Gerontology, 57*, 74–86.
- Tsigaropoulos, T., Mazaris, E., Chatzidarellis, E., Skolarikos, A., Varkarakis, I., & Deliveliotis, C. (2009). Problems faced by relatives caring for cancer patients at home. *International Journal of Nursing Practice, 15*, 1–6. doi:10.1111/j.1440-172X.2008.01725.x
- Walsh, K., Jones, L., Tookman, A., Mason, C., McLoughlin, J., Blizard, R., & King, M. (2007). Reducing emotional distress in people caring for patients receiving specialist palliative care. *British Journal of Psychiatry, 190*, 142–147. doi:10.1192/bjp.bp.106.023960
- Wang, Y.N., Shyu, Y.I., Chen, M.C., & Yang, P.S. (2011). Reconciling work and family caregiving among adult-child family caregivers of older people with dementia: Effects on role strain and depressive symptoms. *Journal of Advanced Nursing, 67*, 829–840.
- Weitzner, M.A., Jacobsen, P.B., Wagner, H.J., Jr., Friedland, J., & Cox, C. (1999). The Caregiver Quality of Life Index-Cancer (CQOLC) scale: Development and validation of an instrument to measure quality of life of the family caregiver of patients with cancer. *Quality of Life Research, 8*, 55–63. doi:10.1023/A:1026407010614
- Wong, M.S., & Chan, S.W. (2007). The experience of Chinese family members of terminally ill patients—A qualitative study. *Journal of Clinical Nursing, 16*, 2357–2364. doi:10.1111/j.1365-2702.2007.01943.x
- World Health Organization. (1996). *WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment*. Retrieved from http://who.int/mental_health/media/en/76.pdf
- World Health Organization. (2015). WHO definition of palliative care. Retrieved from <http://bit.ly/17eOVmf>
- Yates, M.E., Tennstedt, S., & Chang, B.H. (1999). Contributors to and mediators of psychological well-being for informal caregivers. *Journals of Gerontology, 54*, 12–22. doi:10.1093/geronb/54B.1.P12