Original Article

Family Caregivers' Subjective Caregiving Burden, Quality of Life, and Depressive Symptoms Are Associated With Terminally Ill Cancer Patients' Distinct Patterns of Conjoint Symptom Distress and Functional Impairment in Their Last Six Months of Life

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Abstract

Context. Family caregivers constitute a critical component of the end-of-life care system with considerable cost to themselves. However, the joint association of terminally ill cancer patients' symptom distress and functional impairment with caregivers' subjective caregiving burden, quality of life (QOL), and depressive symptoms remains unknown.

Objectives/Methods. We used multivariate hierarchical linear modeling to simultaneously evaluate associations between five distinct patterns of conjoint symptom distress and functional impairment (symptom-functional states) and subjective caregiving burden, QOL, and depressive symptoms in a convenience sample of 215 family caregiver—patient dyads. Data were collected every 2 to 4 weeks over patients' last 6 months.

Results. Caregivers of patients in the worst symptom-functional states (States 3—5) reported worse subjective caregiving burden and depressive symptoms than those in the best two states, but the three outcomes did not differ between caregivers of patients in State 3 and States 4—5. Caregivers of patients in State 5 endured worse subjective caregiving burden and QOL than those in State 4. Caregivers of patients in State 4 suffered worse subjective caregiving burden and depressive symptoms but comparable QOL to those in State 2.

Conclusion. Patients' five distinct, conjoint symptom-functional states were significantly and differentially associated with their caregivers' worse subjective caregiving burden, QOL, and depressive symptoms while caring for patients over their last 6 months. J Pain Symptom Manage 2019;57:64—72. © *2018 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

Key Words

Caregiving burden, quality of life, depressive symptoms, symptom distress, functional impairment, terminally ill cancer, oncology

Introduction

Family caregivers of terminally ill cancer patients shoulder the burden of end-of-life (EOL) care due to the longstanding trend toward accelerating patients' hospital discharge.[1] This burden is especially heavy for family caregivers in Asian cultures who

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commonly feel obligated by filial piety to assume caregiving roles.[2] Family caregivers, therefore, constitute a critical component of the EOL care system by avoiding the substantial costs of formal services that society would otherwise pay.[3,4] However, family caregivers have been shown by decades of research to perform this important service for society and their loved ones at considerable cost to themselves. Caregivers are vulnerable to diseases,[5,6] psychological distress,[1,7,8] and increased mortality[9,10] due to carrying a tremendous caregiving burden. Terminally ill cancer patients' symptom distress[11–13] and functional impairment[12,14,15] are significantly associated with caregiving burden and may evoke caregivers' compassion for patients' suffering,[16] thus predisposing caregivers to substantial depressive/anxiety symptoms[12,17–21] and deteriorating quality of life (QOL).[22,23]

Therefore, terminally ill cancer patients' disease burden, as manifested by physical symptom distress and functional impairment, is an important risk factor for caregivers' subjective caregiving burden, worse QOL, and psychological distress. However, of the previous studies[11–15,18–23] on the relationship between terminally ill cancer patients' symptom distress or functional impairment and caregivers' subjective caregiving burden, psychological well-being, and QOL, three were cross-sectional[11,14,22] and three did not follow caregivers to the patient's death,[12,18,20] thus failing to capture the impact of increasing disease burden on caregivers as the patient's death approached. Five studies were longitudinal,[13,15,19,21,23] but symptom distress and functional impairment were evaluated independently. However, symptom distress and functional impairment do not necessarily deteriorate synchronously at EOL,[24–26] and the heterogeneity in their changes has only been studied conjointly for pediatric cancer patients at EOL.[26] Thus, the joint association of terminally ill cancer patients' symptom distress and functional impairment with their family caregivers' subjective caregiving burden, psychological distress, and QOL remains unknown.

We identified terminally ill cancer patients' five distinct, worsening conjoint symptom-functional states[27] and found that patients in any two distinct symptom-functional states had significantly differing risks of subsequent death.[27] These symptom-functional states contributed to patients' deteriorating QOL, anxiety symptoms, and depressive symptoms, but each state was negatively and uniquely associated with psychological well-being in patients' last year of life.[28] Since family members respond to cancer as an integrated emotional system[17,29] and caregivers' and patients' well-being are intertwined, we designed this study to evaluate how these five distinct symptom-functional states are associated with caregivers' subjective caregiving burden, QOL, and depressive symptoms over terminally ill cancer patients' last 6 months of life.

Methods

Design and Sample

Data for this study came from a longitudinal study on the quality of death and dying in a convenience sample of family caregiver–terminally ill cancer patient dyads recruited in 2009–2012 and followed through 2015.[30] Detailed information has been reported on sampling[30] and methods for identifying and examining changes in patients' distinct symptom-functional states between consecutive time points.[27] Briefly, oncologists referred terminally ill adult Taiwanese cancer patients when they recognized the patient's disease as progressive and unresponsive to curative treatments and the patient was cognitively competent to participate. Adult caregivers were included if they were identified by patients as the family member most involved in the patient's daily care, were willing to participate, and could communicate with data collectors. Patient and caregiver participants were recruited independently. This study includes only data from patient-caregiver dyads. Patient or caregiver participants were excluded if their dyadic partner was unavailable, refused, or withdrew from participation. Each participating dyad was interviewed by two trained, experienced oncology nurses to collect all data separately when convenient for each dyadic partner, but within one week of each other for their data to be treated as in the same wave. Patients were assessed for symptom distress and functional impairment, whereas caregivers were evaluated for subjective caregiving burden, QOL, and depressive symptoms every 2 to 4 weeks using instruments indicated below for patient and caregiver participants, respectively. Dyadic participants were assessed when the patient was hospitalized or returned for clinical care until participants declined participation, or the patient died. The study site's ethical committee approved the study (98-0476B), and each participant individually signed informed consent.

Measures

All instruments used in this study were well established and commonly used for terminally ill cancer patients and their caregivers, with strong psychometric properties. Herein, we only report the Cronbach's α for each instrument.

Symptom-Functional States. Patient physical symptom distress was measured by the 13-item Symptom Distress Scale that measures common distressing symptoms for cancer patients (i.e., pain, dyspnea, nausea/vomiting, anorexia, constipation, and insomnia).[31] Scores range from 13 to 65, with higher scores indicating greater symptom distress (Cronbach's alpha = 0.80 in this study). Patient functional impairment was measured by the 10-item Enforced Social Dependency Scale.[32] Scores range from 10 to 51, with higher Enforced Social Dependency Scale scores reflecting greater impairment for personal and social functioning (Cronbach's alpha = 0.90 in this study). We formerly identified five, distinct worsening conjoint symptom-functional states (representing worsening cumulative functional impairment at EOL): 1) mild symptom distress with high functioning, 2) moderate symptom distress with mild functional impairment, 3) severe symptom distress with moderate functional impairment, 4) moderate symptom distress with severe functional impairment, and 5) profound symptom distress and functional impairment.[27]

Caregiver Subjective Caregiving Burden. Caregiver subjective caregiving burden was measured by the Caregiver Reaction Assessment.[33] Total scores range from 24 to 120. Higher scores represent stronger negative caregiving impact on schedule, health, finances, caregiver support, and self-esteem (Cronbach's alpha = 0.88 in this study).

Caregiver QOL. Caregiver QOL was measured with the 35-item Caregiver Quality of Life Index-Cancer (CQOLC).[34] The CQOLC measures the effect of cancer patients' illness and caregiving on caregivers' physical, emotional, social, and family functioning in four subscales: burden, disruptiveness, positive adaptation, and financial concerns. CQOLC scores range from 0 to 140, with higher scores indicating better QOL (Cronbach's alpha = 0.92 in this study).

Caregivers' Depressive Symptoms. Caregivers' depressive symptoms were assessed by the 20-item Center for Epidemiological Studies Depression Scale (CES-D).[35] The CES-D has four subscales: positive emotions, depressive emotions, physical activities, and social difficulties. CES-D scores range from 0 to 60; higher scores indicate more depressive symptoms (Cronbach's alpha = 0.93 in this study).

Statistical Analysis

The patient-caregiver dyad was treated as the unit of analysis. Associations of the identified five distinct terminally ill cancer patient symptom-functional states with the three outcomes of interest, that is, caregivers' subjective caregiving burden, QOL, and depressive symptoms in patients' last 6 months of life, were simultaneously evaluated using multivariate hierarchical linear modeling (MHLM)[36] to control for inflation of Type I errors from multiple comparisons of outcomes. Random intercepts were used in MHLM to account for within-subject correlations of repeated observations from each patient-caregiver dyad. MHLM also allows different waves of data across participants to accommodate variable numbers of follow-up points, different time intervals for data collections, and missing data for the dependent variables.[36] Individual differences between the five symptom-functional states' associations with the three outcome variables were tested in MHLM.[37] Our MHLM analysis controlled for known effects of time proximity to death[13,15,19,21,23] (the period between death and assessment, i.e., 1–30, 31–90, and 91–180 days before death), time-invariant caregiver covariates (age, gender, Deyo-Charlson Comorbidity Index,[38] and relationship with the patient [spouse, child, and other]) and time-varying caregiver covariates (lagged subjective caregiving burden,[12,15,20,21] QOL,[22,23] and depressive symptoms[12,18–20]). We arranged the lagged symptom-functional states and known time-varying covariates in the previous wave of assessment to ensure a clear time sequence of associations with the three outcome variables.

Results

Sample Characteristics

Family caregiver–terminally ill cancer patient dyads ($N = 215$) participated until the patient's death and were assessed at least twice to allow adequate analysis of associations of the lagged distinct symptom-functional states with caregivers' subjective caregiving burden, QOL, and depressive symptoms over the patient's last six months of life. Detailed patient and caregiver participants' characteristics have been reported.[30] Briefly, patient participants were predominantly male (57.7%), with a mean (SD) age of 58.68 years (12.97), married (81.9%), and with comorbidities (65.1%). Patient participants' most common cancer sites were liver-pancreas (32.6%), stomach (18.6%), lung (10.7%), and head and neck (9.8%). The majority of caregiver participants were female (60%), with a mean (SD) age of 48.89 years (11.98), married (76.8%), patients' spouse (57.1%) or adult child (26.7%), living with the patient (81.3%), and the patient's primary decision-maker (52.2%).

Participants completed on average 4.29 assessments (SD = 2.70; range: 2–13) in patients' last 6 months of life. The following results are based on 905 assessments, on average 18.32 days (SD = 7.50; median = 15.0; range = 7–82) apart. The last assessment was on average 31.09 days (SD = 28.94; median = 21.00; range = 1–166) before death.

Associations of Distinct Patient Symptom-Functional States With Caregivers' Subjective Caregiving Burden, QOL, and Depressive Symptoms in Patients' Last 6 Months of Life

Initial levels of patient symptom distress and functional impairment as well as caregivers' subjective caregiving burden, QOL, and depressive symptoms across the five distinct, worsening patient symptom-functional states are in Table 1. Our MHLM analysis showed that the further from terminally ill cancer patients' death (indicated by time proximity to death) caregivers were assessed, they had lower subjective caregiving burden, better QOL, and fewer depressive symptoms (Table 2).

Caregivers of a terminally ill cancer patient in the three worst symptom-functional states (States 3—5) reported significantly higher subjective caregiving burden in the subsequent assessment than those of a patient in the best state (mild symptom distress with high functioning, State 1, Table 2; Fig. 1) or in State 2 (moderate symptom distress with mild functional impairment, Table 3), after controlling for time-invariant and time-varying covariates. Furthermore, subjective caregiving burden was significantly higher for caregivers of a patient in State 5 (profound symptom distress and functional impairment) than for those of a beloved in State 4 (moderate symptom distress with severe functional impairment) (Table 3). However, perceived subjective caregiving burden did not differ significantly between caregivers of a patient in the best two states (States 1—2; Table 2) or between those of a beloved in State 3 (severe symptom distress with moderate functional impairment) and in States 4—5 (moderate or profound symptom distress with severe-profound functional impairment) (Table 3).

QOL of caregivers for a patient in the four worst symptom-functional states was significantly poorer than QOL of caregivers for a beloved in the best state (State 1, Table 2; Fig. 1). Caregivers of a patient in the two worst symptom states (States 3 and 5; severe to profound symptom distress) had significantly poorer QOL than for those of a patient in State 2 (moderate symptom distress with mild functional impairment; Table 3), whereas QOL was significantly poorer for caregivers of a patient in State 5 (profound symptom distress and functional impairment) than for those with a beloved in State 4 (moderate symptom distress with severe functional impairment). However, QOL did not differ significantly for caregivers of a patient in States 2 and 4 or in State 3 and States 4—5.

Caregivers of a patient in the four worst symptom-functional states suffered significantly more depressive symptoms than those of a beloved in the best state (State 1, Table 2; Fig. 1), whereas caregivers of a patient in States 3—5 had significantly more depressive symptoms than those whose beloved was in the second best state (State 2; Table 3). However, reported depressive symptoms did not differ significantly among caregivers of a patient in States 3—5 (Table 3).

Discussion

Our findings confirm that EOL caregiving for a cancer patient imposes considerable wear and tear on caregivers as the patient's death approaches.[19,38,39] Consistent with the literature, we found that caregivers of terminally ill cancer patients had worsening subjective caregiving burden,[13,15,19] QOL,[23,39] and depressive symptoms[19,21,40] as the patient's disease progressed and disease burden increased with the patient's

Table 1

Baseline Levels of Terminally Ill Cancer Patients' Symptom Distress and Functional Impairment, With Their Caregivers' Subjective Caregiving Burden, Quality of Life, and Depressive Symptoms by Patients' Symptom-Functional State

State	1	2	3	4	5
Initial State Size (%)	22.44	37.28	8.80	20.75	10.72
Scores			Mean (SD)		
SDS	18.71 (3.94)	25.87 (5.39)	36.20 (5.59)	24.84 (5.01)	40.23 (7.16)
ESDS	16.37 (3.50)	20.68 (3.55)	28.61 (4.52)	33.95 (4.93)	41.83 (4.13)
CRA	55.04 (10.64)	62.35 (11.25)	66.14 (10.82)	62.68 (10.97)	69.21 (13.33)
CQOL	102.22 (17.95)	88.81 (19.23)	81.01 (20.09)	82.99 (18.78)	74.58 (20.34)
CES-D	10.59 (9.97)	15.70 (9.49)	19.49 (10.15)	17.78 (8.50)	23.02 (10.33)

	Mean (SD)	Median	Range	Interquartile
SDS	27.70 (9.18)	26.00	13—58	20—34
ESDS	26.24 (9.73)	24.00	10—51	18—34
CRA	62.29 (12.37)	61.00	28—108	54—70
CQOL	87.76 (21.29)	90.00	21—131	73—104
CES-D	16.46 (10.46)	15.00	0—55	8—23

SDS = Symptom Distress Scale; ESDS = Enforced Social Dependency Scale; CRA = Caregiver Reaction Assessment; CQOL = Caregiver Quality of Life Questionnaire; CES-D = Center for Epidemiological Studies Depression Scale.

Table 2

Associations of Symptom-Functional States With Caregivers' Subjective Caregiving Burden, Quality of Life, and Depressive Symptoms in Cancer Patients' Last 6 Months of Life

	Subjective Caregiving Burden				Quality of Life				Depressive Symptoms			
Variable	β	95% CI		*P*	β	95% CI		*P*	β	95% CI		*P*
Time proximity to death (days)												
≤30	Ref				Ref				Ref			
31−90	−0.675	−1.960	0.609	0.303	3.560	0.911	6.209	<0.001	−2.053	−3.424	−0.683	0.004
91−180	−2.005	−3.487	−0.524	0.008	8.771	5.749	11.792	<0.001	−4.366	−5.931	−2.801	<0.001
State												
5	6.542	3.806	9.277	<0.001	−11.301	−16.584	−6.018	<0.001	6.311	3.566	9.055	<0.001
4	3.488	0.910	6.067	0.008	−9.623	−14.551	−4.696	<0.001	3.787	1.218	6.357	0.004
3	4.921	2.566	7.277	<0.001	−11.380	−16.000	−6.759	<0.001	4.983	2.576	7.390	<0.001
2	0.976	−1.074	3.026	0.351	−5.978	−10.008	−1.949	0.007	2.257	0.163	4.352	0.034
1	Ref				Ref				Ref			
Lagged time-varying covariates												
Subjective caregiving burden[a]					−0.028	−0.145	0.089	0.638	−0.019	−0.089	0.050	0.586
Quality of life[b]	−0.059	−0.103	−0.015	0.009					−0.048	−0.079	−0.016	0.003
Depressive symptoms[c]	−0.012	−0.108	0.083	0.785	−0.127	−0.233	−0.020	0.020				
Gender												
Male	−2.714	−5.208	−0.220	0.033	2.319	−1.926	6.565	0.286	−1.48	−3.630	0.754	0.199
Female	Ref				Ref				Ref			
Age	−0.096	−0.199	0.006	0.066	0.108	−0.068	0.283	0.229	0.003	−0.087	0.093	0.944
Relationship with patient												
Spouse	4.277	0.953	7.602	0.012	−5.777	−11.468	−0.086	0.046	4.708	1.776	7.639	0.002
Child	−4.635	−8.534	−0.737	0.020	3.628	−3.040	10.295	0.287	1.056	−2.380	4.492	0.547
Other	Ref				Ref				Ref			
Comorbidity[d]												
0	Ref				Ref				Ref			
1	−0.446	−3.350	2.458	0.763	1.167	−3.784	6.119	0.644	0.093	−2.461	2.647	0.943
2	4.221	0.967	7.476	0.011	−1.876	−7.415	3.663	0.507	0.558	−2.303	3.419	0.702
≥3	1.958	−1.907	5.823	0.321	1.585	−5.010	8.179	0.637	−0.489	−3.893	2.916	0.778

Ref = reference.

[a] Caregiver Reaction Assessment scores.

[b] Caregiver Quality of Life Questionnaire scores.

[c] Epidemiological Studies Depression Scale scores.

[d] Deyo-Charlson Comorbidity Index.

approaching death. Furthermore, after controlling for time proximity to death, caregivers' subjective caregiving burden, QOL, and depressive symptoms while caregiving at EOL were significantly associated with the patient's five distinct, worsening symptom-functional states. Caregivers of patients in the three worst symptom-functional states (States 3−5) reported worse subjective caregiving burden and depressive symptoms than caregivers of patients in the best two states (Tables 2 and 3). Across the three caregiver outcome variables, insignificant differences between caregivers of patients in States 3 and 4 may be attributed to the effects of patients' conjoint symptom distress and functional impairment, whereas insignificant differences between caregivers of patients in States 3 and 5 suggest that symptom distress beyond the severe level (>75th percentile of Symptom Distress Scale scores) makes caregivers vulnerable to negative caregiving outcomes regardless of the patient's extent of functional impairment. However, symptom distress and functional impairment each contributed significantly and differentially to caregivers' subjective caregiving burden, QOL, and depressive symptoms in terminally ill cancer patients' last six months of life.

Terminally ill cancer patients' symptom distress and functional impairment were both associated with their caregivers' subjective caregiving burden. The profound symptom distress of patients in State 5 prompted caregivers to perceive notably higher subjective caregiving burden than those whose beloved suffered only moderate symptom distress (State 4), despite patients in both states enduring severe-to-profound functional impairment. Furthermore, the severe functional impairment of patients in State 4 made their caregivers perceive higher subjective caregiving burden than those whose loved one had only mild functional impairment (State 2), despite patients in both states suffering the same level of moderate symptom distress. Indeed, caregivers' subjective caregiving burden at patients' EOL is magnified by caregiving tasks that caregivers need to do for patients when they cannot perform them themselves[12,14,15] and by the challenges of helping relieve their loved one's distressing symptoms.[11−13]

Terminally ill cancer patients' symptom distress seems to play a more prominent role than functional impairment in determining their caregivers' QOL. State 5 patients' profound symptom distress

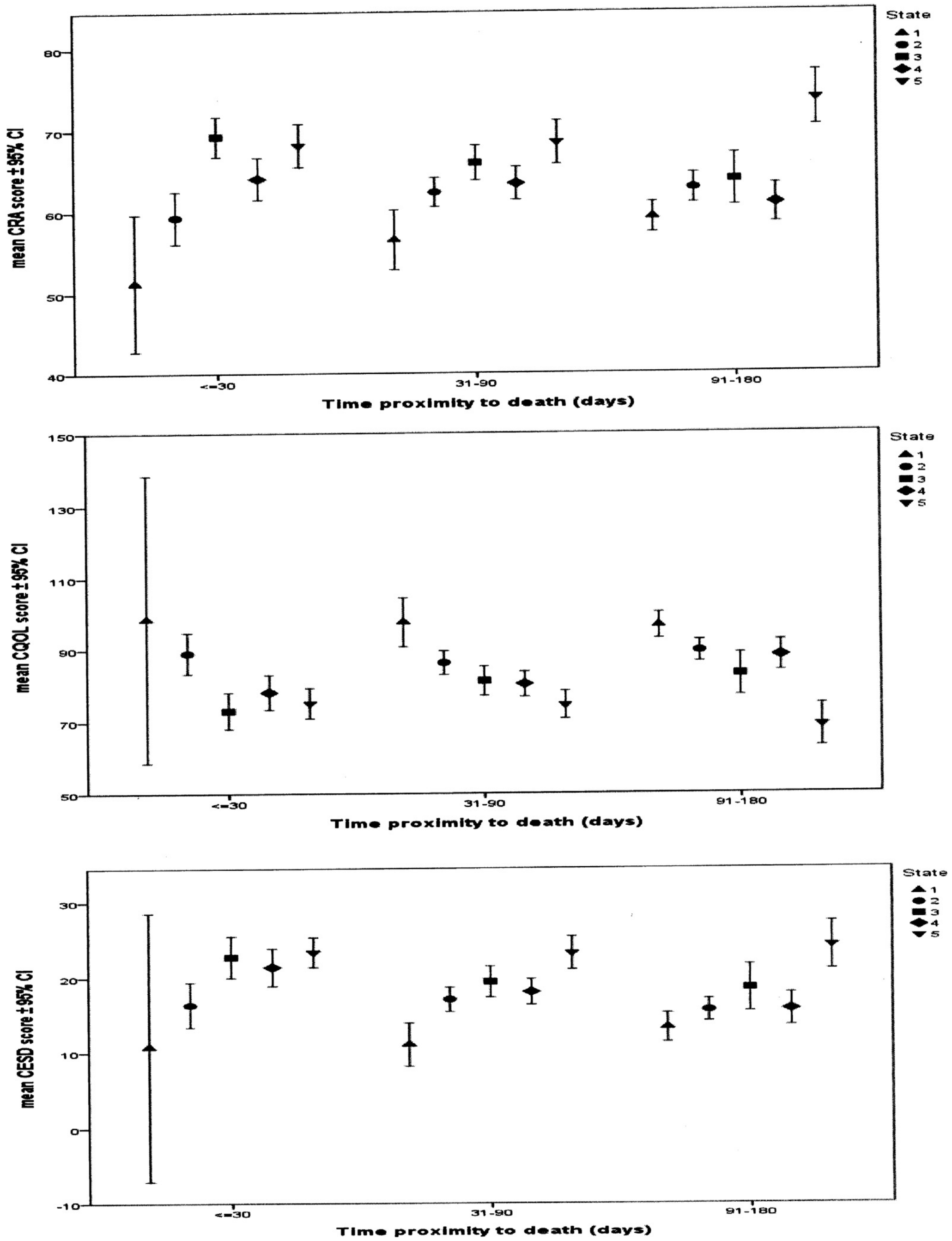

Fig. 1. Changes in family caregivers' scores for subjective caregiving burden, quality of life, and depressive symptoms by terminally ill cancer patients' symptom-functional state over their last six months of life. CRA = Caregiver Reaction Assessment; CQOL = Caregiver Quality of Life Questionnaire; CES-D = Center for Epidemiological Studies Depression Scale.

predisposed their caregivers to report poorer QOL than those whose beloved suffered only moderate symptom distress (State 4), despite both groups of patients having severely to profoundly impaired functioning. By contrast, QOL was comparable for caregivers of patients with moderate symptom distress but mild (State 2) or severe (State 4) functional impairment. The challenges of managing a loved one's symptom distress may profoundly disrupt daily life (e.g., CQOLC items, the need to manage my beloved's pain is overwhelming and my daily life is imposed upon). Furthermore, caregivers' compassion for their beloved's suffering from unrelieved symptom distress may make them feel frustrated, worried, upset by seeing their beloved's deterioration, and even guilty for not helping relieve their beloved's suffering (all reflect CQOL items), thus worsening their QOL.

Table 3
Differential Associations of Terminally Ill Cancer Patients' Five Distinct Symptom-Functional States With Caregivers' Subjective Caregiving Burden, Quality of Life, and Depressive Symptoms

Difference (P-Value)	Subjective Caregiving Burden			Quality of Life			Depressive Symptoms		
Symptom-Functional State	4	3	2	4	3	2	4	3	2
5	0.007	0.125	<0.001	0.028	0.231	<0.001	>0.500	>0.500	0.008
4		0.204	0.015		0.300	0.140		>0.500	0.043
3			<0.001			0.003			0.001

Functional impairment may play a more prominent role than symptom distress in determining caregivers' depressive symptoms in terminally ill cancer patients' last 6 months of life. Severe functional impairment of patients in State 4 predisposed caregivers to endure more depressive symptoms than those whose beloved had mild functional impairment (State 2), despite patients in both states suffering the same level of moderate symptom distress. Providing heavy EOL caregiving to a terminally ill beloved may make caregivers feel too trapped in caregiving (often by themselves and with caregiving tasks that seem endless) to enjoy life as usual and to look forward to a positive future, predisposing them to feel sad and depressed.

Study Strengths and Limitations

The main contribution of our longitudinal study is that it helps fill the gap in knowledge about the associations of terminally ill cancer patients' conjoint symptom distress and functional impairment with their caregivers' subjective caregiving burden, QOL, and depressive symptoms while providing EOL caregiving before and up to the patient's death. However, this study has several caveats that should be recognized before the results can be fully applied. We recruited a convenience sample of terminally ill cancer patients with a family caregiver from a hospital in Taiwan, limiting generalization of our findings to national and international target populations without an available caregiver. Our findings from Taiwan need to be replicated for caregivers of terminally ill cancer patients in other countries whose societal characteristics and cultural considerations for family caregiving may substantially differ. Furthermore, we cannot establish a cause-effect relationship between our identified symptom-functional states and the three family caregiving outcomes of interest, despite arranging the lagged symptom-functional states in the previous wave of assessment to ensure a clear time sequence of their associations with the three outcome variables. We also cannot exclude the possible impact of unmeasured residuals commonly found in observational studies (e.g., coping capabilities, social support, and the cultural value of filial piety) on our selected family caregiving outcomes.

Conclusion

Caregivers' subjective caregiving burden, QOL, and depressive symptoms while providing EOL caregiving were significantly and negatively associated with the five distinct, conjoint symptom-functional states of terminally ill cancer patients over their last six months of life. Specifically, symptom distress and functional impairment together, symptom distress, and functional impairment may play a prominent role in determining caregivers' subjective caregiving burden, QOL, and depressive symptoms, respectively. Despite being consistent with the literature, our interpretation of the more powerful role played by patient symptom distress[23] and functional impairment[20] in determining the level of caregivers' QOL and depressive symptoms warrants further investigation, probably most appropriately with qualitative research.

Clinical Implications

Our serial studies indicate that the tremendous disease burden of terminally ill cancer patients at EOL, manifested by their conjoint symptom distress and functional impairment, not only shortens their survival[27] and worsens their QOL and psychological distress[28] but also predisposes their caregivers to experience higher subjective caregiving burden, poorer QOL, and more depressive symptoms while providing EOL caregiving. Health care professionals should adequately assess terminally ill cancer patients' symptom distress and functional impairment both conjointly and systematically[39] to prompt early identification of caregivers at high risk for poor psychological well-being and QOL (e.g., caregivers of patients in the three worst symptom-functional states). Health care professionals should target at-risk patient-caregiver dyads, rather than individuals, not only to appropriately manage patients' disease burden early with their disease trajectory, but also to provide sufficient support to facilitate caregivers' EOL caregiving by effective palliative care approaches.[41] Health care professionals should educate and empower family caregivers to adequately manage their patient's symptom distress and facilitate his/her functional independence. Such evidence-based clinical practices not only benefit terminally ill cancer patients but also may lighten caregivers' subjective caregiving burden, improve their QOL, and decrease their depressive symptoms to achieve high-quality EOL care.

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The corresponding author had full access to all study data, analyzed the data with Dr. Fur-Hsing Wen, and took responsibility for the integrity of the data and accuracy of the data analysis.

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