Original Article

Depression and Anxiety Disorders in Palliative Cancer Care

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Abstract

Depression and anxiety disorders are thought to be common in palliative cancer care, but there is inconsistent evidence regarding their relevance for other aspects of quality of life. In the Canadian National Palliative Care Survey, semi-structured interviews assessing depression and anxiety disorders were administered to 381 patients who were receiving palliative care for cancer. There were 212 women and 169 men, with a median survival of 63 days. We found that 93 participants (24.4%, 95% confidence interval = 20.2–29.0) fulfilled Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition diagnostic criteria for at least one anxiety or depressive disorder (20.7% prevalence of depressive disorders, 13.9% prevalence of anxiety disorders). The most frequent individual diagnosis was major depression (13.1%, 95% confidence interval = 9.9–16.9). Comorbidity was common, with 10.2% of participants meeting criteria for more than one disorder. Those diagnosed with a disorder were significantly younger than other participants (P = 0.002). They also had lower performance status (P = 0.017), smaller social networks (P = 0.008), and less participation in organized religious services (P = 0.007). In addition, they reported more severe distress on 14 of 18 physical symptoms, social concerns, and existential issues. Of

those with a disorder, 39.8% were being treated with antidepressant medication, and 66.7% had been prescribed a benzodiazepine. In conclusion, it appears that depression and anxiety disorders are indeed common among patients receiving palliative care. These disorders contribute to a greatly diminished quality of life among people who are dying of cancer. J Pain Symptom Manage 2007;33:118−129. © 2007 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Introduction

Many patients with cancer experience mental health problems that represent clinically significant issues in their own right. Although prevalence rates have been found to vary widely depending on the patient populations studied, the diagnostic criteria applied, and the method of assessment (i.e., self-reports vs. structured interviews), recent reviews suggest that across studies, the median prevalence of major depression is about 15% among patients with advanced disease.[1,2] Moreover, many other patients experience milder presentations of depression, such as minor depression or dysthymia, that are also associated with significant distress.[3−5] Anxiety disorders have been studied less extensively than depression, but again, are thought to be relatively common among patients with cancer.[5−7]

In the primary care setting, these mental disorders are associated with marked impairment in quality of life.[8] In the case of patients with cancer, there is a growing body of evidence linking various measures of psychological distress, including diagnosed depression and anxiety disorders, with such problems as pain,[3,9−16] weakness or fatigue,[5,16−18] and low functional status.[3,10,12,19] Some of these studies have included patients who were receiving palliative care for advanced disease. As noted by Hotopf et al.,[1] however, the study of mental disorders in palliative care has been characterized by small samples, lack of standardized diagnostic interviews, and little focus on the question of comorbidity between diagnoses. In this context, the impact of psychological disorders on other dimensions of quality of life remains unclear, and some recent studies have found no significant differences between depressed and nondepressed patients in

palliative care settings.[20,21] This issue is important to resolve because it has been suggested that these disorders can make it more difficult to manage the physical symptoms of advanced disease,[15,21,22] and they may also affect the patients' social or existential well-being at this critical time of life.

In the Canadian National Palliative Care Survey (NPCS), we administered semi-structured diagnostic interviews to a large cohort of patients who were receiving palliative care for cancer. In addition to the assessment of depression and anxiety disorders, the interviews addressed a range of common physical symptoms, social concerns, and existential issues. Thus, the goals of the present study were to investigate the prevalence and comorbidity of depression and anxiety disorders among the NPCS participants, to review the extent to which these disorders are being recognized and treated, to examine their demographic and clinical correlates, and to determine their association with other aspects of health-related quality of life.

Methods

Participants

Details of the NPCS recruitment have been reported elsewhere.[23] Briefly, participants were enrolled into the study at eight sites across Canada. They were recruited from consecutive admissions or consultations to inpatient palliative care units, consultation services to general hospitals, or home care. Eligibility for participation was determined by the palliative care clinician most involved in the patient's care. The inclusion criteria were that 1) the patient was not impaired cognitively to the extent that he/she would be unable to provide a valid interview; 2) the clinician estimated the patient's

survival duration to be within six months, but the patient was not so gravely ill as to be unable to participate; 3) the patient had been informed that the cancer could not be cured; 4) the patient was able to converse in either English or French; and 5) the patient was not in such immediate crisis that research participation would impose a clinical burden.

During the period of recruitment, the palliative care services screened a total of 7,564 consults or admissions. Only 921 patients fulfilled all inclusion criteria and were approached about participation, and 520 initially agreed. Although efforts were made to schedule interviews as soon as possible after referral, 115 prospective participants died, deteriorated medically, or were discharged before the interview could take place. There were 405 individuals who began the interview, 381 of whom were able to complete it to the end of the modules assessing depression and anxiety disorders (41.4% of those considered eligible). This group represents the study sample for the present analyses.

Procedures

The protocol was approved by the research ethics boards of all institutions from which participants were recruited. All participants completed a written acknowledgment of informed consent before taking part in the interview.

The interviews were administered in person by professional staff who had clinical backgrounds in palliative care nursing, psychology, social work, or education. They were trained in a central two-day workshop, which involved didactic presentations, practice interviews, and role-playing. The interviews were tape recorded in order to permit ongoing supervision and the determination of interrater reliability.

Measures

Demographic Characteristics. We documented the participant's age, sex, and marital status, as well as information related to the size of the social network (the total number of children, other relatives, and friends that the participant reported feeling close to). In addition, we inquired about the participant's religious denomination, and included three items that addressed major dimensions of religiosity.[24,25] These have been described as organizational religiosity (attendance at services, scored on a frequency scale ranging from 1 to 5), nonorganizational religiosity (private prayer, scored on a scale of 1−6), and subjective religiosity (religious self-perception, rated on scale of 1−4).[24,25]

Clinical and Functional Status. Information about the site of the primary malignancy, and details of the medications prescribed, were abstracted from the medical record.

Each participant's functional status was assessed with the Palliative Performance Scale (PPS).[26] The PPS is an extension of the widely used Karnofsky Performance Status Scale,[27] which was modified for palliative care by including such functional considerations as ambulation, task performance, self-care, nutritional intake, and level of consciousness. The PPS was rated by the interviewer after meeting with the participant, with input from the clinical staff if necessary. The ratings were made on a scale of 0 (death) to 100 (unimpaired performance status).

Structured Interview of Symptoms and Concerns. A total of 16 physical symptoms (general malaise, pain, drowsiness, nausea, weakness, breathlessness), social concerns (social isolation, interpersonal communication problems, self-perceived burden to others, financial difficulties), and existential issues (spiritual crisis, difficulty accepting, general dissatisfaction with life, loss of dignity, loss of resilience, loss of control over daily events) were assessed with semi-structured interview items. Two further items addressed the overall sense of suffering and the desire for death.[28] In general, the item selection was informed by a recent conceptual model of quality of life of people who are dying.[29]

The Structured Interview of Symptoms and Concerns (SISC)[18] was developed in recognition of the fact that assessment in palliative care requires a focus on multiple problem areas, conducted with patients who might be too ill to complete lengthy questionnaires. It adopts a format of single-item screening, similar to the approach that might be taken in a bedside clinical assessment, but with a standardized structure. Each SISC item begins

with an introductory question that inquires directly about the presence of a particular problem or concern. If the problem is present at any level of severity, a semi-structured series of probes is used to follow-up regarding the frequency, intensity, and degree of distress associated with it. The interviewer then provides a global rating on a seven-point scale ranging from 0 (no problem) to 6 (extreme). For each point on the scale, specific guidelines are provided to standardize the ratings across interviewers. Ratings $= 3$ are anchored at a level of "moderate" distress and are used to indicate the threshold at which the participant has identified the symptom or concern as "a significant problem." We have used this threshold in previous research into individual constructs addressed by the SISC, including desire for death,[28] loss of dignity,[30] and sense of burden to others.[31]

The original 13 SISC items were found to have excellent interrater reliability when both raters were present at the interview.[18] That study also found that the SISC items had good concordance with ratings made on visual analog scales (VAS), and moderate test-retest reliability (ranging from 0.50 to 0.90 across items, comparable to the VAS assessments). For the present purpose, we expanded the item pool to provide greater coverage of issues relevant to health-related quality of life.[29] Reliability was assessed with 80 audiotaped interviews (10 per site), which were rated by an independent reviewer. We focused on the dichotomous categories of scores ≥ 3 (moderate to extreme), and found that 17 items had substantial to perfect interrater agreement (kappas ranging from 0.68 to 1.00).[32] However, the agreement was poor for one item assessing spiritual crisis, which occurred at a low frequency.

Assessment of Depression and Anxiety Disorders. Depression and anxiety disorders were assessed with a modified version of the Primary Care Evaluation of Mental Disorders (PRIME-MD) clinician evaluation guide.[33] The PRIME-MD provides a quick screening method for a range of disorders described in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV).[34] In initial research with primary care patients, the PRIME-MD had an overall accuracy of 88%

when evaluated against independent assessments by mental health professionals. It has since been validated in an oncology setting, where it has shown good concordance with the Structured Clinical Interview for DSM-IV.[4] It has also been used previously with patients receiving palliative care.[18,35]

Our modification involved more detailed assessment of the core criterion symptoms of subjective anxiety, depressed mood, loss of interest or pleasure in activities, and hopelessness than is included in the original PRIME-MD. Specifically, we developed semi-structured interview questions to address these symptoms, using the same format as for the other SISC items. In earlier research, the SISC ratings for these items were correlated with VAS assessments of the same constructs at $r = 0.72-0.83$.[18]

For diagnostic purposes, we ensured that the item ratings could be linked explicitly to DSM-IV severity thresholds for defining the level at which these symptoms are diagnostically significant.[36] For example, the threshold for major or minor depression required a report of either 1) a mood state in which the participant "usually feels at least somewhat depressed;" 2) a cognitive outlook in which the participant "usually feels at least some sense of discouragement, sometimes to the point of feeling hopeless;" or 3) anhedonia to an extent that, most of the time the participant "feels a markedly diminished interest or pleasure in almost all activities." In the present study, the interrater reliability for these dichotomous judgments ranged from moderate to almost perfect (kappas $= 0.47-0.93$).[32] Furthermore, at least one of these core symptoms must have been present nearly every day for at least two weeks, and be accompanied by at least four other symptoms for major depression and two for minor depression. For dysthymia and major depression in partial remission, which are by definition less severe disorders, we allowed a lower severity threshold to count toward the diagnosis, provided that other defining criteria were also met.

The remaining symptoms for the depression and anxiety disorders, including the screening for panic disorder, were assessed using the yes-no checklist format of the original PRIME-MD interview guide. We did not exclude physical symptoms from contributing to these diagnoses, even though there has been a longstanding

concern that these disorders may be overestimated because of overlapping symptom profiles between medical and mental health problems.[37] There is evidence, however, that this confound mainly arises with mild or subthreshold presentations of depression, and is less problematic when strict severity thresholds are applied.[36]

Given the generally high level of functional disability due to medical illness in this group of participants, we suspended the additional DSM-IV requirement that the mental disorders cause further impairment. Rather, we required that the participant identify the experience of anxiety or depression as a problem. Finally, we have reported the diagnoses in a nonhierarchical format. That is, when criteria were met for both an anxiety and a depressive disorder, we have presented them as comorbid conditions rather than assign primacy to one.

Statistical Analyses

The data were analyzed with the SPSS 11.5 statistical package. We have reported the overall prevalence of specific depressive and anxiety disorders, and conducted group comparisons between participants who met DSM-IV criteria for any disorder and those who did not. The statistical comparisons involved t-tests for continuous variables and scores on rating scales, and either χ^2 or Fisher's exact tests for categorical data. Survival duration was examined using the Kaplan-Meier procedure. Unless otherwise reported, the criterion for statistical significance was set at $P < 0.05$ in a two-tailed test.

Several of the SISC items had score distributions that were positively skewed, with many patients reporting only minor difficulties in those areas. In analyzing these data, therefore, we dichotomized the distributions into categorical groupings comprising scores of 0−2 (no problem to mild) and 3−6 (moderate to extreme). The latter ratings are above the threshold indicating significant distress, and they are useful for describing the absolute prevalence of clinically important symptoms and concerns.[18] These scores were then analyzed with logistic regression, after adjusting for age and sex.

We also conducted exploratory analyses within the subgroup of participants who were diagnosed with a disorder. These analyses addressed the issue of comorbidity, and compared participants who had both depression and an anxiety disorder with those who were diagnosed with depression only.

Results

Participant Characteristics

The study group consisted of 212 women and 169 men, with a mean age $= 67.2 \pm 12.9$ years (range $= 26−93$ years). The sites of the primary malignancies were mixed, and included the lung ($n = 91$, 23.9%), genitourinary system ($n = 76$, 19.9%), gastrointestinal tract ($n = 70$, 18.3%), breast ($n = 37$, 9.7%), brain ($n = 14$, 3.7%), head and neck ($n = 12$, 3.1%), various other sites ($n = 61$, 16.0%), or they were of unknown origin ($n = 20$, 5.2%). The median survival duration was 63 days from the time of the interview.

Prevalence of Depression and Anxiety Disorders

Table 1 shows the prevalence of specific anxiety and depressive disorders. Overall, a total of 93 (24.4%) participants met diagnostic criteria for at least one disorder, with major depression being the single most frequent problem ($n = 50$, 13.1%). Comorbidity between disorders was common, with 39 individuals meeting

Table 1
Prevalence of Depression and Anxiety Disorders ($n = 381$)

Diagnosis	No. of Patients	%	95% Confidence Interval
Major depression	50	13.1	9.9−16.9
Major depression in partial remission	18	4.7	2.8−7.4
Minor depression	8	2.1	0.9−4.1
Dysthymia	17	4.5	2.6−7.1
Any depressive disorder	79	20.7	16.8−25.2
Panic disorder	21	5.5	3.4−8.3
Generalized anxiety disorder	22	5.8	3.7−8.6
Anxiety disorder not otherwise specified	18	4.7	2.8−7.4
Anxiety disorder secondary to a general medical condition	7	1.8	0.7−3.8
Any anxiety disorder	53	13.9	10.6−17.8
Any disorder	93	24.4	20.2−29.0
More than one disorder	39	10.2	7.4−13.7

criteria for two or more diagnoses (41.9% of those with any diagnosis). For example, of the 53 (13.9%) individuals who were diagnosed with an anxiety disorder, 35 (66%) also met criteria for depression and 24 (45%) met criteria for a second anxiety disorder.

Demographic and Clinical Correlates

As shown in Table 2, those participants diagnosed with a mental disorder were younger than the other participants, and they reported smaller social networks. They also reported less frequent attendance at organized religious services, but they did not differ in the other dimensions of religiosity. There were no significant differences between the groups in other demographic characteristics, although those with a disorder were somewhat more likely to be female ($P = 0.082$). When we conducted a subanalysis with depressed participants only, we found that women were significantly more likely to be depressed than men (25.0%, 95% CI = 19.3−31.4 vs. 15.4%, 95% CI = 10.3−21.7), $\chi^2(1) = 5.29$, $P = 0.021$, OR = 1.83, 95% CI = 1.09−3.08.

The patients diagnosed with a depressive or anxiety disorder had lower scores in PPS, but as shown in Fig. 1, there was no association between these disorders and the time to death, logrank $P = 0.776$.

Table 2
Demographic and Clinical Characteristics of Participants Diagnosed With or Without Depression or an Anxiety Disorder

Characteristic	With a Disorder ($n = 93$)	Without a Disorder ($n = 288$)	t or χ^2 Value	df[a]	P-value
Age, mean (SD) years	63.5 (12.5)	68.4 (12.8)	3.19	379	0.002
Sex, n (%)			3.03	1	0.082
Men	34 (36.6)	135 (46.9)			
Women	59 (63.4)	153 (53.1)			
Religion, n (%)			2.29	3	0.515
Protestant	31 (33.3)	117 (40.6)			
Roman Catholic	35 (37.6)	102 (35.4)			
Other	11 (11.8)	23 (8.0)			
None	16 (17.2)	46 (16.0)			
Religiosity, mean (SD)					
Organizational	2.7 (1.5)	3.2 (1.6)	2.73	379	0.007
Nonorganizational	3.9 (1.6)	4.0 (1.5)	0.35	377	0.726
Subjective	2.5 (0.9)	2.6 (1.0)	1.35	379	0.179
Marital status, n (%)			0.33	1	0.567
Married/living with	50 (53.8)	145 (50.3)			
Other	43 (46.2)	143 (49.7)			
Social network size, mean (SD)	11.6 (7.7)	14.2 (9.2)	2.69	377	0.008
Education, n (%)			0.70	2	0.706
Less than high school	30 (32.3)	105 (26.5)			
High school graduate	20 (21.5)	63 (21.9)			
More than high school	43 (46.2)	120 (41.7)			
Language, n (%)			0.18	2	0.916
English	78 (83.9)	243 (84.4)			
French	12 (12.9)	38 (13.2)			
Other	3 (3.2)	7 (2.4)			
Setting, n (%)			1.21	2	0.546
Palliative care unit	49 (52.7)	148 (51.4)			
Hospital inpatient	22 (23.7)	57 (19.8)			
Outpatient, home care	22 (23.7)	83 (28.8)			
Palliative Performance Scale, mean (SD)	51.5 (13.3)	55.4 (13.7)	2.39	378	0.017
Survival duration, median (IQR)	67.0 (114.0)	61.0 (117.5)	0.32	1	0.574
Medications					
Opioids	71 (76.3)	223 (77.7)	0.07	1	0.786
Antidepressants	37 (39.8)	49 (17.1)	20.69	1	<0.001
Benzodiazepines	62 (66.7)	113 (39.4)	21.06	1	<0.001
Neuroleptics	26 (28.0)	43 (15.0)	7.96	1	0.005

[a]df vary for some comparisons because of occasional missing data.

Specific Symptoms and Concerns

Table 3 shows the association between the depression and anxiety disorders and other specific symptoms and concerns. Overall, those participants who were diagnosed with a disorder reported a greater number of symptoms at the moderate-to-extreme level (M $= 5.48 \pm 3.06$) than did those without a disorder (M $= 2.68 \pm 2.28$), $t(379) = 8.13$, $P < 0.001$. In fact, they were more likely to report having significant difficulty on 14 of the 18 individual items covered by the SISC. The only exceptions were the social concerns of a marked communication problem with a family member and financial distress, as well as the physical symptom of breathlessness, and the existential acknowledgment of a spiritual crisis. Importantly, 55.9% (95% CI $= 45.2-66.2$) of participants with a disorder characterized their overall global experience as one of moderate-to-extreme "suffering," compared to 16.0% (95% CI $= 11.9-20.7$) of those without a disorder ($P < 0.001$). They were also more likely to report a persistent desire for death ($P < 0.001$).

Treatment of Depression and Anxiety Disorders

The place of care did not differ between the groups, but there were broad differences in the classes of medication that they were prescribed.

Although comparable proportions were taking opioids, the participants with a mental disorder were more likely to be given antidepressants, benzodiazepines, and neuroleptics. Almost 40% (95% CI $= 29.8-50.5$) of these participants were being treated with antidepressant medication, and about two-thirds (95% CI $= 56.1-76.1$) had prescriptions for benzodiazepines. The most common antidepressants were selective serotonin reuptake inhibitors ($n = 13$, 14.0%; 95% CI $= 7.7-22.7$) and tricyclics ($n = 12$, 12.9%; 95% CI $= 6.9-21.5$), followed by venlafaxine ($n = 5$, 5.4%; 95% CI $= 1.8-12.1$), and stimulants ($n = 4$, 4.3%; 95% CI $= 1.2-10.7$). We also found that 17.1% (95% CI $= 12.9-21.9$) of those without a disorder were taking antidepressants, and almost 40% (95% CI $= 33.7-45.3$) were prescribed benzodiazepines.

Relevance of Comorbidity

In order to address the issue of comorbidity between depression and anxiety disorders, we conducted a series of exploratory analyses comparing patients with only a depression diagnosis ($n = 44$) and those with both depression and anxiety ($n = 35$). These analyses revealed few differences in demographic characteristics between the groups, other than that those participants with comorbidity had
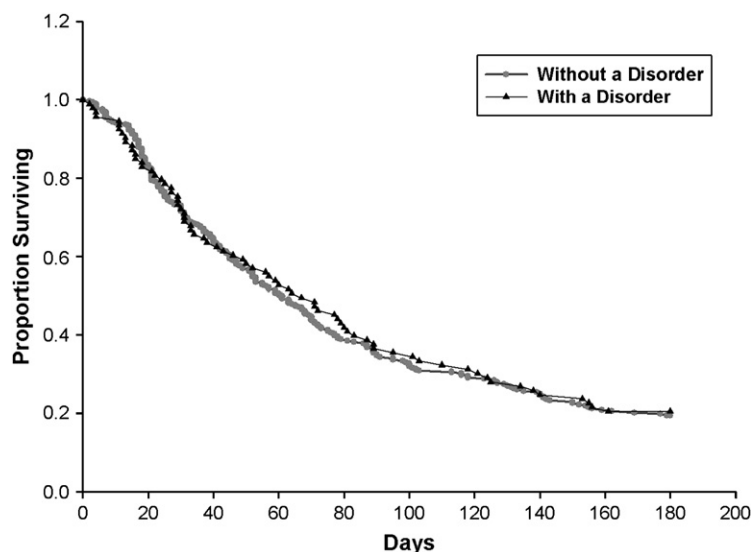

Fig. 1. Six-month cumulative survival curves for patients diagnosed with ($n = 93$) or without ($n = 288$) depression or an anxiety disorder.

Table 3
Symptoms and Concerns Reported by Patients Diagnosed With or Without Depression or an Anxiety Disorder

Symptom or Concern[a]	With a Disorder ($n = 93$)	Without a Disorder ($n = 288$)	P-value[b]	Odds Ratio[b]	95% Confidence Interval[b]
Social concerns					
Social isolation	25 (26.9)	20 (6.9)	<0.001	5.49	2.81−10.75
Communication problem	4 (4.3)	4 (1.4)	0.145	2.90	0.69−12.15
Burden to others	35 (37.6)	63 (21.9)	0.009	1.99	1.19−3.31
Financial problem (1)[c]	13 (14.0)	21 (7.3)	0.185	1.68	0.78−3.60
Physical symptoms					
General malaise	57 (61.3)	105 (36.5)	<0.001	2.70	1.65−4.44
Pain	46 (49.5)	83 (28.8)	0.001	2.26	1.37−3.72
Drowsiness	46 (49.5)	77 (26.7)	<0.001	2.46	1.51−4.02
Nausea	28 (30.1)	37 (12.8)	0.002	2.55	1.43−4.55
Weakness	67 (72.0)	158 (54.9)	0.003	2.17	1.29−3.64
Breathlessness	26 (28.0)	73 (25.3)	0.526	1.19	0.70−2.03
Existential issues					
Loss of resilience (2)	23 (25.0)	12 (4.2)	<0.001	7.66	3.57−16.46
Loss of dignity	14 (15.1)	12 (4.2)	0.002	3.69	1.61−8.46
Loss of control	18 (19.4)	8 (2.8)	<0.001	8.44	3.47−20.55
Spiritual crisis (2)	6 (6.5)	5 (1.7)	0.071	3.10	0.91−10.58
Difficulty accepting	15 (16.1)	18 (6.3)	0.023	2.39	1.13−5.07
Dissatisfaction with life	11 (11.8)	9 (3.1)	0.005	3.78	1.49−9.61
Desire for death (4)	24 (26.4)	22 (7.7)	<0.001	4.70	2.42−9.10
Suffering	52 (55.9)	46 (16.0)	<0.001	6.59	3.88−11.17

[a]Each symptom or concern was assessed on a seven-point severity rating scale. Table entries are the number (percentage) of respondents who received ratings ranging from 3 (moderate) to 6 (extreme).
[b]The P-values and odds ratios are derived from logistic regression, after adjusting for age and sex.
[c]Numbers in parentheses represent the number of cases with missing values.

higher levels of educational attainment. Specifically, 62.9% of those with both depression and anxiety disorders had educational training beyond high school, compared to 36.4% of those with depression only, $\chi^2(1) = 5.48$, $P = 0.019$, OR = 2.96, 95% CI = 1.19−7.37.

On the SISC, the participants with comorbid depression and anxiety disorders had more symptoms and concerns that were rated at a moderate-to-extreme level (M = 6.89 ± 2.92) than participants with depression alone (M = 4.36 ± 2.38), $t(77) = 4.23$, $P < 0.001$. Of the individual problems, the comorbidity group had a higher prevalence of general malaise (71.4% vs. 47.7%, $P = 0.041$, OR = 2.74, 95% CI = 1.08−6.94), loss of resilience (i.e., a sense of coping poorly; 38.2% vs. 15.9%, $P = 0.036$, OR = 3.27, 95% CI = 1.15−9.25), and loss of control (34.3% vs. 9.1%, $P = 0.010$, OR = 5.22, 95% CI = 1.57−17.14). They were also much more likely to report that they were suffering (82.9% vs. 31.8%, $P < 0.001$, OR = 10.35, 95% CI = 3.56−29.92), and to express a desire for death (45.5% vs. 20.5%, $P = 0.026$, OR = 3.24, 95% CI = 1.21−8.70).

Clinically, the participants who had both depression and anxiety disorders were more likely to have benzodiazepine prescriptions than those with depression only (74.3% vs. 52.3%), $\chi^2(1) = 4.01$, $P = 0.045$, OR = 2.64, 95% CI = 1.02−6.80), but their medication profiles were similar in other respects. The rates of antidepressant utilization were 40.9% among those with depression only and 40.0% among those with comorbid depression and anxiety, $\chi^2(1) < 0.01$, $P = 0.935$, OR = 0.96, 95% CI = 0.39−2.36.

Discussion

The merits of the NPCS are that it is a relatively large, national collaborative study involving face-to-face diagnostic interviews. It should be noted, however, that we only approached palliative care patients who were cognitively lucid and medically able to tolerate an extended interview. If cognitive impairment and incapacitating illness are associated with depression and anxiety disorders, then it is possible that

the prevalence rates are lower than would be found with a consecutive series of patients.

In addition, it should be noted that the diagnostic interview was a modification of a protocol that has been developed for the rapid screening of mental disorders in primary rather than palliative care. Although it has been used in previous studies in oncology settings, admittedly there is not a strong body of validating research to support its application to patients with advanced illness, particularly in our modified format. On the other hand, the observed prevalence figures are within the general range reported by other investigators,[1,2] which suggests that the results may have wider generalizability.

Although these disorders are common, they are not universal, and the majority of patients receiving palliative cancer care do not meet formal diagnostic criteria for clinical depression or anxiety. The 13.1% current prevalence of major depression, which is the most widely studied individual disorder, is certainly higher than the 1.8−4.9% that has been found in epidemiologic studies of general community residents,[38,39] but it may not be higher than the rates found in primary care.[33] Indeed, the demographic characteristics associated with the depression and anxiety disorders in the NPCS participants appear to be largely similar to those observed in other settings. For example, the finding that younger adults are at greater risk than the elderly has been found in epidemiologic studies of the general population[40] and in primary care,[41] as well as in some studies of patients with cancer.[5,42] A correlation between organizational religiosity and low levels of depressive symptoms has also been found in various other populations,[43−45] as has an association with larger social networks.[46] Moreover, one of the most consistent findings across epidemiologic studies within community and primary care samples is that women have rates of depressive disorders that are substantially higher than those of men.[47−49] Although gender differences are found less frequently in studies of patients with cancer,[2,50] the present findings are in keeping with this broader literature. That is, younger women, and those who have fewer opportunities to access meaningful social support, seem to have the highest risk for depression, even in the context of palliative care.

When considering the observed prevalence rates, it is important to note that we did not attempt to diagnose adjustment disorders, which are not included as a category in the PRIME-MD. Adjustment disorders are defined less explicitly than many diagnoses in the DSM-IV.[51] They are also a controversial diagnostic category when applied to patients with advanced illness,[52] because they require the clinical decision that a patient's emotional response to the situation is "in excess of a normal and expectable reaction." If applied loosely, this subjective evaluation can blur the line between mental disorders and normal displays of grief.[2] Nevertheless, studies of patients with cancer have often found that when adjustment disorders are included in the diagnostic interview, fully 25−50% of patients have been diagnosed with one.[5,53,54] It is likely, therefore, that among our participants who did not qualify for a PRIME-MD diagnosis, there were some who would have been considered to have adjustment disorders by the criteria of other studies.

It has been suggested that psychological disorders among patients with advanced disease may make it more difficult to treat their physical symptoms.[15,21,22] However, some recent studies have not found a clear association between depression and other problems.[20,21] Lloyd-Williams et al.[21] found only nonsignificant trends for depressed and nondepressed patients to differ in some physical concerns, and Kai-hoi Sze et al.[20] found no differences between groups on measures of pain and disability. The latter study used a self-report questionnaire rather than a diagnostic interview to identify Chinese patients as depressed, so both cultural and methodological factors may be relevant to their findings. The present results, on the other hand, strongly support the hypothesis of an association between anxiety and depressive disorders and physical symptoms, in the sense that patients with these disorders were more likely to report moderate-to-extreme pain, and to feel more weak, drowsy, and ill. They also had lower performance status, but not shorter survival durations, which suggests that the psychological state contributed to disability beyond that caused by the medical condition. Moreover, the impact of these disorders on patients' social and existential concerns may be even

stronger than on the experience of physical symptoms. This is particularly noteworthy because there is evidence that existential issues can be very important for determining the quality of life of people who are dying.[55]

Comorbidity between depression and anxiety disorders is known to be common, and patients with both problems tend to present with greater severity.[56–59] To our knowledge, however, the NPCS is the first study to examine the issue of comorbidity in a palliative care setting. The results indicate that patients who meet criteria for both depression and an anxiety disorder experience greater difficulties overall than do patients who present with depression only. Perhaps the most striking finding in this regard is that fully 82.9% of the participants with both depression and anxiety reported a moderate-to-extreme degree of global suffering. When considered in conjunction with their distressed mental state and their elevated symptom reports, it appears that this group, in particular, most closely resembles the palliative care profile of "total pain."[15,60,61]

Recent studies of the treatment of depression and anxiety disorders in patients with cancer suggest that there is no consensus with respect to the initiation of antidepressant medications, which are effective for both classes of disorder. For example, Ell et al.[10] found that only 6.4% of low-income women with breast or gynecological cancer were being treated with antidepressant medication (including only 12% of those with major depression), whereas Coyne et al.[62] found that 34% of women with breast cancer were receiving antidepressants (including 70% of those with major depression). These discrepancies have important implications for screening recommendations. Do we need improved screening practices so that patients with depression and anxiety disorders have better access to care, or are most being identified already? Our findings are intermediate in that 22.6% of the total sample were prescribed antidepressants, which included 39.8% of those diagnosed with a mental disorder. Conversely, 60% of those with a disorder were not being treated with antidepressants, which tends to support the argument that these problems are still being underdiagnosed and undertreated.[63,64]

Of course, there may be other reasons for the decision not to initiate antidepressant therapy. For example, if distress is mainly conceptualized as arising from existential concerns, then psychological or spiritual interventions may be seen as more appropriate.[65] These approaches were not documented in the NPCS. Moreover, there may have been well-considered clinical decisions that benzodiazepine or neuroleptic medications represented a better choice for some patients, refusal by patients of the medication option, or medical concerns about side effects and drug interactions. Overall, however, the present findings underscore the need for continued vigilance in the diagnostic assessment of depression and anxiety disorders in palliative care, and a move toward greater consensus within the field as to when and with whom to initiate treatment. As the results of this study show clearly, these disorders are associated with a greatly diminished quality of life among people who are dying of cancer.

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