## JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

# Predictors of Referral for Specialized Psychosocial Oncology Care in Patients With Metastatic Cancer: The Contributions of Age, Distress, and Marital Status

*Janet Ellis, Judy Lin, Andrew Walsh, Christopher Lo, Frances A. Shepherd, Malcolm Moore, Madeline Li, Lucia Gagliese, Camilla Zimmermann, and Gary Rodin*

From the Departments of Psychosocial Oncology and Palliative Care, and Medical Oncology, Princess Margaret Hospital; Psychosocial Oncology and Palliative Care Research Division, Ontario Cancer Institute, University Health Network; Behavioural Sciences and Health Research Division, Toronto General Research Institute, University Health Network; University of Toronto; and the Department of Kinesiology and Health Science, York University, Toronto, Ontario, Canada.

Corresponding author: Gary Rodin, MD, Department of Psychosocial Oncology and Palliative Care, Princess Margaret Hospital, University Health Network, 16th Floor, Room 724, 610 University Avenue, Toronto, Ontario M5G 2M9 Canada; e-mail: gary.rodin@uhn.on.ca.

## ABSTRACT

**Purpose**
This study examines the rate and prediction of referral for specialized psychosocial oncology care in 326 patients with metastatic GI or lung cancer.

**Patients and Methods**
Referral information was abstracted from medical records and hospital databases. Patients completed measures of psychosocial and physical distress and functioning.

**Results**
Routine referral occurred in 33% of patients, and in 42% and 44%, respectively, of those scoring high on measures of depression (Beck Depression Inventory [BDI]-II $\geq$ 15) and hopelessness (Beck Hopelessness Scale $\geq$ 8). Univariate analyses indicated that referral was associated with younger age, unmarried status, living alone, presence of more depressive symptoms, hopelessness, and attachment anxiety, and with less social support, self-esteem, and spiritual well-being (all $P < .05$). Among the significantly depressed (BDI-II $\geq$ 15), 100% of those less than 40 years of age, but only 22% of those age 70 years or older were referred. Multivariate analyses indicated that referral was associated with younger age, unmarried status, and presence of more depressive symptoms. Moreover, increasing age was associated with a progressively lower likelihood of referral independent of the level of distress.

**Conclusion**
Routine referral of patients with metastatic cancer for psychosocial oncology care was predicted by presence of more severe depressive symptoms, younger age, and unmarried status. The rate of referral progressively declined with each decade of age, even among those with significant distress. These findings are consistent with some aspects of Andersen's model of health care utilization. The extent to which referred patients represent those who are most likely to benefit deserves further investigation.

*J Clin Oncol 27:699-705. © 2008 by American Society of Clinical Oncology*

## INTRODUCTION

There is growing advocacy for routine screening of distress in cancer patients because of its high prevalence;[1-3] its association with negative outcomes, such as poor quality of life,[4] nonadherence to medical treatment,[5] and poorer prognosis;[6,7] and because of the availability of effective interventions.[8] However, multiple barriers to providing specialized psychosocial oncology care may exist, and almost half of distressed cancer patients referred may refuse such support.[9]

The likelihood of cancer patient referral for specialized psychosocial care can be understood in terms of Andersen's model of health care utilization.[10] This model was developed to explain, define, and measure access to health care services

and to assist in developing policies to promote equitable access.[10] From this perspective, utilization is considered to be based on the predisposition of individuals to use health care services, on factors which enable or impede their access and use, and on individuals' perceived or evaluated need for care. For example, age, sex, and education were considered by Andersen to be predisposing factors, whereas social relationships were considered to be an enabling factor in health care utilization. The need for psychosocial support has been inferred from the severity of subjective distress,[11] but the determinants of and barriers to referral are not well understood.

The present analyses were conducted to clarify the determinants of referral for specialized psychosocial care in patients with metastatic GI or lung cancer. We evaluated the extent to which the rate of

referral for this care is affected by predisposing factors (eg, age, sex), enabling resources (eg, income, social support), and need (eg, symptoms of depression, physical distress). We hypothesized that referral would be related not only to patient need but also to predisposing demographic and enabling psychosocial factors.

## PATIENTS AND METHODS

### Participants and Procedure

This study received ethical approval from the University Health Network Research Ethics Board. Analyses are based on 326 outpatients with a confirmed diagnosis of stage III or IV lung or stage IV GI cancer attending clinics at Princess Margaret Hospital (PMH), a comprehensive cancer treatment center in Toronto, Canada, and participating in the Will to Live (WTL) Study, a longitudinal study of psychological adjustment in patients with advanced cancer (Rodin et al[12,13]). All participants were at least 18 years of age, obtained a score of 20 or more on the Short-Orientation-Memory and Concentration (SOMC)[14] test (which reflects no significant cognitive impairment), and were able to speak and read English sufficiently to provide written informed consent and to complete the self-report questionnaires. Participants were followed with bimonthly questionnaire assessments until death or study withdrawal. Death was established through hospital records, contact with family members or family physicians, or obituary notices. Baseline assessments were used for all analyses to maximize the sample size.

Specialized psychosocial care at PMH is provided by social workers, psychiatrists, and psychologists. There is overlap in the functions performed by practitioners in these disciplines, each of which provides counseling and support. However, social workers have particular responsibility for social, financial, and family issues, and psychiatrists for the diagnosis and treatment of major mental illness and suicidality, as well as prescription of psychotropic medication.

Assessments included in these analyses were completed at the time of study entry. Referral for specialized psychosocial care could occur at any time during the course of clinic attendance, and all referrals were included in the main analyses because predisposing characteristics may affect referral at any point in the disease course. However, additional analyses were also conducted on a subsample of referred patients for whom referral occurred within 6 months before or after study entry.

### Materials and Measures

Patient characteristics were obtained from the patient, the medical charts, and from the PMH Department of Psychosocial Oncology and Palliative Care (POPC) database. These included age at diagnosis, sex, marital status, living arrangements, primary language, education level, socioeconomic status (based on 2001 Canadian Census data for average annual family income by postal code), date of cancer diagnosis, cancer site, dates of referral for specialized psychosocial oncology care and palliative care, and date of death.

Social support, a potential enabling factor, was measured with the Medical Outcomes Study Social Support Survey (MOS-SSS),[15] a 20-item self-report measure of multiple domains of social support that has demonstrated high reliability, and convergent and discriminant validity.[15]

Psychosocial and physical functioning and distress (patient need) were measured with the following tools:

Beck Depression Inventory-II (BDI-II),[16] a 21-item self-report measure of the intensity of depressive symptoms that is widely used in cancer populations,[12,13,16-19] and the Beck Hopelessness Scale (BHS),[20] a 20-item self-report scale used to quantify negative expectancies about the future that has been used in terminally ill cancer populations;[12,21,22] Experiences in Close Relationships inventory (ECR),[23] a 36-item self-report measure of attachment security with two subscales, attachment anxiety (fear of rejection or abandonment) and attachment avoidance (discomfort with closeness and dependence on significant others); Rosenberg Self-Esteem Scale (RSES),[24] a 10-item self-report questionnaire designed to assess self-esteem and self concept, with demonstrated reliability and concurrent, predictive, and construct validity;[25]

Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp-12),[26] a 12-item self-report scale that measures aspects of spirituality and has been validated in large samples of medically ill patients.[27]; Memorial Symptom Assessment Scale (MSAS),[28] a multidimensional self-report scale designed to assess the presence, frequency, severity, and distress associated with common physical symptoms of cancer. A Global Distress Index (GDI) score was calculated from the combined average of the frequency scores for sadness, worry, irritability, and nervousness, and of the distress scores for fatigue, pain, drowsiness, constipation and dry mouth; and the Karnofsky Performance Status scale (KPS),[29] a widely used observer-rated measure of the extent to which individuals can carry out normal activities and self-care. The KPS has demonstrated good reliability and construct validity as a global measure of functional status.[30,31]

### Statistical Analyses

Statistical analyses were computed using the Statistical Package for the Social Sciences (SPSS), version 12.0 for Windows 2000 (SPSS Inc, Chicago, IL).[32] Descriptive statistics were calculated for all variables. Univariate analyses were conducted between referral groups using $\chi^2$, Spearman and Pearson correlation coefficients, Student $t$ tests, and analysis of variance with post hoc comparisons using the Bonferroni method. Two separate multivariate analyses were undertaken to determine significant factors associated with referral for specialized psychosocial oncology care in this sample of patients with metastatic cancer. First, computer-assisted step-wise logistic regression analysis was undertaken. All variables were entered into the logistic regression equation using a forward selection method. Variables were tested for entry based on the significance level of the Wald statistic, set to .15, and after each entry, variables already in the model were tested for removal based on the significance level of .10. Variables not significantly contributing to the logistic regression equation at the end of the selection process were removed to conserve $df$. Second, Cox proportional hazard regression analysis was used to identify significant factors associated with referral time from diagnosis. Referral time was calculated as the time interval (in months) from diagnosis to either (a) psychosocial referral, (b) death, or to (c) the date of our statistical analysis. Variable selection was similar to that used for logistic regression analysis. Variables were entered into the Cox proportional hazard regression equation using a computer-assisted forward selection method based on the Wald statistic, set to .15. Variables already in the model were tested for removal based on the significance level of .10. Variables not statistically significant in the final model were removed to conserve $df$. Multicollinearity was assessed by calculating the variable inflation factor (VIF) for each variable included in the regression equations. A VIF greater than 2.5 indicates multicollinearity is influencing the estimated beta parameter.[33]

## RESULTS

The present sample consisted of all participants enrolled on the WTL Study between November 1, 2002, and January 31, 2006 (Rodin et al;[12,13] note that the present sample differs slightly from that reported in earlier articles due to differences in the variable set under analysis and hence, the retention of individuals with missing data). Table 1 contains sample characteristics. The 326 participants ranged in age from 21 to 87 years at diagnosis (median age, $61.8 \pm 10.7$ years); 186 (57%) were male and 103 (31.6%) were unmarried (ie, single, separated, divorced, or widowed). Two hundred sixteen patients (66.3%) had GI and 110 (33.7%) had lung cancer. The GI cancers were 140 (42.9%) colorectal, 33 (10.1%) hepatobiliary, 28 (8.6%) pancreatic, and 15 (4.6%) gastric. One hundred seventy (52.1%) participants had been diagnosed within 12 months before study entry, and 276 patients (82.5%) had died by the time of the present analyses. Mean time interval between study entry and death was $11.9 \pm 9.8$ months (range, 7 days to 3.8 years). At the time the assessments were completed, 193

**Table 1.** Patient and Disease Characteristics, Social Support, and Psychosocial and Physical Distress and Functioning by Combined Referral Groups

| Characteristic | Nonreferred (n = 217) | | Referred (n = 109) | | P |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| **Predisposing factor** | | | | | |
| Mean age at diagnosis, years | | | | | < .001 |
|   Mean | 62.6 | | 55.2 | | |
|   SD | 10.1 | | 11.1 | | |
| Male sex | 126 | 58.1 | 60 | 55.0 | .572 |
| Education (≥ high school) | 203 | 93.5 | 101 | 92.7 | .534 |
| Canadian born | 135 | 62.2 | 68 | 62.4 | .983 |
| English as primary language | 180 | 82.3 | 92 | 84.4 | .734 |
| Married/common law | 163 | 75.1 | 60 | 55.0 | < .001 |
| Living alone | 31 | 14.3 | 33 | 30.3 | .001 |
| Disease site | | | | | .067 |
|   Pancreas | 17 | 7.8 | 11 | 10.1 | |
|   Colorectal | 84 | 38.7 | 56 | 51.4 | |
|   Gastric or esphogeal | 9 | 4.1 | 6 | 5.5 | |
|   Hepatobiliary | 27 | 12.5 | 6 | 5.5 | |
|   Lung | 80 | 36.9 | 30 | 27.5 | |
| Duration of illness at study entry, months | | | | | .947 |
|   Mean | 20.2 | | 20.0 | | |
|   SD | 24.5 | | 25.0 | | |
| Average time from study entry to death, months | | | | | .155 |
|   Average | 10.4 | | 12.0 | | |
|   SD | 8.3 | | 9.2 | | |
| No. of patients who died | 170 | | 94 | | |
| Referred to palliative care | 71 | 32.7 | 72 | 66.1 | < .001 |
| Treatment status | | | | | .455 |
|   Chemotherapy discontinued | 14 | 6.5 | 9 | 8.3 | |
|   Active clinical surveillance | 71 | 32.7 | 31 | 28.4 | |
|   Receiving chemotherapy | 125 | 57.6 | 68 | 62.6 | |
|   Unknown | 7 | 3.2 | 1 | 1.0 | |
| **Enabling resources** | | | | | |
| Average household income, $ | | | | | .619 |
|   Mean | 94,526 | | 98,347 | | |
|   SD | 61,868 | | 72,014 | | |
| Social support (MOS-SSS) | | | | | .002 |
|   Mean | 84.8 | | 77.6 | | |
|   SD | 17.9 | | 20.7 | | |
| **Need** | | | | | |
| Depressive symptoms (BDI-II) | | | | | < .001 |
|   Mean | 9.7 | | 13.0 | | |
|   SD | 6.6 | | 8.7 | | |
| BDI-II cutoff (≥ 15) | 44 | 20.3 | 32 | 29.4 | .062 |
| Hopelessness (BHS) | | | | | .017 |
|   Mean | 4.9 | | 6.2 | | |
|   SD | 4.4 | | 4.9 | | |
| BHS cut off (≥ 8) | 42 | 19.4 | 33 | 30.3 | .021 |
| Attachment anxiety (ECR) | | | | | .001 |
|   Mean | 2.3 | | 2.7 | | |
|   SD | 1.0 | | 1.1 | | |
| Attachment avoidance (ECR) | | | | | .657 |
|   Mean | 3.0 | | 3.1 | | |
|   SD | 1.0 | | 0.8 | | |
| Self-esteem (RSES) | | | | | .038 |
|   Mean | 34.4 | | 33.2 | | |
|   SD | 4.5 | | 5.1 | | |
| Spiritual wellbeing (FACIT) | | | | | .033 |
|   Mean | 3.0 | | 2.8 | | |
|   SD | 0.7 | | 0.8 | | |
| (continued on following page) | | | | | |

 ****

**Table 1.** Patient and Disease Characteristics, Social Support, and Psychosocial and Physical Distress and Functioning by Combined Referral Groups (continued)

| Characteristic | Nonreferred (n = 217) | | Referred (n = 109) | | P |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| No. of physical symptoms (MSAS) | | | | | .484 |
| Mean | 6.7 | | 7.1 | | |
| SD | 5.1 | | 4.3 | | |
| Global distress index (MSAS) | | | | | .256 |
| Mean | 2.1 | | 2.2 | | |
| SD | 1.0 | | 1.0 | | |
| Karnofsky performance status | | | | | .492 |
| Mean | 81.7 | | 80.9 | | |
| SD | 9.1 | | 9.3 | | |

Abbreviations: SD, standard deviation; MOS-SSS, Medical Outcomes Study Social Support Survey; BDI-II, Beck Depression Inventory-II; BHS, Beck Hopelessness Scale; ECR, Experiences in Close Relationships inventory; RSES, Rosenberg Self-Esteem Scale; FACIT, Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale; MSAS, Memorial Symptom Assessment Scale.

patients were receiving chemotherapy, 102 were under active clinical surveillance, and chemotherapy had been discontinued in 23 patients who were receiving supportive care alone; treatment status for eight patients was unknown. All treatments were administered with palliative intent.

One hundred nine patients (33.4%) were referred for specialized psychosocial care during their treatment at PMH. Of these, 65 (59.6%) were referred to social work, 23 (21.1%) to psychiatry/psychology, and 21 (19.3%) to both social work and psychiatry/psychology. Mean time from diagnosis to death was 31.6 ± 26.2 months (range, 2 months to 14 years), and did not significantly differ between referral groups ($P > .05$). Mean time from diagnosis to referral was 21.9 ± 27.0 months (range, 2 days to 13 years), and mean time from referral to death for the 96 referred patients who died (88.1%), was 10.6 ± 11.6 months (range, 4 days to 4 years); 59 (54%) of the referrals occurred after WTL Study entry, with a mean time from assessment to referral of 7.6 ± 6.3 months (range, 1 day to 2.5 years). Of those 50 participants referred for psychosocial care before WTL Study entry, mean time from referral to assessment was 6.9 ± 9.3 months (range, 1 day to 3 years).

Analysis of variance and post hoc group-by-group comparisons among the four referral groups (nonreferred, psychology/psychiatry-referred, social work-referred, psychology/psychiatry and social work-referred) revealed that, for all variables, the three referred groups did not differ significantly from each other, but did differ from the non-referred patient group. Therefore, for all subsequent analyses, patients referred for psychosocial care were combined into one group, and comparisons were made against the nonreferred group.

Table 1 contains the univariate analyses for predisposing enabling factors, and need (psychosocial and physical distress and functioning) in the referred versus nonreferred groups. Patients in the referred group were significantly younger at diagnosis than nonreferred patients, more often unmarried and living alone, and reported more depression, hopelessness, and attachment anxiety, and less social support, self-esteem, and spiritual well-being. There were no significant differences between the referred and nonreferred groups for GDI or any of the physical burden variables.

Figure 1 depicts the referral rates for stratified age grouping. Of the whole sample, 77.8% of those 20 to 39 years of age (seven of nine), 56.0% of those 40 to 49 (28 of 50), 40.7% of those 50 to 59 (41 of 97),

21.3% of those 60 to 69 (23 of 108), and 16.1% of those age 70 years or older (10 of 62) were referred for psychosocial care. Among those who scored at least 15 (a cutoff with high sensitivity and specificity for the diagnosis of major depression in cancer populations[18]) on the BDI-II (23.3%, n = 76): 100% of those 30 to 39 (two of two), 66.6% of those 40 to 49 (10 of 15), 40.7% of those 50 to 59 (11 of 27), 30.4% of those 60 to 69 (seven of 23), and 22% of those age 70 years or older (two of nine) were referred. There were no patients in the 20- to 29-year-old age group who scored higher than the BDI-II cutoff. Among those who scored 8 or higher (a suggested cutoff,[20] indicating high hopelessness), on the BHS (23%, n = 75): 100% of those 30 to 39 (one of one), 56.3% of those 40 to 49 (nine of 16), 50.0% of those 50 to 59 (12 of 24), 44.4% of those 60 to 69 (eight of 18), and 18.7% of those age 70 years or older (three of 16); there were no patients in the 20- to 29-year-old age group who scored higher than the BHS cutoff. A test of the correlation between age at diagnosis and duration of illness at death was nonsignificant ($P > .05$), suggesting that older patients did not have shorter illness duration than younger patients. Additionally, there were no significant differences between age groups in duration of illness at the time of referral ($P > .05$).
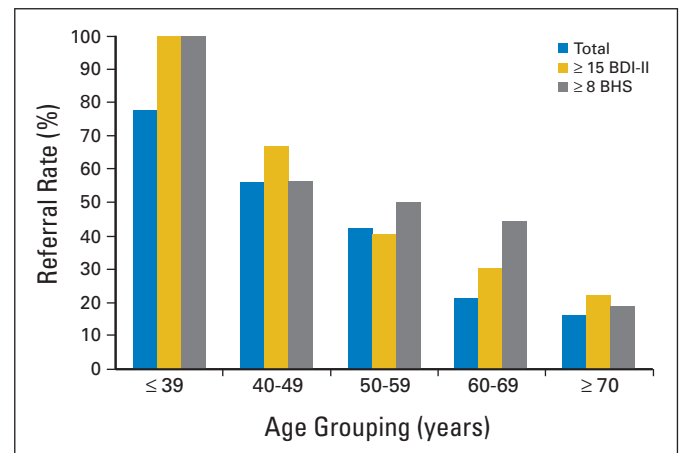


**Fig 1.** Referral rates for specialized psychosocial care by age grouping for the total sample, patients scoring 15 or higher on the Beck Depression Inventory-II (BDI-II) and patients scoring 8 or higher on the Beck Hopelessness Scale (BHS).

**Table 2.** Logistic Regression Parameters for the Final Model Predicting Referral for Specialized Psychosocial Oncology Care

| Variable | B | SE | Wald t Test | P | Odds Ratio | 95% CI | VIF |
|---|---|---|---|---|---|---|---|
| Married/common law | −0.96 | 0.31 | 9.84 | .002 | 0.38 | 0.21 to 0.70 | 1.00 |
| Age at diagnosis, years | −0.07 | 0.01 | 22.97 | < .0001 | 0.93 | 0.90 to 0.96 | 1.03 |
| Depressive symptoms (BDI-II) | 0.04 | 0.02 | 5.15 | .023 | 1.04 | 1.01 to 1.08 | 1.03 |

Abbreviations: VIF, variable inflation factor; BDI-II, Beck Depression Inventory-II.

## Logistic Regression Analysis

Table 2 contains the estimated regression parameters for the final variables retained in the computer-assisted step-wise logistic regression analysis. Referral was associated with younger age at diagnosis, presence of more depressive symptoms, and unmarried status. The final model correctly classified 88.3% of the nonreferred group and 40.4% of the referred group, and had an overall classification rate of 71.3% with a Cox and Snell $R$-squared statistic of 0.174. Analyses on the subsample (n = 67) of patients referred to psychosocial oncology within 6 months before or after entering the study reproduced the findings obtained on the whole sample, with younger age (b = −0.066, $P <$ .0001), unmarried status (b = −0.986, $P =$ .004), and presence of more depressive symptoms (b = 0.051, $P =$ .022) all significantly associated with referral for specialized care; the overall classification rate was 75.2%, with 93.9% of the nonreferred group and 18.5% of the referred groups correctly classified. Examination of the VIFs of the predictor variables indicated that multicollinearity did not affect estimated parameters.

## Cox Proportional Regression

Table 3 contains the median time from diagnosis to psychosocial oncology referral for the variables found significantly associated with referral in the logistic regression analysis. Table 4 contains the estimated hazard parameters for the final variables retained in the Cox proportional regression analysis. Time to referral for psychosocial care was significantly negatively associated with younger age at diagnosis, unmarried status, and presence of more depressive symptoms. A subsequent analysis was conducted on the subsample (n = 67) of patients who were referred for psychosocial care within 6 months of entering the study. These results replicate those found in the whole

**Table 3.** Median Time from Diagnosis to Psychosocial Oncology Referral

| Variable | Time to Referral from Diagnosis (months) | |
|---|---|---|
| | Median | Range |
| Age strata, years | | |
| ≤ 39 | 1.1 | 2 days-3.2 years |
| 40-49 | 17.0 | 15 days-10.8 years |
| 50-59 | 9.7 | 10 days-5.5 years |
| 60-69 | 10.5 | 9 days-7.0 years |
| ≥ 70 | 20.1 | 106 days-4.7 years |
| Married/common law | 23.5 | 15 days-10.8 years |
| Unmarried | 19.8 | 2 days-14.7 years |
| High BDI-II scorers (BDI-II ≥ 15) | 17.3 | 2 days-9.5 years |
| Low BDI-II scorers (BDI-II < 15) | 22.9 | 10 days-14.8 years |

Abbreviation: BDI-II, Beck Depression Inventory-II.

sample, with referral significantly associated with younger age at diagnosis (b = −0.5, $P <$ .0001), unmarried status (b = −0.68, $P =$ .016), and presence of more depressive symptoms (b = 0.04, $P =$ .013).

## DISCUSSION

In the present analysis, approximately one third of patients with metastatic cancer were referred for specialized psychosocial oncology care, a proportion comparable to that reported in other centers.[34,35] Of the approximately 25% of patients who scored above the cutoff on measures of depression or hopelessness at study entry, fewer than half were referred for psychosocial care at any point during their clinical follow-up. Even more striking, however, is the association of younger age with referral in this study. Despite similar and significant symptoms of depression, all of those younger than 40 were referred for psychosocial care, and only 22% of those age 70 or older were referred. A similar age-related referral pattern was observed for those with high levels of hopelessness.

The age-related findings regarding referral in this study are consistent with the Andersen model of health care utilization,[10] in which age may be a predisposing factor affecting utilization of psychosocial care. However, the mechanisms that explain this age-related effect require elucidation. It may have occurred because illness is emotionally more traumatic and requires greater life adjustment in those who are younger, because younger patients are more aware of psychosocial services or because they are less likely to perceive stigma in association with the utilization of psychosocial services. It may also be that medical caregivers tend to perceive younger patients as more likely to need or to derive benefit from psychosocial care, or that they underestimate or minimize the needs of older patients. Age-related bias in the allocation of health care services has also been observed in other populations.[36,37] However, predisposing characteristics such as age have not been taken into account in guidelines for distress screening and referral for psychosocial support in cancer treatment settings.[43] It may be important for such factors to be considered to ensure that psychosocial services are most appropriately and equitably distributed.

The lack of association of referral with sex or socioeconomic status contrasts with findings in cancer and other populations in which women have been shown to be more help-seeking,[38] and in which the provision of health care resources has been shown to be related to higher socioeconomic status.[39,40] The absence of this socioeconomic effect could be a result of the relative absence of economic barriers to psychosocial care in this setting, and/or because of the selective referral of some patients specifically because of financial difficulties. Potential sex differences may have been diminished by the support needs of spouse caregivers, who may initiate referrals for their

**Table 4.** Referral for Specialized Psychosocial Oncology Care

| Variable | B | SE | Wald $t$ Test | $P$ | Hazard | 95% CI |
|---|---|---|---|---|---|---|
| Married/common law | −0.66 | 0.28 | 5.482 | .019 | 0.52 | 0.30 to 0.90 |
| Age at diagnosis, years | −0.05 | 0.01 | 12.586 | < .0001 | 0.95 | 0.93 to 0.98 |
| Depressive symptoms (BDI-II) | 0.04 | 0.02 | 6.082 | .014 | 1.04 | 1.01 to 1.08 |

Abbreviation: BDI-II, Beck Depression Inventory-II.

ill partners. In that regard, we have recently shown that spouse caregivers may be even more distressed than cancer patients themselves.[41]

The present study does not establish whether there were other appropriate and effective responses initiated to alleviate patient distress. However, there is consensus that psychosocial needs tend to be inadequately addressed in cancer treatment settings[42] and current National Comprehensive Cancer Network (NCCN) guidelines[43] recommend that patients with moderate to severe distress be considered for referral for psychosocial care.[43] There are, at present, no age-related guidelines for referral of cancer patients for psychosocial care in Canadian settings.

Limitations of the present study include its retrospective design, the selective recruitment of participants from a specialized cancer treatment center where clinical trials are being conducted, and the exclusion of non-English speaking and cognitively impaired patients. Further research is needed to determine whether these findings apply to community-based settings and to clarify the relationship of referral to distress because the timing between the assessment of distress and referral was not controlled in the present study. Finally, there should be caution in the interpretation of the age-related findings because of the under-representation of some age groups in our sample.

The findings from this study warrant further exploration including a more in-depth examination of barriers, patient preferences, medical caregiver attitudes, and other factors that may contribute to age-related differences in referral. More research is also needed to clarify which patient groups and which symptoms or needs are most likely to benefit from referral for psychosocial care. The identification of age-related differences in the effectiveness of specific psy-chosocial interventions may inform the appropriate allocation of psychosocial resources. Research is also needed to determine to what extent better communication and supportive interventions by primary health care providers may alleviate and prevent distress in cancer patients and diminish the need for referral for specialized psychosocial care. These questions are important to address to ensure that systemic barriers to psychosocial care are minimized.

## AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

## AUTHOR CONTRIBUTIONS

**Conception and design:** Janet Ellis, Judy Lin, Andrew Walsh, Christopher Lo, Madeline Li, Camilla Zimmermann, Lucia Gagliese, Gary Rodin
**Administrative support:** Andrew Walsh
**Provision of study materials or patients:** Frances A. Shepherd, Malcolm Moore
**Collection and assembly of data:** Judy Lin, Andrew Walsh
**Data analysis and interpretation:** Andrew Walsh, Christopher Lo, Gary Rodin
**Manuscript writing:** Janet Ellis, Judy Lin, Andrew Walsh, Christopher Lo, Frances A. Shepherd, Malcolm Moore, Madeline Li, Camilla Zimmermann, Lucia Gagliese, Gary Rodin
**Final approval of manuscript:** Gary Rodin

## REFERENCES

1. Jacobsen PB: Screening for psychological distress in cancer patients: Challenges and opportunities. J Clin Oncol 25:4526-4527, 2006

2. Carlson LE, Bultz BD: Cancer distress screening. Needs, models, and methods. J Psychosom Res 55:403-409, 2003

3. Carlson LE, Angen M, Cullum J, et al: High levels of untreated distress and fatigue in cancer patients. Br J Cancer 90:2297-2304, 2004

4. Skarstein J, Aass N, Fossa SD, et al: Anxiety and depression in cancer patients: Relation between the Hospital Anxiety and Depression Scale and the European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire. J Psychosom Res 49:27-34, 2000

5. Kennard BD, Stewart SM, Olvera R, et al: Nonadherence in adolescent oncology patients: Preliminary data on psychological risk factors and relationships to outcome. J Clin Psych Med Settings 11:31-39, 2004

6. Groenvold M, Petersen MA, Idler E, et al: Psychological distress and fatigue predicted recurrence and survival in primary breast cancer patients. Breast Cancer Res Treat 105:209-219, 2007

7. Küchler T, Bestmann B, Rappat S, et al: Impact of psychotherapeutic support for patients with gastrointestinal cancer undergoing surgery: 10-year survival results of a randomized trial. J Clin Oncol 25:2702-2708, 2007

8. Rodin G: The treatment of depression in patients with cancer. Lancet 372:8-10, 2008

9. Curry C, Cossich T, Matthews JP, et al: Uptake of psychosocial referrals in a cancer outpatient setting: Improving service accessibility via the referral process. Support Care Cancer 10:549-555, 2002

10. Andersen RM: Revisiting the behavioral model and access to medical care: Does it matter? J Health Soc Behav 36:1-10, 1995

11. Loscalzo MJ, Clark KL: Problem-related distress in cancer patients drives requests for help: A prospective study. Oncology (Williston Park) 21:1133-1142, 2007

12. Rodin G, Zimmermann C, Rydall A, et al: The desire for hastened death in patients with metastatic cancer. J Pain Symptom Manage 33:661-675, 2007

13. Rodin G, Walsh A, Zimmermann C, et al: The contribution of attachment security and social support to depressive symptoms in patients with metastatic cancer. Psychooncology 16:1080-1091, 2007

14. Katzman R, Brown T, Fuld P, et al: Validation of a Short Orientation-Memory-Concentration Test of cognitive impairment. Am J Psychiatry 140:734-739, 1983

15. Sherbourne CD, Stewart AL: The MOS Social Support Survey. Soc Sci Med 32:705-714, 1991

16. Beck AT, Steer RA, Brown GK: Manual for the Beck Depression Inventory-II. San Antonio, TX, Psychological Corporation, 1996

17. Chochinov HM, Wilson KG, Enns M, et al: Depression, hopelessness and suicidal ideation. Psychosomatics 39:366-370, 1998

18. Berard RMF, Boermeester F, Viljoen G: Depressive disorders in an out-patient oncology setting: Prevalence, assessment, and management. Psychooncology 7:112-120, 1998

19. Schneider RA: Concurrent validity of the Beck Depression Inventory and the Multidimensional Fatigue Inventory-20 in assessing fatigue among cancer patients. Psychol Rep 82:883-886, 1998

20. Beck AT, Weissman A, Lester D, et al: The measurement of pessimism: The Hopelessness Scale. J Consult Clin Psychol 42:861-865, 1974

21. Breitbart W, Rosenfeld B, Pessin H, et al: Depression, hopelessness, and desire for hastened death in terminally ill patients with cancer. JAMA 284:2907-2911, 2000

22. Rosenfeld B, Breitbart W, Galietta M, et al: The schedule of attitudes toward hastened death: Measuring desire for death in terminally ill cancer patients. Cancer 88:2868-2875, 2000

23. Brennan KA, Clark CL, Shaver PR: Self-report measurement of adult romantic attachment: An integrative overview, in Simpson JA, Rholes WS (eds): Attachment Theory and Close Relationships. New York, NY, Guilford Press, 1998, pp 46-76

24. Rosenberg M: Society and the Adolescent Self-image (revised ed). Middletown, CT, Wesleyan University Press, 1989

25. Blascovich J, Tomaka J: Measures of self-esteem, in Robinson JP, Shaver PR, Wrightsman LS, (eds): Measures of Personality and Social Psychological Attitudes. San Diego, CA, Academic Press, 1991, pp 115-160

26. Cella DF, Tulsky DS, Gray G, et al: The Functional Assessment of Cancer Therapy scale: Development and validation of the general measure. J Clin Oncol 11:570-579, 1993

27. Brady MJ, Peterman AH, Fitchett G, et al: A case for including spirituality in quality of life measurement in oncology. Psychooncology 8:417-428, 1999

28. Portenoy RK, Thaler HT, Kornblith AB, et al: The Memorial Symptom Assessment Scale: An instrument for the evaluation of symptom prevalence, characteristics and distress. Eur J Cancer 30A:1326-1336, 1994

29. Karnofsky DA, Burchenal JH: The clinical evaluation of chemotherapeutic agents in cancer, in Macleod CM (ed): Evaluation of Chemotherapeutic Agents. New York, NY, Columbia University Press, 1949, pp 191-205

30. Yates JW, Chalmer B, McKegney FP: Evaluation of patients with advanced cancer using the Karnofsky Performance Status. Cancer 45:2220-2224, 1980

31. Lassaunière JM, Vinant P: Prognostic factors, survival, and advanced cancer. J Palliat Care 8:52-54, 1992

32. George D, Mallery P: SPSSReg. for Windows-Reg. Step by Step: A Simple Guide and Reference. Needham Heights, MA, Allyn & Becon, 1999

33. Neter J, Kutner MH, Nachtsheim CJ, et al: Applied Linear Statistical Models (ed 4). Chicago, IL, Irwin, 1996, pp 387

34. Pascoe S, Edelman S, Kidman A: Prevalence of psychological distress and use of support services by cancer patients at Sydney Hospital. Aust N Z J Psychiatry 34:785-791, 2000

35. Kadan-Lottick NS, Vanderwerker LC, Block SD, et al: Psychiatric disorders and mental health service use in patients with advanced cancer: A report from the coping with cancer study. Cancer 104:2872-2881, 2005

36. Bouchardy C, Rapiti E, Blagojevic S, et al: Older female cancer patients: Importance, causes, and consequences of undertreatment. J Clin Oncol 25:1858-1869, 2007

37. Bhalla A, Grieve R, Tilling K, et al: Older stroke patients in Europe: Stroke care and determinants of outcome. Age Ageing 33:618-624, 2004

38. Adams ML, Ford JD, Dailey WF: Predictors of help seeking among Connecticut adults after September 11, 2001. Am J Public Health 94:1596-1602, 2004

39. Lutfey K, Freese J: Toward some fundamentals of fundamental causality: Socioeconomic status and health in the routine clinic visit for diabetes. Am J Sociol 110:1326-1372, 2005

40. Adamson J, Ben-Shlomo Y, Chaturvedi N, et al: Ethnicity, socio-economic position and gender: Do they affect reported health-care seeking behaviour? Soc Sci Med 57:895-904, 2003

41. Braun M, Mikulincer M, Rydall A, et al: Hidden morbidity in cancer: Spouse caregivers. J Clin Oncol 25:4829-4834, 2007

42. Sharpe M, Strong V, Allen K, et al: Major depression in outpatients attending a regional cancer centre: Screening and unmet treatment needs. Br J Cancer 90:314-320, 2004

43. National Comprehensive Cancer Network: Practice Guidelines in Oncology, v. 1.2008, www.nccn.org

■ ■ ■

© 2008 by American Society of Clinical Oncology   **705**