SHORT TITLE: Predictors of change in unmet supportive care needs

Predictors of Change in Unmet Supportive Care Needs in Cancer.

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Keywords: Cancer, Oncology, Supportive Care Needs
Abstract

Objective: Patient Reported Outcome (PRO) assessments can assist health professionals to tailor their health practices to the individual needs of patients and improve patient care over time. The present study assessed prospective predictors of unmet supportive care needs in cancer patients over a six month period.

Methods: Participants were recruited from a regional cancer treatment centre in Australia and completed the Supportive Care Needs Survey (SCNS) at recruitment \( (n = 439; 61.4\% \text{ response rate}) \) and six months follow-up \( (n = 396) \). Hierarchical logistic regression was used to identify predictors of change unmet needs across each supportive care domain. Predictor variables were socio-demographic, treatment and psychosocial factors including depression, anxiety, social support, and patient satisfaction.

Results: Unmet needs were reported by approximately two thirds of patients at baseline and half of patients at six months follow-up. Having unmet needs at baseline was the strongest predictor of unmet needs at six months. Longer time since diagnosis was a consistent predictor of greater unmet needs, associated with change in physical/daily living, psychological and health system and information unmet needs over time. By contrast, a complex relationship was found in that patient satisfaction, psychosocial and treatment characteristics predicted higher needs in some domains and lower needs in others.

Conclusions: Unmet supportive care needs persist over time and psychological needs may emerge later in the illness continuum. Interventions to meet the needs of longer term cancer survivors are needed and should closely articulate with reported supportive care needs.
Predictors of Change in Unmet Supportive Care Needs in Cancer

Patient Reported Outcome (PRO) assessments are being used increasingly to assess areas of care where patients feel that they continue to need support following their cancer [1, 2]. For example, the Supportive Care Needs Survey [3], the Cancer Survivors Unmet Needs measure [4], and the Cancer Patient Needs Questionnaire [5] are PRO assessments designed for patients to report the extent to which they have unmet supportive care needs across physical, psychological and informational domains. Patient report measures have received considerable attention for their potential to improve healthcare practice, particularly given the low congruence between healthcare needs identified as important by health professionals compared to patients [2, 6]. For example, Snyder et al. [2] found that patients identify information about treatment and care coordination as the most important aspects of their healthcare whereas health professionals nominate symptom-related issues (e.g., pain). Thus, it is proposed that PRO assessments may help health professionals to tailor their professional practices more effectively to the individual needs of patients.

As well, identifying the characteristics of patients who are more likely to report unmet needs may allow better targeting of services. To date, younger age [7-11], living in rural areas [8, 12], later stage disease [7, 12, 13], type of cancer treatment [8, 9, 12], time since diagnosis [11, 14] and physical or mental quality of life [13, 15] have been associated with greater unmet needs. However, while these predictors provide some insight into the patients at risk of higher unmet supportive care needs, many of these factors are not amenable to change and so cannot be targeted by support interventions. There is some evidence that depression, anxiety and psychological distress are associated with patients reporting greater unmet needs [13, 16]. However, it is not clear how these factors relate to different needs domains. For example, although Snyder et al. [15] reported that better emotional functioning
was associated with fewer psychological, patient care and support, and health system and information needs, Bredart et al. [17] found that lower emotional functioning was related to higher satisfaction with provision of information, organisation of care, and the technical and interpersonal skills of doctors. Thus, while psychological distress may increase patient need for information and support it may also act as a motivator for patients to mobilise support.

Specifically, Lepore, Glaser and Roberts [18] found that for women with breast cancer, early negative affect predicted subsequent received support suggesting that cancer patients who are more distressed receive and utilise greater social support. Accordingly, patients who perceive emotional, instrumental or informational support from health professionals, family members and friends report better adjustment and health-related quality of life [19-21]. However, despite considerable research suggesting that social support is related to positive adjustment to cancer, Beesley et al. [12] found that social support was not associated with unmet needs. As this is the only study examining the association between social support and unmet needs further exploration of this relationship is needed.

Further, if patients are not satisfied with their medical care they may be more likely to report unmet patient care, health system and information needs. An aspect of medical care that patients want most improvement from health professionals is the provision of information [17] and patients who report barriers to information access experience lower emotional, functional and social well-being [22]. The change in care and support following treatment completion suggests that patient satisfaction and social support may be important predictors of unmet supportive care needs over time. At the conclusion of treatment, medical care and support may decrease owing to the belief that the worst is over and that the patient does not require ongoing assistance [23]. Patients indicate some discomfort requesting information from medical providers as time since diagnosis increases and instead seek information from popular media [24]. Breast cancer patients report a significant decrease in the helpfulness of
emotional, informational and decision-making support from family, friends and health providers within the first year of diagnosis [19] and patient satisfaction with healthcare decreases over time [25]. As well, there is some evidence that perceptions of higher continuity of care are associated with lower supportive care needs [26]. The potential for social support and patient satisfaction to predict unmet supportive care needs over time has yet to be explored.

The present study examined the prevalence and prospective predictors of unmet supportive care needs in cancer patients over a six month time period. In addition to patient, cancer and treatment characteristics, the present study explored the contribution of psychosocial predictors that are amenable to change and can be targeted by healthcare interventions. It was predicted that after controlling for socio-demographic, cancer and treatment characteristics and quality-of-life factors, psychological (anxiety, depression and distress), patient satisfaction and social support factors would predict unmet supportive care needs prospectively.

Method

Participants

Participant demographics and study protocols have been reported in detail elsewhere [27]. Patients were eligible if they were over the age of 20 years; had been diagnosed with a solid tumour or haematological cancer; presented for diagnosis or treatment to a regional cancer treatment centre in Queensland, Australia, between January 2004 and June 2006; and had presented to the cancer centre within the six months prior to the commencement of the study. Patients with prostate cancer were excluded from the present study owing to a pre-existing study.
Of the 439 respondents (61% response rate) who consented to participate in the study at time 1, 59% were female and the majority were born in Australia (83.8%). The age of participants ranged between 22 and 89 years (M = 59.23, SD = 12.00). The average time since diagnosis was 87.48 weeks (ranging from 1-1057 weeks) at the time of recruitment. The majority of patients (78.6%) had completed treatment at the time of the interview; 76.7% had surgery, 64.1% chemotherapy, 74.4% radiation and 21% hormone therapy. The average time since treatment completion was 49.11 weeks (ranging from 0-223.43 weeks). Over 90% of participants (n = 396) who participated in the first assessment completed the six month assessment. However, 43 of these had commenced additional treatment and these patients were excluded from later longitudinal analyses only. There were no differences between the demographic characteristics of participants who completed both assessment points and those who completed only the first assessment.

Procedure

A brief computer-assisted telephone interview (CATI) was used to assess socio-demographic and medical characteristics at baseline and at six months follow-up including information about cancer diagnoses and treatment and health care utilisation. Following each CATI, patients completed a self-report questionnaire assessing psychosocial factors including supportive care needs, anxiety and depression, patient satisfaction, quality of life and social support. The self-report questionnaire was mailed to participants following the CATI.

Measures

Predictor Variables

Socio-demographic and medical variables. Age, gender, time since diagnosis, whether the patient had finished treatment, type of treatment received (chemotherapy,
radiation, surgery or hormone therapy) and driving distance from hospital were assessed in the interview.

**Health-Related Quality of Life.** The Medical Outcomes Study Health Survey Short-Form [SF-36v2;28] is a well-validated, reliable generic measure of health-related quality of life assessing eight domains of physical and mental quality of life including: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health. The present study utilised the Physical and Mental Component Scale scores to examine physical and mental health dimensions [29]. Higher scale scores indicate better health (ranging from 0 *worst health* to 100 *best health*).

**Depression and Anxiety.** The Hospital Anxiety and Depression Scale [HADS;30] assesses depression (7 items) and anxiety (7 items) using 4-point Likert scales measuring the frequency with which a respondent has experienced different feelings within the past week (e.g., *I feel tense or ‘wound up’*). The anxiety and depression scales range from 0 (no distress) to 21 (high distress) with scores greater than 7 indicative of a case at risk of psychological distress.

**General Distress.** The Distress Thermometer (DT) is a brief screening tool assessing psychological distress in cancer patients [31, 32]. The DT is a single-item 11-point scale ranging from 0 (no distress) to 10 (extreme distress) and respondents are instructed to circle the number that best describes how much distress they have been experiencing within the past week. A cut-off score of ≥ 4 is indicative of psychological distress and has been shown to be comparable with the HADS as a measure for identifying distressed cancer patients and is sensitive to respondents who do not meet anxiety or depression caseness [31].

**Social Support.** The ENRICHD Social Support Instrument [33] was used to measure patient social support. Five items assess functional and emotional support utilising a five-point scale ranging from 1 (none of the time) to 5 (all of the time) with higher scores
indicating greater availability of social support (e.g., *is there someone available to you whom you can count on to listen to you when you need to talk*). The scale has been used as a prospective predictor of healthcare experience in previous research [34] and demonstrates good internal consistency in the present study (\(\alpha = .93\) at time 1 and \(\alpha = .92\) at time 2).

*Patient Satisfaction.* A modified version of the Patient Satisfaction Questionnaire Short Form [PSQ-18;35] was used to assess patient satisfaction with healthcare. A principal components analysis of the PSQ-18 revealed a single factor with an eigenvalue greater than one accounting for more than 84% of the variance. The four items that loaded above .70 on this factor were incorporated into a patient satisfaction scale, representing a general summation of patient satisfaction items (e.g., *the medical care I have been receiving is just about perfect; when I go for medical care, they are careful to check everything when treating and examining me; those who provide my medical care sometimes hurry too much when they treat me; I have some doubts about the ability of the doctors who treat me*). Items were rated on a scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) with relevant items reversed scored so that higher scores indicated greater patient satisfaction with healthcare.

The modified patient satisfaction scale showed good reliability (\(\alpha = .82\) at time 1 and \(\alpha = .75\) at time 2).

*Outcome Variable (baseline and six month follow-up)*

*Supportive Care Needs.* The Supportive Care Needs Survey Short Form (SCNS-SF34) assessed supportive care needs across five domains: *physical/daily living* (5 items), *psychological* (5 items), *patient care and support* (10 items), *sexuality* (3 items) and *health system and information needs* (11 items). The SCNS-SF34 is a validated assessment of supportive care needs and has been used extensively to assess supportive care needs in cancer populations [3] and has been shown to be psychometrically sound [1, 8]. In the present study,
Cronbach’s alpha demonstrated good internal consistency for all five domains ranging from $\alpha = .87$ to $\alpha = .96$. Patients are asked to indicate their level of need for help for each item over the past month. Needs are measured on a five-point scale ranging from no need-not applicable, no need-satisfied, low need, moderate need or high need. Individual needs items are dichotomised into no-to-low need and moderate-to-high need to assess the proportion of patients reporting individual unmet needs [9, 12] and summated scale scores are standardised to rank the prevalence of each need domain (ranging from 0-100).

Statistical Analysis

To examine predictors of unmet supportive care needs patients were categorised as having some need if they reported having at least one low-to-high need in a domain, and no need if they did not report any need to all items in a domain [3]. Hierarchical logistic regression was used to identify predictors of change in unmet need across each supportive care domain, separately. After controlling for time 1 supportive care needs, patient and medical characteristics were entered as predictors prior to psychosocial predictors. As treatment completion was a predictor in the current study, patients who reported starting a new treatment at time 2 were excluded from logistic regression analyses. As patient satisfaction and social support have not been examined in prior research, they were added in a final step to explore whether they explained any additional variance in unmet needs. Thus, predictors were entered in the following steps: (1) time 1 supportive care needs; (2) age, time since diagnosis, finished treatment, gender, driving distance from hospital, treatment received, physical and mental quality of life; (3) anxiety, depression and distress; (4) patient satisfaction and social support.

Results
Prevalence of unmet needs at time 1 and time 2

Consistent with Beesley et al. [12] and Sanson-Fisher et al. [9], dichotomised no-to-low and moderate-to-high individual needs item were used to assess the prevalence of unmet supportive care needs. Almost two thirds of patients (57.8%) reported having at least one moderate to high unmet need at baseline and just under half (47.4%) reported at least one moderate to high unmet need at six month follow-up. The top 10 moderate to high unmet needs were in the physical/daily living and psychological domains and the majority of these unmet needs remained in the top 10 needs reported at 6 months (see Table 1).

Standardised Likert summated scores were used to rank the prevalence of needs domains. At time 1, health system/information (median = 25) and physical/daily living (median = 25) needs were ranked most prevalent followed by psychological (median = 22.5), patient care/support (median = 20) and sexuality needs (median = 8.33). Ratings were similar for these domains at time 2: health system/information (median = 20.45), physical/daily living (median = 20), psychological (median = 20), patient care/support (median = 15) and sexuality needs (median = 0).

Predictors of Unmet Supportive Care Needs

Descriptive statistics for all variables used in the analyses are presented in Table 2. Logistic regression results for prospective predictors of unmet supportive care needs are reported in Table 3. Participants who reported having unmet needs at time 1 were between 2.92-7.03 times more likely to report having unmet needs at time 2 and baseline unmet needs were highly significant prospective predictors across all needs domains (see Table 3).

Physical/daily living needs. Time 1 physical/daily living needs, older age, being female, longer time since diagnosis, lower physical quality of life, greater depression, and
greater distress were associated with being more likely to have unmet physical/daily living needs at time 2.

*Psychological needs.* Once accounting for time 1 psychological unmet needs, only increasing time since diagnosis was associated with a greater likelihood of time 2 unmet psychological needs.

*Patient care/support needs.* Being female was the only predictor associated with change in unmet patient care and support needs at time 2 after accounting for time 1 patient care needs.

*Sexuality needs.* Time 1 sexuality needs, lower mental quality of life, greater patient satisfaction with healthcare and less social support was associated with a greater likelihood of time 2 unmet sexuality needs.

*Health system/information needs.* Health system/information needs at time 1, longer time since diagnosis, not having had hormone therapy and lower patient satisfaction with healthcare was associated with being more likely to report time 2 unmet health system and information needs.

**Discussion**

Consistent with previous research, the highest ranked unmet supportive care needs were in the physical/daily living and psychological needs domains [7, 9, 12] and a large proportion of respondents experienced at least one mod-to-high unmet need at baseline and six month follow-up. The proportion of respondents reporting unmet needs at time 1 was reduced at time 2 across all domains.

Predictors of change in unmet supportive care needs varied across each needs domain demonstrating how patient, medical and psychosocial characteristics may differentially
predict areas of unmet supportive care needs. For instance, psychological factors such as depression, anxiety and distress have been linked previously to patients reporting unmet needs [13, 16] and the present study extends these findings by identifying which needs domains are predicted by psychological factors. Specifically, greater depression and greater distress at time 1 was associated with patients reporting unmet needs in the physical/daily living domain at six months follow-up. The prediction of change in physical unmet needs by psychological factors is consistent with the results of Ronis et al. [36] who found that depression predicted change in 6 of 12 health-related quality of life domains over a one year period from pre- to post-treatment.

Paradoxically, although over time patients experience less distress over time, unmet physical/daily living, psychological, and health system/information needs increased with longer time since diagnosis. Patients experience a significant disruption in their global functioning and supportive care needs immediately following diagnosis however they continue to require assistance adapting to and coping with their cancer throughout the cancer trajectory [23, 37]. Stanton et al. [23] suggests that the realisation one has cancer may only become apparent over time, for example when active coping strategies (e.g., treatment) are removed. As well, family and medical support decreases once cancer treatment is completed leaving patients with fewer resources, and less communication and support during their recovery. Psychological adjustment to the reality of cancer, and treatment outcomes and side-effects may change during the cancer experience supporting the idea that patients’ long-term physical, psychological and informational needs increase with such an awareness.

These results support research focusing on cancer survivorship. Despite being satisfied with information and medical care during treatment, cancer survivors report less satisfaction with the physical, emotional and lifestyle support they receive with regards to the changes they may experience over time [38-41]. Research on unmet needs in cancer
survivors has focused almost exclusively on breast cancer patients, and the present study
generalises these findings to patients who may have a variety of cancer and treatment
experiences.

As predicted, lower patient satisfaction with healthcare was associated with reporting
change in health system and information needs. This result is consistent with the idea that
patients make judgements about their healthcare based on the quality of physician-patient
communication and the provision of adequate information about cancer [42]. Dissatisfaction
with initial information about cancer may increase the need for information over time.
Although lower patient satisfaction related to change in health system/information needs,
greater patient satisfaction was associated with unmet sexuality needs. A possible
explanation for this finding concerns the complexity of patient and physician expectations
about the role of sexuality issues in medical care. For example, some patients hold the view
that health professionals are medical experts and feel that if sexuality issues were of concern
they would have been mentioned by their health professional whereas physicians have
reported avoiding sexuality issues and feeling uncertain or uncomfortable about discussing
these with patients [43, 44]. Patients may be neglecting issues of sexuality in assessments of
their medical care and report sexuality needs independently of patient satisfaction. By
excluding sexuality issues from assessments of satisfaction with medical care, patients with
great satisfaction initially may then become aware of unmet sexuality needs over time.
Alternatively, as patients are satisfied with their medical care and as medical issues become
less of a focus over time, patients may be more aware of alternative aspects of their life where
their needs are unmet, for example, assessing and addressing their sexual relationships and
sexuality needs.

This second explanation is consistent with the finding that lower social support was
associated with a higher likelihood of reporting unmet sexuality needs. Addressing sexuality
needs may be more difficult for patients who perceive that they have limited social support to encourage disclosure of such a sensitive issue. Patients who perceive emotional and informational support from family, friends and health providers demonstrate better adjustment [19-21] and sexuality needs may be a persistent area of concern for patients who perceive inadequate support.

Conclusions and Future Directions

Cancer patients continue to report unmet supportive care needs years after their cancer diagnosis. The complex relationships between patient care, health system and information needs and psychological factors highlight the role of medical professionals in ensuring cancer patients are satisfied with their treatment and cancer care and are adjusting to their cancer over time. These findings extend across a general cancer sample and patients who have experienced a range of treatment and healthcare experiences suggesting that these predictors can be generalised to a variety of healthcare settings. Further, these results support recommendations deriving from a recent report into the medical and psychosocial issues faced by cancer survivors proposing that cancer patients be provided with a survivorship care plan that addresses information related to their long-term care and identifies psychological and social support services available to them over time [45].

The present study has provided valuable insight into the socio-demographic, cancer and psychosocial characteristics that are associated with the changing needs of cancer patients over time. Extending previous research on supportive care needs by incorporating psychosocial factors including psychological distress, social support and patient satisfaction predictors will help health professionals to identify patients who may be at risk of greater unmet needs over time. As well, unlike many of the socio-demographic, cancer and treatment factors explored in prior research on supportive care needs, psychosocial predictors are
amenable to change and can be targeted by healthcare interventions. For example, interventions that reduce psychological distress and depression in cancer patients may increase patients’ feelings of being able to cope with their physical needs over time. Although the present study explores direct relationships between psychosocial factors and unmet supportive care needs, additional research examining moderational or mediational relationships is needed. For example, although lower patient satisfaction has been linked to greater health system/information needs, there is some evidence that the quality of physician-patient communication [42] and the quality of physician empathic responses can influence patient satisfaction and psychosocial health outcomes [46]. Further, physician empathy can indirectly affect depression and socio-emotional-cognitive quality of life through a desire for more information from physicians about treatment options and health promotion [47]. Additional research into possible indirect relationships between psychosocial, cancer and socio-demographic predictors may further identify those patients with healthcare experiences that are more likely to lead to poor psychosocial and physical adjustment.
Acknowledgements

This project was funded by the Cancer Council Queensland. We gratefully acknowledge the support of The Townsville Hospital and Ms Alison Beeden in the undertaking of this research.
References

Table 1. Top 10 unmet supportive care needs listed as moderate to high at time 1 and time 2.

<table>
<thead>
<tr>
<th>Item</th>
<th>Time 1 (%)</th>
<th>Time 2 (%)</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of energy/tiredness</td>
<td>26.5</td>
<td>21.4</td>
<td>Physical</td>
</tr>
<tr>
<td>Not being able to do the things you used to do</td>
<td>26.5</td>
<td>20.9</td>
<td>Physical</td>
</tr>
<tr>
<td>Fears about the cancer spreading</td>
<td>24.9</td>
<td>19.8</td>
<td>Psychological</td>
</tr>
<tr>
<td>Concerns about the worries of those close to you</td>
<td>21.8</td>
<td>20.1</td>
<td>Psychological</td>
</tr>
<tr>
<td>Uncertainty about the future</td>
<td>20.6</td>
<td>16.7</td>
<td>Psychological</td>
</tr>
<tr>
<td>Work around the home</td>
<td>19.2</td>
<td>14.6</td>
<td>Physical</td>
</tr>
<tr>
<td>Worry that the results of treatment are beyond your control</td>
<td>19.1</td>
<td>13.3</td>
<td>Psychological</td>
</tr>
<tr>
<td>Feeling down or depressed</td>
<td>18.9</td>
<td>16.9</td>
<td>Psychological</td>
</tr>
<tr>
<td>Anxiety</td>
<td>18.2</td>
<td>14.1</td>
<td>Psychological</td>
</tr>
<tr>
<td>Feelings of sadness</td>
<td>15.6</td>
<td>11.5</td>
<td>Psychological</td>
</tr>
<tr>
<td>Pain</td>
<td>14.7</td>
<td>13.0</td>
<td>Physical</td>
</tr>
</tbody>
</table>
Table 2. Descriptive statistics for predictors and supportive care needs at Time 1 and Time 2.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>PCS</td>
<td>43.30 (11.64)</td>
<td>45.26 (10.98)</td>
</tr>
<tr>
<td>MCS</td>
<td>48.92 (10.65)</td>
<td>49.54 (10.97)</td>
</tr>
<tr>
<td>Depression</td>
<td>4.26 (3.51)</td>
<td>4.03 (3.42)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.14 (4.00)</td>
<td>5.99 (4.11)</td>
</tr>
<tr>
<td>Distress</td>
<td>2.98 (2.72)</td>
<td>2.93 (2.82)</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>4.01 (.72)</td>
<td>3.97 (.66)</td>
</tr>
<tr>
<td>Social support</td>
<td>20.82 (4.76)</td>
<td>20.66 (4.65)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(% reporting unmet need)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical/daily living</td>
<td>60.82</td>
<td>53.79</td>
</tr>
<tr>
<td>Psychological</td>
<td>65.71</td>
<td>55.99</td>
</tr>
<tr>
<td>Patient care/support</td>
<td>30.79</td>
<td>24.87</td>
</tr>
<tr>
<td>Sexuality</td>
<td>30.70</td>
<td>26.89</td>
</tr>
<tr>
<td>Health system/information</td>
<td>47.12</td>
<td>37.17</td>
</tr>
</tbody>
</table>

Note: higher scores indicate more of the construct.
Table 3. Final Logistic Regression Models Predicting Change in Supportive Care Needs

<table>
<thead>
<tr>
<th></th>
<th>Physical/daily living</th>
<th>Psychological</th>
<th>Patient care &amp; support</th>
<th>Sexuality</th>
<th>Health system &amp; information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (CI)</td>
<td>OR (CI)</td>
<td>OR (CI)</td>
<td>OR (CI)</td>
<td>OR (CI)</td>
</tr>
<tr>
<td>SCNS domain need (time1)</td>
<td>3.02 (1.56-5.83)**</td>
<td>4.26 (2.22-8.17)***</td>
<td>7.03 (3.48-14.19)***</td>
<td>7.03 (3.428-14.47)***</td>
<td>2.92 (1.58-5.39)**</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>1.04 (1.01-1.08)**</td>
<td>.99 (.97-1.02)</td>
<td>1.00 (.97-1.03)</td>
<td>.99 (.96-1.02)</td>
<td>1.02 (.99-1.05)</td>
</tr>
<tr>
<td>Female†</td>
<td>2.72 (1.32-5.61)**</td>
<td>1.41 (.73-2.73)</td>
<td>2.71 (1.23-5.97)*</td>
<td>.81 (.37-1.75)</td>
<td>1.45 (.77-2.75)</td>
</tr>
<tr>
<td>Lives within driving distance†</td>
<td>.60 (.33-1.10)</td>
<td>.92 (.52-1.63)</td>
<td>.76 (.40-1.45)</td>
<td>.53 (.28-1.01)</td>
<td>.80 (.45-1.39)</td>
</tr>
<tr>
<td>Time since diagnosis (weeks)</td>
<td>1.01 (1.00-1.01)*</td>
<td>1.01 (1.00-1.01)*</td>
<td>1.00 (.99-1.01)</td>
<td>1.00 (.99-1.01)</td>
<td>1.00 (1.00-1.01)*</td>
</tr>
<tr>
<td>Finished treatment†</td>
<td>.43 (.17-1.07)</td>
<td>.86 (.37-1.99)</td>
<td>.82 (.34-1.99)</td>
<td>1.02 (.41-2.51)</td>
<td>.55 (.25-1.23)</td>
</tr>
<tr>
<td>Had surgery†</td>
<td>.77 (.34-1.75)</td>
<td>1.16 (.53-2.53)</td>
<td>1.06 (.43-2.61)</td>
<td>1.01 (.42-2.43)</td>
<td>2.07 (.95-4.53)</td>
</tr>
<tr>
<td>Had radiation†</td>
<td>1.12 (.53-2.40)</td>
<td>.84 (.42-1.68)</td>
<td>.98 (.45-2.14)</td>
<td>1.51 (.69-3.31)</td>
<td>.65 (.33-1.27)</td>
</tr>
<tr>
<td>Had chemotherapy†</td>
<td>1.20 (.62-2.30)</td>
<td>.96 (.51-1.79)</td>
<td>.86 (.42-1.75)</td>
<td>1.25 (.60-2.60)</td>
<td>1.06 (.56-1.98)</td>
</tr>
<tr>
<td>Had hormone treatment†</td>
<td>.68 (.31-1.50)</td>
<td>1.03 (.48-2.20)</td>
<td>.80 (.35-1.80)</td>
<td>.67 (.28-1.63)</td>
<td>.45 (.21-.96)</td>
</tr>
<tr>
<td>PCS (time1)</td>
<td>.96 (.93-.99)*</td>
<td>1.00 (.97-1.03)</td>
<td>1.00 (.96-1.03)</td>
<td>.99 (.96-1.03)</td>
<td>.98 (.95-1.01)</td>
</tr>
<tr>
<td>MCS (time1)</td>
<td>.98 (.93-1.03)</td>
<td>.98 (.94-1.03)</td>
<td>.98 (.93-1.03)</td>
<td>.96 (.91-1.00)*</td>
<td>.99 (.95-1.03)</td>
</tr>
<tr>
<td>HADS depression (time1)</td>
<td>1.31 (1.12-1.53)**</td>
<td>1.15 (.99-1.33)</td>
<td>1.01 (.88-1.17)</td>
<td>.92 (.80-1.07)</td>
<td>1.07 (.94-1.21)</td>
</tr>
<tr>
<td>HADS anxiety (time1)</td>
<td>.90 (.79-1.02)</td>
<td>1.08 (.97-1.21)</td>
<td>.98 (.88-1.10)</td>
<td>1.01 (.89-1.13)</td>
<td>1.00 (.90-1.12)</td>
</tr>
<tr>
<td>Distress (time1)</td>
<td>1.26 (1.06-1.49)**</td>
<td>1.15 (.99-1.34)</td>
<td>.99 (.84-1.17)</td>
<td>1.13 (.96-1.33)</td>
<td>1.02 (.88-1.19)</td>
</tr>
<tr>
<td>Patient satisfaction (time1)</td>
<td>1.49 (.94-2.38)</td>
<td>1.08 (.70-1.67)</td>
<td>.76 (.48-1.19)</td>
<td>2.49(1.46-4.26)**</td>
<td>.61 (.40-.93)*</td>
</tr>
<tr>
<td>Social support (time1)</td>
<td>1.04 (.95-1.11)</td>
<td>1.03 (.97-1.12)</td>
<td>.98 (.91-1.06)</td>
<td>.91 (.85-.98)*</td>
<td>.95 (.89-1.02)</td>
</tr>
<tr>
<td>Total Model</td>
<td>$x^2 = 145.99$</td>
<td>$x^2 = 121.30$</td>
<td>$x^2 = 74.54$</td>
<td>$x^2 = 90.57$</td>
<td>$x^2 = 84.16$</td>
</tr>
</tbody>
</table>

$p < .05$  **$p < .01$  ***$p < .001$

OR = odds ratio, CI = confidence interval

Note. † = predictor is a dummy variable.